MICS

SUDAN
Multiple Indicator Cluster Survey 2014

Final Report

UNFPA

unicef

UKaid
from the British people

WFP
World Food Programme
wfp.org

World Health Organization

Central Bureau of Statistics
Republic of Sudan

Map of Sudan

The Sudan Multiple Indicator Cluster Survey (MICS) was carried out in 2014, by the Central Bureau of Statistics (CBS) Sudan in collaboration with the Ministry of Health as part of the global MICS programme, round 5. Technical support was provided by the United Nations Children's Fund (UNICEF) at national, regional and headquarter levels for quality assurance. A large partnership has been established for the conduct of MICS Sudan involving UNICEF, World Health Organization (WHO), United Nations Population Fund (UNFPA), World Food Program (WFP), and the Department for International Development (DfID) UK, who provided financial support.

The global MICS programme was developed by UNICEF in the 1990s as an international household survey programme to support countries in the collection of internationally comparable data on a wide range of indicators on the situation of children and women. MICS surveys measure key indicators that allow countries to generate data for use in policies and programmes, and to monitor progress towards the Millennium Development Goals (MDGs) and other internationally agreed upon commitments.

The specific objectives of the survey are to:

- Update information for assessing the situation of children and women in Sudan, based on MICS5 modules and geographical coverage of the 18 States in Sudan.
- Measure the trend towards achievement of the MDGs and the goals of a World Fit For Children Plan of Action and other internationally agreed upon indicators related to children and women.
- Furnish data needed for the indicators as per the global review of the Millennium Development Goals.
- Contribute to the improvement of data and monitoring systems in Sudan, and to strengthen technical expertise, national capacity building in the design, implementation, and analysis of such systems.
- Update Census indicators and provide solid evidence for decentralization (planning and measuring of progress).
- Provide key evidence for social sector programming and the Poverty Reduction Strategy Paper (PRSP) under development and accountabilities for sector strategic plans and UNDAF 2013-2016.

Summary Table of Survey Implementation and the Survey Population, Sudan MICS, 2014

Survey Implementation			
Sample frame	Sudan Population Census 2008	**Questionnaires**	Household
			Women (age 15-49)
- Household Listing	July, 2014		Children under five
Interviewer training	July, 2014	**Fieldwork**	10th September – 30th October 2014
Survey sample			
Households		**Children under five**	
- Sampled	18,000	- Eligible	14,751
- Occupied	17,142	- Mothers/caretakers interviewed	14,081
- Interviewed	16,801	- Response rate (Percent)	95.5
- Response rate (Percent)	98.0		
Women			
- Eligible for interviews	20,327		
- Interviewed	18,302		
- Response rate (Percent)	90.0		

Survey Population			
Average household size	5.9	**Percentage of population living in**	
		- Urban area	29.8
Percentage of population under:		- Rural area	70.2
- Age 5	15.2		
- Age 18	50.6	States	
		- Northern	2.5
Percentage of women age 15-49 years with at least one live birth in the last 2 years	30.7	- River Nile	4.0
		- Red Sea	3.1
		- Kassala	4.3
		- Gadarif	5.1
		- Khartoum	13.8
		- Gezira	15.6
		- White Nile	5.2
		- Sinnar	3.9
		- Blue Nile	3.9
		- North Kordofan	6.7
		- South Kordofan	2.8
		- West Kordofan	6.0
		- North Darfur	7.4
		- West Darfur	3.3
		- South Darfur	7.6
		- Central Darfur	1.8
		- East Darfur	3.0

Housing Characteristics	
Percentage of households with	
- Electricity	44.9
- Finished floor	14.0
- Finished roofing	25.0
- Finished walls	28.1
Mean number of persons per room used for sleeping	3.2

Household or Personal Assets	
Percentage of households that own	
- A television	39.6
- A refrigerator	25.9
- Agricultural land	39.5
- Farm animals/livestock	51.0
Percentage of households where at least one member has or owns:	
- A mobile phone	73.8
- A car or truck	6.4

Summary Table of Findings[1]

Multiple Indicator Cluster Surveys (MICS) and Millennium Development Goals (MDG) Indicators, Sudan MICS, 2014

CHILD MORTALITY				
Early childhood mortality[a]				
MICS Indicator		**Indicator**	**Description**	**Value**
1.1		Neonatal mortality rate	Probability of dying within the first month of life	33
1.2	**MDG 4.2**	Infant mortality rate	Probability of dying between birth and the first birthday	52
1.3		Post-neonatal mortality rate	Difference between infant and neonatal mortality rates	19
1.4		Child mortality rate	Probability of dying between the first and the fifth birthdays	17
1.5	**MDG 4.1**	Under-five mortality rate	Probability of dying between birth and the fifth birthday	68
[a] Indicator values are per 1,000 live births and refer to the five-year period before the survey				

NUTRITION				
Nutritional status				
MICS Indicator		**Indicator**	**Description**	**Value**
2.1a 2.1b	**MDG 1.8**	Underweight prevalence (a) Moderate and severe (b) Severe	Percentage of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for age of the WHO standard	33.0 12.0
2.2a 2.2b		Stunting prevalence (a) Moderate and severe (b) Severe	Percentage of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median height for age of the WHO standard	38.2 18.2
2.3a 2.3b		Wasting prevalence (a) Moderate and severe (b) Severe	Percentage of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for height of the WHO standard	16.3 4.5
2.4		Overweight prevalence	Percentage of children under age 5 who are above two standard deviations of the median weight for height of the WHO standard	3.0

---

[1] See Appendix E for a detailed description of MICS indicators

NUTRITION

Nutritional status

MICS Indicator	Indicator	Description	Value
Breastfeeding and Infant Feeding			
2.5	Children ever breastfed	Percentage of women with a live birth in the last 2 years who breastfed their last live-born child at any time	95.6
2.6	Early initiation of breastfeeding	Percentage of women with a live birth in the last 2 years who put their last new-born to the breast within one hour of birth	68.7
2.7	Exclusive breastfeeding under 6 months	Percentage of infants under 6 months of age who are exclusively breastfed	55.4
2.8	Predominant breastfeeding under 6 months	Percentage of infants under 6 months of age who received breast milk as the predominant source of nourishment during the previous day	80.8
2.9	Continued breastfeeding at 1 year	Percentage of children age 12-15 months who received breast milk during the previous day	89.4
2.10	Continued breastfeeding at 2 years	Percentage of children age 20-23 months who received breast milk during the previous day	48.8
2.11	Median duration of breastfeeding	The age in months when 50 percent of children age 0-35 months did not receive breast milk during the previous day	21.2
2.12	Age-appropriate breastfeeding	Percentage of children age 0-23 months appropriately fed during the previous day	63.1
2.13	Introduction of solid, semi-solid or soft foods	Percentage of infants age 6-8 months who received solid, semi-solid or soft foods during the previous day	61.2
2.14	Milk feeding frequency for non-breastfed children	Percentage of non-breastfed children age 6-23 months who received at least 2 milk feedings during the previous day	57.5
2.15	Minimum meal frequency	Percentage of children age 6-23 months who received solid, semi-solid and soft foods (plus milk feeds for non-breastfed children) the minimum number of times or more during the previous day	40.7
2.16	Minimum dietary diversity	Percentage of children age 6–23 months who received foods from 4 or more food groups during the previous day	28.0
2.17a 2.17b	Minimum acceptable diet	(a) Percentage of breastfed children age 6–23 months who had at least the minimum dietary diversity and the minimum meal frequency during the previous day	25.0
		(b) Percentage of non-breastfed children age 6–23 months who received at least 2 milk feedings and had at least the minimum dietary diversity, not including milk feeds and the minimum meal frequency during the previous day	37.0
2.18	Bottle feeding	Percentage of children age 0-23 months who were fed with a bottle during the previous day	7.3
Salt iodization			
2.19	Iodized salt consumption	Percentage of households with salt testing 15 parts per million or more of iodide/iodate	7.6
Low-birthweight			
2.20	Low-birthweight infants	Percentage of most recent live births in the last 2 years weighing below 2,500 grams at birth	32.3
2.21	Infants weighed at birth	Percentage of most recent live births in the last 2 years who were weighed at birth	16.3

CHILD HEALTH

Vaccinations

MICS Indicator		Indicator	Description	Value
3.1		Tuberculosis immunization coverage	Percentage of children age 12-23 months who received BCG vaccine by their first birthday	78.5
3.2		Polio immunization coverage	Percentage of children age 12-23 months who received the third dose of OPV vaccine (OPV3) by their first birthday	65.3
3.3 3.5 3.6		Pentavalanet DPT+HepB+Hib) immunization coverage	Percentage of children age 12-23 months who received the third dose of Pentavalent (DPT+HepB+Hib) vaccine by their first birthday	63.9
3.4	**MDG 4.3**	Measles immunization coverage	Percentage of children age 12-23 months who received measles vaccine by their first birthday	60.9
3.8		Full immunization coverage	Percentage of children age 12-23 months who received all vaccinations recommended in the national immunization schedule by their first birthday	42.8

Tetanus Toxoid

MICS Indicator		Indicator	Description	Value
3.9		Neonatal tetanus protection	Percentage of women age 15-49 years with a live birth in the last 2 years, who were given at least two doses of tetanus toxoid vaccine within the appropriate interval prior to the most recent birth	58.2

Diarrhoea

MICS Indicator		Indicator	Description	Value
-		Children with diarrhoea	Percentage of children under age 5 with diarrhoea in the last 2 weeks	29.0
3.10		Care-seeking for diarrhoea	Percentage of children under age 5 with diarrhoea in the last 2 weeks, for whom advice or treatment was sought from a health facility or provider	42.7
3.11		Diarrhoea treatment with oral rehydration salts (ORS) and zinc	Percentage of children under age 5 with diarrhoea in the last 2 weeks, who received ORS and zinc	28.9
3.12		Diarrhoea treatment with oral rehydration therapy (ORT) and continued feeding	Percentage of children under age 5 with diarrhoea in the last 2 weeks, who received ORT (ORS packet, pre-packaged ORS fluid, recommended homemade fluid or increased fluids) and continued feeding during the episode of diarrhoea	59.3

Acute Respiratory Infection (ARI) symptoms

MICS Indicator		Indicator	Description	Value
-		Children with ARI symptoms	Percentage of children under age 5 with ARI symptoms in the last 2 weeks	17.8
3.13		Care-seeking for children with ARI symptoms	Percentage of children under age 5 with ARI symptoms in the last 2 weeks, for whom advice or treatment was sought from a health facility or provider	48.3
3.14		Antibiotic treatment for children with ARI symptoms	Percentage of children under age 5 with ARI symptoms in the last 2 weeks, who received antibiotics	59.0

Solid fuel use

MICS Indicator		Indicator	Description	Value
3.15		Use of solid fuels for cooking	Percentage of household members in households that use solid fuels as the primary source of domestic energy to cook	58.2

WATER AND SANITATION

MICS Indicator		Indicator	Description	Value
4.1	**MDG 7.8**	Use of improved drinking water sources	Percentage of household members using improved sources of drinking water	68.0
4.2		Water treatment	Percentage of household members in households using unimproved drinking water, who use an appropriate treatment method	4.1

WATER AND SANITATION

MICS Indicator		Indicator	Description	Value
4.3	**MDG 7.9**	Use of improved sanitation	Percentage of household members using improved sanitation facilities which are not shared	32.9
4.4		Safe disposal of child faeces	Percentage of children age 0-2 years whose last stools were disposed of safely	53.0
4.5		Place for handwashing	Percentage of households with a specific place for hand washing where water and soap or other cleansing agents are present	25.8
4.6		Availability of soap or other cleansing agent	Percentage of households with soap or other cleansing agents	55.4

REPRODUCTIVE HEALTH

Contraception and unmet need

MICS Indicator		Indicator	Description	Value
-		Total fertility rate	Total fertility rate^A for women age 15-49 years	5.2
5.1	**MDG 5.4**	Adolescent birth rate	Age-specific fertility rate^A for women age 15-19 years	87
5.2		Early childbearing	Percentage of women age 20-24 years who had at least one live birth before age 18	21.5
5.3	**MDG 5.3**	Contraceptive prevalence rate	Percentage of women age 15-49 years currently married and using (or whose partner is using) a modern or traditional contraceptive method	12.2
5.4	**MDG 5.6**	Unmet need	Percentage of married women age 15-49 years who are fecund and want to space their births, or limit the number of children they have and who are not currently using contraception	26.6

^{A} The age-specific fertility rate is defined as the number of live births to women in a specific age group during a specified period, divided by the average number of women in that age group during the same period, expressed per 1,000 women. The age-specific fertility rate for women age 15-19 years is also termed as the adolescent birth rate.
The total fertility rate (TFR) is calculated by summing the age-specific fertility rates calculated for each of the 5-year age groups of women, from age 15 through to age 49. The TFR denotes the average number of children to which a woman will have given birth by the end of her reproductive years (by age 50) if current fertility rates prevailed.

Maternal and Newborn Health

MICS Indicator		Indicator	Description	Value
5.5a 5.5b	**MDG 5.5** **MDG 5.5**	Antenatal care coverage	Percentage of women age 15-49 years with a live birth in the last 2 years, who were attended to during their last pregnancy that led to a live birth (a) at least once by skilled health personnel (b) at least four times by any provider	79.1 50.7
5.6		Content of antenatal care	Percentage of women age 15-49 years with a live birth in the last 2 years, who had their blood pressure measured and gave urine and blood samples during the last pregnancy that led to a live birth	62.8
5.7	**MDG 5.2**	Skilled attendant at delivery	Percentage of women age 15-49 years with a live birth in the last 2 years, who were attended to by skilled health personnel during their most recent live birth	77.5
5.8		Institutional deliveries	Percentage of women age 15-49 years with a live birth in the last 2 years, whose most recent live birth was delivered in a health facility	27.7
5.9		Caesarean section	Percentage of women age 15-49 years whose most recent live birth in the last 2 years, was delivered by caesarean section	9.1

Post-natal health checks

5.10	Post-partum stay in health facility	Percentage of women age 15-49 years who stayed in the health facility for 12 hours or more after the delivery of their most recent live birth, in the last 2 years	51.5
5.11	Post-natal health check for the newborn	Percentage of last live births in the last 2 years who received a health check while in a facility or at home following delivery, or a post-natal care visit within 2 days after delivery	27.7
5.12	Post-natal health check for the mother	Percentage of women age 15-49 years who received a health check while in a facility or at home following delivery, or a post-natal care visit within 2 days after delivery of their most recent live birth, in the last 2 years	26.6

CHILD DEVELOPMENT

MICS Indicator	Indicator	Description	Value
6.1	Attendance to early childhood education	Percentage of children age 36-59 months who are attending an early childhood education programme	22.3
6.5	Availability of children's books	Percentage of children under age 5 who have three or more children's books	1.5
6.6	Availability of playthings	Percentage of children under age 5 who play with two or more types of playthings	45.5

LITERACY AND EDUCATION

MICS Indicator		Indicator	Description	Value
7.1	MDG 2.3	Literacy rate among young people	Percentage of young people age 15-24 years who are able to read a short simple statement about everyday life, or who attended secondary or higher education (a) women	59.8
7.2		School readiness	Percentage of children in first grade of primary school who attended pre-school during the previous school year	69.7
7.3		Net intake rate in primary education	Percentage of children of school-entry age who enter the first grade of primary school	36.8
7.4	MDG 2.1	Primary school net attendance ratio (adjusted)	Percentage of children of primary school age currently attending primary or secondary school	76.4
7.5		Secondary school net attendance ratio (adjusted)	Percentage of children of secondary school age currently attending secondary school or higher	28.4
7.6	MDG 2.2	Children reaching last grade of primary	Percentage of children entering the first grade of primary school who eventually reach last grade	80.4
7.7		Primary completion rate	Number of children attending the last grade of primary school (excluding repeaters) divided by number of children of primary school completion age (age appropriate to final grade of primary school)	79.3
7.8		Transition rate to secondary school	Number of children attending the last grade of primary school during the previous school year, who are in the first grade of secondary school during the current school year, divided by number of children attending the last grade of primary school during the previous school year	90.7
7.9	MDG 3.1	Gender parity index (primary school)	Primary school net attendance ratio (adjusted) for girls divided by primary school net attendance ratio (adjusted) for boys	0.98
7.10	MDG 3.1	Gender parity index (secondary school)	Secondary school net attendance ratio (adjusted) for girls divided by secondary school net attendance ratio (adjusted) for boys	1.07

CHILD PROTECTION

Birth registration

MICS Indicator	Indicator	Description	Value
8.1	Birth registration	Percentage of children under age 5 whose births are reported registered	67.3

Child labour

8.2	Child labour	Percentage of children age 5-17 years who are involved in child labour	24.9

Child discipline

8.3	Violent discipline	Percentage of children age 1-14 years who experienced psychological aggression or physical punishment during the last one month	63.9

Early marriage and polygyny

8.4	Marriage before age 15	Percentage of people age 15-49 years who were first married before age 15 (a) Women	11.9
8.5	Marriage before age 18	Percentage of people age 20-49 years who were first married before age 18 (a) Women	38.0
8.6	Young people age 15-19 years currently married	Percentage of young people age 15-19 years who are married (a) Women	21.2
8.7	Polygyny	Percentage of people age 15-49 years who are in a polygynous union (a) Women	21.7
8.8a 8.8b	Spousal age difference	Percentage of young married women whose spouse is 10 or more years older, (a) among women age 15-19 years, (b) among women age 20-24 years	7.9 23.0

Female genital mutilation/cutting

8.9	Approval for female genital mutilation/cutting (FGM/C)	Percentage of women age 15-49 years who state that FGM/C should be continued	40.9
8.10	Prevalence of FGM/C among women	Percentage of women age 15-49 years who report to have undergone any form of FGM/C	86.6
8.11	Prevalence of FGM/C among girls	Percentage of daughters age 0-14 years who have undergone any form of FGM/C, as reported by mothers age 15-49 years	31.5

Attitudes towards domestic violence

8.12	Attitudes towards domestic violence	Percentage of people age 15-49 years who state that a husband is justified in hitting or beating his wife in at least one of the following circumstances: (1) she goes out without telling him, (2) she neglects the children, (3) she argues with him, (4) she refuses sex with him, (5) she burns the food (a) Women	34.0

Children's living arrangements

8.13	Children's living arrangements	Percentage of children age 0-17 years living with neither biological parent	3.4
8.14	Prevalence of children with one or both parents dead	Percentage of children age 0-17 years with one or both biological parents dead	5.3
8.15	Children with at least one parent living abroad	Percentage of children 0-17 years with at least one biological parent living abroad	1.8

HIV/AIDS AND SEXUAL BEHAVIOUR

HIV/AIDS knowledge and attitudes

MICS Indicator		Indicator	Description	Value
-		Have heard of AIDS	Percentage of people age 15-49 years who have heard of AIDS (a) Women	74.8
9.1	**MDG 6.3**	Knowledge about HIV prevention among young people	Percentage of young people age 15-24 years who correctly identify ways of preventing the sexual transmission of HIV, and who reject major misconceptions about HIV transmission (a) Women	8.5
9.2		Knowledge of mother-to-child transmission of HIV	Percentage of people age 15-49 years who correctly identify all three means of mother-to-child transmission of HIV (a) Women	28.4
9.3		Accepting attitudes towards people living with HIV	Percentage of people age 15-49 years expressing accepting attitudes on all four questions toward people living with HIV (a) Women	7.9
HIV testing				
9.4		People who know where to be tested for HIV	Percentage of people age 15-49 years who demonstrate knowledge of a place to be tested for HIV (a) Women	17.0
9.5		People who have been tested for HIV and know the results	Percentage of people age 15-49 years who have been tested for HIV in the last 12 months, and who know their results (a) Women	1.6
9.6		Sexually active young people who have been tested for HIV and know the results	Percentage of young people age 15-24 years who have had sex in the last 12 months, and who have been tested for HIV in the last 12 months and know their results (a) Women	1.2
9.7		HIV counselling during antenatal care	Percentage of women age 15-49 years who had a live birth in the last 2 years, and received antenatal care during the pregnancy of their most recent birth, reporting that they received counselling on HIV during antenatal care	4.2
9.8		HIV testing during antenatal care	Percentage of women age 15-49 years who had a live birth in the last 2 years, and received antenatal care during the pregnancy of their most recent birth, reporting that they were offered and accepted an HIV test during antenatal care and received their results	3.6
Orphans				
9.16	**MDG 6.4**	Ratio of school attendance of orphans to school attendance of non-orphans	Proportion attending school among children age 10-14 years who have lost both parents, divided by proportion attending school among children age 10-14 years whose parents are alive and who are living with one or both parents	0.82

Table of Contents

List of Tables

List of Figures

List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARI	Acute Respiratory Infection
BCG	Bacillis-Calmette-Geuerin (Tuberculosis)
CBS	Central Bureau of Statistics
CPR	Contraceptive Prevalence Rate
CRC	Convention on the Rights of the Child
CSPro	Census and Survey Processing System
DHS	Demographic and Health Survey
DPT	Diphtheria Pertussis Tetanus
EPI	Expanded Programme on Immunization
FGM/C	Female Genital Mutilation/Cutting
FMoH	Federal Ministry of Health
FP	Family Planning
GPI	Gender Parity Index
HB	Hepatitis B
HIB	Haemophilus Influenza type B
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population and Development
IDD	Iodine Deficiency Disorders
IGME	Inter-Agency Group on Mortality Estimation
IMR	Infant Mortality Rate
ITN	Insecticide Treated Net
IUD	Intrauterine Device
JICA	Japan International Cooperation Agency
JMP	Joint Monitoring Programme
LAM	Lactational Amenorrhea Method
MD	Millennium Declaration
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MICS4	Multiple Indicator Cluster Survey Round 4
MICS5	Fifth global round of Multiple Indicator Clusters Surveys programme
MMR	Measles, Mumps, and Rubella
NAR	Net Attendance Rate
NCCW	National Council for Child Welfare
NIDs	National Immunisation Days
NMR	Neonatal Mortality Rate
ORT	Oral Rehydration Treatment
PAPFAM	Pan Arab Project for Family Health
PRSP	Poverty Reduction Strategy Paper
RH	Reproductive Health
SHHS	Sudan Household Health Survey

SHHS2	Sudan Household Health Survey - Second Round
SPSS	Statistical Package for Social Sciences
STI	Sexually Transmitted Infections
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
USMR	Under 5 Mortality Rate
UNAIDS	United Nations Programme on HIV/ AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
Vit. A	Vitamin A
WFFC	World Fit for Children
WFP	World Food Programme
WHO	World Health Organization

Foreword

The Government of Sudan, represented by the Ministry of Cabinet Affairs and UNICEF Representative in Sudan, are pleased to launch this Multiple Indicator Cluster Survey (2014) Final Report for Sudan.

This report of statistically sound and internationally comparable data source, provides credible evidence for informing policies and programmes, and for monitoring Sudan's progress toward the national development plan and the Sustainable Development Goals (SDGs).

Under the leadership of the Director General of the Central Bureau of Statistics (CBS), a steering committee comprised of representatives from national and international institutions that contribute to the goals of the survey, worked tirelessly for the past year to present coherent and nationally validated information. These findings relate to nutrition, education, child health, maternal health, HIV/AIDS, water and sanitation and child protection. The availability of accurate and current nationwide data provided by MICS 2014, represents a key assest for Sudan after the separation of South Sudan in 2011.

We are grateful for the role played by a wide range of partnerships during the implementation of this survey, with special reference to the Government of Sudan, including all relevant line ministries, states, and local authorities.

We are also grateful for the technical and financial support provided by UNICEF, WFP, UNFPA, WHO and DFID for this exercise.

In light of the above, we encourage all policy makers, humanitarian and development partners, academic institutions, and indeed the people of Sudan to make effective use of this report to plan, monitor and evaluate relevant goals and objectives addressing the survival, development and protection rights of children in the country.

Signed on 03rd March 2016, by:

For the Government of Sudan

Signature_____

Mr. Tarig Tawfig Moh. Suliman
Minister of State
Ministry of Cabinet

For the United Nations Children Funds (UNICEF)

Signature_____

Mr. Geert Cappelaere
UNICEF Representative in Sudan

Acknowledgements

Executive Summary

The Sudan Multiple Indicator Cluster Survey (MICS5) is a nationally representative survey of households, women, and children with field work conducted from August to November 2014. The survey was conducted by the Central Bureau of Statistics (CBS) in collaboration with the ministries of health, welfare, general education, national environment, and National Water Cooperation.

The survey provides statistically sound and internationally comparable data essential for developing evidence-based policies and programmes, and for monitoring progress toward national goals and global commitments. Among these global commitments are those emanating from the World Fit for Children Declaration and Plan of Action, the goals of the United Nations General Assembly Special Session on HIV/AIDS, the Education for All Declaration and the Millennium Development Goals (MDGs).

Interviews were successfully completed in 15,801 households drawn from a sample 18,000 households from all 18 states of Sudan, with an overall response rate of 98 percent. The main results from the survey are summarized below.

Child Mortality
Child mortality was measured in this survey through a methodology that produced retrospective estimates (for the year 2012) of the infant mortality rate (IMR) and under-five mortality rate (U5MR). The survey estimated the IMR as 52 per 1000 live births and the U5MR as 68 per 1000 live births, indicating that 76.5 percent of under-five deaths are infant deaths.

Findings reveal an inequality of probabilities of dying between urban and rural areas: under-five mortality and infant mortality rates are respectively 56.5 and 11.8 deaths for 1,000 live births in urban areas, 72.8 and 19.3 in rural areas.

Also, the risk of under-five children dying before the fifth birthday, widely varies among states with East Darfur (111.7/1,000 live births) being the highest and Northern state (29.9/1,000 live births) being the lowest.

There is also disparity in child mortality in Sudan by wealth index quintile: U5MR is estimated at 84/1,000 live births and 39/1,000 live births for the poorest and richest quintile respectively.

Nutrition
The survey indicated towards a high prevalence of child malnutrition in Sudan: one-third (33 percent) of under-five children are underweight, nearly two in five (38.2 percent) children under-five years are stunted (too short for their age), and one in six (16.3 percent) children is wasted (too thin for their height).

The prevalence of those underweight is 23.2 percent in urban areas as compared to 37.1 percent in rural areas; there is a very wide gap in child stunting between rural areas (43 percent) and urban areas (27.1 percent).

Breastfeeding
There is a high level of breastfeeding practice in Sudan, with approximately 96 percent of children ever breastfed. However, only 69 percent of the babies are breastfed for the first time within one hour of birth, 28 percent of newborns are given pre-lacteal feeds at birth. Fifty-five (55.4 percent) of children 0-5 months are exclusively breastfed, nearly 90 percent aged 12-15 months are having continued

breastfeeding at year of age and nearly half (48.8 percent) of the children aged 20-23 months are receiving continued breastfeeding at 2 years of age.

Salt Iodization

Sudan does not have a national law on salt iodization and as a consequence only 7.6 percent of households have adequately iodized salt (which contains 15 parts per million ppm or more of iodine). Use of adequately iodized salt is lowest in the states of West Kordofan (2.9 percent), Blue Nile (3.1 percent), Red Sea (3.2 percent) and Khartoum (3.3 percent). Relatively high use of iodized salt is recorded in East Darfur (18.1 percent), Central Darfur (14.8 percent) and Sinnar (15.6 percent). There is no difference of iodized salt consumption between the richest (8.8 percent) and poorest households (8.0 percent).

Vitamin A Supplementation

There is high coverage of vitamin A supplementation in Sudan; 78 percent of children under five years received Vitamin A during the last 6 months preceding the survey. The coverage of Vitamin A varies by state, age of children, mother's education and wealth index quintile.

Low Birth Weight

Weight at birth is an excellent indicator of both a mother's health and nutritional status and also a newborn's chances for survival, growth, long-term health and psychosocial development. The Sudan 2014 MICS, states that 16.3 percent of children were weighed at birth. Approximately 32.3 percent of infants born during the last two years were estimated to weigh less than 2,500 grams at birth. The prevalence of low birth weight varies by urban (27.9 percent) and rural areas (33.9 percent) and by the mother's education - from 33.7 percent among children whose mothers are not educated to 23.7 percent for children whose mothers have higher levels of education.

The highest prevalence of low birth weight was observed in the states of North Darfur (47.5 percent), East Darfur (46.9 percent), North Kordofan (41.4 percent) and West Kordofan (36 percent) in comparison to the low prevalence observed in the states of River Nile (17.2 percent), Khartoum (22.2 percent), Gadarif (23.9 percent) and Blue Nile (25.7 percent).

Child Health

Immunization

Approximately 78.5 percent of children age 12-23 months had received a BCG vaccination by the age of 12 months. About sixty-four (63.9 percent) of the children received the third dose of Pentavalent (DPT+HepB+Hib) by their first birthday. Similarly, 65.3 percent of children aged 12-23 months, received the third dose of the Polio vaccination by the age of 12 months and 58.9 percent received the first dose of measles vaccine by the same age. Overall, the percentage of children who had all the recommended vaccinations by their first birthday is low, at only 42.8 percent.

Tetanus Toxoid

Thirty-two (32.1 percent) of surveyed women aged 15-49 years who gave birth during the year prior to the MICS5 survey, received at least two doses of tetanus toxoid (TT) vaccine during their pregnancy, and 58.2 percent of the women were protected against neonatal tetanus due to previous TT vaccinations.

The data also showed that a higher percentage of women aged 15-49 years in urban areas with a live birth in the last two years prior to the survey, were protected against neonatal tetanus (65.9 percent) compared to their counterparts in rural areas (55.4 percent).

Oral Rehydration Treatment

Approximately 34 percent of the children age 0-59 months with diarrhoea, received ORS or increased fluids. Nearly sixty (59.3 percent) of children received ORT with continued feeding as recommended. There are notable differences in ORT and continued feeding during diarrhoea among the states, ranging from 16.9 percent in River Nile State to 31.3 percent in West Kordofam.

Care Seeking and Antibiotic Treatment of Pneumonia

Approximately half (48.3 percent) of children age 0-59 months with symptoms of ARI, were taken to a qualified provider. While 59 percent of the children received antibiotics during the two weeks prior to the survey. The percentage was considerably higher in urban than in rural areas, and ranged from 49 percent in South Darfur state to 78 percent in River Nile state. Antibiotic treatment of ARI symptoms is low among the poorest households and among children whose mothers/caretakers have less than secondary education. Approximately, only five (4.5 percent) of the children with symptoms of ARI received treatment from community health workers.

An important determinant of care-seeking behaviour is a mothers' knowledge of danger signs. In the Sudan MICS 2014, 26.9 percent of women knew at least one of the two danger signs of pneumonia including fast and/or difficult breathing. The most commonly identified symptom for taking a child to a health facility is fever, which accounts for more than 80 percent of respondents. About 11.7 percent and 20.9 percent of mothers identified fast breathing and difficult breathing respectively, as symptoms for taking children immediately to a health care provider.

Solid Fuel Use

Overall, more than 58.2 percent of the household population in Sudan use solid fuels for cooking, consisting mainly of wood (40.7 percent). Use of solid fuels is low in urban areas (40.7 percent), but high in rural areas where it is used by two-thirds (66 percent) of household members. There is a large difference between the states, as use of solid fuels ranges from 99.9 percent in Central Darfur to 13.3 percent in River Nile State.

Water and Sanitation

The MICS5 estimates that the population's access to improved sources of drinking water in Sudan, is 68 percent. Overall, more than two-fifths (41.4 percent) of household members used drinking water that was piped into their dwelling or into their compound, yard, plot or into public tap/standpipe. Furthermore, nearly 41 percent of the population are living in households using improved sanitation facilities.

Access to improved sanitation facilities widely varies between urban areas (39.3 percent) as compared with 28.2 percent in rural areas. Approximately 30 percent of the households in Sudan practiced open defecation (no facility, bush, field). For example, use of open defecation as a method of faecal disposal ranged from 1.7 percent in Khartoum State, to 44.9 percent in Kassala State.

Overall, 28 percent of the households in Sudan have access to both improved sources of drinking water and improved sources of sanitation. This figure greatly varies among households along the wealth index status ladder, with 3 percent in households in the poorest quintile compared to 75 percent in households in the richest quintile.

Reproductive Health

Fertility
The Total Fertility Rate (FTR) for the three years preceding the MICS5 survey, is 5.2 births per woman. Fertility is considerably higher in rural areas (5.6 births per woman) than in the urban areas (4.4 births per woman).

The urban-rural difference in fertility is most pronounced for women in the 20-24 age group: with 167 births per 1,000 women in urban areas versus 225 births per 1,000 women in rural areas. The overall age pattern of fertility, as reflected in the ASFRs, indicates that childbearing begins early. Fertility is low among adolescents and increases to a peak of 259 births per 1,000 among women aged 25-29.

Contraception
Sudan MICS5 reported the current level of contraception use is 12.2 percent among women currently married [2]. The most popular method was the pill, which is used by approximately one in ten married women in Sudan (9.0 percent).

Almost 87.8 percent of the married women reported using no form of contraception.
The survey results also show that contraceptive prevalence ranges from 2.9 percent in Central Darfur to 26.5 percent in Khartoum State. About 20.1 percent of married women in urban and 9.0 percent in rural areas use a method of contraception.

The level of women's education is also strongly associated with contraceptive prevalence; rising from 4.4 percent among those with no education to 13.3 percent among those with primary education, and to 21 percent and 27.6 percent among those with secondary and higher educations respectively.
About 27 percent of women 15-49 years reported for unmet need in the Sudan MICS5.

Antenatal Care
Overall, the proportion of women who received ANC from any skilled provider (i.e. a doctor, nurse, or midwife) was 79.1 percent, while the number of women who did not receive ANC was 19.9 percent. There exists rural-urban differentials in favour of women who received antenatal care in urban areas (90.8 percent) compared to women in rural areas (74.9 percent).
There was also significant differences among the states for women who received ANC from any provider; ranging from 61.8 percent of women in South Darfur state to 97.1 percent of the women in Khartoum state.

Assistance at Delivery
About 80 percent of births in Sudan that occurred in the two years preceding the MICS 2014 survey, were delivered by the assistance of skilled personnel. This percentage is higher in urban areas, with 92.9 percent of the deliveries by skilled personnel, compared with 71.9 percent in rural areas. Deliveries by skilled personnel varied widely in the states, ranging from 37.5 percent in Central Darfur state to 99 percent in Northern state.

Also, delivery by skilled personnel is found to be strongly influenced by the level of education; assistance by skilled delivery attendants for women with no education was 58.5 percent, while among those with primary education, the figure is 86.7 percent. Among women with secondary and higher education levels it was found to be 95.7 percent and 97.6 percent respectively.
More than half of the births (55 percent) in the two years preceding the MICS survey were delivered with the assistance of a certified midwife. Medical doctors assisted with the delivery of 19.2 percent of births and the births delivered by assistance of Traditional Birth Attendants (TBAs) is 18 percent.

---

[2] All references to "married women" in this chapter include women in marital union as well.

Place of Delivery
Slightly more than a quarter (27.7 percent) of births in Sudan are delivered in a health facility – 26.1 percent of which occur in public sector facilities, while only 1.6 percent of the deliveries occur in private sector facilities. The MICS results also indicate that 71.3 percent of the deliveries take place at home.

Women in urban areas (45.2 percent) are more than twice as likely to deliver in a health facility as their rural counterparts (21.5 percent).

Women with higher levels of educational attainment are also more likely to deliver in a health facility than women with less education or no education. Specifically, 11.5 percent of women who had delivered in a health facility had no education compared to 25.8 percent of the women with primary education, to 49.8 percent of the women with secondary education, and to 75.5 percent of the women with a higher level of education.

Post-natal checks
Overall, 51.5 percent of women who gave birth in a health facility stay there for 12 hours or more after delivery. Across the country, the percentage of women who stay 12 hours or more, does vary from 29.3 percent in Central Darfur to 73.2 percent in White Nile State. The survey results indicated a small difference between proportions of those delivering in public and private facilities and who stay 12 hours or more in the facility.

Child Development
Approximately 22.3 percent of children aged 36-59 months are attending an organised early childhood education programme in Sudan. Urban-rural and state differentials are notable – the figure is as high as 44.6 percent in urban areas, compared to 13.9 percent in rural areas.
Among children aged 36-59 months, attendance at early childhood education programmes is more prevalent in Khartoum state (44.3 percent), and lowest in West Kordofan (4.3 percent).

There are also significant differences among children living in different socioeconomic backgrounds; 59.4 percent of children living in the richest (20 percent) households attend such programmes, while the figure drops to 6.9 percent among children in the poorest households.

Literacy and Education

Adult Literacy
The MICS5 indicates that about six out of ten (59.8 percent) young women in Sudan are literate and that literacy statuses vary greatly by area (For example, 79.8 percent in urban areas and 50 percent in rural areas). Of women who stated that primary school was their highest level of education, just 43.7 percent were actually able to read a simple statement shown to them.

The proportion of women who were literate was higher among women aged 15-19 years (63.4 percent) than that among women age 20-24 years (55.6 percent). The proportion of literate women (aged 15-24 years) also varied by their household wealth – being much higher among those belonging to households in the richest quintile (92.2 percent) than those belonging to households in the poorest quintile (31.2 percent).

Pre-School Attendance and School Readiness
Approximately seventy (69.7) percent of children who are currently attending the first grade of primary school, were attending pre-school the previous year. A varying proportion is noted regarding

children in first grade in urban areas (81.0 percent) who had attended pre-school the previous year, compared to 64.7 percent among children living in rural areas.

State differentials are also very significant; It was 3 times more likely for first graders in Khartoum to have attended pre-school (87 percent) as compared to their counterparts in Central Darfur State (30.5 percent). Socioeconomic status appears to have a positive correlation with school readiness – while the indicator is only 50.6 percent among the poorest households, it increases to 86.9 percent among children living in the richest households.

Primary and Secondary School Participation
Less than forty (36.8) percent of children who are at a primary school entry age in Sudan, are attending the first grade of primary school. Sex differentials do not exist. However, significant differentials are present by state and urban-rural areas. In Northern state, for instance, the percentage of children entering grade one is 73.6 percent, while those entering at grade one in Western Kordofan state is 13.4 percent. The number of those entering grade one in urban areas (56.6 percent) is nearly twice as much as those in rural areas (29.5 percent).

A positive correlation with socioeconomic status is observed for children aged 6, who were attending the first grade. In richest households, the proportion is around 77.6 percent, while it is 14.5 percent among children living in the poorest households.

Over three-fourths (76.4 percent) of children of primary school age are attending school, while only (28.4 percent) of the children of secondary school age are attending secondary school.

Child Protection

Birth Registration
The births of 67.3 percent of children under five years of age in Sudan have been registered. Of that figure, 23.4 percent of the registration certificates were seen by the interviewers, while 26.4 percent were not. Those reported to have no birth certificate totaled 17.5 percent.

Children in Central Darfur state (30.9 percent) were the least to have their births registered compared with children in other states. Northern states (98.3 percent) registered the highest number of children under five at birth. While only 37.0 percent of the children in the poorest households were registered, nearly all children (97.9 percent) of the under five children who belong to richest households, were registered. Overall, only 49.8 of the children possess a birth certificate.

Child Labour
According to the definition of "child labour" that was used in MICS5, a child aged 5-11 years was considered to be involved in child labour activities if she/he, performed at least one hour of economic work, or 28 hours or more of domestic work per week, during the week preceding the survey. For a child aged 12-14 years, the cut-off points to be considered a "child labourer" involved at least 14 hours of economic work or 28 hours or more of domestic work per week.

While 41.2 percent of children aged 12-14 are engaged in some forms of economic activities, 9 percent are performing such tasks for fourteen or more hours. The involvement in economic activities change with age: 21 percent of children aged 5-11 years are engaged in economic activities, compared to 39.1 percent of children aged 12-14 years, and 41.2 percent of children aged 15-17 years.
It is also clear from the MICS5 results that engagement in economic activities increases with movement from wealthiest to poorest households. For instance, among children aged 5–11 years engaged in economic activity, 9.2 percent of them belong to the wealthiest households while 35.0

percent of them fall in the poorest category. The involvement in economic activities by children also varies by State, ranging from 4.9 percent in Khartoum to 46.8 percent in South Darfur

Child Discipline
In MICS 2014 for Sudan, 63.9 percent of children aged 1-14 years, were subjected to at least one form of psychological or physical punishment by household members during the month prior to the survey.

Generally, the households employed a combination of violent disciplinary practices, reflecting caregivers' motivation to control children's behaviour by any means possible. While 52.8 percent of children experienced psychological aggression, about 47.7 percent experienced physical punishment.

The most severe forms of physical punishment (hitting the child on the head, ears or face or hitting the child hard and repeatedly) are less common: 13.6 percent of children were subjected to such severe punishment.

Overall, 52.8 percent of children within the age group of 1-14 years, experienced psychological aggression in the month preceding the survey. River Nile state was reported to have the highest proportion (69.6 percent) and Central Darfur state (12.6 percent) where children aged 1-14 years experienced the lowest levels of psychological aggression.

Early Marriage and Polygyny
Early marriage, polygyny, and large spousal age differences are common in Sudan. About 21.2 percent of young women aged 15-19 years are currently married. This proportion is significantly different between young women in urban areas (11.2 percent) and those in rural areas (26.0 percent). Wide variations between states were also observed. For example, in Khartoum state it is 12 percent, while the figure reaches 29.9 percent in Blue Nile state.

It is believed to be strongly related to the level of education, for example, 27.5 percent for women with primary education compared to only 2.4 percent for those with higher education. The percentage of women in a polygynous union is also provided in Table CP.7. Among all women aged 15-49 years who are in union, 21.7 percent are in polygynous unions. Such unions are more common among rural women (23.6 percent compared to 16.9 percent for urban women). Polygynous relationships are more prevalent among older women age 45-49 years (30.8 percent compared to only 7.7 percent among younger women age 15-19 years).

Among currently married women aged 20-24 years, about 41.8 percent are married to a man who is ten years older or more. For currently married women age 15-19 years, the corresponding figure is 39.5 percent.

Female Genital Mutilation/Cutting
The practice of female genital mutilation/cutting (FGM/C) is highly prevalent in Sudan. Approximately 87 percent of women aged 15-49 years had some form of female genital mutilation. The percentages rise from 76.8 percent for women without formal education to 91.8 percent for women with higher education. The practice appears more common in rural areas, the highest percentage is in North Darfur state (97.6 percent) and lowest for Central Darfur state (45.4 percent). Surprisingly, the practice is highly prevalent among women in wealthy households with population in the richest and fourth richest quintiles recording 90.0 percent and 91.6 percent respectively. The prevalence of FGM is higher among older women between 45-49 years with a percentage of 91.8, compared to 81.7 percent for women in the 15-19 years age group.

Domestic Violence

Women aged 15-49 years were asked whether husbands are justified in hitting or beating their wives or partners according to five different scenarios. Researchers found that women who agree that their partners are justified in beating them, tend to themselves be victims of domestic violence.

Overall, 34 percent of women in the survey feel that a husband is justified in hitting or beating his wife in at least one of the five situations including:

- If she neglects the children (24.2 percent agree)
- If she argues with him or goes out without telling him (19.5 percent agree)
- If she refuses sex with him (18.2 percent agree)
- If she burns the food

Justification in any of the above five situations is more common among those living in the poorest households, less educated, and also currently married women. Among the states, East Darfur, reported the highest percentage (77.4 percent) of women who approve wife beating, while River Nile reported the lowest at 9.6 percent.

HIV/AIDS and Orphanhood

Knowledge of HIV Transmission and Utilization of HIV Testing Services

In Sudan, about three-quarters (74.8 percent) of women aged 15-49 years, have heard of HIV and AIDS. However, the percentage of those who know of both primary ways of preventing HIV transmission – having only one faithful uninfected partner and using a condom every time – falls to about one in ten (8.9 percent). Approximately sixty (59.8 percent) of the women know of having one faithful uninfected sex partner and 26.7 percent know of using a condom every time as main ways of preventing HIV transmission.

Correct identification of the misconceptions concerning HIV, is based on the two most common and relevant misconceptions in the survey; that HIV can be transmitted by sharing food with someone with HIV (50.5 percent) and by mosquito bites (53.1 percent). Overall, 19.2 percent of the respondents reject the two most common misconceptions and acknowledge that a healthy-looking person can be HIV-positive.

People who have comprehensive knowledge about HIV prevention include those who know of the two main prevention methods (having only one faithful uninfected partner and using a condom every time). It also includes those who recognize that a healthy looking person can be HIV-positive, and who reject the two most common misconceptions. Comprehensive knowledge of HIV prevention methods and transmission is fairly low, although there are differences by area; 6.9 percent and 13.1 percent in rural and urban areas respectively.

Comprehensive knowledge about HIV transmission greatly varies with the level of women's education:
- 48.3 percent in women with higher levels of education
- 2.1 percent in women with no education

It also depends on wealth index level of the household:
- 20.4 percent in the richest quintile
- 2.1 percent in the poorest quintile of the households

Seventeen percent of women know of a place where they can be tested, while 5.2 percent have actually been tested. Only 4.3 percent of the women know the result of their most recent test. Also, a very small proportion have been tested within the last 12 months prior to the survey (1.9 percent), while a somewhat smaller proportion has been tested within the last 12 months and know the result (1.6 percent).

Orphanhood

Less than one (0.3 percent) of children aged 10-14 years in Sudan, are orphans. Of these, 66.1 percent are attending school, as compared with an 80.2 percent attendance rate amongst non-orphan children of the same age group, who are living with at least one parent. This results in an orphans to non-orphans school attendance ratio of 0.82, which suggests that orphans are not disadvantaged in relation to non-orphans. The ratio is 0.71 for girls and 1.0 for boys. The ratio is 0.92 for children in urban areas compared to 0.78 for children in rural areas.

Household Food Security

Data was collected on two important proxy measures of household food security including the household food consumption score (FCS) and the coping strategies that households use when they don't have enough food or money to buy food.

The food consumption groups can be described as follows:

- **Poor food consumption:** Households that are consuming only cereals and vegetables every day, and never or very seldom consume protein rich food such as meat and dairy.

- **Borderline food consumption:** Households that are consuming cereals and vegetables every day, accompanied by oil and pulses a few times a week.

- **Acceptable food consumption:** Households that are consuming cereals and vegetables every day, frequently accompanied by oil and pulses and occasionally meat and dairy.

Overall, 81 percent of the households demonstrated an acceptable food consumption score. There is, however, wide variation of food security among the states, with North Darfur having the poorest food consumption score of 16 percent.

1. Introduction

1.1 Background

This report is based on the Sudan Multiple Indicator Cluster Survey (MICS5), conducted through fieldwork between August-November 2014, by the Central Bureau of Statistics (CBS), Ministry of Health, Ministry of Welfare, Ministry of General Education, National Environment and National Water Cooperation. The survey provides statistically sound and internationally comparable data essential for developing evidence-based policies and programmes, and for monitoring progress toward national goals and global commitments. Among these global commitments are those emanating from the World Fit for Children Declaration and Plan of Action, the goals of the United Nations General Assembly Special Session on HIV/AIDS, the Education for All Declaration and the Millennium Development Goals (MDGs).

A Commitment to Action: National and International Reporting Responsibilities

The governments that signed the Millennium Declaration, the World Fit for Children Declaration and Plan of Action, also committed themselves to monitoring progress towards the goals and objectives they contained:

"We will monitor regularly at the national level and, where appropriate, at the state level and assess progress towards the goals and targets of the present Plan of Action at the national, state and global levels. Accordingly, we will strengthen our national statistical capacity to collect, analyse and disaggregate data, including by sex, age and other relevant factors that may lead to disparities and support for a wide range of child-focused research. We will enhance international cooperation to support statistical capacity-building efforts and build community capacity for monitoring, assessment and planning." (**A World Fit for Children**, paragraph 60)

"…We will conduct periodic reviews at the national and subnational levels of progress in order to address obstacles more effectively and accelerate actions.…" (**A World Fit for Children**, paragraph 61)

The Plan of Action of the World Fit for Children (paragraph 61) also calls for the specific involvement of UNICEF in the preparation of periodic progress reports:

"… As the world's lead agency for children, the United Nations Children's Fund is requested to continue to prepare and disseminate, in close collaboration with Governments, relevant funds, programmes and the specialized agencies of the United Nations system, and all other relevant actors, as appropriate, information on the progress made in the implementation of the Declaration and the Plan of Action."

Similarly, the **Millennium Declaration** (paragraph 31) calls for periodic reporting on progress:

"…We request the General Assembly to review on a regular basis the progress made in implementing the provisions of this Declaration, and ask the Secretary-General to issue periodic reports for consideration by the General Assembly and as a basis for further action."

The MICS 2014 results are critical for final MDG reporting in 2015, and are expected to form part of the baseline data for the post-2015 era.

MICS 2014 is expected to contribute to the evidence base of several other important initiatives, including Committing to Child Survival: A Promise Renewed, a global movement that seeks to end child deaths from preventable causes, and the accountability framework proposed by the Commission on Information and Accountability for the Global Strategy for Women's and Children's Health.

This final report presents the results of the indicators and topics covered in the survey.

1.2 Survey Objectives

Primary objectives of The Sudan MICS 2014 are as follows:

- Measure the trend towards achievement of the MDGs and the goals of a World Fit for Children Plan of Action, and other internationally agreed upon indicators related to children and women.
- Furnish data needed for the indicators as per the global review of the Millennium Development Goals.
- Contribute to the improvement of data and monitoring systems in Sudan and to strengthen technical expertise, national capacity building in the design, implementation, and analysis of such systems.
- Update Census indicators and provide solid evidence for decentralization (planning and measuring of progress).
- Provide key evidence for social sector programming and the Poverty Reduction Strategy Paper (PRSP) under development and accountabilities for sector strategic plans and UNDAF 2013-2016.
- To provide up-to-date information for assessing the situation of children and women in Sudan.
- To generate data for the critical assessment of the progress made in various areas, and to implement additional efforts in those areas that require more attention.
- To collect disaggregated data for the identification of disparities, to allow for evidence based policy-making aimed at social inclusion of the most vulnerable.
- To contribute to the generation of baseline data for the post-2015 agenda.

Population:
In 2014, the population of Sudan was estimated at **37.2 million** , based on the 2008 population census. About 8 percent of the population (2.7 million) are nomads and pastoralists. The population of Sudan is growing very rapidly at 2.5 percent annually, with an average fertility rate of 5.5.
The average household size is **5.68 persons**. Life Expectancy at birth is estimated at 54 years.

Overall, Sudan is experiencing a major demographic shift to an increasingly young, urbanized population. There are 15 million children below the age of 18 years and 4.5 million below the age of five years. In some states, children under the age of 16 years, constitute 52 percent of the population.

Agriculture and Livestock
Agriculture and livestock are essential to Sudan's economic diversification (in addition to oil) and could contribute to medium-term macroeconomic stability. While these sectors presently contribute approximately **31.8** percent of gross domestic product (GDP), they could contribute significantly more with greater investment and better governance. Sudan, now recognizes this need for greater attention to agriculture and livestock, as reflected in its Interim Poverty Reduction Strategy and the five-year program for economic reform.

2. Sample and Survey Methodology

2.1 Sample Design

The sample for Round Five of the Sudan Multiple Indicator Cluster Survey (MICS5) was designed to provide estimates for a large number of indicators describing the situation of children and women at the national level in urban and rural areas, and in the 18 States of Sudan.

In order to produce State-level estimates of moderate precision, a minimum of 40 enumeration areas (EAs) were selected in each State, resulting in a sample that was not self-weighting. The urban and rural areas within each state were identified as the main sampling strata and the sample was selected in two stages.

In the first stage, within each stratum, a specified number of EAs were selected systematically with probability proportional to size. In the second stage, after a household listing was carried out within the selected enumeration areas, a systematic sample of 25 households was drawn in each selected EA. All of the selected EAs were visited during the fieldwork period. The sample was thus stratified by state and then by urban/rural areas. For reporting national and state-level results, sample weights are used. A more detailed description of the sample design can be found in Appendix A.

2.2 Questionnaires

Three types of questionnaires were used in the survey: 1) a household questionnaire was used to collect information on all de jure household members, the household, and the dwelling 2) a women's questionnaire administered in each household to all women aged 15-49 years and 3) an under-5 questionnaire, administered to mothers or caretakers of all children under 5 years living in the household.

The questionnaires included the following:

- ✓ **Household Questionnaire**, including the following modules**:**
    1. Household Information Panel
    2. List of Household Members
    3. Education
    4. Child Labour
    5. Child Discipline
    6. Water and Sanitation
    7. Hand washing
    8. Salt Iodization
    9. Food Consumption & Sources[3]
    10. Coping Strategies[3]

- ✓ **Individual Women questionnaire,** including the following modules:
    1. Woman's Information Panel
    2. Woman's Background
    3. Fertility/Birth History
    4. Desire for Last Birth
    5. Maternal and New-born Health
    6. Post-Natal Health Checks
    7. Contraception

---

[3] Survey-specific module

8. Unmet Need
9. Female Genital Mutilation/Cutting
10. Attitudes toward Domestic Violence
11. HIV/AIDS
12. Mid Upper Arm Circumference(Muac)[4]
13. Haemoglobin Testing (Anaemia)[4]

- ✓ **Children under Five questionnaire,** administered to mothers or caretakers of children under-five years of age, living in the households. The questionnaire included the following modules:
  1. Under Five Child Information Panel
  2. Age
  3. Birth Registration
  4. Early Childhood Development
  5. Breastfeeding and Dietary Intake
  6. Immunization
  7. Care Of Illness
  8. Anthropometry
  9. Haemoglobin Testing (Anaemia)[4]

2.3 Training

Training of Trainers (TOT) was conducted in Khartoum between 24th May 2014 – 5th June 2014. The training was facilitated by three HH survey consultants (Housni Elarabi, Manar Abdel-Rahman and Achraf Mrabet). 18 State directors, 18 National Supervisors, 54 team supervisors and 18 measurers from the Ministry of Health attended the TOT. Training of interviewers and measurers was conducted in the States between the 8th -17th July 2014.

2.4 Pre-test

The Pre-test was conducted in Khartoum states covering urban and rural clusters, with a one day workshop convened for questionnaire finalization. The objective of the exercise was to test the language, the clarity of questions, coding, skipping, the translation, test areas of senility and the overall do-ability within the country context and specifics.

2.5 Field work

The field work was applied by Central Bureau of Statistics and states ministries of health. In total, 54 field teams covered the 18 States. Each team consists of 6 members: 3 female interviewers, one supervisor, one editor and one measures. Each state is supported with the State CBS director and the National state supervisor.

The table below outlines the start and completion dates of the field work in the States:

	State	Starting date of data collection	Completion date of data collection
1.	Northern	10/09/2014	30/10/2014
2.	River Nile	10/09/2014	28/10/2014
3.	Red Sea	10/09/2014	28/10/2014
4.	Kassala	13/09/2014	31/10/2014
5.	Gadarif	13/09/2014	01/11/2014

---

[4] Survey specific module

	State	Starting date of data collection	Completion date of data collection
6.	Gezira	11/09/2014	27/10/2014
7.	Khartoum	11/08/2014	28/09/2014
8.	White Nile	16/09/2014	31/10/2014
9.	Sinnar	18/09/2014	06/11/2014
10.	Blue Nile	18/09/2014	05/11/2014
11.	North Kordofan	17/09/2014	27/10/2014
12.	South Kordofan	12/09/2014	30/10/2014
13.	West Kordofan	16/09/2014	27/10/2014
14.	North Darfur	01/09/2014	20/10/2014
15.	East Darfur	09/09/2014	29/10/2014
16.	Central Darfur	08/09/2014	05/11/2014
17.	West Darfur	11/09/2014	30/10/2014
18.	South Darfur	10/09/2014	30/10/2014

2.6 Data Processing

Data were entered into the computers using the Census and Surveys Processing System (CSPro) software package, Version 5.0. The data were entered on 32 desktop computers by 40 data entry operators and 9 data entry supervisors. For quality assurance purposes, all questionnaires were double-entered and internal consistency checks were performed. Procedures and standard programmes developed under the global MICS programme and adapted to the Sudan questionnaires, were used throughout. Data entry started 14 September and was completed on 27 November 2014. Data were analyzed using the Statistical Package for Social Sciences (SPSS) software, Version 21. Model syntax and tabulation plans developed by the Global MICS team were customized and used for this purpose.

3. Sample Coverage and the Characteristics of Households and Respondents

3.1 Sample coverage

Of the 18,000 households selected in the sample, 17,142 were found to be occupied. Of these, 16,801 were successfully interviewed at a household response rate of 98 percent. In the interviewed households, 20,327 women (aged 15-49 years) were identified and of whom 18,302 were successfully interviewed, yielding a response rate of 90 percent. In addition to the women, 14,751 children under the age of five years, were listed in the household questionnaires.

Questionnaires were completed for 14,081 of these children, corresponding to Under-5s response rate of 95.5 percent within the interviewed households.

The highest response rate at state level for households was in South Darfur, at 99.3 percent, while the lowest response rate was in West Kordofan, at 93.4 percent. Response rate was slightly higher in rural areas (98.5 percent) than in urban areas (96.8 percent).

The highest response rate among eligible women aged 15-49 years, was 96.6 percent in Gezira State, while the lowest response rate of 78.1 percent, was recorded in North Durfur. Similarly, the highest response rate among eligible children under-5's was recorded for Gezira at 96.9 percent, while the lowest response rate was also in North Darfur at 87.9 percent (Table HH.1).

Table HH.1: Results of Household, Women's, and Under-5 Interviews

Number of households, women, and children under 5 by results of the household women's, and under-5's interviews, and household, women's and under-5's response rates
Sudan MICS, 2014

Background Characdtics	Total	Area		State																	
		Urban	Rural	Northern	River Nile	Red Sea	Kassala	Gadarif	Khartoum	Gezira	White Nile	Sinnar	Blue Nile	North Kordofan	South Kordofan	West Kordofan	North Darfur	West Darfur	South Darfur	Central Darfur	East Darfur
Households																					
Sampled	18,000	5,275	12,725	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Occupied	17,142	4,984	12,158	963	938	946	932	966	945	992	925	969	961	960	971	934	943	925	953	963	956
Interviewed	16,801	4825	11,976	957	928	928	899	947	921	988	912	955	954	928	961	872	914	904	946	955	932
response rate	98.0	96.8	98.5	99.4	98.9	98.1	96.5	98.0	97.5	99.6	98.6	98.6	99.3	96.7	99.0	93.4	96.9	97.7	99.3	99.2	97.5
Women																					
Eligible	20,327	6,692	13,635	1,191	1,115	969	1,036	1,110	1,274	1,395	1,074	1,158	1,181	1,096	1,264	969	1,153	1,035	1,176	988	1,143
Interviewed	18,302	5,979	12,323	1,083	1,027	826	946	1,012	1,171	1,347	1,027	1,057	1,079	949	1,171	863	901	918	1,065	878	982
Response rate	90.0	89.3	90.4	90.9	92.1	85.2	91.3	91.2	91.9	96.6	95.6	91.3	91.4	86.6	92.6	89.1	78.1	88.7	90.6	88.9	85.9
Overall response rate	88.2	86.5	89.0	90.4	91.1	83.6	88.1	89.4	89.6	96.2	94.3	90.0	90.7	83.7	91.7	83.1	75.7	86.7	89.9	88.1	83.8
Children under 5																					
Eligible	14,751	3,998	10,753	559	600	443	681	881	717	822	785	859	1,052	799	1,120	763	976	860	1,017	875	942
Mothers/ Caretakers interviewed	14,081	3,811	10,270	532	565	404	655	858	699	800	754	814	1,006	750	1,092	741	885	843	975	837	871
Response rate	95.5	95.3	95.5	95.2	94.2	91.2	96.2	97.4	97.5	97.3	96.1	94.8	95.6	93.9	97.5	97.1	90.7	98.0	95.9	95.7	92.5
Overall response rate	93.6	92.3	94.1	94.6	93.2	89.5	92.8	95.5	95.0	96.9	94.7	93.4	94.9	90.7	96.5	90.7	87.9	95.8	95.2	94.9	90.1

6

3.2 Characteristics of Households

The weighted stratified age and sex distribution of the survey population is provided in Table HH.2. The distribution is also used to produce the population pyramid in Figure HH.1. In the 16,801 households successfully interviewed in the survey, 98,883 household members were listed. Of these, 49,286 were males, 49,577 were females and 21 of them were of an unknown gender.

Table HH.2:	Age Distribution of Household Population by Sex							
Percent and frequency distribution of the household population by five-year age groups, dependency age groups, and by child (age 0-17 years) and adult populations (age 18 or more), by sex Sudan MICS, 2014								
Background charateristics	**Total**		**Males**		**Females**		**Missing**	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Sudan	98,883	100.0	49,286	100.0	49,577	100.0	21	(100.0)
Age								
0-4	15,050	15.2	7611	15.4	7,439	15.0	0	*
5-9	16,071	16.3	8,036	16.3	8,035	16.2	0	*
10-14	13,447	13.6	6,540	13.3	6,905	13.9	1	*
15-19	9,161	9.3	4,711	9.6	4,451	9.0	0	*
20-24	7,134	7.2	3,463	7.0	3,670	7.4	1	*
25-29	6,690	6.8	2,925	5.9	3,765	7.6	0	*
30-34	5,519	5.6	2,665	5.4	2,854	5.8	0	*
35-39	5,418	5.5	2,598	5.3	2,820	5.7	0	*
40-44	3,877	3.9	2,065	4.2	1,812	3.7	0	*
45-49	3,315	3.4	1,789	3.6	1,526	3.1	0	*
50-54	4,112	4.2	1,641	3.3	2,471	5.0	0	*
55-59	2,462	2.5	1,356	2.8	1,106	2.2	0	*
60-64	2,166	2.2	1,274	2.6	892	1.8	0	*
65-69	1,350	1.4	808	1.6	542	1.1	0	*
70-74	1,455	1.5	851	1.7	604	1.2	0	*
75-79	659	0.7	404	0.8	256	0.5	0	*
80-84	523	0.5	299	0.6	224	0.5	0	*
85+	421	0.4	229	0.5	192	0.4	0	*
Missing/DK	53	0.1	24	*	12	*	17	*
Dependency age groups								
0-14	44,568	45.1	22,187	45.0	22,380	45.1	1	*
15-64	49,855	50.4	24,485	49.7	25,368	51.2	2	*
65+	4,408	4.5	2,590	5.3	1,817	3.7	0	*
Missing/DK	53	0.1	24	*	12	*	17	*
Children and adult populations								
Children age 0-17 years	50,054	50.6	25,074	50.9	24,979	50.4	1	*
Adults age 18+ years	48,777	49.3	24,188	49.1	24,586	49.6	2	*
Missing/DK	53	0.1	24	*	12	*	17	*

[*] Based on less than 25 unweighted cases and percentages have been suppressed.
( ) Figures that are based on 25-49 unweighted cases

Children aged 0-17 years comprise 47.7₃ percent of the MICS5 survey population, indicating the young nature of the population in Sudan.

Comparing the age distribution of MICS5 (table HH.2) with results from the Household Health Survey 2010, no significant differences are observed, for example, the percentage of the population aged 0-14 was 45.1 percent in MICS5 as compared to 45.6 percent for Household Health Survey 2010 and the percentage of the population aged 15-64 was 50.4 percent and 50.5 percent respectively. The population aged 65+ was 4.5 percent in MICS5 compared with 3.9 percent in the 2010 Household Health Survey. In comparing children aged 0-17, the percentage was 50.6 percent in MICS5 compared with 50.8 percent in the 2010 Household Health survey. The adult population aged 18+ was 49.3 percent in MICS5 and 49.1 percent in the 2010 Household Health survey.

Data from Table HH.2 is used to create the population pyramid in Figure HH.1. Examination of this figure reveals that the population pyramid is as the same as expected; it took bell shape. Except for the female population in the age group 50-54, compared to the neighbouring age groups where there was an over representation. This could have been related to interviewers bias to reduce number of eligible women in the data collection.

Figure HH.1: Age and sex distribution of household population, Sudan MICS, 2014
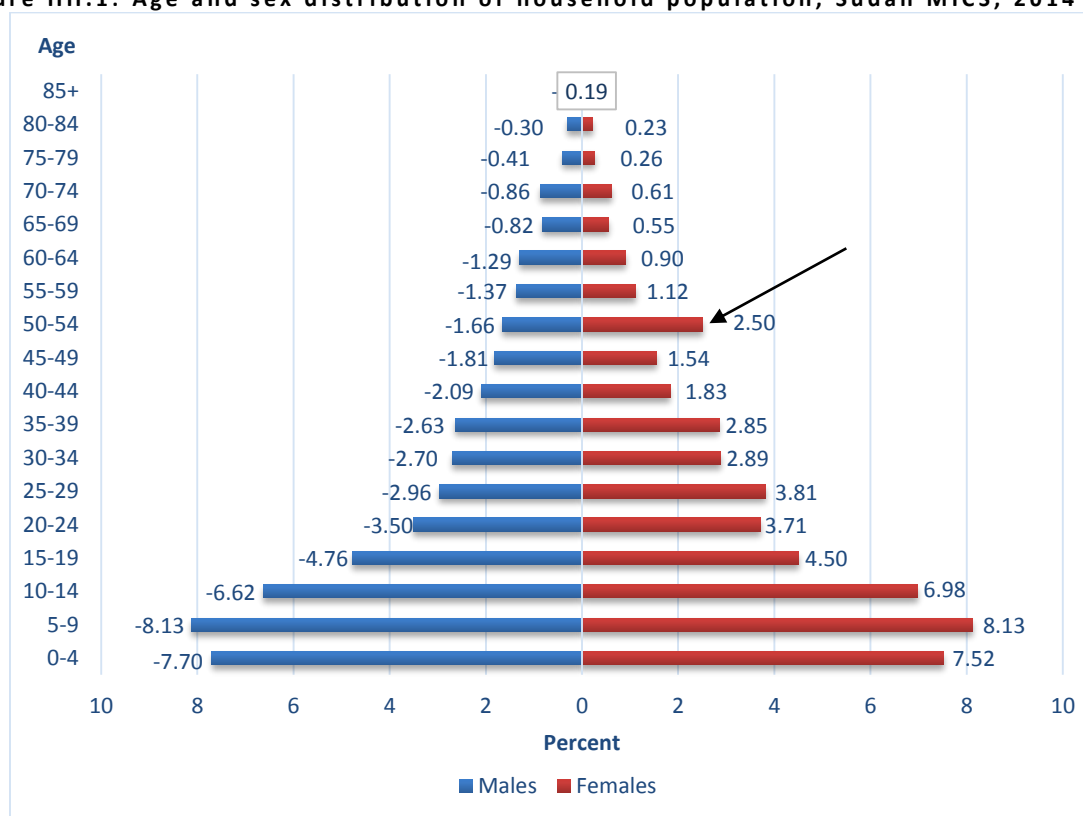
Note: # household members with missing age and/or sex are excluded

Tables HH.3, HH.4 and HH.5 provide basic information on the households, female respondents aged 15-49, male respondents aged 15-49, and children under 5. Both unweight and weighted numbers are presented. Such information is essential for the interpretation of findings presented later in this report and provide background information on the representativeness of the survey sample. The remaining tables in this report are presented only with weighted numbers.[5]

---

[5] See Appendix A: Sample Design, for more details on sample weights.

Table HH.3 provides basic background information on the households, including the sex of the household head, state, area, number of household members, and education of household head[6], shown in the table. These background characteristics are used in subsequent tables in this report. The figures in the table are also intended to show the number of observations by major categories of analysis in the report.

---

[6] This was determined by asking the questions used for the construction of the background variables; typical questions asked in MICS surveys are mother tongue, ethnic background and/or religion.

Table HH.3:   Household Composition

Percent and frequency distribution of households by selected characteristics Sudan MICS, 2014

Background Characteristics	Weighted Percent	Number of households	
		Weighted	Unweighted
Sudan	100.0	16,801	16,801
Sex of household head			
Male	85.8	14,414	14,513
Female	14.2	2,387	2,288
State			
Northern	2.5	423	957
River Nile	4.0	666	928
Red Sea	3.1	519	928
Kassala	4.3	722	899
Gadarif	5.1	858	947
Khartoum	13.8	2,317	921
Gezira	15.6	2,629	988
White Nile	5.2	874	912
Sinnar	3.9	661	955
Blue Nile	3.9	656	954
North Kordofan	6.7	1,125	928
South Kordofan	2.8	462	961
West Kordofan	6.0	1,003	872
North Darfur	7.4	1,243	914
West Darfur	3.3	553	904
South Darfur	7.6	1,282	946
Central Darfur	1.8	299	955
East Darfur	3.0	508	932
Area			
Urban	29.8	5,000	4,825
Rural	70.2	11,801	11,976
Number of household members			
1	1.6	268	314
2	7.8	1,303	1,394
3	10.6	1,773	1,867
4	13.3	2,236	2,288
5	14.5	2,443	2,447
6	14.0	2,359	2,347
7	12.5	2,108	2,030
8	9.7	1,624	1,573
9	7.1	1,190	1,095
10+	8.9	1,498	1,446
Education of household head			
None	46.4	7,799	8,418
Primary	28.2	4,730	4,452
Secondary	18.7	3,137	2,885
Higher	6.0	1,013	915
Missing/DK	0.7	122	131
Mean household size	5.9	16,801	16,801

The weighted and unweighted Sudan number of households are equal, since sample weights were normalized.[5] The table also shows the weighted mean household size estimated by the survey.

The head of household in the survey was predominantly male in 85.8 percent of surveyed household members. The most populated states in the survey were Gezira (15.6 percent) and Khartoum (13.8 percent). Approximately one-third of the population was urbanized (29.8 percent) while 70.2 percent were rural.

3.3 Characteristics of Female Respondents 15-49 Years of Age and Children Under-5

Table HH.4 and Table HH.5 provide information on the background characteristics of female respondents 15-49 years of age and of children under 5 years of age. In both tables, the Sudan numbers of weighted and unweighted observations are equal, since sample weights have been normalized (standardized).5 In addition to providing useful information on the background characteristics of women, and children under age five, the tables are also intended to show the number of observations in each background category. These categories are used in the subsequent tabulations of this report.

Table HH.4:	Women's Background Characteristics		
Percent and frequency distribution of women aged 15-49 years by selected background characteristics Sudan MICS, 2014			
Background Characteristics	Weighted Percent	Number of Women	
		Weighted	Unweighted
Sudan	100.0	18,302	18,302
State			
Northern	2.5	457	1,083
River Nile	3.8	701	1,027
Red Sea	2.7	493	826
Kassala	4.1	747	946
Gadarif	4.8	879	1,012
Khartoum	15.4	2,821	1,171
Gezira	17.4	3,176	1,347
White Nile	4.9	889	1,027
Sinnar	3.8	698	1,057
Blue Nile	4.0	729	1,079
North Kordofan	6.4	1,173	949
South Kordofan	2.9	525	1,171
West Kordofan	5.3	965	863
North Darfur	7.2	1,317	901
West Darfur	3.0	555	918
South Darfur	7.4	1,363	1,065
Central Darfur	1.5	272	878
East Darfur	3.0	542	982
Area			
Urban	32.9	6,029	5,979
Rural	67.1	12,273	12,323
Age			
15-19	20.3	3,709	3,655
20-24	17.3	3,162	3,150
25-29	18.4	3,359	3,415

11

Table HH.4:   Women's Background Characteristics

Percent and frequency distribution of women aged 15-49 years by selected background characteristics
Sudan MICS, 2014

Background Characteristics	Weighted Percent	Number of Women	
		Weighted	Unweighted
30-34	14.0	2,558	2,593
35-39	13.9	2,542	2,527
40-44	8.9	1,633	1,639
45-49	7.3	1,339	1,323
Marital status			
Currently married	64.8	11,867	12,023
Widowed	1.5	278	286
Divorced	3.1	564	588
Separated	0.2	45	45
Never married	30.3	5,547	5,359
Missing	*	1	1
Motherhood and recent births			
Never gave birth	37.1	6,798	6,601
Ever gave birth	62.9	11,504	11,701
Gave birth in last two years	30.7	5,622	5,684
No birth in last two years	32.2	5,895	6,024
Education			
None	31.9	5,843	6,462
Primary	33.5	6,128	5,988
Secondary	23.8	4,361	4,132
Higher	10.7	1,965	1,715
Missing/DK	*	5	5
Wealth index quintile			
Poorest	17.7	3,246	3,345
Second	18.5	3,380	4,074
Middle	19.9	3,646	3,929
Fourth	20.5	3,759	3,363
Richest	23.3	4,271	3,591

[*] Based on less than 25 unweighted cases and percentages have been suppressed.

Sixty-five percent of sampled women are married, and 63 percent have given birth to at least one child. Thirty-two percent of MICS5 respondents are uneducated, while 34 and 24 percent have completed primary and secondary education, respectively. The large differences between weighted and unweighted numbers for the states are due to the oversampling of smaller states, as described in Chapter Two.

We observe that there is a significant variation between weight and un-weighted in the number of women, especially by state level, similarly, the same variation was noted in HHS 2010.

Some background characteristics of children under 5 are presented in Table HH.5. These include the distribution of children by several attributes: sex, state and area, age, mother's or caretaker's education and wealth of household head. 49.2 percent of the children represented in the MICS5 survey are female. Only 16 percent of children live in households in the wealthiest quintile, while 23 percent of children live in households in the least wealthy quintile.

Table HH.5:	Under-5's Background Characteristics		
Percent and frequency distribution of children under five years of age by selected characteristics Sudan MICS, 2014			
Background Characteristics	Weighted Percent	Number of children	
		Weighted	Unweighted
Sudan	100.0	14,081	14,081
Sex			
Male	50.8	7,157	7,190
Female	49.2	6,924	6,891
State			
Northern	1.7	236	532
River Nile	2.8	393	565
Red Sea	1.7	244	404
Kassala	3.5	498	655
Gadarif	5.4	765	858
Khartoum	12.3	1,736	699
Gezira	15.3	2,149	800
White Nile	5.0	711	754
Sinnar	3.9	555	814
Blue Nile	4.9	691	1,006
North Kordofan	6.4	907	750
South Kordofan	3.8	529	1,092
West Kordofan	6.3	893	741
North Darfur	8.6	1,211	885
West Darfur	3.5	487	843
South Darfur	9.4	1,326	975
Central Darfur	1.8	254	837
East Darfur	3.5	495	871
Area			
Urban	27.4	3,862	3,811
Rural	72.6	10,219	10,270
Age			
0-5 months	10.8	1,516	1,543
6-11 months	10.3	1,448	1,423
12-23 months	19.0	2,672	2,641
24-35 months	18.6	2,618	2,647
36-47 months	23.2	3,268	3,217
48-59 months	18.2	2,559	2,610
Respondent to the under-5 questionnaire			
Mother	98.5	13,810	13,810
Other primary caretaker	1.5	213	214
Mother's education**			
None	42.6	5,994	6,587
Primary	35.1	4,936	4,666
Secondary	15.3	2,152	2,018
Higher	7.0	982	794
Missing/DK	*	17	16

Table HH.5: Under-5's Background Characteristics			
Percent and frequency distribution of children under five years of age by selected characteristics Sudan MICS, 2014			
Background Characteristics	Weighted Percent	Number of children	
		Weighted	Unweighted
Wealth index quintile			
Poorest	22.6	3,188	3,248
Second	21.4	3,015	3,734
Middle	21.0	2,956	3,088
Fourth	19.1	2,684	2,212
Richest	15.9	2,238	1,799

[*] Based on less than 25 unweighted cases and percentages have been suppressed.

** In this table and throughout the report, mother's education refers to educational attainment of mothers as well as caretakers of children under 5, who are the respondents to the under-5 questionnaire if the mother is deceased or is living elsewhere.

3.4 Housing Characteristics, Asset Ownership, and Wealth Quintiles

Tables HH.6, HH.7 and HH.8 provide further details on household level characteristics.
HH.6 presents characteristics of housing, disaggregated by area and state, distributed by whether the dwelling has electricity, the main materials of the flooring, roof and exterior walls, as well as the number of rooms used for sleeping.

Only about 45 percent of the households in Sudan have access to electricity. Availability of electricity widely varies among the States: while 94.4 percent of the households in the Northern state have access to electricity, less than 20 percent of Darfur and Kordofan states have electricity access. North Darfur was found to have the least percentage (8.7) of access to electricity.
Furthermore, seventy-six percent of households with access to electricity are in urban areas.

Main shelter materials in Sudan are made of natural floors, natural roofing and natural walls.

- Approximately 30 percent of the houses have single rooms for sleeping
- Approximately 42 percent of the houses have 2 rooms for sleeping
- Approximately 28 percent of the houses have 3 or more rooms for sleeping

The mean number of persons per room used for sleeping is 3.23.

Table HH.6: Housing Characteristics

Percent distribution of households by selected housing characteristics, according to area of residence and states
Sudan MICS, 2014

Background Characteristics	Sudan	Area		State																	
		Urban	Rural	Northern	River Nile	Red Sea	Kassala	Gadarif	Khartoum	Gezira	White Nile	Sinnar	Blue Nile	North Kordofan	South Kordofan	West Kordofan	North Darfur	West Darfur	South Darfur	Central Darfur	East Darfur
Electricity																					
Yes	44.9	76.3	31.7	94.4	79.1	39.6	38.0	39.5	81.6	72.9	40.1	57.9	48.6	17.7	19.6	12.0	8.7	15.5	19.9	11.4	11.0
No	55.0	23.6	68.3	5.6	20.7	60.4	62.0	60.4	18.4	27.0	59.8	41.9	51.4	82.3	80.4	87.9	91.3	84.5	80.1	88.5	89.0
Missing	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Flooring																					
Natural floor	85.4	68.9	92.4	64.4	80.6	74.7	91.5	96.0	62.6	77.5	90.6	86.4	92.2	96.4	93.1	95.5	94.8	96.0	97.9	95.3	94.6
Rudimentary floor	0.1	0.2	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.0	0.3	0.2	0.0	0.0
Finished floor	14.0	30.2	7.2	35.4	19.2	22.5	7.9	2.9	36.9	22.3	9.2	13.2	7.8	2.6	6.2	4.0	4.4	2.7	1.3	4.0	4.7
Other	0.3	0.3	0.2	0.2	0.1	1.7	0.0	0.4	0.3	0.2	0.0	0.1	0.0	0.4	0.1	0.0	0.4	0.1	0.3	0.0	0.3
Missing/DK	0.3	0.4	0.2	0.0	0.0	0.4	0.6	0.8	0.1	0.0	0.2	0.3	0.1	0.5	0.3	0.3	0.3	0.9	0.3	0.7	0.3
Roof																					
Natural roofing	38.7	14.2	49.1	20.1	7.2	5.3	53.2	84.8	1.5	5.6	1.7	16.1	30.4	63.3	35.3	77.8	87.2	69.7	72.1	80.7	84.7
Rudimentary roofing	34.7	34.3	34.8	61.0	84.2	28.7	30.2	2.6	49.5	76.6	77.7	46.7	4.0	10.6	6.2	9.6	1.7	6.9	9.0	5.9	0.7
Finished roofing	25.0	50.5	14.2	18.7	8.1	50.8	11.7	12.6	48.4	17.1	20.5	36.7	62.9	25.1	54.4	12.4	10.4	21.7	18.1	11.5	5.8
Other	1.6	1.0	1.9	0.2	0.5	15.1	4.5	0.1	0.6	0.6	0.1	0.1	2.7	0.8	4.2	0.1	0.7	1.6	0.7	1.9	8.8
Missing/DK	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Exterior walls																					
Natural walls	60.6	36.3	70.8	63.6	65.2	34.1	79.9	64.0	36.8	43.7	80.1	53.2	30.2	79.4	36.3	85.4	81.3	68.3	75.4	72.0	83.8
Rudimentary walls	4.9	7.5	3.8	11.4	8.8	13.9	6.7	1.5	4.7	5.0	1.6	2.0	1.5	4.4	4.8	3.4	5.9	3.8	6.7	7.8	.3
Finished walls	28.1	50.8	18.5	24.9	25.8	42.7	11.2	2.3	56.7	51.2	17.9	43.4	20.2	10.0	39.7	7.0	7.9	19.7	17.7	18.7	6.1
Other	6.3	5.3	6.8	0.1	0.1	9.2	1.6	32.2	1.8	0.2	0.4	1.1	48.0	6.1	19.1	4.1	4.7	8.0	0.3	1.5	9.8
Missing/DK	0.1	0.0	0.1	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.2	0.2	0.0	0.1	0.0

Table HH.6:	Housing Characteristics																					

Percent distribution of households by selected housing characteristics, according to area of residence and states
Sudan MICS, 2014

Background Characteristics	Sudan	Area		State																		
		Urban	Rural	Northern	River Nile	Red Sea	Kassala	Gadarif	Khartoum	Gezira	White Nile	Sinnar	Blue Nile	North Kordofan	South Kordofan	West Kordofan	North Darfur	West Darfur	South Darfur	Central Darfur	East Darfur
Rooms used for sleeping																					
1	29.7	22.3	32.8	17.6	23.6	52.4	36.4	24.7	22.1	25.7	21.0	34.1	33.6	29.4	37.0	29.0	33.5	35.2	34.9	34.9	46.5
2	41.8	40.5	42.3	49.8	48.1	28.9	35.9	49.4	38.1	41.5	46.8	42.4	48.4	42.7	37.5	43.5	44.0	42.9	38.2	39.7	37.7
3 or more	28.2	36.5	24.6	32.6	28.0	18.6	27.1	25.6	39.4	32.7	31.4	23.3	17.9	27.2	25.6	26.2	22.5	20.9	26.3	24.8	15.9
Missing/DK	0.4	0.6	0.3	0.0	0.3	0.1	0.6	0.3	0.3	0.1	0.8	0.1	0.1	0.7	0.0	1.3	0.1	1.0	0.5	0.6	0.0
Sudan	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	16,801	5,000	11,801	423	666	519	722	858	2,317	2,629	874	661	656	1,125	462	1,003	1,243	553	1,282	299	508
Mean number of persons per room used for sleeping	3.23	3.06	3.30	2.61	2.94	3.28	3.35	3.13	2.98	3.26	2.87	3.22	3.56	3.11	3.87	3.17	3.58	3.13	3.38	3.16	4.00

3.5 Household Assets

MICS5 2014, collected information on households and ownership of selected assets that are in themselves believed to have a strong association with poverty levels. Some of these can be used to measure household welfare when combined with other indicators to generate wealth index. Information was collected on household ownership of television and radio as a measure of access to mass media, non–mobile telephones as an indicator of access to an efficient means of communication, refrigerators as indication of capacity for hygienic storage of foods, in addition to digital receiver flat TV screen, internet, computer and washing machine.

Information was also collected from households with regards to ownership of the following: means of transportation (bicycle, motorcycle, animal-drawn cart, car or truck, motorboat) and smart mobile, laptop, Thira mobile and bank account.

Table HH.7 shows the percentage distribution of households by ownership of selected household and personal assets, and percent distribution by ownership of dwelling, according to area of residence and states.

Access to non-mobile phones was the least - at 1.8 percent, while approximately 40 percent of the households have access to Television. About 74 percent of households had at least one household member possessing a mobile telephone - with Northern, Khartoun, Blue Nile, Gezira, and River Nile having access at 96.6, 91.3, 87.5, 87.3, and 84.6 percent, respectively.

Central Darfur had the least access to mobile phones - at 47.3 percent. Almost all the mobile phones are likely to be owned by urban households, with 87.3 percent owning mobile phones compared to 68.1 percent ownership in rural areas.

Access to the internet and a computer were minimal, at 3.8 and 3.7 percent respectively.

Table HH.7 shows that 35.2 percent of the households own a radio. Urban households are more likely than rural households to own a television (71.1 percent compared with 26.3 percent, respectively). Overall, 25.9 percent of all households own a refrigerator and as expected, urban households are more likely than rural households to own one (50.1 percent compared with 15.7 percent, respectively).

Access to Agricultural land and Farm animals/livestock was highest in rural households, which stood at 51 percent and 64 percent respectively. Such access unfavourably compares to urban households (12 percent and 20 percent, respectively).

With regard to transport access, table HH.7 shows that access to car or truck transportation was 6.4 percent of households, ranging from 4.4 percent in rural households to 11.0 percent in urban households. In contrast, access to animal drawn transportation was 17.9 percent of rural households compared to 8.1 percent of urban households.

Most of the people surveyed did not own personal bank accounts. Ownership of a personal bank account was 2.4 percent in rural households and 11.1 percent in urban households. Ownership of a personal bank account was highest in Khartoun and Northern states, respectively at 12.6 and 9.6 percent. Ownership of a personal bank account was found to be lowest in Central Darfur and West Kordofan/North Darfur at 1.0 and 1.6 percent respectively.

Most of the dwellings were owned by a household member. The highest percentage of ownership stood at 94.4 percent and was in households in North Darfur. Others included:
West Kordofan at 93.5 percent ; North Kordofan at 92.2 percent ; Blue Nile at 92.2 percent ; South Kordofan at 91.3 percent ; White Nile at 91.0 percent.

Table HH.7: Household and Personal Assets

❖ Percentage of households by ownership of selected household and personal assets
❖ Percent distribution by ownership of dwelling, according to area of residence and states
  Sudan MICS, 2014

Background Characteristics	Sudan	Area		State																	
		Urban	Rural	Northern	River Nile	Red Sea	Kassala	Gadarif	Khartoum	Gezira	White Nile	Sinnar	Blue Nile	North Kordofan	South Kordofan	West Kordofan	North Darfur	West Darfur	South Darfur	Central Darfur	East Darfur
Percentage of households that own a:																					
Radio	35.2	41.5	32.6	30.5	37.1	27.7	21.2	30.5	42.3	35.1	41.2	36.5	44.0	41.9	47.0	29.4	30.7	20.9	37.5	22.2	31.7
Television	39.6	71.1	26.3	86.0	75.3	41.2	29.0	28.8	77.0	60.5	42.0	41.5	30.4	17.4	20.2	12.4	7.6	13.8	18.2	8.0	12.5
Non-mobile phone	1.8	3.6	1.1	2.6	3.3	2.7	2.7	0.9	3.1	2.1	1.6	2.7	1.0	1.2	1.0	1.5	0.8	1.1	0.6	1.3	1.2
Refrigerator	25.9	50.1	15.7	75.7	63.1	26.7	17.8	11.0	63.2	39.8	25.1	23.1	8.7	7.7	5.0	3.5	2.7	4.5	5.9	1.8	5.9
Digital receiver	33.8	62.5	21.6	81.8	71.0	36.3	24.3	20.3	71.6	52.8	32.6	37.4	22.8	10.1	13.6	3.8	5.5	10.6	14.1	3.9	10.7
Flat TV Screen	2.3	5.7	.9	3.6	2.3	2.1	2.0	0.8	7.1	2.8	2.2	1.7	1.1	0.6	0.3	0.3	0.8	1.7	1.6	0.6	0.2
Internet	3.8	10.2	1.1	3.3	2.3	6.8	1.7	1.8	16.4	2.7	1.1	5.7	0.2	1.0	0.6	0.3	0.4	0.5	1.6	0.9	0.2
Computer	3.7	8.9	1.4	5.8	5.0	4.6	2.9	0.9	12.0	4.2	1.6	3.4	0.8	1.2	1.4	.7	1.4	1.2	1.4	1.0	0.6
Wash Machine	11.1	22.5	6.2	43.6	31.7	15.4	7.8	2.8	30.8	15.5	5.8	7.1	2.7	2.6	0.6	0.8	0.6	0.8	0.6	1.3	0.8
Percentage of households that own:																					
Agricultural land	39.5	12.0	51.1	31.3	22.7	30.3	28.0	43.4	7.0	24.0	30.2	42.7	48.0	55.6	52.0	43.2	83.4	69.4	63.3	48.8	55.7
Farm animals/ Livestock	51.0	20.3	64.0	65.1	51.9	44.0	44.9	51.0	13.8	45.4	54.8	51.7	62.9	62.3	52.7	55.1	83.1	54.4	66.5	54.2	71.7
Percentage of households where at least one member owns or has a:																					
Mobile telephone	73.8	87.3	68.1	96.4	84.6	58.9	54.9	72.1	91.3	87.3	69.4	74.7	87.5	66.5	73.0	66.1	60.6	57.9	59.2	47.3	60.0
Bicycle	13.3	17.8	11.4	12.0	12.4	5.5	14.8	10.0	13.9	18.4	10.0	22.5	30.8	2.9	35.5	13.1	3.5	5.6	11.8	21.7	4.3
Motorcycle or scooter	4.4	6.6	3.5	2.5	4.4	2.9	6.1	3.5	4.2	2.8	2.3	6.2	15.8	1.1	10.4	7.0	1.1	3.4	7.0	6.2	1.9
Animal-drawn cart	15.0	8.1	17.9	16.4	11.8	1.9	9.0	16.3	5.6	14.8	24.3	21.7	14.2	16.5	24.1	28.0	4.5	8.2	19.8	16.4	39.1
Car or truck	6.4	11.0	4.4	12.7	10.8	6.1	6.0	3.1	16.4	7.8	6.0	6.2	4.1	4.2	1.4	0.7	1.4	1.9	2.6	0.8	2.4
Boat with motor	0.5	0.3	0.6	1.0	1.4	0.5	0.2	0.0	0.1	0.3	4.8	0.6	0.2	0.2	0.2	0.0	0.0	0.1	0.2	0.6	0.0
Raksha	1.3	3.4	.4	2.0	2.8	2.7	0.1	0.5	3.6	1.0	1.8	1.6	0.5	0.2	1.3	0.3	0.0	0.2	1.4	0.8	0.1

Table HH.7: Household and Personal Assets																					

❖ Percentage of households by ownership of selected household and personal assets
❖ Percent distribution by ownership of dwelling, according to area of residence and states
Sudan MICS, 2014

Background Characteristics	Sudan	Area		State																		
		Urban	Rural	Northern	River Nile	Red Sea	Kassala	Gadarif	Khartoum	Gezira	White Nile	Sinnar	Blue Nile	North Kordofan	South Kordofan	West Kordofan	North Darfur	West Darfur	South Darfur	Central Darfur	East Darfur
Smart Mobile	8.9	17.8	5.1	33.4	15.3	10.3	12.4	2.9	22.1	9.8	11.0	6.7	2.9	2.8	2.5	1.0	1.5	1.8	3.1	6.1	2.7
Labtop/Tablet	3.8	9.4	1.4	7.2	4.8	4.4	2.0	.9	11.9	4.4	2.2	3.6	2.0	1.4	1.0	.4	1.0	2.2	2.3	1.4	1.2
Thria mobile	0.4	0.5	0.3	0.3	0.3	0.3	0.4	0.2	0.0	0.2	3.4	0.7	0.2	0.2	0.3	0.0	0.0	0.6	0.3	0.1	0.4
Bank account	5.0	11.1	2.4	9.6	4.4	8.2	2.1	4.5	12.6	4.9	2.3	5.4	5.6	1.7	4.3	1.6	1.6	3.3	3.4	1.0	2.9
Ownership of dwelling																					
Owned by a household member	85.5	67.3	93.3	75.5	84.4	81.4	91.1	89.1	69.3	87.2	91.0	82.6	92.2	92.2	91.3	93.5	94.4	85.8	83.5	83.2	86.3
Not owned	14.4	32.5	6.7	24.5	15.4	18.5	8.8	10.9	30.7	12.8	8.8	17.1	7.8	7.7	8.6	6.2	5.5	14.2	16.5	16.7	13.7
Rented	7.0	19.1	1.9	6.3	6.2	9.0	4.9	3.1	21.4	3.8	5.0	3.1	4.0	3.0	4.5	4.5	1.7	6.0	9.2	6.5	4.2
Other	7.4	13.4	4.8	18.3	9.2	9.6	3.9	7.8	9.4	9.0	3.7	14.0	3.8	4.6	4.1	1.7	3.7	8.2	7.3	10.2	9.5
Missing/DK	0.1	0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.3	0.0	0.1	0.1	0.2	0.2	0.0	0.0	0.1	0.0
Number of households	16,801	5,000	11,801	423	666	519	722	858	2,317	2,629	874	661	656	1,125	462	1,003	1,243	553	1,282	299	508

[*] Based on less than 25 unweighted cases and has been suppressed.

Table HH.8 shows how the household populations in Areas and States are distributed according to household wealth quintiles.

Table HH.8:	Wealth Quintiles						
Percent distribution of the household population by wealth index quintiles, according to area of residence and states Sudan MICS, 2014							
Background Characteristics	Wealth index quintile					Sudan	Number of household members
	Poorest	Second	Middle	Fourth	Richest		
Sudan	20.0	20.0	20.0	20.0	20.0	100.0	98,883
Area							
Urban	2.8	7.2	21.0	26.9	42.0	100.0	30,476
Rural	27.7	25.7	19.6	16.9	10.2	100.0	68,407
State							
Northern	0.0	0.8	10.5	39.3	49.5	100.0	2,181
River Nile	3.6	1.9	10.4	38.3	45.8	100.0	3,715
Red Sea	9.1	22.5	26	21.2	21.3	100.0	2,489
Kassala	19.5	28.4	25.3	13.6	13.1	100.0	4,117
Gadarif	16.7	35.5	30.7	12.8	4.3	100.0	5,005
Khartoum	0.2	2.8	12.5	26.0	58.4	100.0	13,830
Gezira	0.6	4.7	21.3	44.5	28.8	100.0	16,270
White Nile	2.0	22.5	38.3	21.3	15.9	100.0	5,016
Sinnar	1.2	21.2	36.7	21.8	19.1	100.0	3,763
Blue Nile	2.3	26.4	45.5	18.5	7.3	100.0	4,094
North Kordofan	37.4	28.1	21.3	8.1	5.1	100.0	6,359
South Kordofan	9.9	51.0	28.4	8.5	2.2	100.0	2,983
West Kordofan	41.6	40.9	14	2.9	0.6	100.0	5,745
North Darfur	59.9	26.8	8.0	2.8	2.5	100.0	7,776
West Darfur	40.5	30.0	13.7	11.0	4.8	100.0	3,023
South Darfur	52.0	22.3	14.8	7.9	2.9	100.0	7,712
Central Darfur	32.1	49.5	12.7	4.0	1.7	100.0	1,646
East Darfur	60.8	26.0	5.9	3.4	3.9	100.0	3,158

Child Mortality

The risk of children dying before the 5th birthday remains high in conflict areas, with the worst rates in East Darfur.

4. Child Mortality

4.1 Introduction

One of the overarching targets of the Millennium Development Goals (MDGs) is to reduce infant and under-five mortality. Specifically, the MDGs call for the reduction of under-five mortality by two-thirds, between 1990 and 2015. The Goal of the Sudan Health Sector Strategic Plan (HSSP 2012-2016) was to "improve health status and outcomes, especially for poor, underserved, disadvantaged and vulnerable populations". Expectations included the reduction of the under-five mortality rate from 83 thousand live births estimated by Sudan Household Health Survey (SHHS) 2010, to 53 thousands live births and the reduction of infant mortality rate from 57 to 43 per 1,000 live births, at the end of the health strategic plan in 2016. This national commitment is part of the Government's National Development Plan 2012-2016, compatible with the 25-year National Strategic Plan for Health (2003-2027) and the National Health Policy (2007).

Monitoring progress towards such global and national goals is an important but difficult objective. MICS 2014 offers an opportunity to generate accurate evidence on the status of child survival in Sudan at a national level and by state, following the separation of South Sudan from Sudan in 2011. This seperation resulted in structural economic challenges of limited fiscal space (the loss of 65 percent of oil revenue) for capital investment for the social sector.

Another major challenge for development results, is the persistent humanitarian responses to vulnerable populations affected by natural disasters, conflicts and displacements.

The gap of human resources capacities and health financing, the limited geographic coverage of PHC (11.3 percent of the population do not have access to health services within 5km) represent major bottlenecks for the acceleration of progress to achieve MDG4 and MDG5 in Sudan, as mentioned in 2012 by the SHSS 2012-2016. Other noted challenges include the financial barriers related to use of health services by poorest families and prevailing social norms and behavioural issues.

Despite such challenges and bottlenecks, it is important to recognise that in Sudan, health infrastructures and skilled manpower are in place. Efforts have also been made to operationalize strategies and innovative high impact interventions as agreed within HSSP and the Health Sector COMPACT. This very large partnership comprised of Government, donors, civil cociety and local authorities, with the engagement of communities and family participation.

Mortality rates presented in this chapter are calculated from information collected in the birth histories of the Women's Questionnaires. All interviewed women were asked whether they had ever given birth, and if yes, they were asked to report the number of sons and daughters who live with them, the number who live elsewhere, and the number of those who died. In addition, they were asked to provide a detailed birth history of live births of children in chronological order starting with the firstborn. Women were asked whether births were single or multiple, the sex of the children, date of birth (month and year), and survival status. Furthermore, for children still alive, they were asked the current age of the child and, if not alive, the age at death.

Childhood mortality rates are expressed by conventional age categories and are defined as follows:

- Neonatal mortality (NN): probability of dying within the first month of life
- Post-neonatal mortality (PNN): difference between infant and neonatal mortality rates
- Infant mortality ($_1q_0$): probability of dying between birth and the first birthday
- Child mortality ($_4q_1$): probability of dying between the first and the fifth birthdays
- Under-five mortality ($_5q_0$): the probability of dying between birth and the fifth birthday

Rates are expressed as deaths per 1,000 live births, except in the case of child mortality, expressed as deaths per 1,000 children surviving to age one, and post-neonatal mortality, which is the difference between infant and neonatal mortality rates.

4.2. Status of Child Mortality at national level

Table CM.1 and Figure CM.1 present neonatal, post-neonatal, infant, child, and under-five mortality rates for the three most recent five-year periods before the survey.

In Sudan, the under-five mortality rate is estimated by MICS 2014 at 68 deaths per 1,000 live births for the period of five years preceding the survey (2010-2014). The infant mortality rate is 52 per 1,000 live births for the same period, indicating that 76.5 percent of under-five deaths are infant deaths.

Neonatal mortality in the most recent 5-year period is estimated at 33 per 1,000 live births, while the post-neonatal mortality rate is estimated at 19 per 1,000 live births.

Table CM.1: Early childhood mortality rates					
Neonatal, post-neonatal, infant, child and under-five mortality rates for five year periods preceding the survey, Sudan MICS, 2014					
Years preceding the survey	**Neonatal mortality rate (1)**	**Post neonatal mortality (2)**	**Infant mortality(3)**	**Child mortality (4)**	**Under five mortality(5)**
0-4	**32.6**	**19.4**	**52.0**	**17.3**	**68.4**
5-9	28.2	19.7	47.9	23.0	69.8
10-14	28.3	26.5	54.9	32.1	85.2

[1] MICS indicator 1.1 – Neonatal mortality
[2] MICS indicator 1.3 – Post neonatal mortality rate
[3] MICS indicator 1.2 – MDG indicator 4.2 – infant mortality rate
[4] MICS indicator 1.4 – Child Mortality Rate
[5] MICS indicator 1.5 - MDG indicator 4.1 – Under-five mortality rate
Post neonatal mortality rates are computed as the difference between the infant and neonatal mortality rate

The birth history method enables the calculation of early child mortality rates for different years preceding the survey. The table and figure also show a declining trend at the national level during the last 15 years, with under-five mortality at 85 per 1,000 live births during the 10-14 year period preceding the survey. During the most recent 5-year period, roughly referring to the years indicate period, the under 5 mortality rate is 69.8 per 1,000 live births. A similar pattern is observed in all other indicators.

However, there has been stagnation of the neonatal mortality rate during the period 10-14 years (28.3) and 5-9 years (28.2) preceding the MICS 2014.

Figure CM.1: Early childhood mortality rates, Sudan MICS, 2014

Note: Indicator values are per 1,000 live births
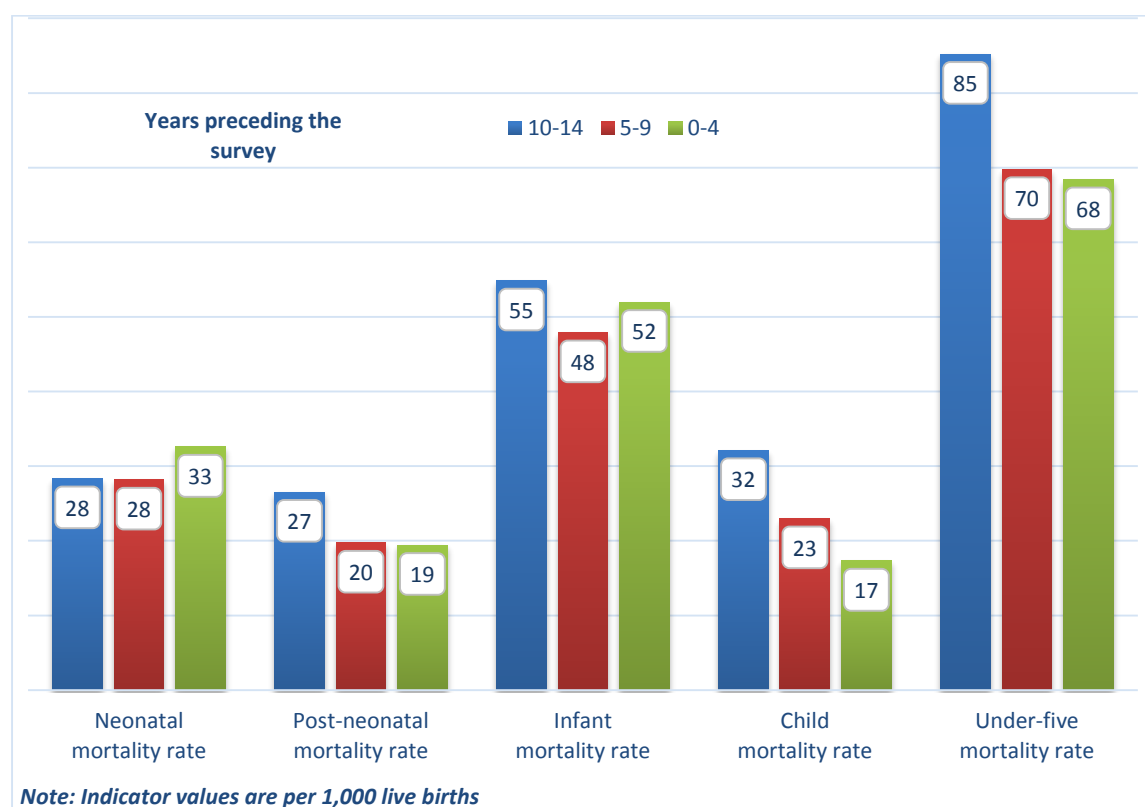
4.3 Geographic Disparity in Childhood Mortality

Tables CM.2 and figure CM.2 provide estimates of child mortality by area and by states. Findings reveal that there is inequality of probabilities of dying between urban and rural areas. Under-five mortality and infant mortality rates are respectively 56.5 and 11.8 deaths for 1,000 live births in urban areas, 72.8 and 19.3 in rural areas.

The risk of dying in under-five children before the fifth birthday, is very high in the states of:
- East Darfur (111.7)
- South Kordofan (95.4)
- West Darfur (91.4)
- North Darfur (90.3)

The lowest under-five mortality rates, according to measurements in the below states:
- Northern (29.9)
- River Nile (35.1)
- North Kordofan (41.9)
- Khartoum (49.8) states.

Figure CM.2 provides a graphical presentation of these differences.

Table CM.2:	Early Childhood Mortality				
Neonatal, post-neonatal, infant, child and under-five mortality rates for five year periods preceding the survey by Area and State, Sudan MICS, 2014					
Geographic area	Neonatal mortality[1]	Post neonatal mortality[2]	Infant mortality[3]	Child mortality[4]	Under five mortality[5]
Sudan	**32.6**	**19.4**	**52.0**	**17.3**	**68.4**
Area					
Urban	30.3	14.8	45.1	11.8	56.5
Rural	33.4	21.1	54.5	19.3	72.8
State					
Northern	23.0	6.9	30.0	0.0	29.9
River Nile	25.8	2.3	28.1	7.2	35.1
Red Sea	18.6	25.6	44.2	17.9	61.3
Kassala	47.2	15.0	62.1	19.7	80.5
Gadarif	32.6	20.8	53.4	24.6	76.7
Khartoum	30.5	14.6	45.1	4.9	49.8
Gezira	26.2	15.2	41.4	12.6	53.5
White Nile	30.3	16.5	46.8	20.0	65.8
Sinnar	18.0	16.1	34.1	18.1	51.6
Blue Nile	26.0	20.8	46.8	38.9	83.9
North Kordofan	23.0	12.7	35.6	6.5	41.9
South Kordofan	32.5	37.6	70.2	27.1	95.4
West Kordofan	43.4	24.8	68.2	15.0	82.1
North Darfur	43.9	24.6	68.5	23.4	90.3
West Darfur	39.2	32.0	71.2	21.8	91.4
South Darfur	35.2	17.5	52.6	20.4	71.9
Central Darfur	24.7	19.8	44.5	34.4	77.4
East Darfur	51.8	36.7	88.5	25.5	111.7

[1] MICS indicator 1.1 - Neonatal mortality rate
[2] MICS indicator 1.3 - Post-neonatal mortality rate
[3] MICS indicator 1.2; MDG indicator 4.2 - Infant mortality rate
[4] MICS indicator 1.4 - Child mortality rate
[5] MICS indicator 1.5; MDG indicator 4.1 - Under-five mortality rate

The graph below illustrates the 3.7 times gap of equity in child survival between Northern state (the lowest U5MR of 30 deaths per 1,000 live births) and East Darfur (the highest under-five mortality rate of 111.7 deaths for 1,000 live births).

Figure CM.2: Underfive Mortality Rates by State, Sudan MICS, 2014
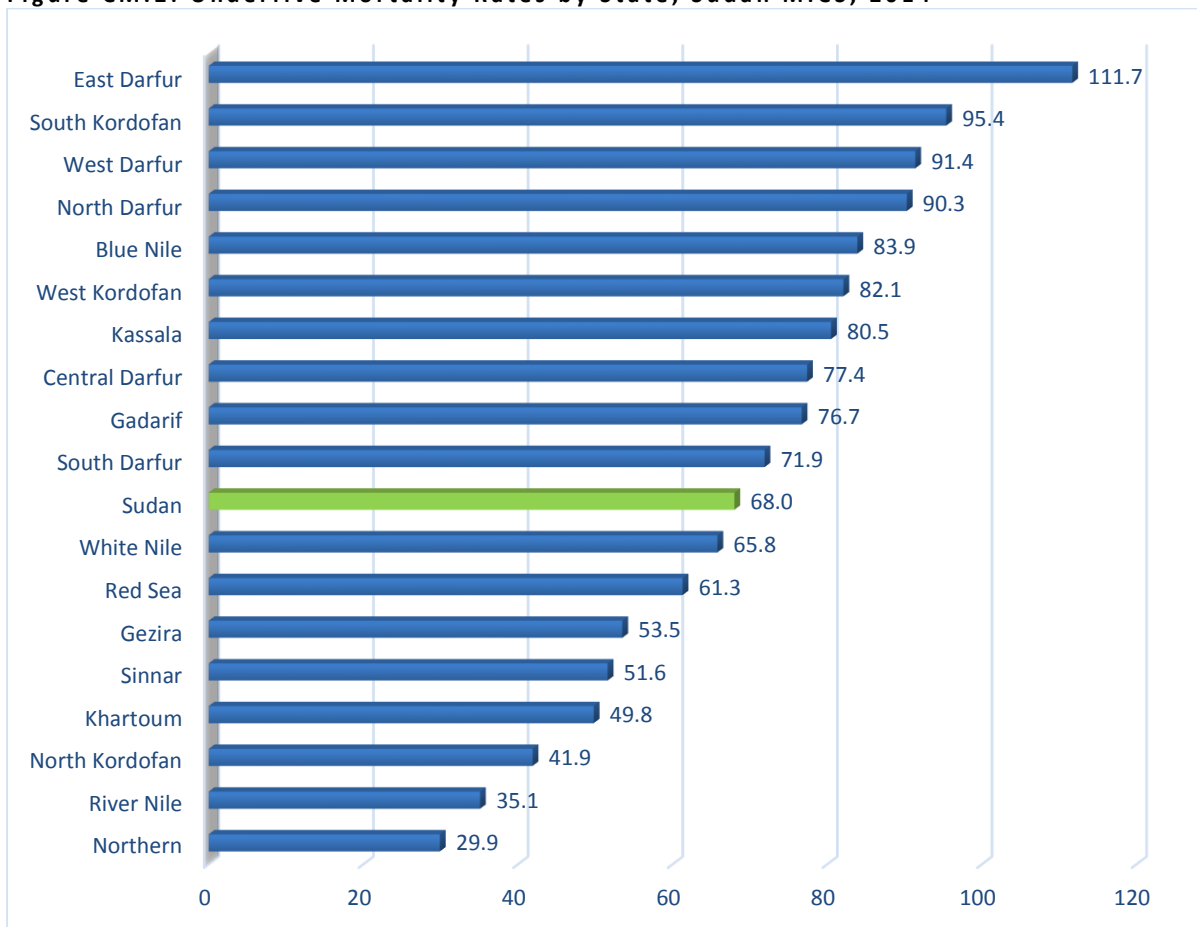
The gap of equity of child survival between urban and rural areas is high in Sudan, as indicated below.

Figure CM.2a: Under five Mortality Rates by geographic area, Sudan MICS, 2014
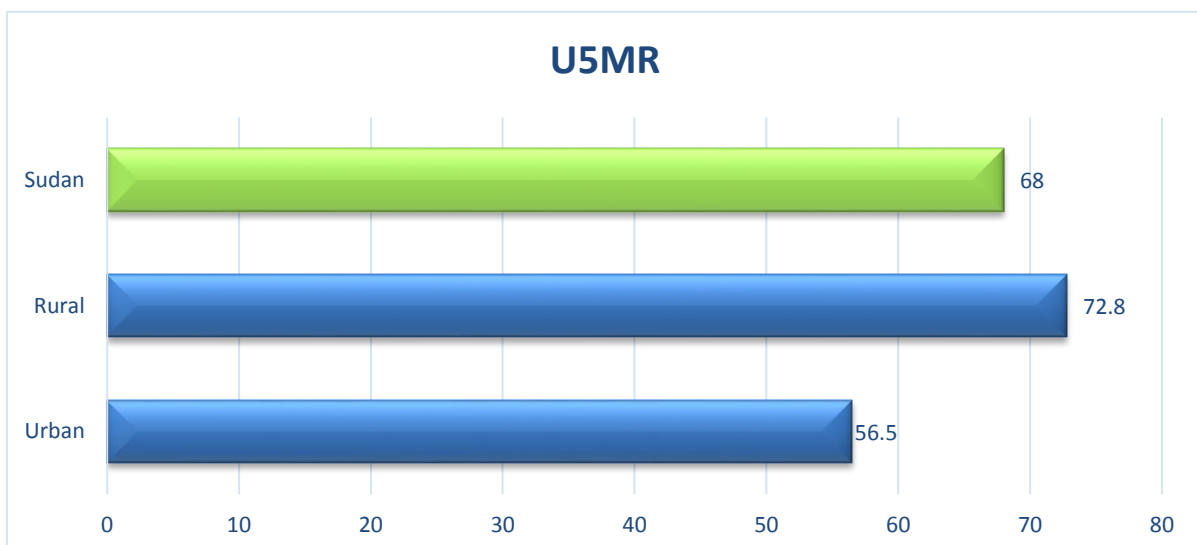
4.4 Disparity in Childhood mortality by socioeconomic and demographic patterns

Tables CM.2b and figures CM.2c-CM.2d provide estimates of child mortality by socioeconomic and demographic characteristics. There is a difference between the probabilities of dying among boys (78.7) and girls (57.6). Inequity for child survival is very high in Sudan. Children living amongst poorest families have double the risk of dying before their fifth birthday (U5MR of 84.2), in comparison to children from the richest household (U5MR of 39.4).

There are also differences in mortality in terms of mothers' education, age-group, birth order and interval of birth as indicated in figures and tables below.

Figure CM.2b: Under 5 Mortality Rates by sex of child and wealth quintile, Sudan MICS, 2014
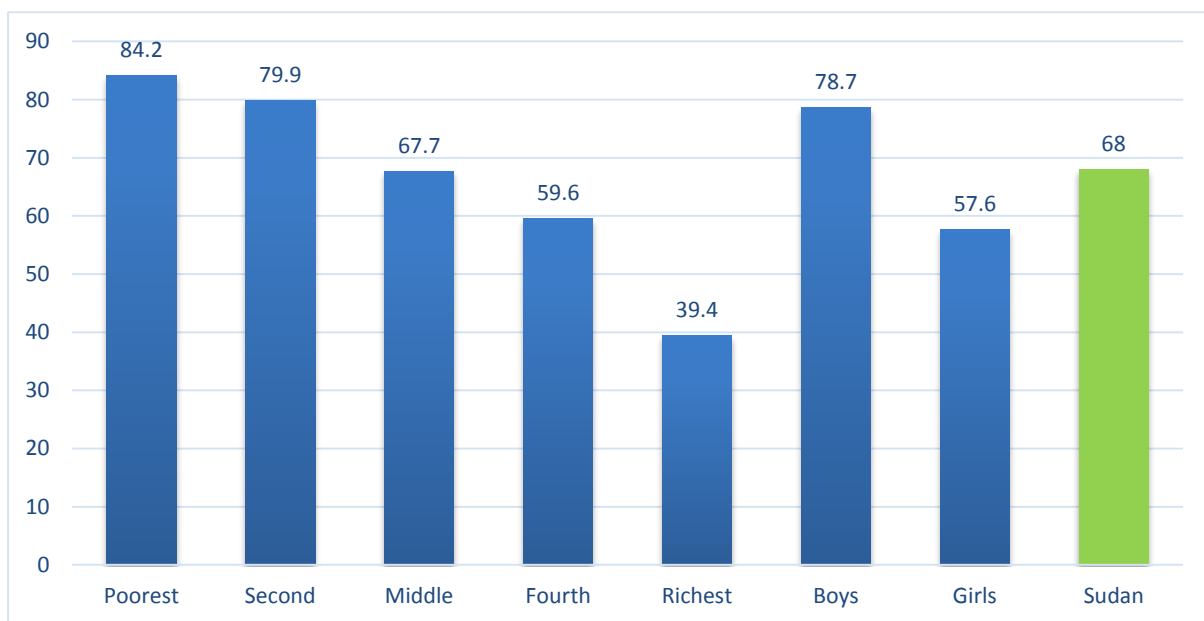
Figure CM.2c: Under five mortality rates by mother's education, Sudan MICS, 2014
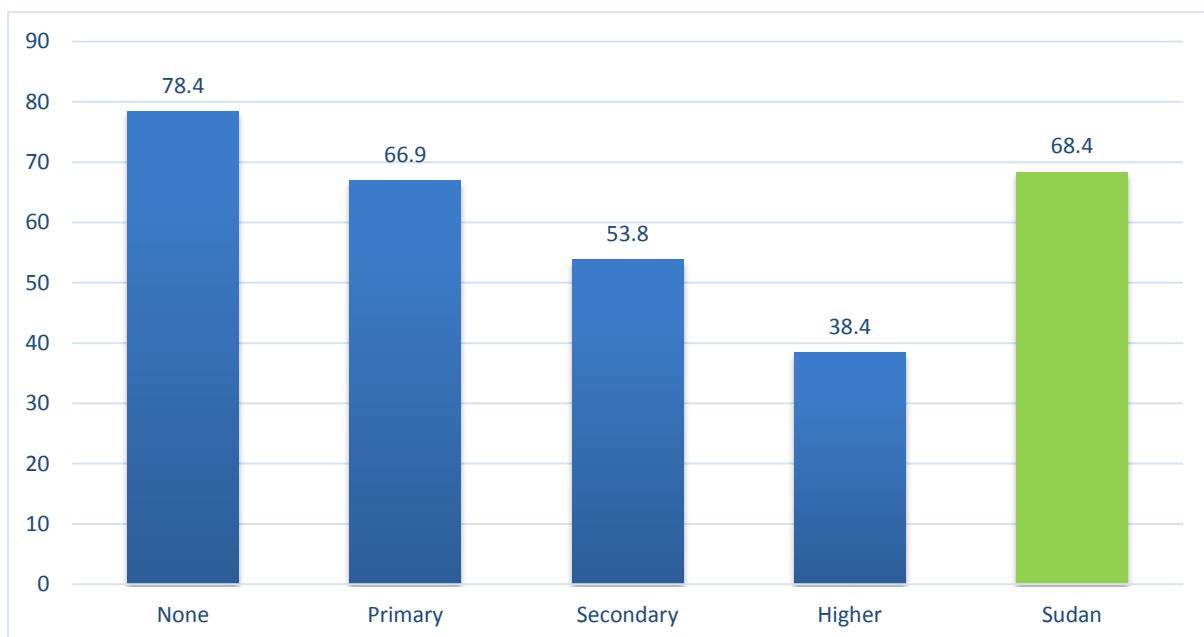
Table CM.3:   Early Childhood Mortality

Neonatal, post-neonatal, infant, child and under-five mortality rates for five year periods, preceding the survey by demographic characteristics
Sudan MICS, 2014

Background Characteristics	Neonatal mortality	Post neonatal mortality	Infant mortality	Child mortality	Under five mortality
Sudan	**32.6**	**19.4**	**52.0**	**17.3**	**68.4**
Sex of child					
Boys	38.4	21.1	59.4	20.5	78.7
Girls	26.5	17.7	44.2	14.1	57.6
Birth order					
1	37.9	10.2	48.0	12.5	60.0
2-3	22.8	20.5	43.3	14.8	57.5
4-6	28.3	19.6	47.9	18.9	65.9
7+	53.4	25.8	79.2	24.4	101.7
Previous birth interval					
< 2 years	52.7	30.2	82.9	27.1	107.8
2 years	23.8	19.8	43.7	18.4	61.3
3 years	13.7	11.6	25.3	7.3	32.4
4+ years	30.5	15.8	46.3	8.7	54.6
Mother's education					
None	34.6	20.6	55.3	24.6	78.4
Primary	32.5	20.7	53.2	14.5	66.9
Secondary	35.0	13.0	48.0	6.1	53.8
Higher	14.6	20.2	34.8	3.8	38.4
Wealth index quintile					
Poorest	41.1	23.8	64.9	20.6	84.2
Second	36.0	24.3	60.3	20.9	79.9
Middle	31.2	19.2	50.3	18.2	67.7
Fourth	25.0	17.7	42.7	17.7	59.6
Richest	25.7	8.2	33.9	5.7	39.4

[1] MICS indicator 1.1 - Neonatal mortality rate
[2] MICS indicator 1.3 - Post-neonatal mortality rate
[3] MICS indicator 1.2; MDG indicator 4.2 - Infant mortality rate
[4] MICS indicator 1.4 - Child mortality rate
[5] MICS indicator 1.5; MDG indicator 4.1 - Under-five mortality rate
[a] Post-neonatal mortality rates are computed as the difference between the infant and neonatal mortality rates
(*) Rates based on fewer than 250 unweighted exposed persons
( ) Rates based on 250 to 499 unweighted exposed persons

4.5 Trend in Childhood mortality rate using different sources

As part of an effort to recap the overall evolution of child mortality measurement conducted in Sudan, this section presents data related to the estimation of under-five mortality. This falls in line with the officially approved and published data within the national household survey full report completed in Sudan, in 2000.

In addition, reference to the estimation performed by the United Nations inter agency estimation group (IGME) is also presented in the graph for information.

This trend analysis will cover the evolution of under-five mortality at a national level, by state and by wealth quintile. The data must be considered with caution, taking into account the difference of sampling, the variance of indicator, method used and variation of geographic area (variation from 15 states in 2010 to 18 states in 2014). Despite, the limitations of different surveys in statistical view, the recap of estimations from previous surveys, provide an indication of the potential evolution of the situation of child survival in Sudan (including decrease or increase by state and wealth quintile).

4.5.1 Trend at national level
Figure CM.3 compares the findings of MICS 2014 on under-5 mortality rates with those from other data sources like SHHS 2010, SHSS 2006 and SHSS 2000.

The MICS estimates indicate a decline in mortality during the last 20 years. Furthermore, secondary data analysis will provide explanation related to probable factors of the acceleration or not - of the decline of U5MR during the two periods (1995-2006 and 2006-2014).

Figure CM.3: Trends in Under-Five Mortality and Infant Mortality in Sudan as estimated by SHHS 2000, SHHS 2006, SHHS2 2010 and MICS 2014
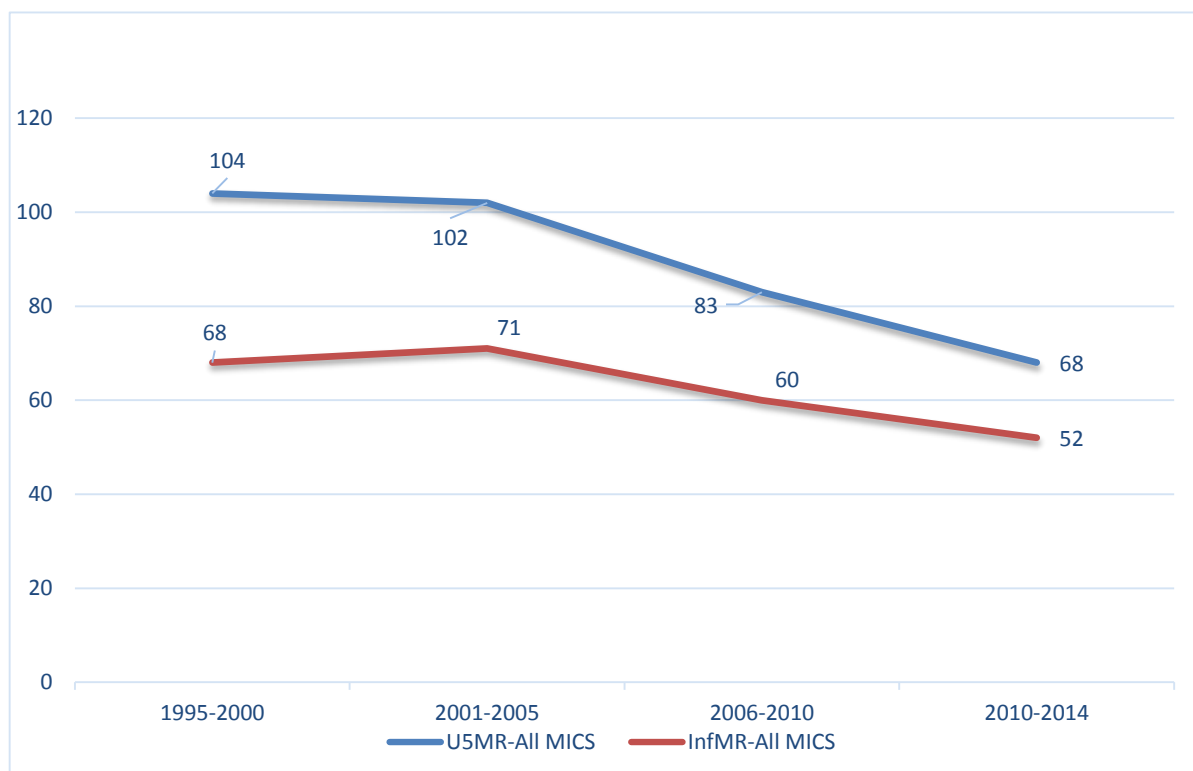
4.5.2 Trend by wealth index quintile from SHHS 2010 and MICS 2014 data sources
Figure CM.3a below seems to indicate that the reduction of under-five mortality during the last five years, is greatest among the middle wealth quintile than the poorest and richest quintiles.

Figure CM.3a: Trend in Under Five Mortality Rates by sex of child and wealth quintile in Sudan, SHHS 2010 and Sudan MICS, 2014
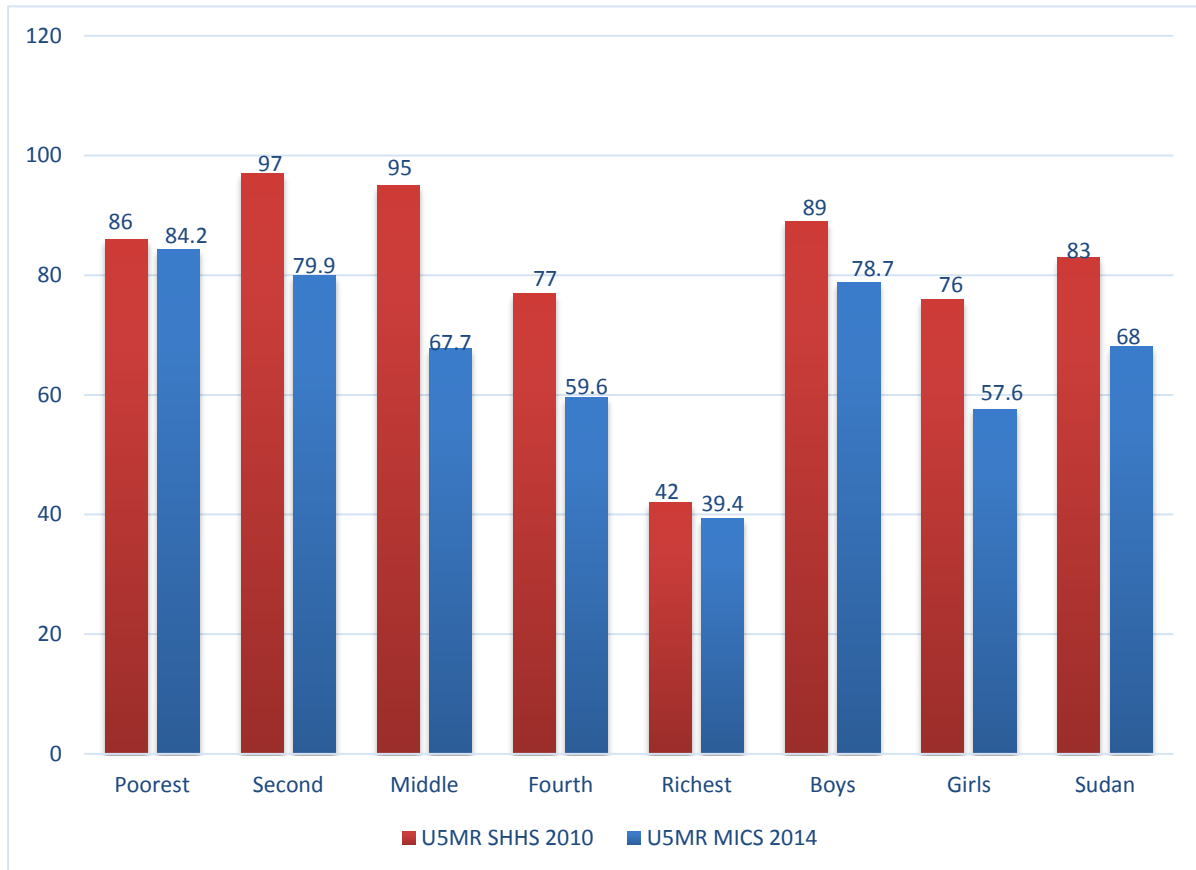
Nutrition

Malnutrition is associated with more than half of all child deaths worldwide.

5. Nutrition

Sudan has been committed to the 2015 Millennium Development Goals aiming to eradicate, extreme poverty and hunger. The reduction of child malnutrition is one of the goals of Sudan's National Health Sector Strategic Plan (NHSSP) 2012-2016, which is intended to reduce the prevalence of moderate malnutrition (underweight) from 32 percent to 16 percent.

According to the Ministry of Health's annual statistical reports - pneumonia, malaria, diarrhoea and malnutrition are the major causes of under-five illnesses and hospital admission.

Investing in nutrition is estimated to increase a country's GDP by at least 3 percent annually, as noted in the global evidence of studies conducted by the World Bank (2010) and Horton and Steckel (2013). The Investment in Nutrition Case Document developed for Sudan in 2014, estimated that investing in nutrition can specifically increase Sudan's 2013 GDP by US$66.55 billion, equaling to a gain of US$2 billion per annum.

Sudan does have a National Nutrition Policy, which supports many of the interventions that are considered to be high impact and evidence based. Within the SHSSP 2012-2016, efforts have been made by Government and donors in order to strengthen the institutional capacity for coordination and management of nutrition services at federal, state and periphery levels. Efforts have also been made to increase financial investment for addressing the prevention and treatment of acute malnutrition. The coverage of health-based services for treatment of severe acute malnutrition reached 28 percent in 2014, and the government allocated in 2015 an amount of US$ 8 million in Sudan, for therapeutic foods.

MICS 2014 offers an opportunity to assess the status of child malnutrition in Sudan vis-à-vis MDG 2015 and the NHSSP 2012-2016 targets. In addition, it sets to provide baseline evidence-based prioritization of child malnutrition within the full Poverty Reduction Strategic Paper in process, the development of a national multi-sector nutrition strategy and better targeting and investment of humanitarian responses to reduce child acute malnutrition.

This chapter also presents findings related to low birth weight, nutritional status of children under-five years, breastfeeding and Infant and Young Child Feeding, the use of salt iodization at a household level, and the coverage of a child's Vitamin A supplementation.

5.1 Low Birth Weight

Weight at birth is a good indicator not only of a mother's health and nutritional status, but also the newborn's chance of survival, growth, long-term health and psychosocial development. Low birth weight (defined as less than 2,500 grams) carries a range of grave health risks for children. Babies who were undernourished during pregnancy, face a greatly increased risk of dying during their early stages of life up to five years of age. Those who survive, may have impaired immune function and increased risk of disease.They are also likely to remain undernourished, with reduced muscle strength throughout their lives, and suffer a higher incidence of diabetes and heart disease in later life. Children born with low birth weight also have a risk of lower IQ and cognitive disabilities, affecting their performance in school and job opportunities as adults.

In developing countries, low birth weight stems primarily from the mother's poor health and nutrition. Three factors have the most impact: the mother's poor nutritional status before conception, short stature (due mostly to under nutrition and infections during her childhood), and poor nutrition during pregnancy. Inadequate weight gain during pregnancy is particularly important since it accounts for a large proportion of foetal growth restrictions. Moreover, diseases such as diarrhoea and malaria,

which are common in many developing countries, can significantly impair foetal growth if the pregnant mother becomes infected.

Cigarette smoking during pregnancy is a leading cause of low birth weight. In addition, teenagers who give birth when their own bodies have yet to finish growing, run a higher risk of bearing low birth weight babies.

One of the major challenges in measuring the incidence of low birth weight is that more than half of infants at birth, are not weighed. In the past, most estimates of low birth weight for developing countries were based on data compiled from health facilities. However, these estimates are biased for most developing countries because the majority of newborns are not delivered in facilities, and those who are, represent only a selected sample of all births.

Because many infants are not weighed at birth, and those who are weighed may be a biased sample of all births, the reported birth weights usually cannot be used to estimate the prevalence of low birth weight among all children.

The percentage of births weighing below 2,500 grams is estimated from two items in the questionnaire: the mother's own assessment of the child's **size** at birth (i.e. very small, smaller than average, average, larger than average, very large) and the mother's recollection of the child's **weight** or the weight as recorded on a health card if the child was weighed at birth.[7]

Sudan's 2014 MICS report states that 16.3 percent of infants were weighed at birth. Approximately 32.3 percent of infants born during the last two years, were estimated to weigh less than 2,500 grams at birth (Table NU.1). The prevalence of low birth weight varies by urban (27.9 percent) and rural areas (33.9 percent) and by the mother's education - from 33.7 percent among children for whose mothers are not educated to 23.7 percent for children whose mothers have higher levels of education.

The highest prevalence of low birth weight was observed in the states of:
- North Darfur (47.5 percent)
- East Darfur (46.9 percent)
- North Kordofan (41.4 percent)
- West Kordofan (36 percent)

The Lowest prevalence of low birth weight, was observed in the states of:
- River Nile (17.2 percent)
- Khartoum (22.2 percent)
- Gadarif (23.9 percent)
- Blue Nile (25.7 percent).

There is nocticeable inequality in terms of the prevalence of low birth weight among children in the wealth index quintiles of the population - 39 percent among children living in the poorest household to 22.2 percent for children falling under the richest household category.

---

[7] For a detailed description of the methodology, see Boerma, JT et al. 1996. *Data on Birth Weight in Developing Countries: Can Surveys Help?* Bulletin of the World Health Organization 74(2): 209-16.

Table NU.1: Low birth Weight Infants

❖ Percentage of last live-born children in the last two years that are estimated to have weighed below 2,500 grams at birth, and
❖ Percentage of live births weighed at birth
Sudan MICS, 2014

Background Characteristics	Percent distribution of births by mother's assessment of size at birth					Sudan	Percentage of live births:		Number of last live-born children in the last two years
	Very small	Smaller than average	Average	Larger than average or very large	DK		Below 2,500 grams [1]	Weighed at birth [2]	
Sudan	18.6	15.2	51.5	12.9	1.8	100.0	32.3	16.3	5,622
Mother's age at birth									
Less than 20 years	19.7	20.2	47.2	11.3	1.5	100.0	36.2	11.6	640
20-34 years	18.8	14.9	51.5	13.1	1.8	100.0	32.2	16.4	4,001
35-49 years	17.4	13.3	54.0	13.4	1.8	100.0	30.3	19.2	981
Birth order									
1	16.6	16.8	53.7	11.7	1.1	100.0	31.9	21.9	910
2-3	16.2	14.8	54.0	13.0	2.0	100.0	30.5	19.3	1,669
4-5	18.8	16.1	51.0	12.2	1.9	100.0	33.1	13.5	1,428
6+	22.1	14.0	48.0	14.1	1.8	100.0	33.8	12.7	1,614
State									
Northern	16.3	9.0	67.9	5.8	1.1	100.0	27.1	27.3	92
River Nile	2.7	7.5	81.2	8.6	.0	100.0	17.2	26.5	151
Red Sea	15.4	9.1	53.0	6.2	16.2	100.0	29.3	26.2	92
Kassala	16.2	7.8	62.3	12.4	1.3	100.0	26.0	13.7	199
Gadarif	9.0	11.6	70.9	7.8	0.6	100.0	23.9	7.2	307
Khartoum	7.8	10.5	69.5	11.4	0.8	100.0	22.2	56.3	684
Gezira	13.3	19.5	60.8	6.0	0.3	100.0	31.6	15.2	852
White Nile	24.6	13.4	50.0	8.7	3.3	100.0	35.6	13.6	273
Sinnar	18.2	15.4	55.6	9.9	0.9	100.0	32.1	13.1	226
Blue Nile	15.2	9.9	43.9	30.9	0.1	100.0	25.7	12.4	287
North Kordofan	23.8	23.9	36.5	13.2	2.5	100.0	41.4	10.9	352
South Kordofan	20.4	14.0	51.2	12.1	2.2	100.0	32.9	7.9	194
West Kordofan	26.6	12.9	48.2	10.8	1.5	100.0	36.0	4.3	341
North Darfur	29.5	26.9	34.6	6.0	3.0	100.0	47.5	5.3	525
West Darfur	14.4	17.3	37.0	27.0	4.2	100.0	30.7	12.7	179
South Darfur	26.6	11.2	37.1	23.2	1.9	100.0	34.5	5.1	556
Central Darfur	11.2	11.8	42.9	33.3	0.9	100.0	24.3	5.7	99
East Darfur	38.8	17.5	21.6	19.4	2.6	100.0	46.9	4.2	211
Area									
Urban	15.2	11.7	56.4	14.6	2.1	100.0	27.9	33.6	1,488
Rural	19.9	16.5	49.7	12.3	1.7	100.0	33.9	10.1	4,134
Mother's education									
None	20.2	15.8	46.4	15.2	2.4	100.0	33.7	5.8	2,247
Primary	19.4	16.9	50.0	12.5	1.2	100.0	33.8	13.2	2,022
Secondary	16.6	12.9	58.6	10.0	2.0	100.0	29.7	31.3	942
Higher	10.9	9.5	69.9	8.9	0.8	100.0	23.7	54.7	410

Table NU.1:	Low birth Weight Infants								

❖ Percentage of last live-born children in the last two years that are estimated to have weighed below 2,500 grams at birth, and
❖ Percentage of live births weighed at birth
  Sudan MICS, 2014

Background Characteristics	Percent distribution of births by mother's assessment of size at birth					Sudan	Percentage of live births:		Number of last live-born children in the last two years
	Very small	Smaller than average	Average	Larger than average or very large	DK		Below 2,500 grams [1]	Weighed at birth [2]	
Wealth index quintile									
Poorest	25.3	19.2	39.2	14.7	1.7	100.0	39.0	3.7	1,251
Second	22.7	15.3	44.9	14.7	2.4	100.0	35.1	7.4	1,232
Middle	17.7	14.7	52.8	13.0	1.8	100.0	31.4	10.9	1,192
Fourth	15.2	16.0	55.9	11.5	1.5	100.0	30.6	21.0	1,096
Richest	8.9	9.0	71.3	9.5	1.3	100.0	22.2	49.3	851

[1] MICS indicator 2.20 - Low-birthweight infants
[2] MICS indicator 2.21 - Infants weighed at birth

5.2 Nutritional Status

A Child's nutritional status is a reflection of their overall health. When children have access to adequate food supply, they are not exposed to repeated illnesses, are well cared for, they reach their growth potential and are considered well nourished.

Malnutrition is associated with more than half of all child deaths worldwide. Undernourished children are more likely to die from common childhood ailments, and for those who survive, have recurring sicknesses and faltering growth. Three-quarters of children who die from causes related to malnutrition were only mildly or moderately malnourished – showing no outward sign of their vulnerability. The Millennium Development Goal target was to reduce by half the proportion of people who suffer from hunger between 1990 and 2015. A reduction in the prevalence of malnutrition will also assist in the goal to reduce child mortality.

In a well-nourished population, there is a reference distribution of height and weight for children under age five. Under-nourishment in a population can be gauged by comparing children to a reference population. The reference population used in this report is based on the WHO growth standards[8]. Each of the three nutritional status indicators – weight-for-age, height-for-age, and weight-for-height - can be expressed in standard deviation units (z-scores) from the median of the reference population.

Weight-for-age is a measure of both acute and chronic malnutrition. Children whose weight-for-age is more than two standard deviations below the median of the reference population, are considered *moderately or severely underweight.* Those whose weight-for-age is more than three standard deviations below the median, are classified as *severely underweight.*

---

[8] http://www.who.int/childgrowth/standards/technical_report

Height-for-age is a measure of linear growth. Children whose height-for-age is more than two standard deviations below the median of the reference population, are considered short for their age and classified as *moderately or severely stunted.* Those whose height-for-age is more than three standard deviations below the median, are classified as *severely stunted.*

Stunting is a reflection of chronic malnutrition as a result of failure to receive adequate nutrition over a long period and recurrent or chronic illness.

Weight-for-height can be used to assess wasting and overweight status. Children whose *weight-for-height* is more than two standard deviations below the median of the reference population, are classified as *moderately or severely wasted,* while those who fall more than three standard deviations below the median are classified as *severely wasted.* Wasting is usually the result of a recent nutritional deficiency. The indicator of wasting may exhibit significant seasonal shifts associated with changes in the availability of food or disease prevalence.

Children whose weight-for-height is more than two standard deviations above the median reference population, are classified as moderately or severely overweight.

In MICS, weights and heights of all children under 5 years of age, were measured using the anthropometric equipment recommended[9] by UNICEF. Findings in this section are based on the results of these measurements.

Table NU.2 shows percentage of children classified into each of the above described categories, based on the anthropometric measurements that were taken during fieldwork. Additionally, the table includes mean z-scores for all three anthropometric indicators.

Regarding the quality of nutrition indicators, children whose full birth date (month and year) were not obtained and children whose measurements are outside a plausible range, are excluded from Table NU.2. Children are excluded from one or more of the anthropometric indicators when their weights and heights have not been measured (whichever applicable). For example, if a child has been weighed but his/her height has not been measured, the child is included in underweight calculations, but not in the calculations for stunting and wasting.

Percentages of children by age and reasons for exclusion are shown in the data quality Tables DQ.12, DQ.13, and DQ.14 in Appendix D. The tables show that due to incomplete dates of birth, implausible measurements, missing weight and/or height and possible particular situations in Sudan, 19.3 percent of children have been excluded from calculations of the weight-for-age indicator. Also excluded are 21.8 percent from the height-for-age indicator, and 11.9 percent for the weight-for-height indicator.

---

[9] See MICS Supply Procurement Instructions: http://www.childinfo.org/mics5_planning.html

Table NU.2: Nutritional Status of Children

Percentage of children under age 5 by nutritional status according to three anthropometric indices: weight for age, height for age, and weight for height, Sudan MICS, 2014

Background Characteristics	Weight for age		Mean Z-Score (SD)	Number of children under age 5	Height for age		Mean Z-Score (SD)	Number of children under age 5	Weight for height			Mean Z-Score (SD)	Number of children under age 5
	Underweight				Stunted				Wasted		Overweight		
	Percent below				Percent below				Percent below		Percent above		
	- 2 SD [1]	- 3 SD [2]			- 2 SD [3]	- 3 SD [4]			- 2 SD [5]	- 3 SD [6]	+ 2 SD [7]		
Sudan	33.0	12.0	-1.5	11,713	38.2	18.2	-1.6	11,333	16.3	4.5	3.0	-.8	12,550
Sex													
Male	34.6	12.8	-1.5	5,975	40.3	20.5	-1.6	5,778	16.9	5.1	3.2	-.9	6,375
Female	31.5	11.2	-1.4	5,737	36.1	15.8	-1.5	5,556	15.7	3.8	2.8	-.8	6,175
State													
Northern	21.9	4.5	-1.1	214	22.6	7.2	-1.1	208	11.4	2.6	2.7	-.7	206
River Nile	32.2	11.0	-1.5	338	29.5	12.1	-1.2	336	20.1	6.1	2.0	-1.0	346
Red Sea	33.6	15.9	-1.6	182	45.4	27.1	-1.9	178	14.0	2.3	4.1	-.6	184
Kassala	42.0	15.5	-1.7	409	48.8	25.7	-1.8	400	18.5	5.1	1.7	-1.0	414
Gadarif	37.7	15.5	-1.6	666	46.0	24.3	-1.9	658	15.4	5.4	4.6	-.7	698
Khartoum	23.2	6.4	-1.2	1,603	21.9	8.4	-1.0	1,593	14.5	3.8	.5	-.8	1,632
Gezira	32.4	12.3	-1.3	2,084	41.6	21.1	-1.7	2,046	14.0	3.7	8.5	-.5	2,050
White Nile	29.8	11.1	-1.4	572	36.6	17.4	-1.5	562	14.4	3.5	2.2	-.7	622
Sinnar	36.4	14.6	-1.6	471	38.1	17.9	-1.5	465	16.0	4.5	1.6	-1.0	477
Blue Nile	35.3	10.7	-1.5	668	46.7	22.6	-1.9	656	11.1	2.7	2.2	-.6	666
North Kordofan	32.4	11.5	-1.5	752	40.8	17.5	-1.7	731	14.8	4.5	2.5	-.8	764
South Kordofan	34.8	14.5	-1.6	431	40.6	23.7	-1.6	413	16.3	3.8	2.6	-.8	452
West Kordofan	38.7	14.8	-1.5	388	42.5	22.4	-1.5	383	18.7	5.1	1.5	-1.0	781
North Darfur	44.9	16.9	-1.9	861	45.9	21.6	-1.8	759	27.9	8.6	.9	-1.4	959
West Darfur	29.4	9.9	-1.3	223	35.2	13.7	-1.2	218	19.1	6.7	4.7	-0.9	455
South Darfur	29.4	9.9	-1.4	1,231	34.2	12.8	-1.4	1,120	15.9	3.5	.3	-1.0	1,164
Central Darfur	41.0	18.5	-1.6	163	47.5	25.5	-1.8	156	17.8	4.3	5.9	-0.7	221
East Darfur	40.2	16.6	-1.7	457	46.6	24.7	-1.8	452	15.3	4.2	.9	-0.9	460

Table NU.2: Nutritional Status of Children

Percentage of children under age 5 by nutritional status according to three anthropometric indices: weight for age, height for age, and weight for height, Sudan MICS, 2014

Background Characteristics	Weight for age			Number of children under age 5	Height for age			Number of children under age 5	Weight for height			Mean Z-Score (SD)	Number of children under age 5
	Underweight		Mean Z-Score (SD)		Stunted		Mean Z-Score (SD)		Wasted		Overweight		
	Percent below				Percent below				Percent below		Percent above		
	- 2 SD [1]	- 3 SD [2]			- 2 SD [3]	- 3 SD [4]			- 2 SD [5]	- 3 SD [6]	+ 2 SD [7]		
Area													
Urban	23.2	7.6	-1.2	3,405	27.1	10.8	-1.2	3,327	13.4	3.6	2.5	-0.7	3,494
Rural	37.1	13.8	-1.6	8,308	42.9	21.2	-1.7	8,006	17.4	4.8	3.2	-0.9	9,056
Age													
0-5 months	12.4	4.3	-0.5	1,296	12.2	5.3	-0.3	1,100	12.2	4.1	7.2	-0.3	1,158
6-11 months	24.1	9.1	-1.1	1,308	18.6	6.4	-0.8	1,274	18.3	6.1	3.3	-0.8	1,319
12-17 months	34.8	12.7	-1.4	1,290	36.1	14.8	-1.4	1,274	22.6	6.6	2.4	-1.1	1,361
18-23 months	36.3	15.1	-1.7	1,034	46.0	23.5	-1.9	1,014	19.5	5.2	0.9	-0.9	1,083
24-35 months	39.4	16.6	-1.8	2,216	49.8	25.2	-2.0	2,166	17.1	4.9	2.3	-0.9	2,391
36-47 months	37.9	13.3	-1.6	2,555	47.2	23.9	-1.9	2,519	13.2	3.0	3.0	-0.8	2,928
48-59 months	36.2	10.2	-1.6	2,014	38.8	17.5	-1.7	1,987	15.2	3.7	2.7	-0.9	2,310
Mother's education													
None	40.8	17.2	-1.7	4,683	46.8	24.3	-1.9	4,504	18.1	5.2	2.0	-1.0	5,278
Primary	32.3	11.1	-1.4	4,179	37.8	17.1	-1.5	4,055	16.3	4.5	3.4	-0.8	4,430
Secondary	23.8	5.4	-1.1	1,930	27.6	10.1	-1.2	1,883	13.5	2.9	4.1	-0.7	1,934
Higher	16.8	3.7	-0.9	907	19.7	9.2	-1.0	877	12.1	3.2	4.5	-0.5	891
Missing/DK	*	*	-1.0	14	*	*	-0.9	13	*	*	*	-1.0	16
Wealth index quintile													
Poorest	39.5	14.9	-1.7	2,277	44.0	22.2	-1.8	2,127	20.1	5.7	1.4	-1.1	2,720
Second	39.8	16.4	-1.7	2,321	47.3	23.9	-1.8	2,235	17.8	4.9	2.0	-0.9	2,657
Middle	35.4	13.6	-1.6	2,548	43.6	20.9	-1.7	2,481	15.4	5.3	3.4	-0.8	2,641
Fourth	31.1	9.9	-1.4	2,493	33.8	14.9	-1.4	2,462	15.4	3.3	3.8	-0.7	2,482
Richest	17.8	4.6	-1.0	2,072	21.1	8.4	-1.0	2,027	11.7	2.6	4.8	-0.6	2,050

[1] MICS indicator 2.1a and MDG indicator 1.8 - Underweight prevalence (moderate and severe)
[2] MICS indicator 2.1b - Underweight prevalence (severe)
[3] MICS indicator 2.2a - Stunting prevalence (moderate and severe)
[4] MICS indicator 2.2b - Stunting prevalence (severe)
[5] MICS indicator 2.3a - Wasting prevalence (moderate and severe)
[6] MICS indicator 2.3b - Wasting prevalence (severe)
[7] MICS indicator 2.4 - Overweight prevalence

5.2.1 Overall Status of Child Malnutrition

In Sudan, as indicated by the graph below, the overall prevalence of child malnutrition is high: one-third (33 percent) of under-five children are underweight. Approximately two in five children (38.2 percent) under-five years are stunted (too short for their age), and one in six (16.3 percent) children is wasted (too thin for their height).

Figure NU.1a: Percentage of underweight, stunted and wasted children under-five years in Sudan MICS, 2014
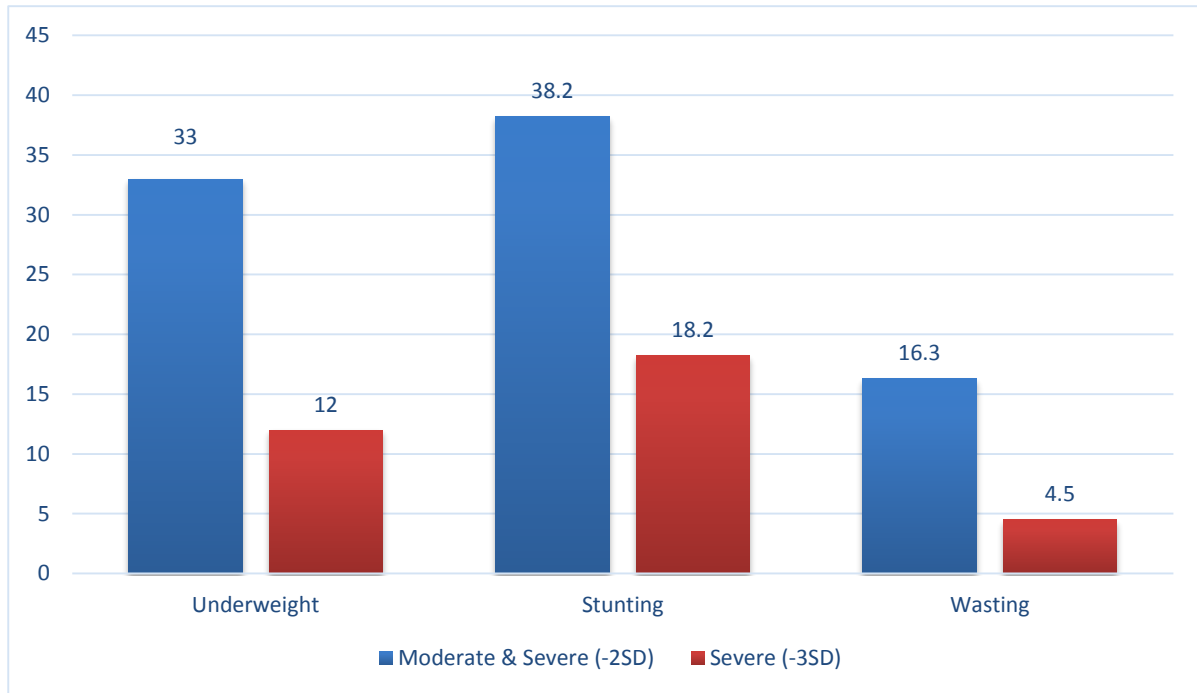
With regard to gender variation in undernutrition, boys were reported to be slightly more underweight, stunted, and wasted than girls. The age pattern shows that a higher percentage of children in the age group 12-23 months, are undernourished according to all three indices, in comparison to children who are in the younger and older age groups (Figure NU.1b). This pattern is expected and related to the age group at which many children cease to be breastfed and are exposed to contamination in water, food, and environment.

Figure NU.1: Underweight, stunted, wasted and overweight children under age 5 (moderate and severe), Sudan MICS, 2014
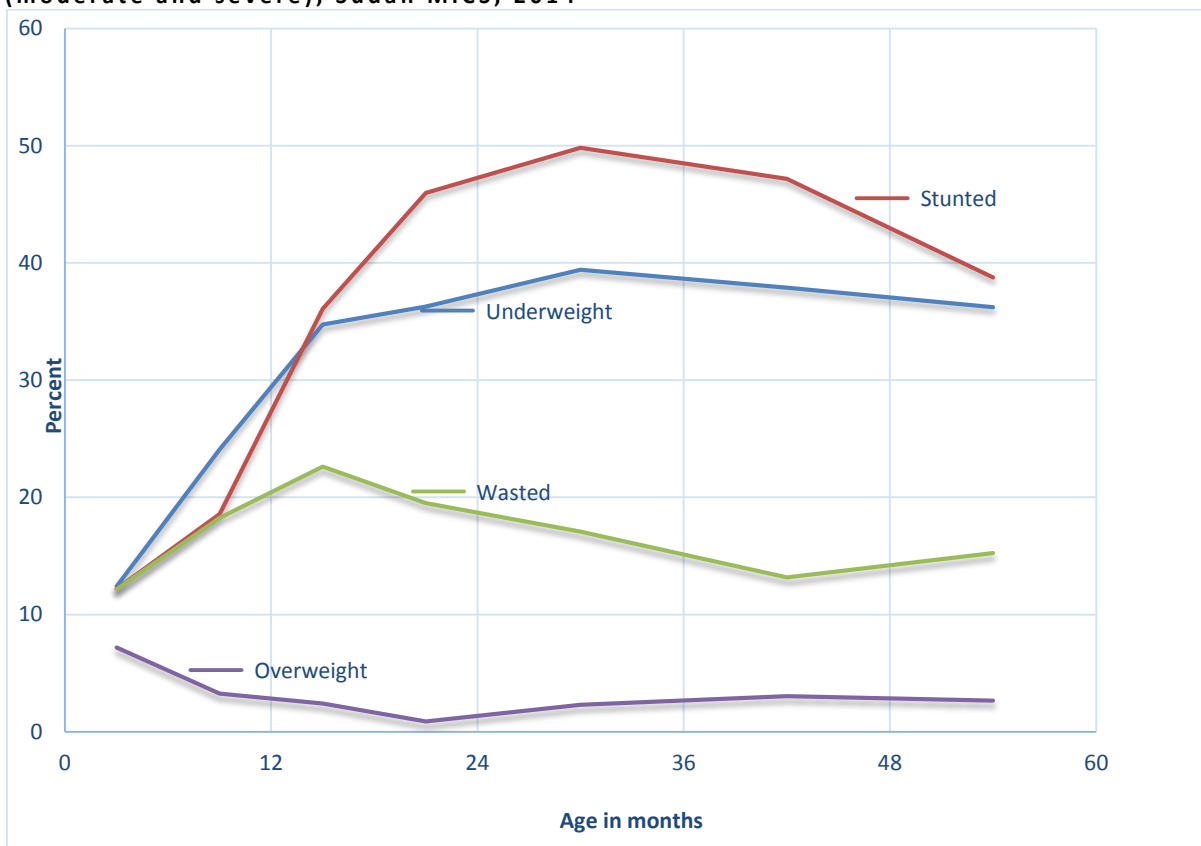
5.2.2 Geographic Inequity in Child Malnutrition

Table NU.2 shows that children living in the rural areas are the most affected by child malnutrition. The prevalence of those underweight is 23.2 percent in urban areas in comparison to 37.1 percent in rural areas. Acute Malnutrition affects 17.4 percent of children living in rural areas in comparison to 13.4 percent for urban areas. The gap is very high regarding child stunting between rural (43 percent) and urban areas (27.1 percent).

In Sudan, children are mostly affected by malnutrition in the states experiencing conflicts and displacements of populations such as Darfur, Kordofan, and Kassala, as indicated below:

- Very high prevalence of underweight children in the states of North Darfur (44.9 percent), Central Darfur (41.0 percent), East Darfur (40.2 percent), West Kordofan (38.7 percent) and Kassala (42.0 percent).
- The lowest prevalence of underweight children is in Northern (21.9 percent), Khartoum (23.2 percent) and White Nile states (29.8 percent).
- High stunting prevalence among children in the state of Kassala is (48.8 percent), Blue Nile (46.7 percent), Central Darfur (47.5 percent), North Darfur (45.9 percent) and East Darfur (46.6 percent).
- Severe wasting prevalence and children likely to be affected are in the states of North Darfur (8.6 percent), West Darfur (6.7 percent), Central Darfur (4.3 percent) and Kassala (5.1 percent).

Figure NU.1b: Percentage of under five children stunted (moderate and severe) by State, Sudan MICS, 2014

State	Percentage
Kassala	48.8
Central Darfor	47.5
Blue Nile	46.7
East Darfor	46.6
Gadarif	46.0
North Darfor	45.9
Red Sea	45.4
West Kordofan	42.5
Gezira	41.6
North Kordofan	40.8
South Kordofan	40.6
Sudan	38.2
Sinnar	38.1
White Nile	36.6
West Darfor	35.2
South Darfor	34.2
River Nile	29.5
Northern	22.6
Khartoum	21.9
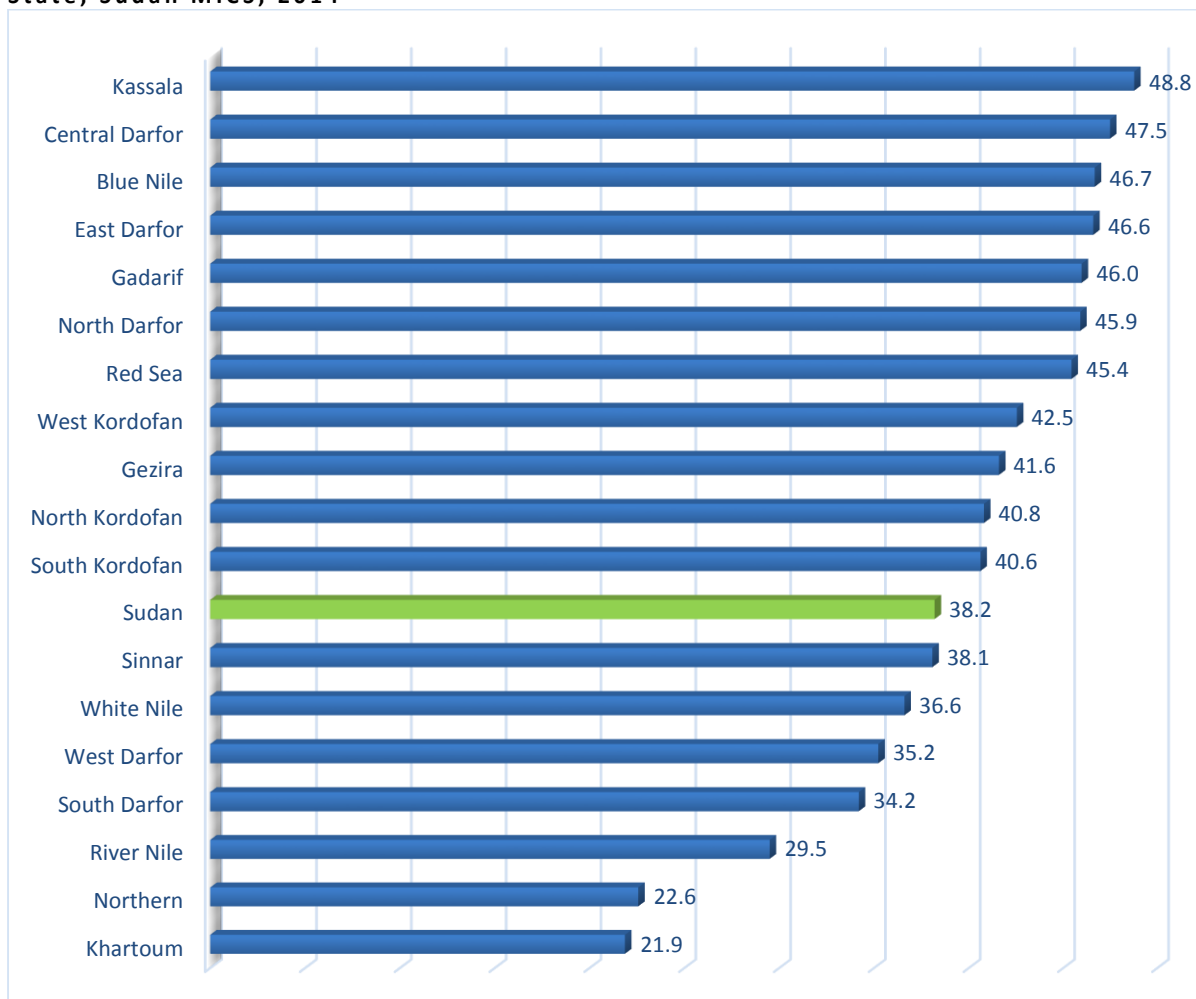
Figure NU.1.c: Percentage of under five children wasted (moderate and severe acute malnutrition) by State, Sudan MICS, 2014

State	Percentage
North Darfor	27.9
River Nile	20.1
West Darfor	19.1
West Kordofan	18.7
Kassala	18.5
Central Darfor	17.8
Sudan	16.3
South Kordofan	16.3
Sinnar	16.0
South Darfor	15.9
Gadarif	15.4
East Darfor	15.3
North Kordofan	14.8
Khartoum	14.5
White Nile	14.4
Gezira	14.0
Red Sea	14.0
Northern	11.4
Blue Nile	11.1
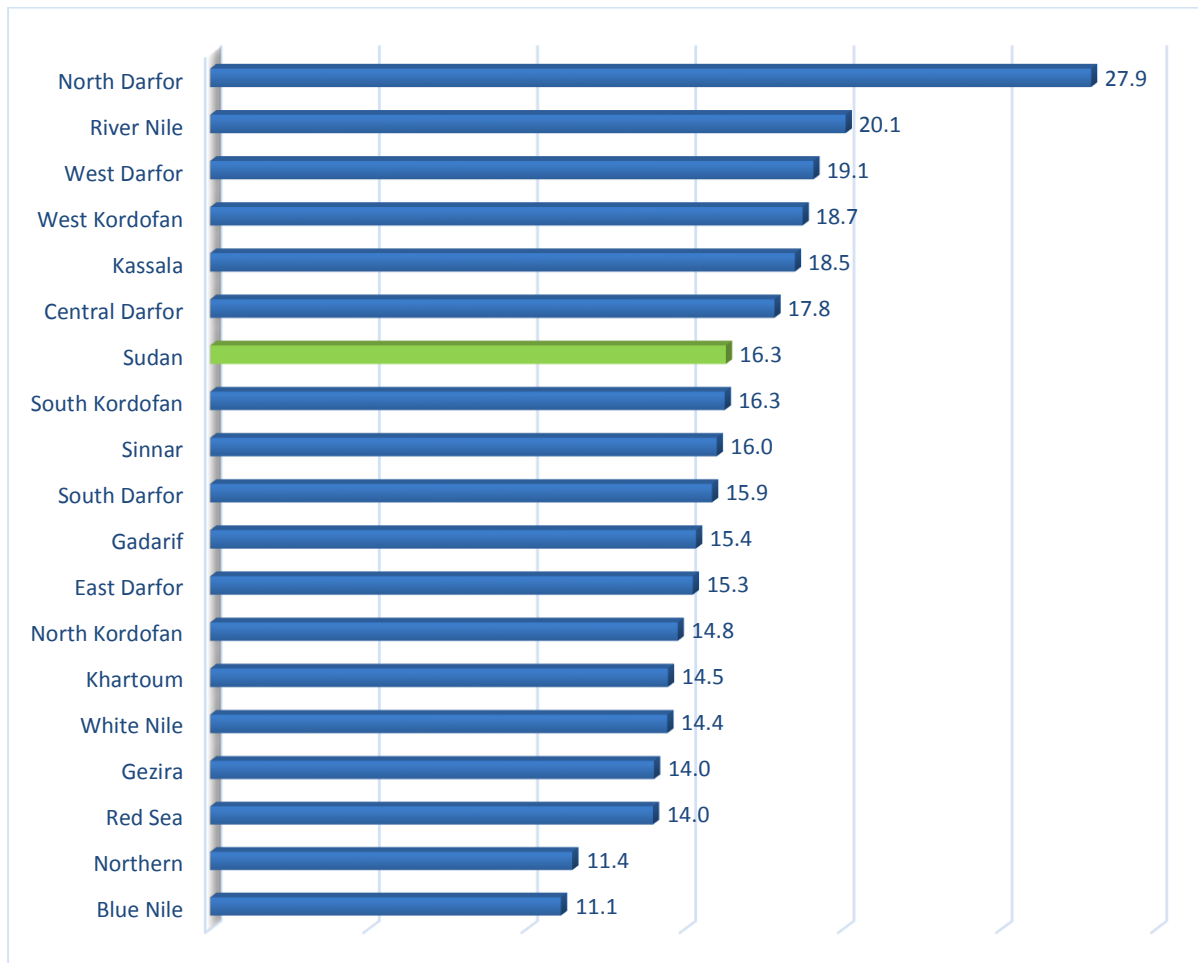
5.2.3 Disparity of Child Malnutrition by Wealth Index Quintile

Figure NU.1d below, shows the disparity in child malnutrition according to household poverty conditions measured through the wealth index and calculated using household assets. The prevalence of underweight, stunting and wasting is highest among children living in poorest households and respectively 39.5 percent, 44.0 percent and 20.1 percent. This is in comparison to low prevalence of malnutrition among children living in the richest households, respectively 17.8 percent, 21.1 percent and 11.7 percent.
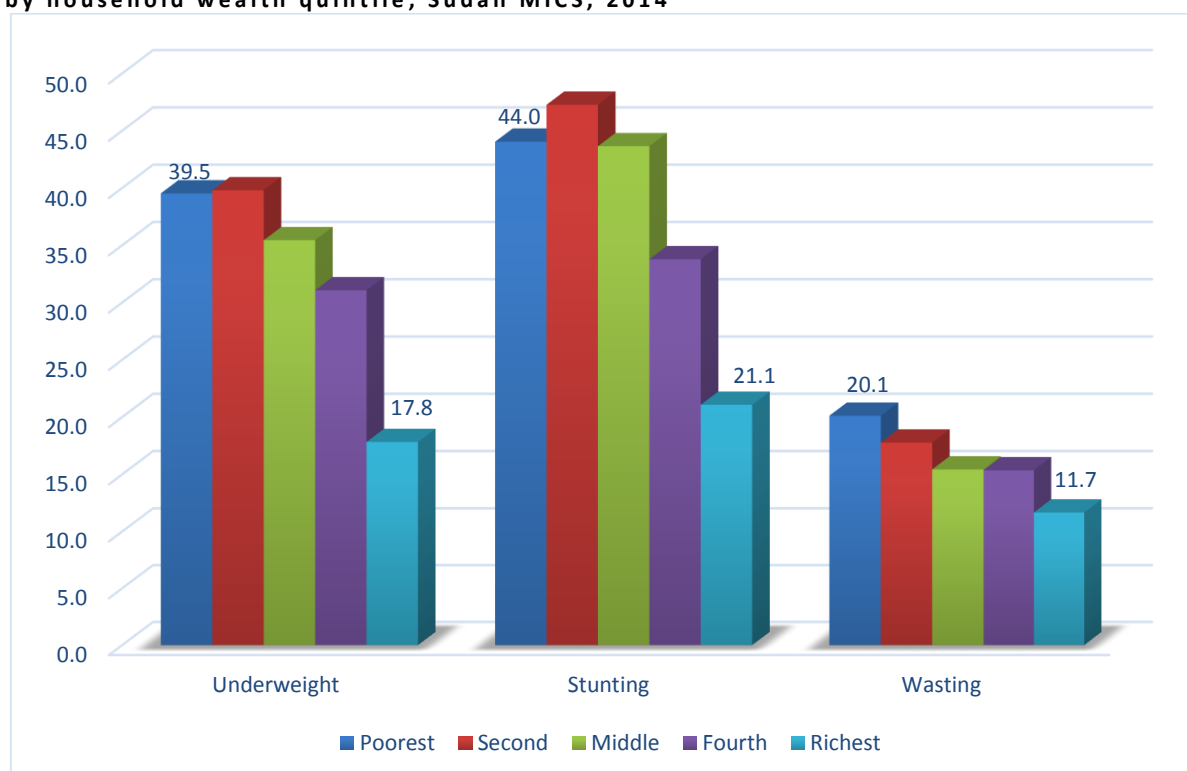
5.2.4 Disparity in Child Malnutrition by Mother's Education

Children whose mothers have had access to secondary or higher education, are the least likely to be underweight and stunted, compared to children of mothers who have received no education as indicated by table NU.2.

5.2.5 Trends in Under-five Nutritional Status from 2006 to 2014

Since 2006, the nutritional status of children in Sudan remains a very challenging issue for child survival. Using the same WHO standard reference, the figure NU1.f below, indicates that there has been no change in the prevalence of acute malnutrition. The prevalence is still over the WHO emergency threshold of 15 percent. The percentage of underweight children also remains high - at the same level of approximately one-third of under-five children, as estimated by all three national surveys; SHHS 2006, SHHS 2010 and MICS 2014.

The prevalence of stunting has increased from 32.5 percent in 2006, 35 percent in 2010 and to 38.2 percent in 2014. With reference to the literature, representations of key determinant factors for increased child malnutrition in Sudan, include:

- A gap in knowledge of mother's of malnourished children
- A gap of capacities of health facilities
- The low effective use of health services due to limited geographic access and financial barriers (poverty issue and health policy of cost recovery)
- Low coverage of use of improved sanitation facilities (33 percent)
- The high prevalence of diarrhoea among children (29percent)
- The continuous influx of displaced populations and refugees.
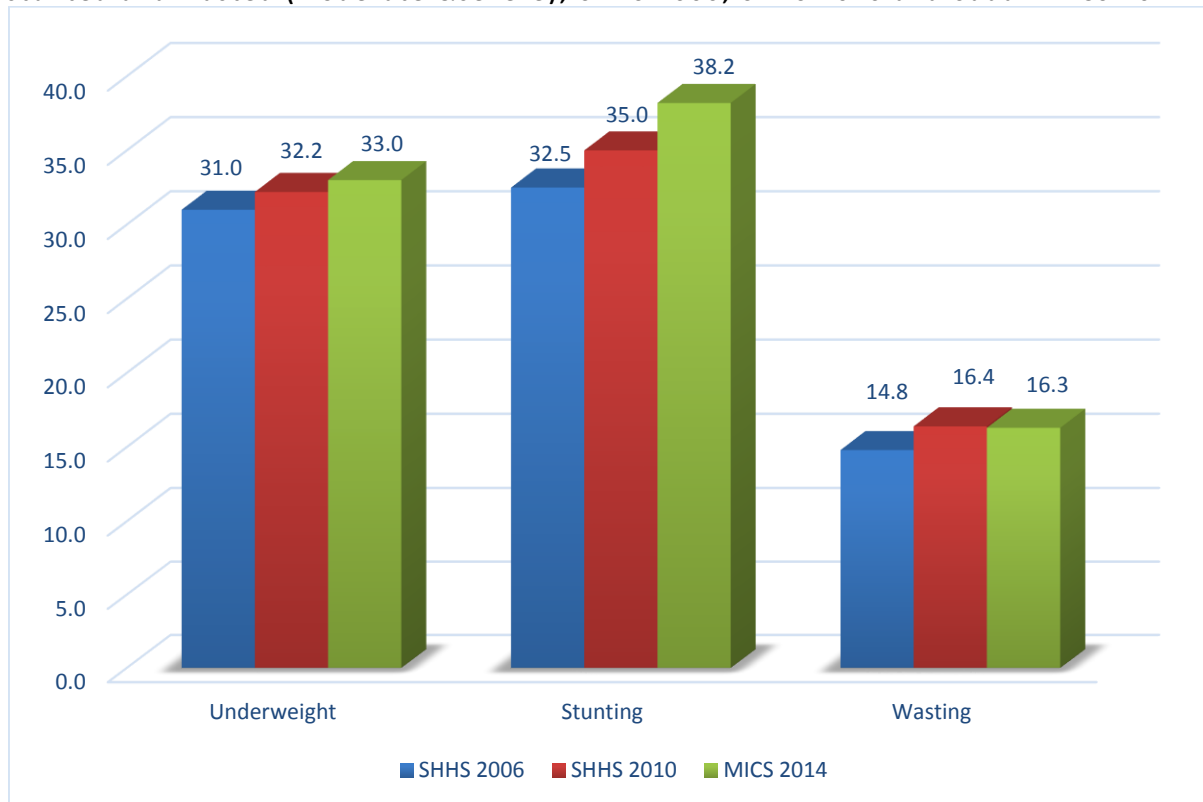
In view of equity, figure NU.1g shows that there is an important increase of stunting (from 15 percent in 2010 to 21.1 percent) among children living in richest household conditions in comparison to low increase affecting poorest children. However, regarding acute malnutrition, there has been a tendency towards an increase of prevalence of wasting among poorest children in comparison to a decrease trend for children living in richest family conditions.

Figure NU.1f: Trend in inequality of Poorest and Richest under five children underweight, stunted or wasted, SHHS 2010 and Sudan MICS, 2014
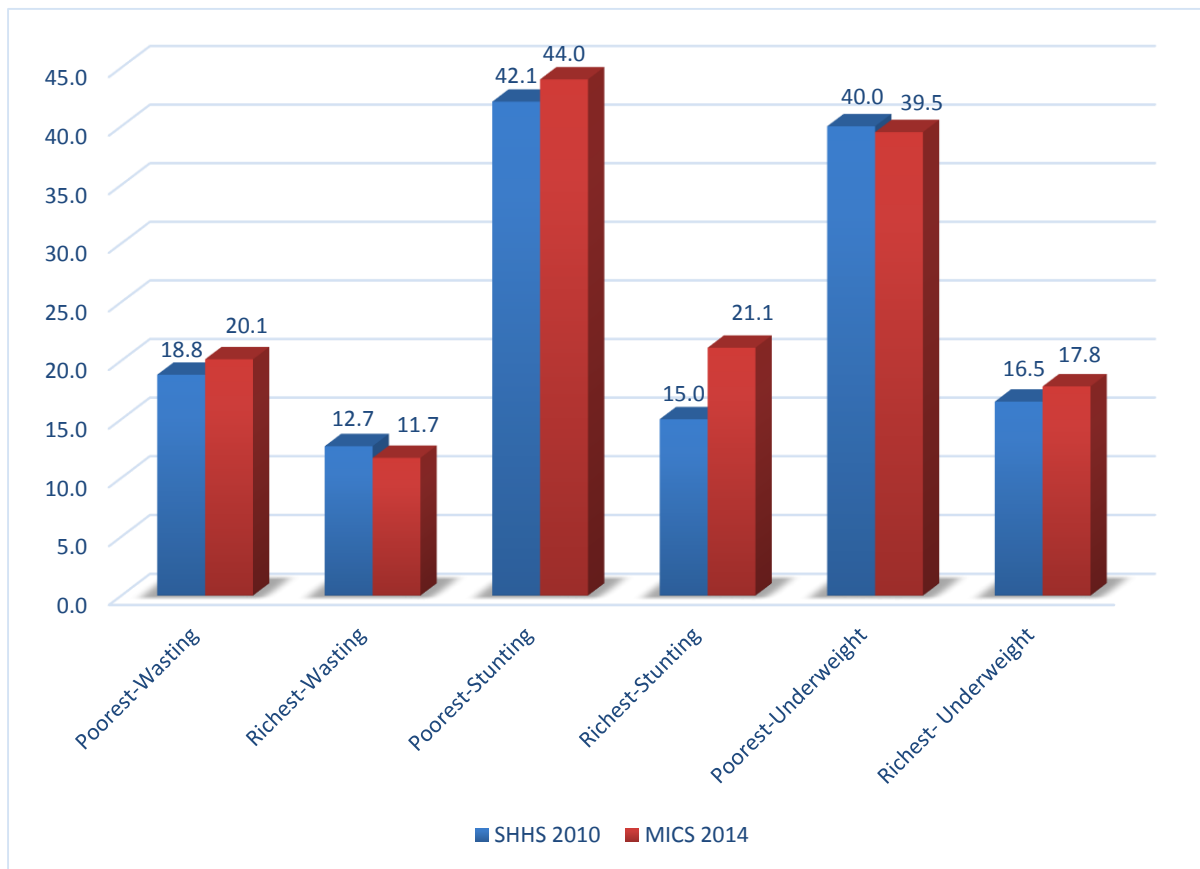
Figure NU.1g, indicates that the prevalence of stunting has increased in the states of Darfur, Kordofan, Blue Nile and Gadarif. However, the prevalence of stunting has decreased in River Nile, Red Sea, Sinnar and Northern States.

The prevalence of acute malnutrition has increased in Darfur, from 24.4 percent in 2010 to 28 percent in 2014.

Figure NU.1g: Trend in Stunted Children under five years (moderate and severe) from SHHS 2010 to Sudan MICS 2014
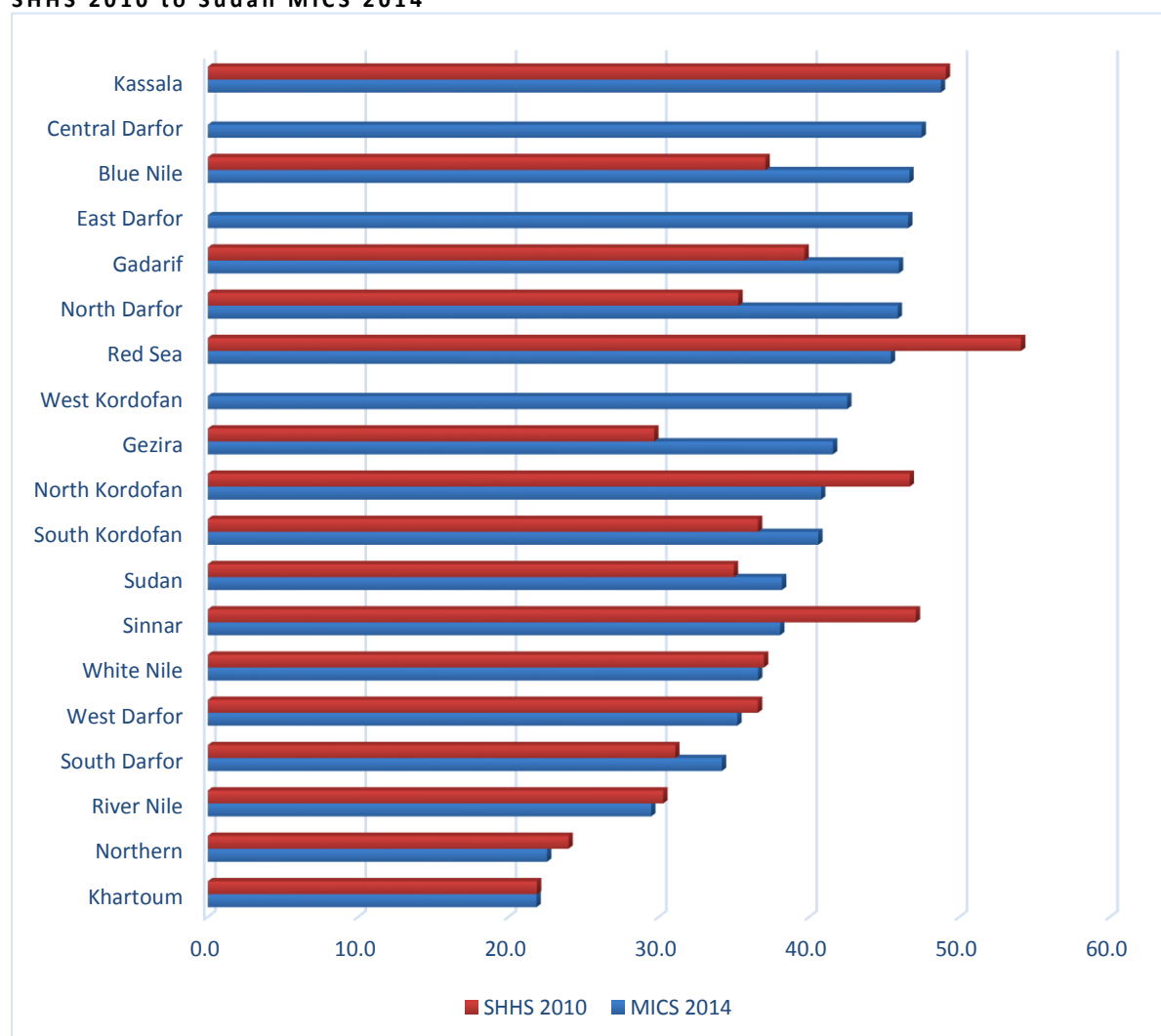
5.3 Breastfeeding and Infant and Young Child Feeding

Proper feeding of infants and young children can increase their chances of survival, and can also promote optimal growth and development, especially in the critical window from birth to 2 years of age. Breastfeeding for the first few years of life protects children from infection, provides an ideal source of nutrients, is economical and safe. However, many mothers do not start to breastfeed early enough, do not breastfeed exclusively for the recommended 6 months, or stop breastfeeding too soon. There are often pressures to switch to infant formula, which can contribute to growth faltering and micronutrient malnutrition. This can also be unsafe if hygienic conditions, including safe drinking water are not readily available.

Studies have shown that, in addition to continued breastfeeding, consumption of appropriate, adequate and safe solid, semi-solid and soft foods from the age of 6 months onwards, leads to better health and growth outcomes, with potential to reduce stunting during the first two years of life.[10]

UNICEF and WHO, recommend that infants be breastfed within one hour of birth, breastfed exclusively for the first six months of life and continue to be breastfed up to 2 years of age and beyond.[11] Starting

---

[10] Bhuta, Z. et al. 2013. *Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?* The Lancet June 6, 2013.

[11] WHO. 2003. *Implementing the Global Strategy for Infant and Young Child Feeding*. Meeting Report Geneva, 3-5 February,

at 6 months, breastfeeding should be combined with safe, age-appropriate feeding of solid, semi-solid and soft foods.[12] A summary of key guiding principles[13, 14] for feeding 6-23 month olds, is provided in the table below along with proximate measures for these guidelines collected in this survey.

The guiding principles for which proximate measures and indicators exist are:
- (i) continued breastfeeding
- (ii) appropriate frequency of meals (but not energy density)
- (iii) appropriate nutrient content of food

Feeding frequency is used as proxy for energy intake, requiring children to receive a minimum number of meals/snacks (and milk feeds for non-breastfed children) for their age. Dietary diversity is used to ascertain the adequacy of the nutrient content of the food (not including iron) consumed. For dietary diversity, seven food groups were created for which a child consuming at least four of these, is considered to have a better quality diet. In most populations, consumption of at least four food groups means that the child has a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable, in addition to a staple food (grain, root or tuber).[15]

These three dimensions of child feeding were combined into an assessment of the children who received appropriate feeding, using the indicator of "minimum acceptable diet".

To have a minimum acceptable diet in the previous day, a child must have received:
- (i) the appropriate number of meals/snacks/milk feeds
- (ii) food items form at least 4 food groups
- (iii) breastmilk or at least 2 milk feeds (for non-breastfed children).

Guiding Principle (age 6-23 months)	Proximate Measures	Table
Continue frequent, on-demand breastfeeding for two years and beyond	Breastfed in the last 24 hours	NU.4
Appropriate frequency and energy density of meals	**Breastfed children** Depending on age, two or three meals/snacks provided in the last 24 hours **Non-breastfed children** Four meals/snacks and/or milk feeds provided in the last 24 hours	NU.6
Appropriate nutrient content of food	Four food groups[16] eaten in the last 24 hours	NU.6
Appropriate amount of food	No standard indicator exists	na
Appropriate consistency of food	No standard indicator exists	na
Use of vitamin-mineral supplements or fortified products for infant and mother	No standard indicator exists	na
Practice good hygiene and proper food handling	While it was not possible to develop indicators to fully capture programme guidance, one standard indicator does cover part of the principle: Not feeding with a bottle with a nipple	NU.9
Practice responsive feeding, applying the principles of psychosocial care	No standard indicator exists	na

---

2003.

[12] WHO. 2003. *Global Strategy for Infant and Young Child Feeding*.

[13] PAHO. 2003. *Guiding principles for complementary feeding of the breastfed child*.

[14] WHO. 2005. *Guiding principles for feeding non-breastfed children 6-24 months of age*.

[15] WHO. 2008. *Indicators for assessing infant and young child feeding practices. Part 1: Definitions*.

[16] Food groups used for assessment of this indicator are 1) Grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables.

5.3.1 Initial Breastfeeding

Table NU.3, is based on the mothers' reports of what their last-born child, born in the last two years, was fed in the first few days of life. It indicates the proportion who were ever breastfed, those who were first breastfed within one hour and one day of birth, and those who received a prelacteal feed.[17]

In Sudan, 95.6 percent of children are ever breastfed. Although a very important step in management of lactation and the establishment of a physical and emotional relationship between the baby and the mother, only 68.7 percent of babies are breastfed for the first time within one hour of birth, while 87.2 percent of newborns in Sudan, start breastfeeding within one day of birth.

The findings are presented in Figure NU.2 by state and area. The relatively low percentage of initial breastfed children within one hour is observed in Central Darfur (48.6 percent) and South Darfur (51.0 percent).

Figure NU.2: Initiation of breastfeeding, Sudan MICS, 2014
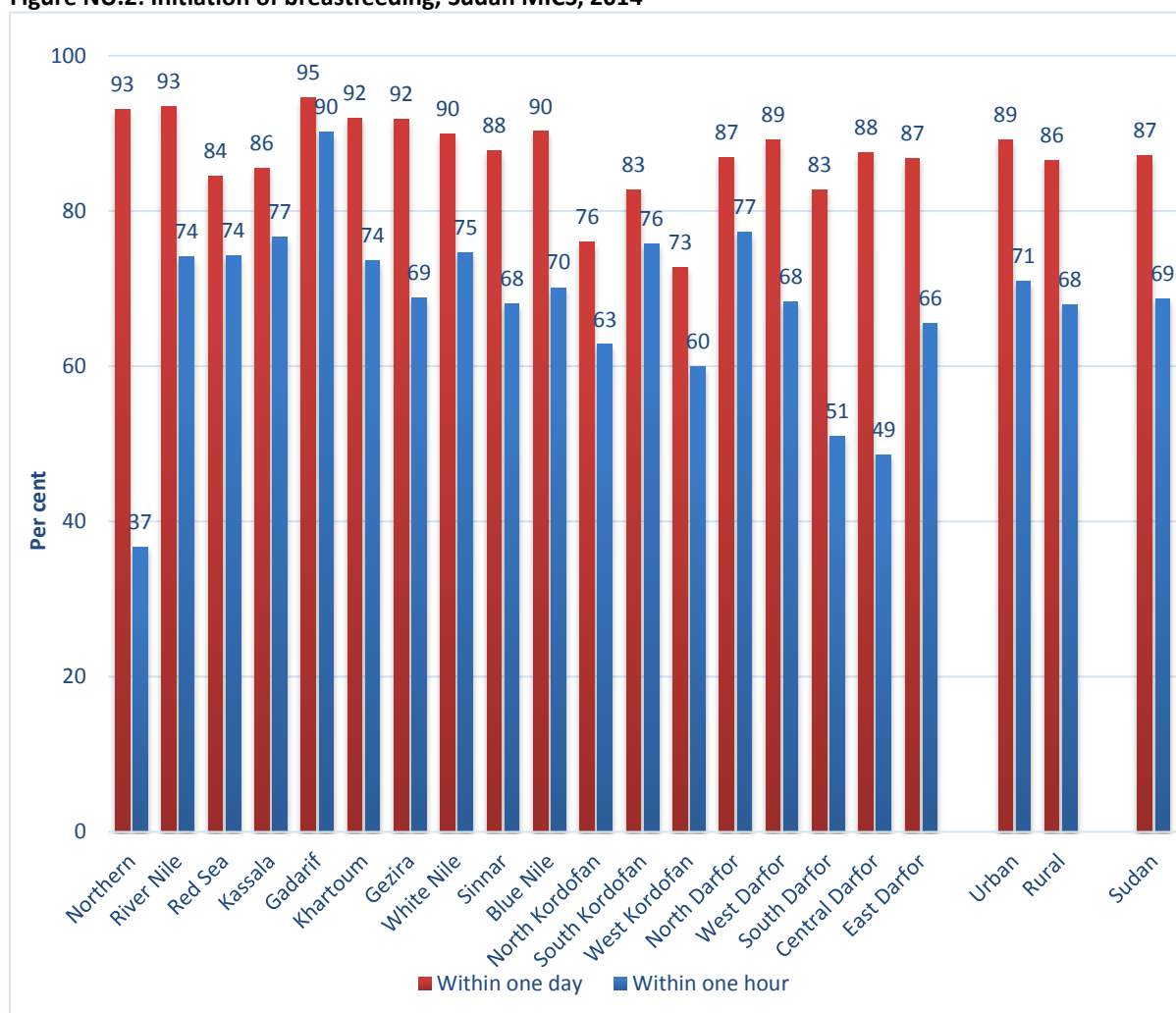
Table NU.3 shows that early breastfeeding of children by mothers within one hour of birth, represents a universal practice of mothers in Sudan, irrespective of their socio-economic status, education level, location of delivery or assistance at delivery by a skilled health worker.

---

[17] Prelacteal feed refers to the provision any liquid or food, other than breastmilk, to a newborn during the period when breastmilk flow is generally being established (estimated here as the first 3 days of life).

Table NU.3: Initial Breastfeeding

❖ Percentage of last live-born children in the last two years who were ever breastfed, breastfed within one hour of birth, and within one day of birth
❖ Percentage who received a pre-lacteal feed
Sudan MICS, 2014

Background Characteristics	Percentage who were ever breastfed [1]	Percentage who were first breastfed:		Percentage who received a pre-lacteal feed	Number of last live-born children in the last two years
		Within one hour of birth [2]	Within one day of birth		
Sudan	95.6	68.7	87.2	28.3	5,622
State					
Northern	99.2	36.7	93.1	44.2	92
River Nile	97.3	74.1	93.5	43.6	151
Red Sea	87.3	74.2	84.4	16.9	92
Kassala	94.9	76.6	85.5	19.5	199
Gadarif	96.8	90.2	94.6	25.7	307
Khartoum	96.9	73.7	91.9	35.9	684
Gezira	95.2	68.8	91.8	35.2	852
White Nile	97.4	74.6	89.9	42.1	273
Sinnar	97.9	68.0	87.7	32.6	226
Blue Nile	98.8	70.1	90.2	25.1	287
North Kordofan	96.9	62.8	76.0	38.6	352
South Kordofan	96.2	75.7	82.8	30.7	194
West Kordofan	88.6	59.9	72.7	11.8	341
North Darfur	95.9	77.2	86.9	10.2	525
West Darfur	93.4	68.3	89.1	3.6	179
South Darfur	95.2	51.0	82.7	28.8	556
Central Darfur	95.8	48.6	87.6	14.9	99
East Darfur	95.7	65.5	86.8	33.9	211
Area					
Urban	96.0	71.0	89.1	30.1	1,488
Rural	95.5	67.9	86.5	27.6	4,134
Months since last birth					
0-11 months	95.5	68.9	86.2	27.0	3,001
12-23 months	95.8	68.5	88.3	29.7	2,620
Assistance at delivery					
Skilled attendant	96.4	70.2	88.8	28.4	4,370
Traditional birth attendant/Daya habil	96.2	65.8	84.2	26.8	1,014
Other	93.7	67.4	84.9	28.7	144
No one/Missing	57.9	33.2	48.9	35.7	94
Place of delivery					
Home	96.4	71.5	87.8	26.3	4,006
Health facility: Public	96.3	63.4	88.1	34.0	1,468
Health facility: Private	96.7	65.1	86.6	37.1	91
Other/Missing	22.9	16.7	18.6	1.6	57
Mother's education					
None	95.5	68.0	85.1	27.7	2,247
Primary	95.9	67.5	87.3	29.4	2,022
Secondary	94.9	73.1	89.8	25.4	942
Higher	97.3	68.8	92.0	32.5	410

49

Table NU.3:	Initial Breastfeeding

Table NU.3: Initial Breastfeeding

❖ Percentage of last live-born children in the last two years who were ever breastfed, breastfed within one hour of birth, and within one day of birth
❖ Percentage who received a pre-lacteal feed
Sudan MICS, 2014

Background Characteristics	Percentage who were ever breastfed [1]	Percentage who were first breastfed:		Percentage who received a pre-lacteal feed	Number of last live-born children in the last two years
		Within one hour of birth [2]	Within one day of birth		
Wealth index quintile					
Poorest	94.4	62.1	81.2	23.9	1,251
Second	95.5	69.8	86.1	22.3	1,232
Middle	97.5	73.1	89.6	30.4	1,192
Fourth	94.6	68.2	89.5	34.3	1,096
Richest	96.4	71.3	91.1	32.5	851

[1] MICS indicator 2.5 - Children ever breastfed
[2] MICS indicator 2.6 - Early initiation of breastfeeding

5.3.2 Young Child Feeding

The set of Infant and Young Child Feeding indicators reported in tables NU.4 through NU.8 are based on the mother's report of children's consumption of food and fluids during the day or night, prior to being interviewed. Data are subject to a number of limitations, some relate to the respondent's ability to provide a full report on the child's liquid and food intake due to recall errors, and lack of knowledge in cases where the child was fed by other individuals.

In Table NU.4, breastfeeding status is presented for both *exclusively breastfed* and *predominantly breastfed. Exclusively breastfed* refers to children aged less than 6 months who received only breast milk (and vitamins, mineral supplements or medicine), distinguished by *the predominantly breastfed,* allowing also plain water and non-milk liquids. The table also shows continued breastfeeding of children at 12-15 and 20-23 months of age.

In Sudan, 55.4 percent of children aged less than six months are exclusively breastfed with limited disparity between girls (54.3 percent) and boys (56.7 percent) and between urban (53.1 percent) and rural areas (56.3 percent). With 80.8 percent predominantly breastfed, it is evident that water-based liquids are displacing feeding of breastmilk to the greatest degree.

Table NU.4: Breastfeeding

Percentage of living children according to breastfeeding status at selected age groups
Sudan MICS, 2014

Background Characteristics	Children age 0-5 months			Children age 12-15 months		Children age 20-23 months	
	Percent exclusively breastfed [1]	Percent pre-dominantly breastfed [2]	Number of children	Percent breastfed (Continued breastfeeding at 1 year) [3]	Number of children	Percent breastfed (Continued breastfeeding at 2 years) [4]	Number of children
Sudan	55.4	80.8	1,516	89.4	1,019	48.8	799
Sex							
Male	56.7	80.4	735	88.5	496	50.7	425
Female	54.3	81.2	781	90.1	523	46.6	375
State							
Northern	(34.7)	(79.5)	21	(93.7)	19	(48.6)	13
River Nile	(38.2)	(81.0)	39	(95.7)	32	(74.6)	17
Red Sea	*	*	17	*	14	*	21
Kassala	61.3	79.5	56	(74.9)	27	(39.8)	23
Gadarif	67.3	86.7	96	85.2	51	(37.7)	38
Khartoum	55.9	81.0	160	98.7	146	49.1	133
Gezira	50.0	83.0	226	87.7	142	52.1	154
White Nile	59.4	84.3	74	94.2	56	(58.7)	31
Sinnar	43.1	83.3	58	91.0	37	(42.1)	30
Blue Nile	54.9	90.4	70	92.1	56	40.5	48
North Kordofan	69.6	87.4	92	(92.7)	56	(36.6)	57
South kordofan	51.3	71.2	56	87.2	31	61.9	25
West Kordofan	43.5	64.2	126	83.9	68	(65.6)	35
North Darfur	75.6	90.3	121	87.0	96	(43.7)	42
West Darfur	57.0	66.7	50	82.7	25	(40.8)	22
South Darfur	50.4	84.7	155	83.4	108	41.9	79
Central Darfur	44.5	65.4	34	84.9	23	*	7
East Darfur	60.3	75.8	65	89.0	35	(54.0)	23
Area							
Urban	53.1	78.9	399	90.4	253	46.7	260
Rural	56.3	81.5	1,117	89.0	767	49.8	539
Mother's education							
None	51.6	80.0	648	85.2	447	55.2	265
Primary	57.2	81.4	581	90.6	322	42.5	302
Secondary	61.3	87.2	193	95.2	183	54.2	154
Higher	59.2	69.8	92	95.0	68	41.0	78
Missing/DK	*	*	1	*	0	*	0
Wealth index quintile							
Poorest	58.4	81.8	364	84.7	231	45.7	124
Second	55.9	77.9	350	90.5	226	49.0	158
Middle	52.4	85.2	332	91.6	229	55.2	163
Fourth	53.4	84.1	274	86.7	179	48.2	212
Richest	57.0	72.1	196	94.5	155	44.7	142

[1] MICS indicator 2.7 - Exclusive breastfeeding under 6 months
[2] MICS indicator 2.8 - Predominant breastfeeding under 6 months
[3] MICS indicator 2.9 - Continued breastfeeding at 1 year
[4] MICS indicator 2.10 - Continued breastfeeding at 2 years ( ) Figures that are based on 25-49 unweighted cases;
(*) Figures that are based on fewer than 25 unweighted cases

51

Figure NU.3: Exclusive Breastfeeding (percent), Sudan MICS, 2014

Exclusively Breastfed

Region	Percent
Sudan	55.4
Rural	56.3
Urban	53.1
Northern	34.7
River Nile	38.2
Sinnar	43.1
West Kordofan	43.5
Central Darfor	44.5
Gezira	50
South Darfor	50.4
South Kordofan	51.3
Red Sea	54.8
Blue Nile	54.9
Khartoum	55.9
West Darfor	57
White Nile	59.4
East Darfor	60.3
Kassala	61.3
Gadarif	67.3
North Kordofan	69.6
North Darfor	75.6
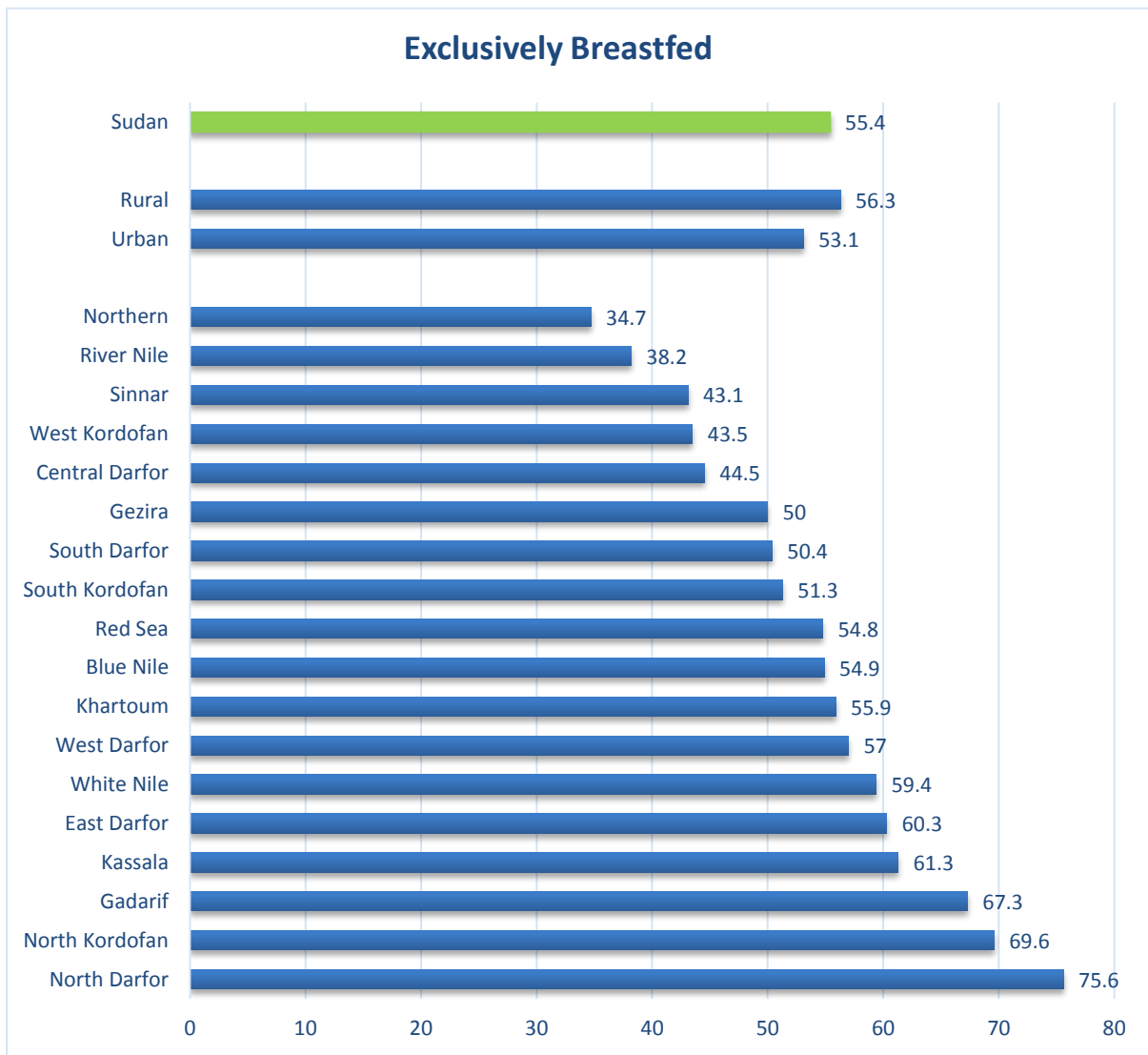
Figure NU.4 shows the detailed pattern of breastfeeding by the child's age in months. Even at the earliest ages, the majority of children are receiving liquids or foods other than breast milk, with local soup named "Salega/Maraga" being of highest prevalence, even at the early age of 0-1 months.

At age 4-5 months, the percentage of children exclusively breastfed is below 20 percent. Only about 0.7 percent of children are receiving breast milk at age 2 years.
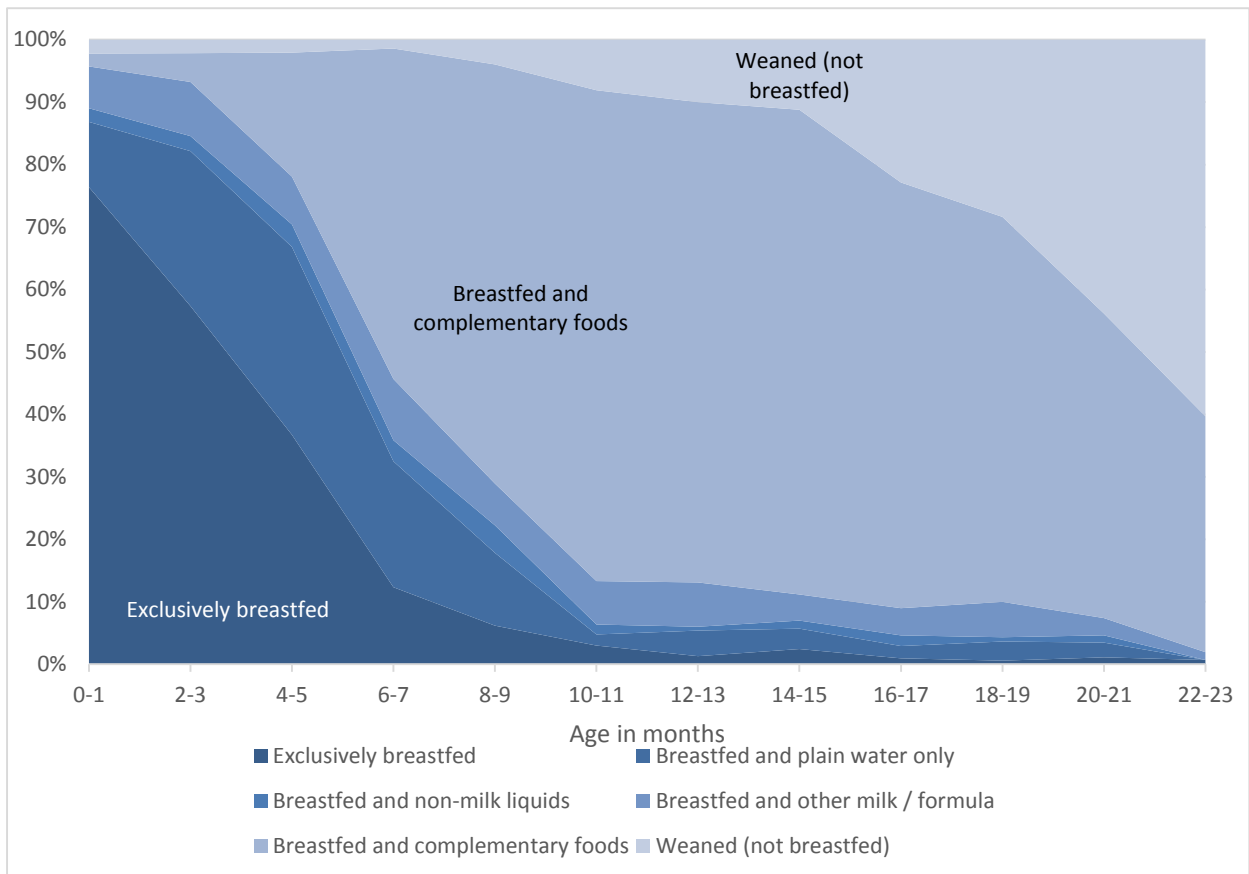
Table NU.5 shows the median duration of breastfeeding by selected background characteristics. Among children under age 36 months, the median duration is 21.2 months for any breastfeeding, 3.1 months for exclusive breastfeeding, and 5.8 months for predominant breastfeeding. There is no significant difference of duration of breastfeeding by geographic area, mother's education and wealth index quintile. However, specific cases of very low duration of exclusive breastfeeding of children is observed in Northern and West Kordofan (0.7 months), River Nile (1.4 months) and Central Darfur (1.9 months).

Table NU.5: Duration of Breastfeeding

Median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children age 0-35 months, Sudan MICS, 2014

Background Characteristics	Median duration (in months) of:			Number of children age 0-35 months
	Any breastfeeding [1]	Exclusive breastfeeding	Predominant breastfeeding	
Median	21.2	3.1	5.8	8,254
Sex				
Male	21.3	3.1	5.7	4,200
Female	21.0	3.0	6.0	4,054
State				
Northern	21.2	.7	4.6	141
River Nile	23.4	1.4	6.1	224
Red Sea	23.5	3.1	4.8	145
Kassala	21.1	4.1	7.1	298
Gadarif	20.1	4.4	6.2	470
Khartoum	21.5	2.9	5.3	1,015
Gezira	21.5	2.5	5.4	1,257
White Nile	21.7	3.2	5.8	435
Sinnar	20.0	2.1	5.4	333
Blue Nile	20.1	3.1	6.7	422
North Kordofan	20.0	4.3	6.0	501
South Kordofan	21.7	2.6	5.8	302
West Kordofan	22.4	.7	5.3	499
North Darfur	20.5	4.8	6.2	682
West Darfur	20.9	4.5	7.0	276
South Darfur	20.7	2.5	6.7	823
Central Darfur	21.5	1.9	6.8	141
East Darfur	21.6	3.5	5.5	288
Area				
Urban	21.0	2.8	5.6	2,268
Rural	21.2	3.2	5.9	5,986
Mother's education				
None	21.4	2.7	6.6	3,358
Primary	20.8	3.2	5.8	2,971
Secondary	21.7	3.3	5.1	1,308
Higher	19.9	3.4	4.2	607
Wealth index quintile				
Poorest	21.0	3.4	6.7	1,794
Second	21.4	3.2	6.0	1,784
Middle	21.5	2.8	6.0	1,773
Fourth	21.1	2.8	5.7	1,608
Richest	20.9	3.2	4.5	1,295
Mean	21.0	3.8	6.4	8,254

[1] MICS indicator 2.11 - Duration of breastfeeding

The age-appropriateness of breastfeeding of children under age 24 months, is provided in Table NU.6. Different criteria of feeding are used depending on the age of the child. For infants aged 0-5 months, exclusive breastfeeding is considered as age-appropriate feeding, while children aged 6-23 months are considered to be appropriately fed if they are receiving breastmilk and solid, semi-solid or soft food.

Overall, 66.0 percent of children aged 6-23 months are being appropriately breastfed. Among children aged 0-23 months, 63.1 percent are age-appropriate breastfeeding. There is disparity of appropriate breastfeeding practices of children aged 0-23 months by state: low level of practice is observed in Central (50.9 percent) and West Darfur (51.2 percent), South Darfur (57.9 percent) and in West Kordofan (54.6 percent). Children from mothers with secondary or high education level and those living in richest households are the most appropriately breastfed in comparison to other groups.

Table NU.6:	Age-appropriate Breastfeeding					

Percentage of children aged 0-23 months who were appropriately breastfed during the previous day
Sudan MICS, 2014

Background Characteristics	Children age 0-5 months		Children age 6-23 months		Children age 0-23 months	
	Percent exclusively breastfed [1]	Number of children	Percent currently breastfeeding and receiving solid, semi-solid or soft foods	Number of children	Percent appropriately breastfed [2]	Number of children
Sudan	55.4	1,516	66.0	4,120	63.1	5,636
Sex						
Male	56.7	735	66.4	2,118	63.9	2,853
Female	54.3	781	65.4	2,002	62.3	2,782
State						
Northern	(34.7)	21	83.0	74	72.4	95
River Nile	38.2	39	82.7	109	71.0	148
Red Sea	(54.8)	17	69.2	72	66.4	89
Kassala	61.3	56	39.4	134	45.8	190
Gadarif	67.3	96	65.4	213	66.0	309
Khartoum	55.9	160	71.1	534	67.6	694
Gezira	50.0	226	70.9	689	65.8	915
White Nile	59.4	74	72.4	210	69.0	284
Sinnar	43.1	58	63.1	169	58.0	227
Blue Nile	54.9	70	68.3	218	65.1	288
North Kordofan	69.6	92	64.0	253	65.5	345
South Kordofan	51.3	56	65.7	132	61.4	189
West Kordofan	43.5	126	60.4	245	54.6	371
North Darfur	75.6	121	65.5	342	68.1	463
West Darfur	57.0	50	49.0	131	51.2	180
South Darfur	50.4	155	60.9	392	57.9	547
Central Darfur	44.5	34	54.1	67	50.9	101
East Darfur	60.3	65	65.0	136	63.5	202
Area						
Urban	53.1	399	68.7	1,104	64.6	1,503
Rural	56.3	1,117	64.9	3,016	62.6	4,133
Mother's education						
None	51.6	648	60.6	1,577	57.9	2,225
Primary	57.2	581	66.0	1,478	63.5	2,059
Secondary	61.3	193	74.9	734	72.1	927
Higher	59.2	92	72.0	329	69.2	421
Missing/DK	*	1	*	1	*	2
Wealth index quintile						
Poorest	58.4	364	59.6	848	59.2	1,212
Second	55.9	350	62.7	876	60.7	1,225
Middle	52.4	332	66.2	867	62.4	1,199
Fourth	53.4	274	68.0	867	64.5	1,142
Richest	57.0	196	75.5	661	71.3	858

[1] MICS indicator 2.7 - Exclusive breastfeeding under 6 months
[2] MICS indicator 2.12 - Age-appropriate breastfeeding
( ) Figures that are based on 25-49 unweighted cases
[*] Based on less than 25 unweighted cases and has been suppressed.

Overall, 61.2 percent of infants aged 6-8 months received solid, semi-solid, or soft foods at least once during the previous day (Table NU.7). Among currently breastfeeding infants, this percentage is 61.1 percent while it is 63.4 percent among infants currently not breastfeeding.

The practice of introduction of solid, semi-solid and soft foods to children aged 6-8 months currently breastfeeding, varies by sex of children (62.4 percent for boys and 59.7 percent for girls) and by urban (67.9 percent) and rural areas (58.9 percent).

Table NU.7:	Introduction of Solid, Semi-solid, or Soft Foods					
Percentage of infants aged 6-8 months who received solid, semi-solid, or soft foods during the previous day Sudan MICS, 2014						
	Currently breastfeeding		Currently not breastfeeding		All	
Background Characteristics	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods [1]	Number of children age 6-8 months
Sudan	61.1	798	*	19	61.2	817
Sex						
Male	62.4	427	*	9	62.0	436
Female	59.7	371	*	10	60.2	381
Area						
Urban	67.9	192	*	5	68.1	198
Rural	58.9	605	*	14	59.0	619

[1] MICS indicator 2.13 - Introduction of solid, semi-solid or soft foods
[*] Based on less than 25 unweighted cases and has been suppressed.

Table NU.8 on the next page, indicates that more than one-fourth of the children aged 6-23 months (40.7 percent) were receiving solid, semi-solid and soft foods the minimum number of times. There is no difference of practices for boys (40.7 percent) and girls (40.7 percent) in achieving the minimum meal frequency.

The proportion of children receiving the minimum dietary diversity, or foods from at least 4 food groups (28.0 percent), was much lower than that for minimum meal frequency (40.7 percent).
This highlights the need to focus on improving diet quality and nutrient intake among this vulnerable group.

A slightly higher proportion of older (18-23 month, old) children (37.2 percent) were achieving the minimum dietary diversity compared to younger children aged between 6-8 month old (9.2 percent).

The overall assessment using the indicator of minimum acceptable diet, revealed that only 15.1 percent of children were benefitting from a diet sufficient in both diversity and frequency.

A very low percentage of children are benefiting from a diet sufficient in both diversity and frequency in the states of:

- Kassala (3.4 percent)
- South Darfur (6.0 percent)
- North Darfur (6.6 percent)
- Central Darfur (6.9 percent)
- North Kordofan (9.0 percent).

These figures unfavourably compare to the high percentages of diet sufficiency in both diversity and frequency in the below states:

- Northern (48.4 percent)
- River Nile (29.4 percent)
- Sinnar (21.5 percent) states

Children from uneducated mothers/caretakers are less covered (10.8 percent) than children from higher educated mothers (30.1 percent). Children of poorest households are among those less benefiting from a diet sufficient in both diversity and frequency (6.4 percent) in comparison to children living in rich household conditions (29.6 percent).

Table NU.8: Infant and Young Child Feeding (IYCF) Practices

Percentage of children age 6-23 months who received appropriate liquids and solid, semi-solid, or soft foods the minimum number of times or more during the previous day, by breastfeeding status
Sudan MICS, 2014

Background Characteristics	Currently breastfeeding				Currently not breastfeeding					All			
	Percent of children who received:			Number of children age 6-23 months	Percent of children who received:				Number of children age 6-23 months	Percent of children who received:			Number of children age 6-23 months
	Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [1], [c]		Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [2], [c]	At least 2 milk feeds [3]		Minimum dietary diversity [4], [a]	Minimum meal frequency [5], [b]	Minimum acceptable diet [c]	
Sudan	25.0	37.0	15.0	3,325	42.0	57.7	15.3	57.5	718	28.0	40.7	15.1	4,120
Sex													
Male	25.2	36.9	15.2	1,722	42.7	59.3	15.8	58.6	353	28.1	40.7	15.3	2,118
Female	24.9	37.1	14.8	1,603	41.3	56.1	14.7	56.5	365	27.9	40.7	14.8	2,002
Age													
6-8 months	8.9	38.8	6.6	798	*	*	*	*	12	9.2	38.7	6.6	817
9-11 months	25.8	34.5	15.1	589	(38.2)	(48.3)	(13.3)	(46.3)	36	26.3	35.3	15.0	631
12-17 months	31.6	37.3	18.1	1,271	33.0	61.1	12.6	64.7	190	31.8	40.4	17.4	1,486
18-23 months	31.2	36.5	19.1	667	46.1	57.8	16.7	56.1	480	37.2	45.4	18.1	1,186
State													
Northern	63.3	72.8	49.8	62	(76.1)	(72.2)	(41.1)	(56.7)	12	65.4	72.7	48.4	74
River Nile	41.5	52.1	27.8	100	*	*	*	*	9	44.5	52.8	29.4	109
Red Sea	36.1	27.1	12.8	64	*	*	*	*	8	36.7	30.3	13.2	72
Kassala	5.4	12.4	.3	100	(30.4)	(52.1)	(14.5)	(72.6)	28	11.6	21.0	3.4	134
Gadarif	29.2	40.2	20.0	166	(43.7)	(57.2)	(19.6)	(58.8)	45	32.3	43.9	19.9	213
Khartoum	39.9	26.4	12.1	435	(65.7)	(51.1)	(20.3)	(69.2)	88	44.0	30.6	13.5	534
Gezira	23.5	50.1	19.4	559	(45.7)	(68.2)	(11.8)	(51.8)	117	27.7	53.2	18.1	689
White Nile	31.3	39.0	19.4	178	(60.7)	(72.6)	(23.6)	(79.0)	29	36.0	43.8	20.0	210

Table NU.8: Infant and Young Child Feeding (IYCF) Practices

Percentage of children age 6-23 months who received appropriate liquids and solid, semi-solid, or soft foods the minimum number of times or more during the previous day, by breastfeeding status Sudan MICS, 2014

| Background Characteristics | Currently breastfeeding | | | | Currently not breastfeeding | | | | | All | | | |
| | Percent of children who received: | | | Number of children age 6-23 months | Percent of children who received: | | | | Number of children age 6-23 months | Percent of children who received: | | | Number of children age 6-23 months |
	Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [1], [c]		Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [2], [c]	At least 2 milk feeds [3]		Minimum dietary diversity [4], [a]	Minimum meal frequency [5], [b]	Minimum acceptable diet [c]	
Sinnar	26.5	50.8	24.3	133	43.1	68.1	10.2	50.5	33	29.8	54.2	21.5	169
Blue Nile	34.4	43.6	22.3	176	71.0	61.5	21.4	59.0	41	41.7	47.0	22.1	218
North Kordofan	16.1	37.7	10.4	201	(24.1)	(37.3)	(2.4)	(37.1)	42	17.8	37.6	9.0	253
South Kordofan	21.4	40.5	13.6	109	34.6	59.2	15.3	42.9	22	23.5	43.6	13.9	132
West Kordofan	27.9	37.0	20.6	197	(21.0)	(52.6)	(12.6)	(69.8)	42	26.1	39.8	19.2	245
North Darfur	7.4	30.5	6.1	266	15.0	47.4	8.5	40.4	69	8.8	34.0	6.6	342
West Darfur	22.0	25.3	12.3	107	59.3	(55.6)	(25.9)	(64.6)	23	28.4	30.7	14.7	131
South Darfur	13.8	22.1	4.3	309	28.0	61.5	13.2	65.2	75	16.5	29.8	6.0	392
Central Darfur	11.9	29.7	5.7	52	(25.7)	(30.4)	(13.2)	(34.8)	10	13.8	29.8	6.9	67
East Darfur	14.1	38.8	9.0	112	(27.7)	(65.8)	(11.0)	(47.7)	23	16.3	43.5	9.3	136
Area													
Urban	36.1	34.9	16.5	877	58.8	59.4	26.7	65.0	201	40.1	39.5	18.4	1,104
Rural	21.1	37.8	14.5	2,448	35.5	57.0	10.8	54.6	517	23.6	41.1	13.9	3,016
Mother's education													
None	16.2	31.3	10.7	1,276	27.1	55.2	11.4	57.8	271	18.4	35.5	10.8	1,577
Primary	20.4	37.5	11.0	1,186	41.3	57.4	14.7	50.0	266	24.1	41.2	11.7	1,478
Secondary	42.2	44.0	24.8	608	65.7	60.4	21.6	67.2	114	45.2	46.6	24.3	734
Higher	49.9	46.4	32.0	254	(65.7)	(64.5)	(22.6)	(69.4)	66	53.2	50.2	30.1	329
Missing/DK	*	*	*	0	*	*	*	*	1	*	*	*	1

Table NU.8:   Infant and Young Child Feeding (IYCF) Practices

Percentage of children age 6-23 months who received appropriate liquids and solid, semi-solid, or soft foods the minimum number of times or more during the previous day, by breastfeeding status
Sudan MICS, 2014

Background Characteristics	Currently breastfeeding				Currently not breastfeeding					All			
	Percent of children who received:			Number of children age 6-23 months	Percent of children who received:				Number of children age 6-23 months	Percent of children who received:			Number of children age 6-23 months
	Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [1], [c]		Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [2], [c]	At least 2 milk feeds [3]		Minimum dietary diversity [4], [a]	Minimum meal frequency [5], [b]	Minimum acceptable diet [c]	
Wealth index quintile													
Poorest	10.7	28.8	6.6	680	12.4	55.5	5.4	57.3	154	11.0	33.8	6.4	848
Second	17.4	31.6	11.5	712	27.5	46.5	9.3	48.3	144	18.9	34.1	11.1	876
Middle	23.2	40.3	13.9	703	49.6	56.0	16.1	57.4	153	28.2	43.1	14.3	867
Fourth	27.6	41.3	17.2	688	52.2	68.1	17.8	58.3	159	32.3	46.3	17.3	867
Richest	52.1	44.8	29.0	541	78.3	63.0	32.6	69.4	107	56.1	47.8	29.6	661

[1] MICS indicator 2.17a - Minimum acceptable diet (breastfed)

[2] MICS indicator 2.17b - Minimum acceptable diet (non-breastfed)

[3] MICS indicator 2.14 - Milk feeding frequency for non-breastfed children

[4] MICS indicator 2.16 - Minimum dietary diversity

[5] MICS indicator 2.15 - Minimum meal frequency

[a] Minimum dietary diversity is defined as receiving foods from at least 4 of 7 food groups: 1) Grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables

[b] Minimum meal frequency among currently breastfeeding children is defined as children who also received solid, semi-solid, or soft foods 2 times or more daily for children aged 6-8 months and 3 times or more daily for children aged 9-23 months. For non-breastfeeding children aged 6-23 months it is defined as receiving solid, semi-solid or soft foods, or milk feeds, at least 4 times

[c] The minimum acceptable diet for breastfed children aged 6-23 months is defined as receiving the minimum dietary diversity and the minimum meal frequency, while for non-breastfed children it further requires at least 2 milk feedings and that the minimum dietary diversity is achieved without counting milk feeds

( ) Figures that are based on 25-49 unweighted cases

[*] Based on less than 25 unweighted cases and has been suppressed.

The continued practice of bottle-feeding is a concern due to the possibility of contamination resulting from exposure to unsafe water and lack of appropriate hygiene practices during preparation.

Table NU.9 shows that 7.3 percent of infants in Sudan are bottle fed. About 7.4 percent of children under 6 months are fed using a bottle with a nipple. Bottle-feeding of children is very prevalent in Red Sea (20.7 percent), Northern (16.7 percent) and Central Darfur (16.2 percent) states of Sudan. This practice is more common in urban areas, among richest households and in households with mothers who have received a higher education.

Table NU.9: Bottle Feeding		
Percentage of children aged 0-23 months who were fed with a bottle with a nipple during the previous day Sudan MICS, 2014		
Background Characteristics	Percentage of children aged 0-23 months fed with a bottle with a nipple [1]	Number of children aged 0-23 months:
Sudan	7.3	5,636
Sex		
Male	6.9	2,853
Female	7.8	2,782
Age		
0-5 months	7.4	1,516
6-11 months	9.0	1,448
12-23 months	6.4	2,672
State		
Northern	16.7	95
River Nile	10.3	148
Red Sea	20.7	89
Kassala	14.5	190
Gadarif	4.7	309
Khartoum	13.8	694
Gezira	5.9	915
White Nile	8.6	284
Sinnar	5.6	227
Blue Nile	1.6	288
North Kordofan	4.4	345
South Kordofan	7.4	189
West Kordofan	5.6	371
North Darfur	2.6	463
West Darfur	8.1	180
South Darfur	5.0	547
Central Darfur	16.2	101
East Darfur	5.1	202
Area		
Urban	10.6	1,503
Rural	6.2	4,133
Mother's education	6.0	2,225
None	5.3	2,059
Primary	9.7	927
Secondary	19.0	421
Higher	*	2

Table NU.9: Bottle Feeding		
Percentage of children aged 0-23 months who were fed with a bottle with a nipple during the previous day Sudan MICS, 2014		
Background Characteristics	Percentage of children aged 0-23 months fed with a bottle with a nipple [1]	Number of children aged 0-23 months:
Wealth index quintile		
Poorest	4.0	1,212
Second	5.8	1,225
Middle	5.5	1,199
Fourth	8.3	1,142
Richest	15.7	858

[1] MICS indicator 2.18 - Bottle feeding
[*] Based on less than 25 unweighted cases and has been suppressed.

5.4 Salt Iodization

Iodine Deficiency Disorders (IDD) is the world's leading cause of preventable intellectual disability and impaired psychomotor development in young children. In its most extreme form, iodine deficiency causes severe stunted physical and mental development. It also increases the risks of stillbirth and miscarriage in pregnant women. Iodine deficiency is most commonly and visibly associated with goitre. Due to IDD taking its greatest toll in impaired mental growth and development, this contributes to poor school performance, reduced intellectual ability, and impaired work performance.

The indicator is the percentage of households consuming adequately iodized salt (>15 parts per million).National laws required to support key nutrition interventions such as food fortification, salt iodization and the breast milk substitute code are absent or have not been enforced.

During 2014 MICS field data collection, salt used in cooking was tested for iodine content by using salt test kits and investigating the presence of indicate whether salt was checked for potassium iodide or potassium iodate content, or both. Table NU.10 shows that cooking salt was tested in 93.9 percent of households surveyed. The table also shows that in 4.8 percent of households, there was no salt available. These households are included in the denominator of the indicator.

As a result of the absence of national law in Sudan, only 7.6 percent of households have adequately iodized salt (which contains 15 parts per million ppm or more of iodine). Use of adequately iodized salt is lowest in the states of:

- West Kordofan (2.9 percent)
- Blue Nile (3.1 percent)
- Red Sea (3.2 percent)
- Khartoum (3.3 percent)

Use of adequately iodized sald is recorded to be relatively highest in the states of:
- East Darfur (18.1 percent)
- Central Darfur (14.8 percent)
- Sinnar (15.6 percent)

Disparity is very low between urban (9.0 percent) and rural areas (7.0 percent).
There is no difference of iodized salt consumption between the richest (8.8 percent) and poorest households (8.1 percent).

Figure NU.5, presents the percentage of adequately iodized salt and also salt containing less than 15 ppm.

Figure NU.5: Consumption of iodized salt: Percentage of households consuming adequately iodized salt, Sudan MICS, 2014

Legend: ■ Any iodine ■ 15+ PPM of iodine
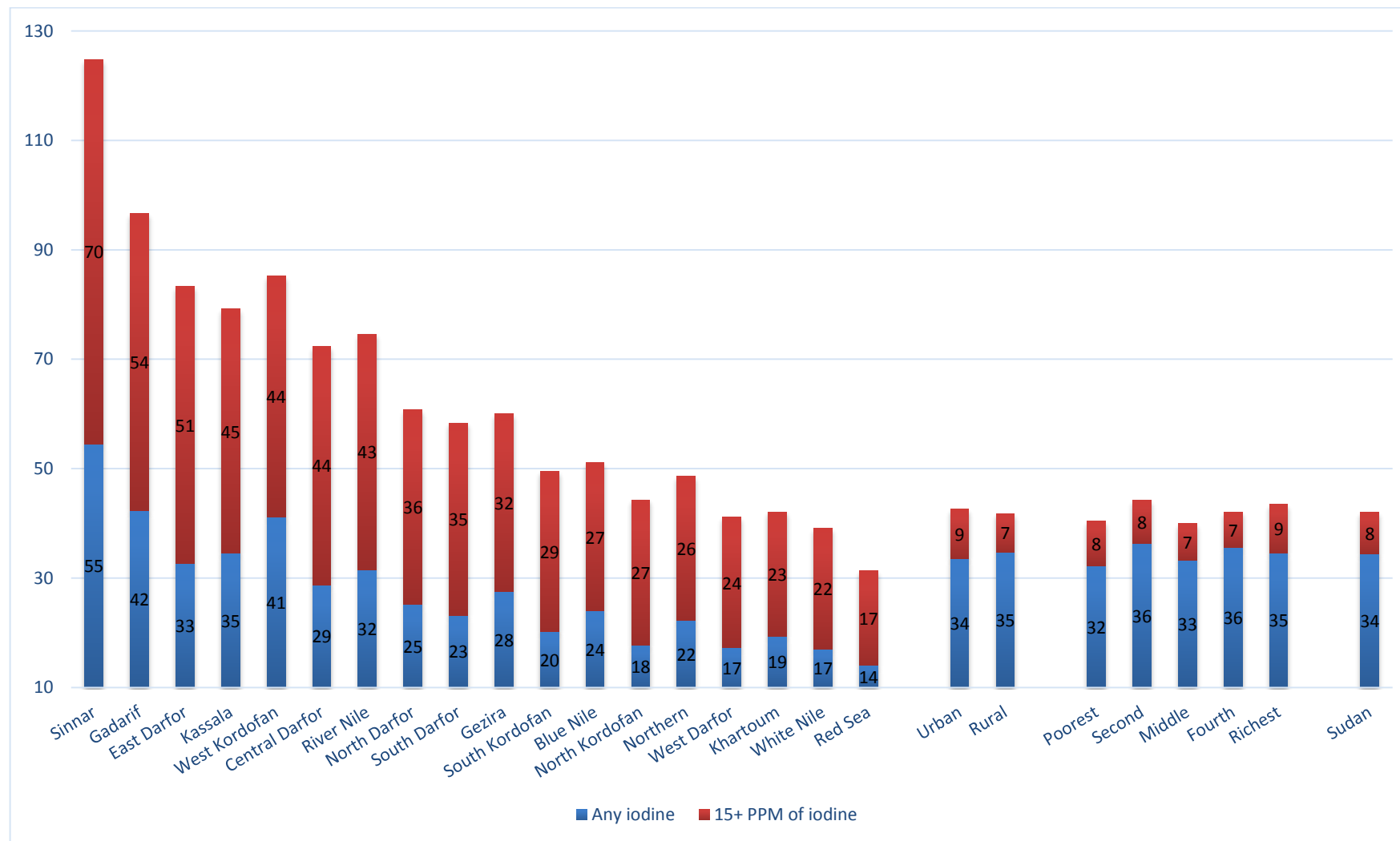
Table NU.10: Iodized Salt Consumption

Percent distribution of households by consumption of iodized salt
Sudan MICS, 2014

Background Characteristics	Percent of households in which salt was tested	Number of households	Percent of households with salt test result				Number of households in which salt was tested or with no salt
			Percent of households with no salt	Not iodized 0 PPM	>0 and <15 PPM	15+ PPM [1]	
Sudan	93.9	16,801	4.8	60.7	26.8	7.6	16,574
State							
Northern	96.5	423	1.1	72.6	22.3	4.0	413
River Nile	98.6	666	0.9	56.0	31.5	11.5	663
Red Sea	94.6	519	3.3	79.4	14.1	3.2	508
Kassala	94.6	722	5.2	50.2	34.6	10.0	721
Gadarif	92.7	858	6.0	39.6	42.3	12.2	847
Khartoum	95.5	2,317	2.5	74.8	19.4	3.3	2,270
Gezira	96.3	2,629	3.6	63.9	27.6	4.8	2,626
White Nile	93.7	874	5.8	72.3	17.1	4.9	869
Sinnar	91.4	661	7.7	22.1	54.6	15.6	654
Blue Nile	93.4	656	6.4	66.5	24.0	3.1	654
North Kordofan	93.6	1,125	2.8	70.5	17.7	9.0	1,084
South Kordofan	94.9	462	3.5	67.2	20.2	9.1	455
West Kordofan	94.2	1,003	4.5	51.5	41.2	2.9	990
North Darfur	90.6	1,243	6.7	57.7	25.2	10.4	1,208
West Darfur	95.6	553	2.9	73.2	17.3	6.6	545
South Darfur	88.7	1,282	10.8	54.1	23.2	11.9	1,274
Central Darfur	92.5	299	5.2	51.3	28.8	14.8	292
East Darfur	89.2	508	9.8	39.5	32.6	18.1	502
Area							
Urban	94.9	5,000	3.6	62.8	24.6	9.0	4,921
Rural	93.5	11,801	5.4	59.9	27.7	7.0	11,652
Wealth index quintile							
Poorest	90.7	3,368	7.7	60.0	24.1	8.1	3,310
Second	92.2	3,592	6.2	57.5	28.3	8.0	3,534
Middle	93.2	3,339	5.5	61.2	26.6	6.7	3,293
Fourth	95.7	3,209	3.5	61.0	29.1	6.5	3,181
Richest	97.8	3,293	1.1	64.3	25.8	8.8	3,256

[1] MICS indicator 2.18 - Bottle feeding

5.5 Children's Vitamin A supplementation

Tables Nu.11 and Figure NU.6 below, show that 78.1 percent of children in Sudan have received the Vitamin A supplementation during the last 6 months preceding the survey. The coverage of Vitamin A varies by state, age of children, mother's education and wealth index quintile.

Table NU.11: Children's Vitamin A Supplementation		
Percent distribution of children aged 6-59 months by receipt of a high dose vitamin A supplement in the last 6 months Sudan MICS, 2014		
Background characteristics	Percentage of children who received Vitamin A during the last 6 months [1]	Number of children age 6-59 months
Sudan	**78.1**	**12,565**
Child's Sex		
Male	78.5	6,422
Female	77.6	6,143
State		
Northern	83.2	215
River Nile	85.2	355
Red Sea	79.0	226
Kassala	74.3	442
Gadarif	82.3	668
Khartoum	87.1	1,576
Gezira	83.3	1,924
White Nile	83.5	636
Sinnar	83.6	497
Blue Nile	83.2	621
North Kordofan	73.6	816
South Kordofan	79.1	472
West Kordofan	55.1	767
North Darfur	81.0	1,090
West Darfur	81.2	438
South Darfur	68.4	1,171
Central Darfur	58.1	220
East Darfur	62.0	430
Area		
Urban	84.5	3,463
Rural	75.6	9,102
Child's age in month		
6-11	30.0	1,448
12-23	78.4	2,672
24-35	85.8	2,618
36-47	85.8	3,268
48-59	87.1	2,559
Mother's education		
None	73.8	5,346
Primary	80.0	4,355
Secondary	82.6	1,959
Higher	83.9	890
Wealth index quintile		
Poorest	67.7	2,824
Second	74.6	2,666
Middle	81.4	2,624
Fourth	84.7	2,410
Richest	84.8	2,042

Figure NU.6. Percentage of children who received Vitamin A during the last 6months in Sudan MICS, 2014

Vitamin A coverage

Region	Coverage
Khartoum	87.1
River Nile	85.2
Sinnar	83.6
White Nile	83.5
Gezira	83.3
Blue Nile	83.2
Northern	83.2
Gadarif	82.3
West Darfor	81.2
North Darfor	81
South Kordofan	79.1
Red Sea	79
Sudan	78.1
Kassala	74.3
North Kordofan	73.6
South Darfor	68.4
East Darfor	62
Central Darfor	58.1
West Kordofan	55.1
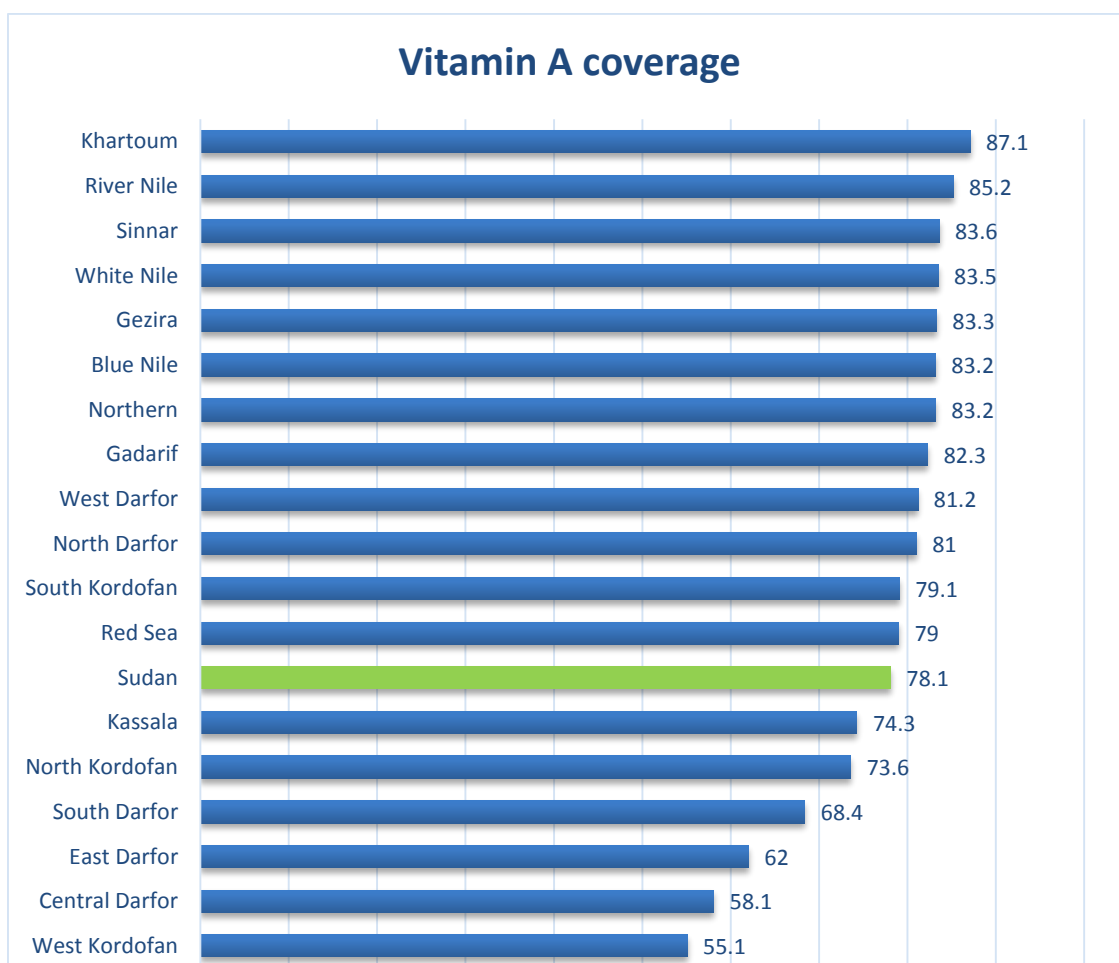
Child Health

Measles vaccinated children happy with their blue marking in their little fingers

6. Child Health

6.1 Vaccinations

Providing a safe and healthy start in life for all children and avoiding child deaths from preventable diseases, is critical to the task of reducing infant and under-five mortality rates.

One of the key elements of achieveing this goal of reducing infant and under-five mortality rates, is immunization. The Millennium Development Goal (MDG) 4, is to reduce child mortality by two thirds between 1990 and 2015. In addition, the Global Vaccine Action Plan (GVAP) was endorsed by the 194 Member States of the World Health Assembly in May 2012, to achieve the Decade of Vaccines vision by delivering universal access to immunization. The lives of millions of children have been saved by immunization in the four decades since the launch of the Expanded Programme on Immunization (EPI) in 1974. It is important to highlight that worldwide, there still remains millions of children who have not been reached by routine immunization. As a result, vaccine-preventable diseases account for more than 2 million child deaths every year.

The WHO Recommended Routine Immunizations for Children[18], proposes that all children be vaccinated against tuberculosis, diphtheria, pertussis, tetanus, polio, measles, hepatitis B, haemophilus influenza type b, pneumonia/meningitis, rotavirus, and rubella.

All doses in the primary series are recommended to be completed before the child's first birthday, although depending on the epidemiology of disease in a country, the first doses of measles and rubella containing vaccines may be recommended at 12 months or later. The recommended number and timing of most other doses also vary slightly with local epidemiology and may include booster doses later in childhood.

The vaccination schedule, followed by the Sudan National Immunization Programme, provides all the above mentioned vaccinations with birth doses of BCG, Polio, and Hepatitis B vaccines (within 24 hours of birth):

- Three doses of the Pentavalent vaccine containing DPT, Hepatitis B, and *Haemophilus influenza* type b (Hib) antigens
- Three doses of Polio vaccine, and measles.

All vaccinations should be received during the first year of life.

Taking into consideration this vaccination schedule, the estimates for full immunization coverage from the Sudan MICS 2014, are based on children aged 12-23 months and 24-35 months.

Vaccination Schedule for Sudan as of 2014		
Age	**Vaccination**	**Type**
Birth/First contact	BCG	International
6 weeks	OPV1, Pentavalent1 ,	Oral drops, IM right, IM left, Thigh, oral drops
10 weeks	OPV2, Pentavalent2	Oral drops, IM right, IM left, Thigh, oral drops
14 weeks	OPV3, Pentavalent3	Oral drops, IM right, IM left, Thigh
9 months	Measles	Subcutaneously
18 months	OPV Booster, DPT booster	Oral Drops, IM right Thigh

---

[18]http://www.who.int/immunization/diseases/en.Table 2 includes recommendations for all children and additional antigens recommended only for children residing in certain regions of the world or living in certain high-risk population groups.

Information on vaccination coverage was collected for all children under three years of age. All mothers or caretakers were asked to provide vaccination cards. If the vaccination card for a child was available, interviewers copied vaccination information from the cards onto the MICS questionnaire. If no vaccination card was available for the child, the interviewer proceeded to ask the mother to recall whether or not the child had received each of the vaccinations, and for Polio, DPT and Hepatitis B. The mothers/caretakers were also asked how many doses were received. Information was also obtained from vaccination records at health facilities.

The final vaccination coverage estimates are based on information obtained from the vaccination card and the mother's report of vaccinations received by the child.

The percentage of children aged 12-23 months and 24-35 months, who have received each of the specific vaccinations by source of information (vaccination card or vaccination records at health facilities and mother's recall) is shown in Table CH.1 above and Figure CH.1 below.

The denominators for the table are comprised of children aged 12-23 months and 24-35 months, so that only children who are old enough to be fully vaccinated are counted. In the first three columns in each panel of the table, the numerator includes all children who were vaccinated at any time before the survey, according to the vaccination card/vaccination records at health facilities or the mother's report.

In the last column in each panel, only children who were vaccinated before their first birthday, as recommended, are included. For children without vaccination cards/records, the proportion of vaccinations given before the first birthday is assumed to be the same as for children with vaccination cards/records.

Table CH.1: Vaccinations in the First Years of Life

Percentage of children aged 12-23 months and 24-35 months vaccinated against vaccine preventable childhood diseases at any time before the survey and by their first birthday
Sudan MICS, 2014

Background Characteristics	Children Age 12-23 months:					Children Age 24-35 months:			
	Vaccinated at any time feore the survey according to:			Vaccinated by 12 months of age[a]		Vaccinated at any time feore the survey according to:			Vaccinated by 12 months of age[a]
	Child health card	Mother's report	Either			Child health card	Mother's report	Either	
BCG [1]	43.7	41.6	85.3	78.5		27.3	56.7	84.0	72.1
Polio 0	42.2	45.3	87.4	30.4		26.4	60.1	86.4	29.7
Polio 1	43.8	43.7	87.5	83.7		27.4	59.1	86.5	80.2
Polio 2	43.5	38.6	82	75.7		27.4	54.0	81.3	73.0
Polio 3 [2]	42.9	32.2	75.1	65.3		27.3	45.0	72.3	59.3
Pentavalent 1	44.2	40.4	84.6	81.1		27.7	56.1	83.8	76.7
Pentavalent 2	43.9	36.7	80.6	74.5		27.6	51.9	79.5	70.7
Pentavalent 3 [3][4][5]	43.4	30.5	73.9	63.9		27.4	43.6	71.0	58.1
Measles 1 [7]	41.7	38.2	79.9	60.9		26.9	53.9	80.8	58.9
Measles 2	36.6	39	75.6	8.8		25.2	54.6	79.8	8.3
Fully vaccinated[b] [8]	42.2	25.3	67.5	42.8		26.3	36.4	62.7	23.1
No vaccinations	.0	11.8	11.8	12.8		.0	12.6	12.6	14.9
Number of children	2,672	2,672	2,672	2,672		2,618	2,618	2,618	2,618

[1] MICS indicator 3.1 - Tuberculosis immunization coverage

[2] MICS indicator 3.2 - Polio immunization coverage

[3] MICS indicator 3.3 - Diphtheria, pertussis and tetanus (DPT) immunization coverage

[4] MICS indicator 3.5 - Hepatitis B immunization coverage

[5] MICS indicator 3.6 - Haemophilus influenzae type B (Hib) immunization coverage

[7] MICS indicator 3.4; MDG indicator 4.3 - Measles immunization coverage

[8] MICS indicator 3.8 - Full immunization coverage

[a] MICS indicators 3.1, 3.2, 3.3, 3.5, 3.6, and 3.7 refer to results of this column in the left panel; MICS indicators 3.4 and 3.8 refer to this column in the right panel

[b] Includes: BCG, Polio3, Pentavalent3 and Measles 1 (MCV1) as per the vaccination schedule in Sudan

Approximately 78.5 percent of children aged 12-23 months, received a BCG vaccination by the age of 12 months and the first dose of Pentavalent vaccine was given to 81.1 percent.

The percentage declines to 74.5 percent for the second dose of Pentavalent, and to 63.9 percent for the third dose. Similarly, 83.7 percent of children received Polio 1 by age 12 months and this declines to 65.3 percent by the third dose. The coverage for the first dose of measles vaccine by age 12-23 months is lower than for the other vaccines, at 60.9 percent.

Overall, the percentage of children who had all the recommended vaccinations by their first birthday is low, at only 42.8 percent.

Children Age 12-23 months

	Per cent
BCG	79
Polio at birth	30
Polio1	84
Polio2	76
Polio3	65
Pentavalent 1	81
Pentavalent 2	75
Pentavalent 3	64
Measles	61
Fully vaccinated	43
No vaccinations	13

Children Age 24-35 months

	Per cent
BCG	72
Polio at birth	30
Polio1	80
Polio2	73
Polio3	59
Pentavalent 1	77
Pentavalent 2	71
Pentavalent 3	58
Measles	59
Fully vaccinated	63
No vaccinations	15
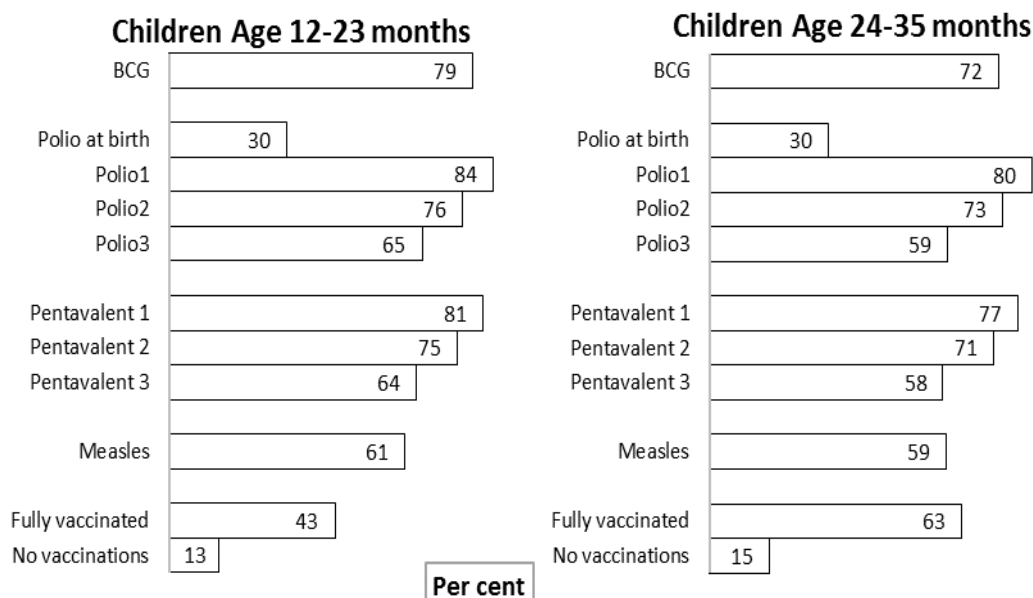
Table CH.2 presents vaccination coverage estimates among children aged 12-23 and 24-35 months, by background characteristics. The figures indicate children receiving the vaccinations at **any time** up to the date of the survey, and based on information from both the vaccination cards/health facility records and mothers'/caretakers' reports. Vaccination cards have been seen by the interviewer for only 43.7 percent of children aged 12-23 months.

The survey data indicated that:
- 85.3 percent of children aged 12-23 months, had received BCG vaccination at any time up to the date of the survey.
- There was only a slight difference in BCG vaccination coverage rate by gender - the BCG vaccination coverage for males and females respectively being 83.7 percent and 86.9 percent.
- The BCG vaccination coverage was higher for children in urban areas (92.0 percent) than among children in rural areas (82.8 percent)
- The BCG vaccination coverage rate, as expected, seems to have a close link with the level of mothers' education.
- The BCG vaccination coverage ranged from 76.6 percent for children of mothers with no education to 88.9 percent for children of mothers exposed to primary education, and to 94.1 percent for children of mothers with secondary and 92.5 percent of mothers with higher education.
- The BCG vaccination coverage rate also has a high association with the economic status of the household. The BCG vaccination coverage was 68.0 percent in the case of children belonging to households in the poorest quintile compared to 94.6 percent for children from households in the richest quintile.
- The BCG vaccination coverage rate ranged from 64.5 percent in South Darfur to 97.4 percent in Blue Nile State.
- The vaccination coverage rate was more than 80 percent in eleven states and below 80 percent in seven states.

Figure CH.1a: Measles Vaccination Coverage by States - Percentage of children aged 24-35 months currently vaccinated against Measles, Sudan MICS, 2014

State	Percentage
Northern	97.1
Gezira	96.7
River Nile	95.5
Blue Nile	90.6
Khartoum	89.7
White Nile	89.1
Sinnar	87.4
Gadarif	86.4
West Darfor	83.4
Sudan	80.8
Central Darfor	77.8
South Kordofan	75.2
North Kordofan	74.5
Kassala	73.0
East Darfor	72.1
West Kordofan	67.5
North Darfor	67.5
Red Sea	67.3
South Darfor	58.9
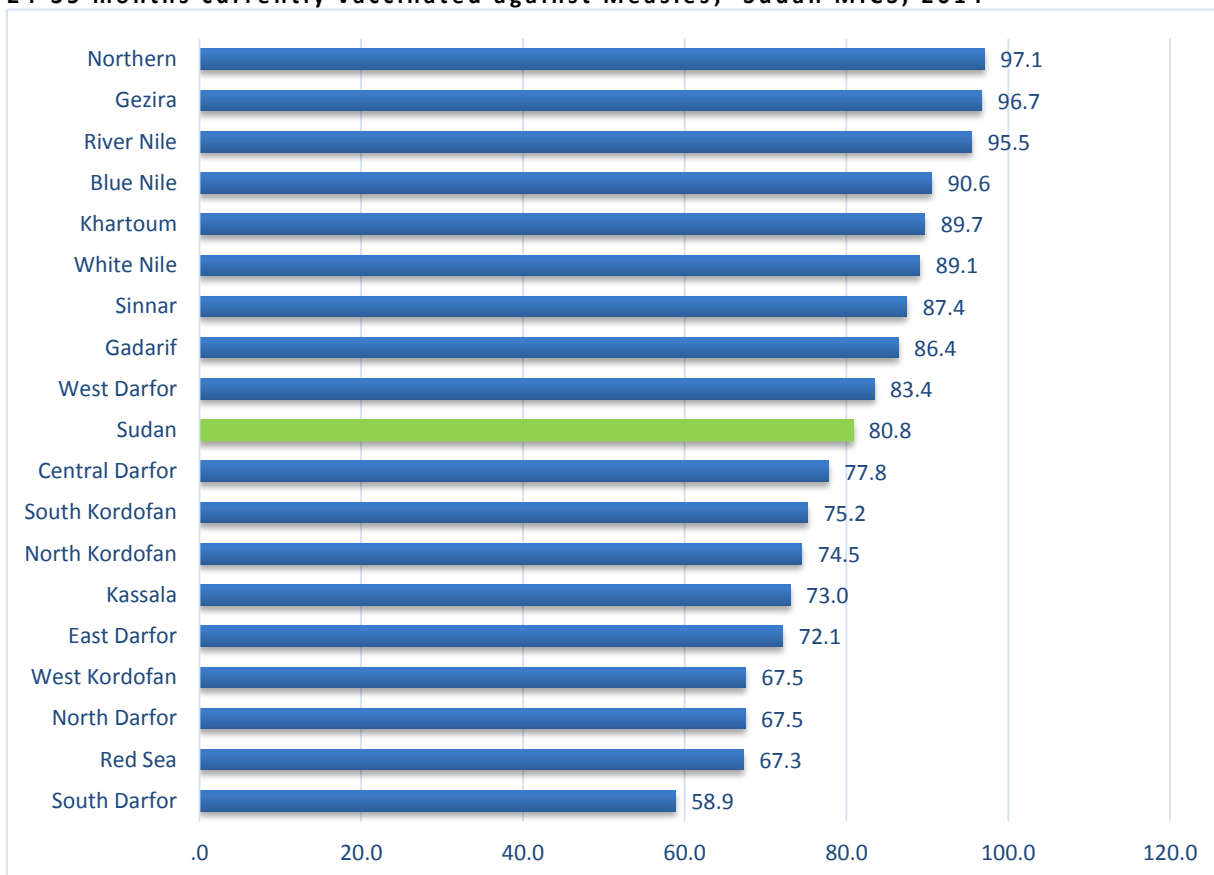
Unicef staff asking vaccinated girls about what they know about measles

Table CH.2: Vaccinations by Background Characteristics

Percentage of children age 12-23 months and 24-35 months currently vaccinated against vaccine preventable childhood diseases
Sudan MICS, 2014

Background Characteristics	Percentage of children age 12-23 months who received:								Percent with vaccination card seen	Number of children age 12-23 months	Percentage of children age 24-35 months who received:			With Card	
	BCG	Polio 0	Polio 1	Polio 2	Polio 3	Pentavalent 1	Pentavalent 2	Pentavalent 3			Measles 1	Measles 2	Full [a]	Percent with vaccination card seen	Number of children age 24-35 months
Sudan	85.3	87.4	87.5	82.0	75.1	84.6	80.6	73.9	43.7	2,672	80.8	79.8	62.7	27.3	2,618
Sex															
Male	83.7	86.3	86.5	81.3	74.0	84.0	79.9	72.6	42.4	1,337	79.2	77.7	60.4	26.7	1,347
Female	86.9	88.5	88.5	82.8	76.2	85.1	81.2	75.2	44.9	1,335	82.5	82.1	65.2	27.9	1,272
State															
Northern	93.3	96.2	96.2	94.6	90.9	94.5	94.0	89.6	50.0	48	97.1	96.0	87.2	44.2	47
River Nile	92.8	93.4	93.4	90.6	82.2	92.8	91.3	88.5	39.6	74	95.5	95.5	86.5	20.5	76
Red Sea	65.7	71.3	71.3	65.2	60.2	62.5	62.5	53.3	22.5	46	67.3	67.3	42.0	15.2	56
Kassala	78.4	79.8	79.8	71.0	64.0	77.6	67.9	62.8	38.6	93	73.0	73.0	56.6	22.3	108
Gadarif	94.4	95.3	95.3	92.8	87.5	95.2	93.7	87.2	43.5	132	86.4	85.8	66.7	21.2	161
Khartoum	95.4	96.0	96.0	92.3	89.7	94.5	92.4	89.9	52.1	364	89.7	88.6	74.1	31.6	320
Gezira	94.8	96.4	96.4	91.6	88.8	95.7	93.5	91.4	55.2	430	96.7	94.0	85.8	39.7	342
White Nile	89.9	93.6	93.6	87.4	77.2	91.2	87.1	79.6	37.1	131	89.1	88.3	67.0	24.2	151
Sinnar	80.2	82.2	82.2	75.8	68.6	79.8	73.1	60.7	42.6	102	87.4	86.6	63.9	38.3	105
Blue Nile	97.4	98.3	98.3	98.0	95.0	97.7	97.4	96.1	72.6	148	90.6	90.3	86.2	46.1	135
North Kordofan	82.9	83.6	85.1	78.5	74.9	81.6	78.5	73.5	38.4	157	74.5	74.5	54.7	24.5	156
South Kordofan	77.3	82.3	82.3	79.0	70.2	80.3	75.4	69.0	46.4	85	75.2	75.2	48.4	16.2	113
West Kordofan	72.2	74.4	74.4	63.4	49.8	66.6	59.5	46.5	11.3	156	67.5	66.8	39.1	8.3	129
North Darfur	81.6	83.1	83.1	79.8	71.3	80.4	76.8	67.3	47.3	223	67.5	67.0	52.5	27.7	219
West Darfur	90.9	96.1	96.1	83.2	70.2	87.1	83.3	68.6	26.2	76	83.4	83.4	53.9	15.4	96

74

Table CH.2: **Vaccinations by Background Characteristics**

Percentage of children age 12-23 months and 24-35 months currently vaccinated against vaccine preventable childhood diseases
Sudan MICS, 2014

Background Characteristics	Percentage of children age 12-23 months who received:								Percent with vaccination card seen	Number of children age 12-23 months	Percentage of children age 24-35 months who received:			With Card	
	BCG	Polio 0	Polio 1	Polio 2	Polio 3	Pentavalent 1	Pentavalent 2	Pentavalent 3			Measles 1	Measles 2	Full [a]	Percent with vaccination card seen	Number of children age 24-35 months
South Darfur	64.5	67.7	68.2	61.1	49.5	63.4	54.9	42.9	29.3	266	58.9	57.2	41.7	20.7	276
Central Darfur	75.9	74.9	74.2	66.3	51.5	71.3	61.5	49.1	43.1	51	(77.8)	(76.8)	(44.6)	(37.9)	40
East Darfur	77.6	86.2	86.2	74.8	60.2	74.4	67.6	57.7	44.9	91	72.1	69.8	38.6	22.2	87
Area															
Urban	92.0	93.4	93.4	89.1	82.9	91.3	88.4	82.1	47.2	726	86.7	85.4	68.5	34.6	766
Rural	82.8	85.2	85.3	79.4	72.2	82.0	77.6	70.8	42.3	1,946	78.4	77.5	60.3	24.2	1,853
Mother's education															
None	76.6	80.2	80.6	73.8	64.9	76.0	70.8	63.2	38.1	1,049	72.3	71.1	53.1	21.5	1,132
Primary	88.9	90.6	90.6	85.1	78.5	87.6	84.0	77.6	46.1	929	86.8	86.0	68.7	34.5	912
Secondary	94.1	95.0	95.0	92.4	87.2	93.7	91.7	85.9	50.2	481	87.1	86.2	69.0	28.8	381
Higher	92.5	92.1	92.1	86.2	83.1	92.3	88.0	82.9	45.8	211	92.7	91.5	80.0	24.9	186
Wealth index quintile															
Poorest	68.0	72.8	73.5	64.5	53.8	66.9	59.3	50.3	29.6	536	61.6	61.0	43.5	17.2	583
Second	79.8	82.4	82.4	76.4	67.0	78.4	73.4	63.2	37.1	591	77.4	76.7	51.5	19.9	558
Middle	91.6	93.3	93.3	88.2	82.5	90.9	87.9	83.1	50.7	560	86.8	85.1	70.6	34.6	574
Fourth	94.0	94.4	94.4	90.5	85.5	93.3	90.9	86.7	49.8	553	90.9	90.5	76.1	31.3	466
Richest	94.6	95.4	95.4	92.3	89.2	94.8	93.3	88.7	53.0	432	91.5	90.0	76.9	36.1	437

[a] Includes: BCG, Polio3, Pentavalent3 and Measles (MCV1) as per the vaccination schedule in Sudan
( ) Figures that are based on 25-49 unweighted cases
[*] Based on less than 25 unweighted cases and has been suppressed.

6.2 Neonatal Tetanus Protection

MDG 5, aims to reduce by three quarters the maternal mortality ratio, with one of its strategies being to eliminate maternal tetanus. Following on from the 42nd and 44th World Health Assembly calling for the elimination of neonatal tetanus, the global community continues to work to reduce the incidence of neonatal tetanus to less than 1 case per 1,000 live births in every state, by 2015.

Prevention of maternal and neonatal tetanus can be ensured if all pregnant women receive at least two doses of tetanus toxoid vaccine. If a woman has received at least two doses of tetanus toxoid during a particular pregnancy, she (and her newborn) are also considered to be protected against tetanus. Other conditions for neonatal Tetanus Protection are when the woman:

- Received at least two doses of tetanus toxoid vaccine, the last within the previous 3 years
- Received at least 3 doses, the last within the previous 5 years
- Received at least 4 doses, the last within the previous 10 years
- Received 5 or more doses anytime during her life [19]

To assess the status of tetanus vaccination coverage, women who had a live birth during the two years before the survey, were asked if they had received tetanus toxoid injections during the pregnancy and if so, they were asked for the number of such injections received. Women who did not receive two or more tetanus toxoid vaccinations during this recent pregnancy, were then asked about tetanus toxoid vaccinations they may have previously received. Interviewers also asked the women to present their vaccination cards on which dates of tetanus toxoid are recorded, and referred to information from the cards when available.

Table CH.3 shows the status of women's protection from tetanus among women aged 15-49 years, who have had a live birth within the last 2 years prior to the survey. Overall, the table shows that 58.2 percent of the women with a live birth in the last two years were protected against neonatal tetanus. Also, only 32.1 percent of the women received at least two doses of tetanus toxoid (TT) vaccine during their last pregnancy.

The data also showed that a higher percentage of women aged 15-49 years in urban areas with a live birth in the last two years prior to the survey, were protected against neonatal tetanus (65.9 percent) compared to their counterparts in rural areas (55.4 percent). However, there was only a marginal difference in the percentage of women who received at least two doses of tetanus toxoid (TT) vaccine during the last pregnancy, between those living in urban areas (32.7 percent) and those living in rural areas (31.8 percent). The data also shows that the level of education among women in Sudan is highly related to the likelihood of neonatal tetanus protection.

For instance, the percentage of women aged 15-49 years who were protected against neonatal tetanus was only 46.7 percent for women with no education, compared to 79.0 percent for women with secondary and higher levels of education. Similar differences were shown among women with varying economic status; percentage of neonatal tetanus protection among women in the richest quintile was 74.2 percent compared with the women from the poorest quintile (44.4 percent).

---

[19] Deming, M.S. et al. 2002. *Tetanus toxoid coverage as an indicator of serological protection against neonatal tetanus.* Bulletin of the World Health Organization 80(9):696-703

Table CH.3: Neonatal Tetanus Protection

Percentage of women aged 15-49 years with a live birth in the last 2 years protected against neonatal tetanus
Sudan MICS, 2014

| Background Characteristics | Percentage of women who received at least 2 doses during last pregnancy | Percentage of women who did not receive two or more doses during last pregnancy but received: | | | | Protected against tetanus [1] | Number of women with a live birth in the last 2 years |
		2 doses, the last within prior 3 years	3 doses, the last within prior 5 years	4 doses, the last within prior 10 years	5 or more doses during lifetime		
Sudan	32.1	19.3	3.8	2.3	.7	58.2	5,622
State							
Northern	41.9	15.0	1.6	.7	1.7	60.9	92
River Nile	42.1	25.7	3.0	2.1	.0	73.0	151
Red Sea	27.6	11.0	0.8	3.0	0.0	42.3	92
Kassala	27.5	9.8	2.2	.8	0.0	40.3	199
Gadarif	27.5	20.3	4.0	3.0	0.4	55.2	307
Khartoum	28.8	33.8	4.1	4.0	2.7	73.4	684
Gezira	36.5	18.0	5.5	2.6	0.7	63.4	852
White Nile	33.2	16.8	5.6	1.6	0.2	57.6	273
Sinnar	31.1	20.0	5.5	3.3	0.2	60.1	226
Blue Nile	31.7	12.4	2.2	4.4	0.3	50.9	287
North Kordofan	34.2	19.4	3.5	1.5	0.5	59.2	352
South Kordofan	32.3	21.7	4.2	1.4	0.0	59.6	194
West Kordofan	33.1	10.2	0.1	0.6	0.0	44.0	341
North Darfur	26.0	23.1	5.1	2.8	0.4	57.4	525
West Darfur	38.5	20.9	3.0	0.9	0.6	64.0	179
South Darfur	28.1	16.0	3.1	2.0	0.6	49.8	556
Central Darfur	51.1	7.7	1.2	0.0	0.0	60.0	99
East Darfur	31.7	13.8	4.5	1.1	0.2	51.3	211
Area							
Urban	32.7	23.3	3.9	4.4	1.6	65.9	1,488
Rural	31.8	17.9	3.7	1.6	0.3	55.4	4,134
Mother's education							
None	26.1	14.3	3.5	2.4	0.5	46.7	2,247
Primary	33.5	20.3	4.1	2.2	1.0	61.1	2,022
Secondary	38.8	23.9	4.0	2.7	0.8	70.3	942
Higher	42.5	30.9	3.4	2.1	0.1	79.0	410
Wealth index quintile							
Poorest	25.3	14.1	3.6	1.0	0.3	44.4	1,251
Second	31.5	17.5	2.7	1.8	0.2	53.7	1,232
Middle	35.2	16.4	3.0	1.7	0.6	56.8	1,192
Fourth	34.4	22.0	6.5	3.7	1.3	68.0	1,096
Richest	35.6	30.0	3.2	4.3	1.2	74.2	851

[1] MICS indicator 3.9 - Neonatal tetanus protection

6.3 Care of Illness

A key strategy for accelerating progress toward MDG 4 is to tackle the diseases that are the leading killers of children under 5. Diarrhoea and pneumonia are two such diseases. The Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea (GAPPD), aims to end preventable pneumonia and diarrhoea deaths by reducing mortality from pneumonia to 3 deaths per 1000 live births, and mortality from diarrhoea to 1 death per 1000 live births by 2025.

Table CH.4 presents the percentage of children under 5 years of age who were reported to have had an episode of diarrhoea, and symptoms of acute respiratory infection (ARI). These results are not measures of true prevalence, and should not be used as such, but rather the period-prevalence of those illnesses over a two-week time window.

The definition of a case of diarrhoea in this survey, was the mother's (or caretaker's) report that the child had such symptoms over the specified period; no other evidence were sought beside the opinion of the mother.

A child was considered to have had an episode of ARI if the mother or caretaker reported that the child had, over the specified period, an illness with a cough with rapid or difficult breathing, and whose symptoms were perceived to be due to a problem in the chest or both a problem in the chest and a blocked nose. While this approach is reasonable in the context of a MICS survey, these simple case definitions must be kept in mind when interpreting the results, as well as the potential for reporting and recall biases.

Furthermore, diarrhoea, fever and ARI are not only seasonal, but are also characterized by the often rapid spread of localized outbreaks from one area to another at different points in time. The timing of the survey and the location of the teams might thus considerably affect the results, which must consequently be interpreted with caution. For these reasons, although the period-prevalence over a two-week time window is reported, the data should not be used to assess the epidemiological characteristics of these diseases, but rather to obtain denominators for the indicators related to use of health services and treatment.

Overall, 29.0 percent of under five children were reported to have had diarrhoea in the two weeks preceding the survey and 17 percent with symptoms of ARI, (Table CH.4). Period-prevalence of diarrhoea ranges from 19.3 percent in the age group 48-59 months to 38.5 percent in the age group 12-23 months. In the case of ARI, the period prevalence ranges from 15.1 percent in the age group 0-11 months to 19.8 percent in the age group 24-35 months. There are minor differences in the prevalence of diarrhoea/ARI between urban and rural areas, and male and female populations. The prevalence of diarrhoea among children widely varies between states, ranging from the lowest in West Kordofan (7.6 percent) to the highest in Khartoum (42.7 percent). In the case of ARI, the prevalence ranges from the lowest in West Kordofan (5.0 percent) to the highest in North Darfur (30.8 percent).

Table CH.4:	Reported Disease Episodes		

Percentage of children aged 0-59 months for whom the mother/caretaker reported an episode of diarrhoea, and/or symptoms of acute respiratory infection (ARI) in the last two weeks
Sudan MICS, 201

Background characteristics	Percentage of children who in the last two weeks had:		Number of children aged 0-59 months
	An episode of diarrhea	Symptoms of ARI [a]	
Sudan	29.0	17.8	14,081
Sex			
Male	29.7	18.4	7,157
Female	28.3	17.1	6,924
State			
Northern	23.9	12.2	236
River Nile	22.5	11.2	393
Red Sea	9.6	5.9	244
Kassala	32.9	15.1	498
Gadarif	22.0	10.5	765
Khartoum	42.7	13.2	1,736
Gezira	34.8	16.8	2,149
White Nile	36.2	25.3	711
Sinnar	28.2	23.4	555
Blue Nile	20.3	12.9	691
North Kordofan	17.4	15.8	907
South Kordofan	25.0	24.3	529
West Kordofan	7.6	5.0	893
North Darfur	37.2	30.8	1,211
West Darfur	23.9	9.0	487
South Darfur	27.2	25.8	1,326
Central Darfur	31.1	14.9	254
East Darfur	35.9	31.1	495
Area			
Urban	31.5	17.5	3,862
Rural	28.1	17.8	10,219
Age			
0-11	31.5	15.1	2,964
12-23	38.5	18.3	2,672
24-35	33.2	19.8	2,618
36-47	23.3	18.6	3,268
48-59	19.3	17.1	2,559
Mother's education			
None	27.0	17.6	5,994
Primary	30.9	18.4	4,936
Secondary	30.1	18.3	2,152
Higher	30.0	14.7	982
Missing/DK	*	*	17
Wealth index quintile			
Poorest	26.5	19.7	3,188
Second	24.9	19.2	3,015
Middle	28.2	18.8	2,956
Fourth	37.1	15.1	2,684
Richest	29.6	14.8	2,238

[a] Children with symptoms of ARI are those who had an illness with a cough accompanied by rapid or difficult breathing.
Sudan MICS did not include questions on symptoms due to a problem in the chest, or both a problem in the chest and a blocked nose
[*] Based on less than 25 unweighted cases and has been suppressed.

6.3.1 Diarrhoea

Diarrhoea is a leading cause of death among children under five worldwide. Most diarrhoea-related deaths in children are due to dehydration from loss of large quantities of water and electrolytes from the body in liquid stools. Management of diarrhoea – either through oral rehydration salts (ORS) or a recommended home fluid (RHF) – can prevent many of these deaths. In addition, provision of zinc supplements has been shown to reduce the duration and severity of the illness as well as the risk of future episodes within the next two or three months.

Preventing dehydration and malnutrition by increasing fluid intake and continuing to feed the child are also important strategies for managing diarrhoea.

In the MICS 2014, mothers or caretakers were asked whether their child under age five years, had an episode of diarrhoea in the two weeks prior to the survey. In cases where mothers reported that the child had diarrhoea, a series of questions were asked about the treatment of the illness. This includes what the child had been given to drink and eat during the episode, and whether this was more or less than what was usually given to the child.

The overall period-prevalence of diarrhoea in children under 5 years of age is 29.0 percent (Table CH.4) and ranges from 9.0 percent in West Darfur state to 42.7 percent in Khartoum state . The highest period-prevalence is seen among children aged 12-23 months, which corresponds to the weaning period.

Table CH.5 shows the percentage of children with diarrhoea in the two weeks preceding the survey for whom advice or treatment was sought. Overall, a health facility or provider was seen in 42.7 percent of the cases, and predominantly in the public sector at 37.3 percent and only 3.2 percent from a community health provider. Generally, the proportion of those seeking advice is similar between male and female children; 42.7 percent for both sexes. There was a significant difference between urban (46.1 percent) and rural (41.3 percent) respondents. Approximately 40.8 percent of children with diarrhoea in the last two weeks did not seek advice for treatment. There were also notable differences between mother's/caretaker's education levels on seeking advice, which was observed in the data.

Table CH.5: Care-seeking During Diarrhoea

Percentage of children aged 0-59 months with diarrhoea in the last two weeks for whom advice or treatment was sought, by source of advice or treatment
Sudan MICS, 2014

Background Characteristics	Percentage of children with diarrhoea for whom:					No advice or treatment sought	Number of children age 0-59 months with diarrhoea in the last two weeks
	Advice or treatment was sought from:				A health facility or provider [1] [b]		
	Health facilities or providers			Other source			
	Public	Private	Community health provider [a]				
Sudan	37.3	13.1	3.2	9.9	42.7	40.8	4,088
Sex							
Male	37.4	14.0	2.7	10.5	42.7	39.2	2,125
Female	37.3	12.1	3.6	9.3	42.7	42.5	1,963
State							
Northern	48.3	8.8	.7	10.6	53.6	33.6	56
River Nile	48.5	9.7	3.6	9.0	53.6	33.7	88
Red Sea	(48.7)	(9.4)	(3.2)	(17.2)	(53.3)	(26.6)	23
Kassala	55.5	4.1	2.7	3.8	57.5	36.6	164
Gadarif	44.8	15.3	3.1	5.5	52.8	36.2	168
Khartoum	39.2	18.4	.3	8.1	46.4	35.3	742
Gezira	36.6	12.7	6.0	5.5	43.8	45.2	749
White Nile	41.8	7.4	3.4	18.9	46.3	34.2	257
Sinnar	46.8	12.7	1.0	7.5	51.2	33.3	156
Blue Nile	46.1	11.1	0.0	14.6	46.5	29.8	141
North Kordofan	40.8	8.9	8.8	2.8	46.2	47.8	158
South Kordofan	35.7	5.4	1.7	8.6	36.6	51.0	132
West Kordofan	30.9	7.6	4.5	10.9	35.2	51.4	68
North Darfur	30.7	15.8	2.7	10.2	32.6	43.9	450
West Darfur	56.2	7.7	2.5	7.2	58.6	29.4	117
South Darfur	18.5	17.6	5.2	17.4	29.1	50.4	360
Central Darfur	38.7	6.1	2.1	20.8	40.1	36.4	79
East Darfur	19.6	14.5	2.0	19.3	22.2	49.9	178
Area							
Urban	38.4	18.2	.7	9.1	46.1	36.5	1,216
Rural	36.9	10.9	4.2	10.3	41.3	42.6	2,872
Age							
0-11	37.6	10.4	1.9	5.3	42.1	47.3	933
12-23	40.6	15.0	4.0	10.7	48.4	35.5	1,028
24-35	36.2	13.1	3.7	10.2	42.0	42.0	870
36-47	31.3	14.1	3.2	11.7	35.4	42.9	763
48-59	41.5	12.6	2.7	14.0	44.5	34.2	494
Mother's education							
None	33.7	13.1	2.9	12.4	38.1	42.3	1,618
Primary	38.0	11.7	4.1	9.3	42.8	42.1	1,525
Secondary	47.4	13.8	2.8	6.7	53.8	32.7	648
Higher	32.1	18.6	.8	6.7	43.4	44.0	295
Missing/DK	*	*	*	*	*	*	2

Table CH.5:	Care-seeking During Diarrhoea						

Percentage of children aged 0-59 months with diarrhoea in the last two weeks for whom advice or treatment was sought, by source of advice or treatment
Sudan MICS, 2014

Background Characteristics	Percentage of children with diarrhoea for whom:						Number of children age 0-59 months with diarrhoea in the last two weeks
	Advice or treatment was sought from:					No advice or treatment sought	
	Health facilities or providers			Other source	A health facility or provider [1] [b]		
	Public	Private	Community health provider [a]				
Wealth index quintile							
Poorest	24.3	13.7	3.5	15.8	29.2	47.7	845
Second	39.2	10.8	5.0	9.0	42.5	41.8	750
Middle	46.7	10.9	2.6	10.1	50.8	34.0	834
Fourth	39.0	13.3	2.8	8.2	44.8	40.9	995
Richest	37.6	17.4	1.9	5.9	46.7	39.2	662

[1] MICS indicator 3.10 - Care-seeking for diarrhoea
[a] Community health providers includes both public (Community health worker and Mobile/Outreach clinic) and private (Mobile clinic) health facilities
[b] Includes all public and private health facilities and providers, but excludes private pharmacy
[*] Based on less than 25 unweighted cases and has been suppressed.
( ) Figures that are based on 25-49 unweighted cases

Table CH.6 provides statistics on drinking and feeding practices during diarrhoea. Only 19.0 percent of under five children with diarrhoea were given more than usual, while 27.3 percent were given the same or less. About 26.7 percent were given somewhat less, same or more (continued feeding), but 18.4 percent were given much less or almost nothing.

The proportion of female children who were given less to drink was 15.7 percent and 20.8 percent were given much less or somewhat less for males. The proportion of children under 5 years of age who had an episode of diarrhoea in the 2 weeks preceding the survey and who were given less to drink, ranged from 18.7 percent in Central Darfur and Northern states to 37.6 percent in West Kordofan.

The proportion of children under 5 years of age who had an episode of diarrhoea in the 2 weeks preceding the survey and who were given no food to eat, was 18.2 percent in urban areas compared to 17.9 percent in rural areas. Approximately 18.3 percent accounted for male children compared to 17.6 percent for female children, and 14.4 percent for children in the poorest quintile compared 16.3 percent for children in the richest quintile.

Table CH.6: Feeding Practices During Diarrhoea

Percent distribution of children aged 0-59 months with diarrhoea in the last two weeks by amount of liquids and food given during episode of diarrhea
Sudan MICS, 2014

Background Characteristics	Drinking practices during diarrhoea:							Eating practices during diarrhoea:							Number of children aged 0-59 months with diarrhea
	Child was given to drink: Much less	Child was given to drink: Somewhat less	Child was given to drink: About the same	Child was given to drink: More	Child was given to drink: Nothing	Missing/ DK	Sudan	Child was given to eat: Much less	Child was given to eat: Somewhat less	Child was given to eat: About the same	Child was given to eat: More	Child was given to eat: Nothing	Missing/ DK	Sudan	
Sudan	18.4	26.7	27.3	19.0	7.7	1.0	100.0	18.3	32.0	24.3	6.0	18.0	1.5	100.0	4,088
Sex															
Male	20.8	25.5	26.9	18.9	7.0	0.8	100.0	19.6	32.2	23.2	5.4	18.3	1.3	100.0	2,125
Female	15.7	27.9	27.7	19.1	8.3	1.2	100.0	16.9	31.7	25.5	6.7	17.6	1.7	100.0	1,963
State															
Northern	6.7	18.7	45.0	25.1	4.6	0.0	100.0	10.5	33.4	28.4	2.6	25.1	0.0	100.0	56
River Nile	10.9	21.1	28.5	30.0	9.6	0.0	100.0	6.8	29.0	23.1	11.4	29.6	0.0	100.0	88
Red Sea	(10.9)	(32.5)	(17.0)	(20.1)	(19.5)	(0.0)	(100.0)	(24.6)	(28.3)	(9.8)	(9.1)	(25.9)	(2.3)	(100.0)	23
Kassala	26.3	34.4	18.3	13.7	5.5	1.7	100.0	24.0	33.4	18.2	9.1	13.9	1.3	100.0	164
Gadarif	16.9	31.3	21.4	24.6	5.2	0.6	100.0	12.5	41.8	28.5	8.3	8.2	0.6	100.0	168
Khartoum	26.9	22.1	27.7	21.1	2.2	0.0	100.0	18.5	32.1	23.0	6.8	18.9	0.7	100.0	742
Gezira	8.9	33.8	25.1	16.7	15.0	0.6	100.0	12.0	33.8	22.4	4.1	26.9	0.8	100.0	749
White Nile	13.7	15.7	38.3	20.0	11.4	0.9	100.0	15.9	23.5	35.2	10.4	14.4	0.6	100.0	257
Sinnar	18.6	23.2	25.3	28.3	4.7	0.0	100.0	24.6	29.8	26.3	4.5	14.7	0.0	100.0	156
Blue Nile	22.9	26.2	21.8	21.5	7.6	0.0	100.0	21.8	29.1	28.0	7.7	12.9	0.5	100.0	141
North Kordofan	19.2	29.1	29.0	16.2	6.4	0.0	100.0	26.1	28.3	29.1	1.6	14.9	0.0	100.0	158
South Kordofan	12.8	37.9	35.4	9.1	4.4	0.5	100.0	15.3	38.8	30.6	6.2	8.9	0.2	100.0	132
West Kordofan	37.6	26.2	17.4	3.3	10.8	4.7	100.0	33.0	31.5	20.5	3.1	8.4	3.5	100.0	68
North Darfur	19.7	32.5	25.6	12.1	7.4	2.8	100.0	21.0	37.7	19.2	3.7	13.3	5.0	100.0	450
West Darfur	25.2	33.3	19.4	12.5	9.4	0.3	100.0	18.2	34.5	20.6	10.6	15.7	0.5	100.0	117
South Darfur	16.8	15.4	38.3	26.2	2.6	0.7	100.0	24.7	24.1	27.0	7.4	15.1	1.7	100.0	360
Central Darfur	18.7	19.2	29.4	8.3	17.1	7.4	100.0	14.2	21.4	33.2	6.3	19.3	5.6	100.0	79
East Darfur	19.0	24.7	17.0	28.5	7.6	3.3	100.0	18.6	33.7	17.8	2.3	24.2	3.6	100.0	178

Table CH.6: Feeding Practices During Diarrhoea

Percent distribution of children aged 0-59 months with diarrhoea in the last two weeks by amount of liquids and food given during episode of diarrhea
Sudan MICS, 2014

Background Characteristics	Drinking practices during diarrhoea:							Eating practices during diarrhoea:							Number of children aged 0-59 months with diarrhea
	Child was given to drink: Much less	Child was given to drink: Somewhat less	Child was given to drink: About the same	Child was given to drink: More	Child was given to drink: Nothing	Missing/ DK	Sudan	Child was given to eat: Much less	Child was given to eat: Somewhat less	Child was given to eat: About the same	Child was given to eat: More	Child was given to eat: Nothing	Missing/ DK	Sudan	
Area															
Urban	22.3	22.7	29.6	21.0	3.9	0.4	100.0	19.9	30.4	24.2	6.5	18.2	0.7	100.0	1,216
Rural	16.7	28.3	26.3	18.1	9.2	1.3	100.0	17.6	32.6	24.3	5.8	17.9	1.8	100.0	2,872
Age															
0-11	18.2	22.8	27.7	10.1	20.1	1.1	100.0	14.6	19.0	13.3	3.7	47.6	1.8	100.0	933
12-23	20.3	30.5	23.6	20.1	4.9	0.6	100.0	20.4	34.1	25.7	5.0	13.4	1.4	100.0	1,028
24-35	18.3	26.0	31.8	19.5	3.1	1.3	100.0	18.7	33.5	30.8	6.4	9.1	1.5	100.0	870
36-47	17.3	29.0	27.4	22.0	3.4	0.9	100.0	19.4	39.7	24.5	8.7	6.2	1.4	100.0	763
48-59	16.4	23.5	26.3	27.9	4.6	1.3	100.0	18.4	37.3	30.4	7.8	5.1	1.0	100.0	494
Mother's education															
None	17.9	26.0	28.4	18.7	7.7	1.3	100.0	18.9	31.7	24.7	5.9	16.9	1.9	100.0	1,618
Primary	17.5	29.5	24.9	18.1	9.3	0.8	100.0	17.7	32.8	23.4	5.3	19.7	1.1	100.0	1,525
Secondary	24.2	23.1	27.6	20.4	4.1	0.6	100.0	19.7	29.8	25.1	6.8	17.5	1.1	100.0	648
Higher	12.7	23.7	33.2	22.1	7.0	1.3	100.0	15.1	33.9	24.6	8.9	16.1	1.5	100.0	295
Missing/DK	*	*	*	*	*	*	100.0	*	*	*	*	*	*	100.0	2
Wealth index quintile															
Poorest	19.3	24.8	27.8	19.6	6.3	2.3	100.0	22.3	33.6	20.3	5.9	14.4	3.5	100.0	845
Second	17.1	31.0	27.6	15.5	7.5	1.4	100.0	16.0	33.8	27.0	4.9	16.8	1.5	100.0	750
Middle	22.7	24.6	22.8	20.2	9.1	0.7	100.0	20.8	28.2	23.9	6.0	20.4	0.7	100.0	834
Fourth	15.2	26.8	28.4	18.4	10.7	0.5	100.0	14.9	31.4	25.9	5.8	20.8	1.1	100.0	995
Richest	18.0	26.6	30.3	21.6	3.3	0.1	100.0	17.7	33.4	24.3	7.7	16.3	0.5	100.0	662

[*] Based on less than 25 unweighted cases and has been suppressed

( ) Figures that are based on 25-49 unweighted cases

Table CH.7 shows the percentage of children receiving ORS, various types of recommended homemade fluids, and zinc during an episode of diarrhoea. Since children were likely to be given more than one type of liquid, the percentages do not necessarily add up to 100. Of the children with diarrhoea in the two weeks prior to the survey, about 14.5 percent of them received fluids from ORS packets or pre-packaged ORS fluids, and 88.9 percent received recommended homemade fluids (fresh juice and rice with water) and 15.2 percent received zinc in one form or another.

Over ninety (90.4 percent) of children with diarrhoea received one or more of the recommended home treatments (i.e. were treated with ORS or any recommended homemade fluid). The percentage of children who received the recommended homemade fluid in the form of fresh juice, rice with water and water, was 48.0 percent, 47.7 percent and 85.8 respectively.

Treatment with ORS (fluid from packet) during diarrhoea episodes, varies from urban (20.7 percent) to rural areas (11.8 percent). However, there was no noticeable difference between children in urban and rural areas for the reception of ORS or any recommended homemade fluid.

Table CH.7: Oral Rehydration Solutions, Recommended Homemade Fluids, and Zinc

Percentage of children aged 0-59 months with diarrhoea in the last two weeks, and treatment with oral rehydration salts (ORS), recommended homemade fluids, and zinc
Sudan MICS, 2014

| | Percentage of children with diarrhoea who received: | | | | | | | | | | | | |
| Background characteristics | Oral rehydration salts (ORS) | | | Recommended homemade fluids | | | | ORS or any recommended homemade fluid | Zinc | | | ORS or zinc [1] | Number of children aged 0-59 months with diarrhea |
	Fluid from packer	Pre-packaged fluid	Any ORS	Fresh juice	Rice water or starch	Water	Any recommended homemade fluid		Tablet	Syrup	Any zinc		
Sudan	14.5	9.1	19.6	8.0	47.7	85.8	88.9	90.4	3.7	14.4	15.2	28.9	4,088
Sex													
Male	14.5	9.0	19.8	48.6	48.7	85.6	88.9	90.2	3.6	14.1	15.1	28.8	2,125
Female	14.4	9.3	19.5	47.4	46.8	86.0	88.9	90.5	3.7	14.7	15.4	29.0	1,963
State													
Northern	11.3	1.4	11.3	72.7	46.0	92.3	95.1	96.1	.7	7.0	7.0	17.6	56
River Nile	21.9	12.3	27.4	60.7	49.4	88.0	94.4	94.4	1.2	10.8	10.8	30.8	88
Red Sea	(34.6)	(23.7)	(37.5)	(68.6)	(59.8)	(81.6)	(90.1)	(95.2)	(17.0)	(19.8)	(27.9)	(53.0)	23
Kassala	34.8	14.4	41.8	40.7	42.1	77.6	82.5	86.4	2.7	21.2	22.5	51.8	164
Gadarif	11.9	10.9	19.8	53.6	50.5	89.8	92.3	92.3	1.7	22.4	22.4	37.3	168
Khartoum	19.8	9.5	22.3	73.2	64.3	88.1	93.0	94.6	2.2	14.5	14.5	30.6	742
Gezira	4.0	11.7	15.2	39.1	37.2	85.9	86.5	87.4	.8	8.9	8.9	22.4	749
White Nile	11.1	6.3	15.7	52.1	52.9	89.5	91.8	93.0	3.1	13.0	13.4	24.8	257
Sinnar	8.8	7.8	13.9	59.6	42.1	91.1	93.2	93.8	2.2	12.5	13.9	24.0	156
Blue Nile	22.7	6.4	27.6	54.7	70.0	93.7	94.2	95.5	2.4	9.9	11.0	31.8	141
North Kordofan	10.1	1.9	11.4	56.6	51.2	83.4	89.7	89.7	7.4	25.1	27.2	35.3	158
South Kordofan	10.2	9.7	15.9	40.8	53.5	88.7	91.9	93.4	9.9	17.2	17.9	27.4	132
West Kordofan	5.5	11.1	13.6	50.8	38.8	77.8	84.1	85.7	.8	9.9	10.7	14.4	68
North Darfor	17.6	8.7	20.2	36.1	41.1	84.7	87.9	90.6	5.6	13.4	13.7	25.1	450

86

Table CH.7: Oral Rehydration Solutions, Recommended Homemade Fluids, and Zinc

Percentage of children aged 0-59 months with diarrhoea in the last two weeks, and treatment with oral rehydration salts (ORS), recommended homemade fluids, and zinc
Sudan MICS, 2014

Background characteristics	Percentage of children with diarrhoea who received:												
	Oral rehydration salts (ORS)			Recommended homemade fluids				ORS or any recommended homemade fluid	Zinc			ORS or zinc [1]	Number of children aged 0-59 months with diarrhea
	Fluid from packer	Pre-packaged fluid	Any ORS	Fresh juice	Rice water or starch	Water	Any recommended homemade fluid		Tablet	Syrup	Any zinc		
West Darfor	29.3	10.3	32.8	39.2	65.4	84.2	87.1	89.9	14.6	22.0	26.6	46.6	117
South Darfor	10.6	6.3	15.5	28.9	38.1	86.6	89.6	90.4	5.2	19.3	22.3	28.2	360
Central Darfor	23.7	16.8	26.4	27.3	41.7	69.4	73.4	76.0	11.4	29.4	31.9	47.5	79
East Darfor	14.3	4.5	15.2	25.2	27.3	73.6	76.4	77.7	2.3	4.6	5.4	18.1	178
Area													
Urban	20.7	10.3	24.8	62.7	58.8	87.8	91.6	93.1	4.9	19.5	20.1	35.6	1,216
Rural	11.8	8.6	17.5	41.9	43.1	85.0	87.8	89.2	3.1	12.2	13.2	26.0	2,872
Age													
0-11	12.2	7.7	16.7	27.5	29.1	67.0	69.6	73.2	3.8	15.5	16.1	26.8	933
12-23	16.7	8.8	21.6	55.8	52.8	90.2	94.0	95.2	2.5	15.1	15.8	30.8	1,028
24-35	15.0	10.9	20.9	52.9	52.6	91.6	95.4	96.1	3.8	14.1	14.7	29.9	870
36-47	14.5	10.2	20.6	52.4	53.7	92.3	94.0	94.9	4.7	12.7	14.0	28.5	763
48-59	13.1	7.9	17.5	55.4	54.8	91.9	95.4	95.5	3.7	13.9	15.1	27.3	494
Wealth index quintile													
Poorest	12.6	7.5	15.9	27.1	37.1	83.0	85.8	87.1	4.7	12.6	14.2	24.2	845
Second	15.7	7.3	19.1	38.8	45.1	83.7	88.1	89.4	5.2	17.7	19.0	30.9	750
Middle	16.1	9.0	21.1	49.1	54.0	87.2	89.2	91.7	4.4	12.7	13.6	28.9	834
Fourth	13.7	11.2	21.2	53.5	49.8	85.7	89.2	89.9	2.2	14.6	15.0	30.0	995
Richest	14.4	10.4	20.7	75.7	53.4	90.1	93.0	94.6	1.8	14.6	14.6	30.7	662

1 MICS indicator 3.11 - Diarrhoea treatment with oral rehydration salts (ORS) and zinc
( ) Figures that are based on 25-49 unweighted cases

The figure below shows the distribution of children under age 5 with diarrhoea who received ORS or recommended homemade fluids.

Figure CH.2: Children under age 5 with diarrhoea who received ORS or recommended homemade fluids, Sudan MICS, 2014
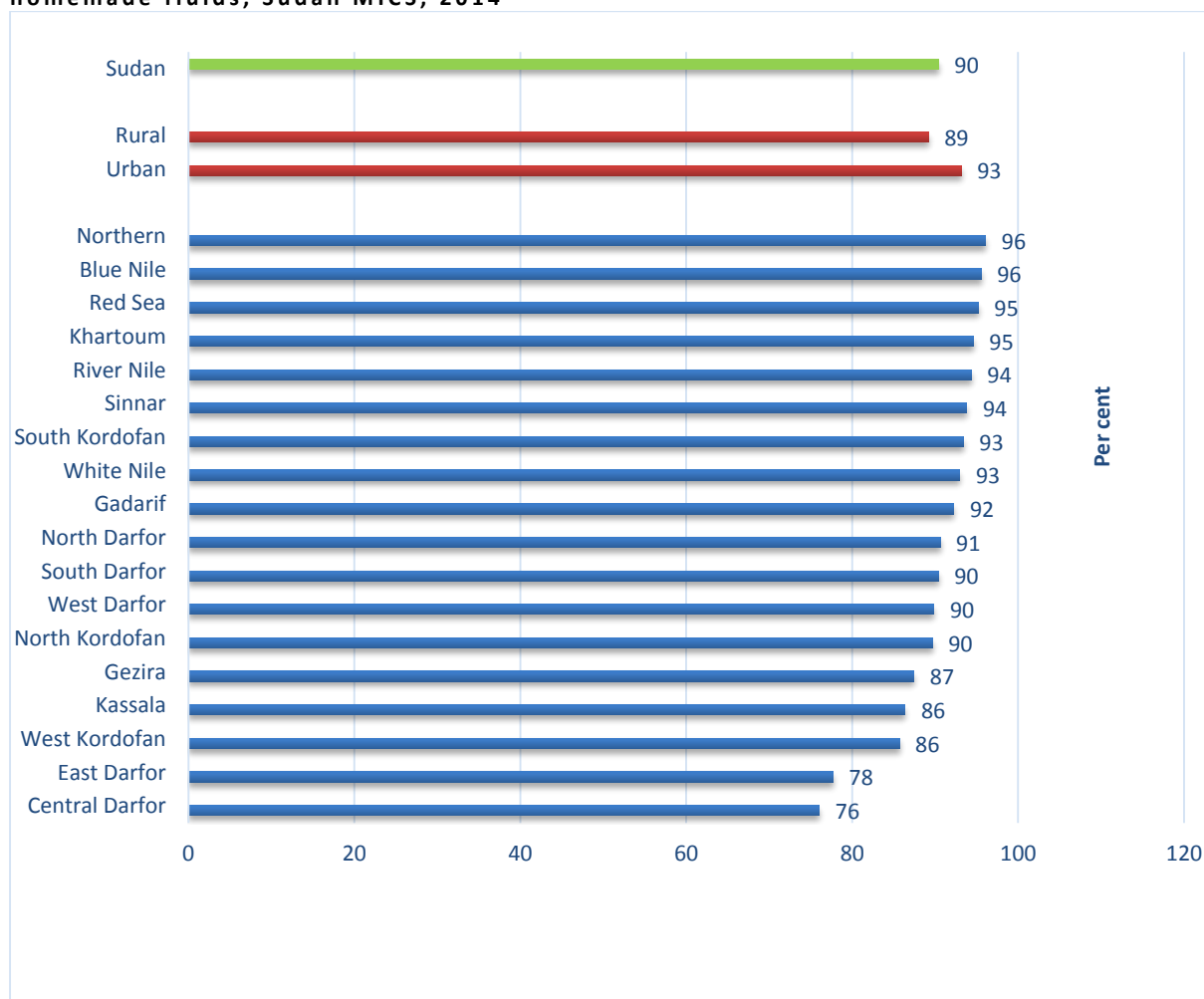
Table CH.8 provides the proportion of children aged 0-59 months with diarrhoea in the last two weeks, who received oral rehydration therapy with continued feeding, and who received other treatments. Overall, 33.7 percent of children with diarrhoea received ORS or increased fluids, 91.0 percent received ORT (ORS or recommended homemade fluids or increased fluids).

Combining the information in Table CH.6 with that of Table CH.7 on oral rehydration therapy, it is observed that 59.3 percent of children received ORT with continued feeding as recommended. There are also notable differences in the home management of diarrhoea by background characteristics. The figures for ORT and continued feeding in table CH.8 range from 47.2 percent in Red Sea State to 74.9 percent in Gadarif State.

There is also a notable difference among children from poorest homes with 55.5 percent and those from richest homes with 63.9 percent for ORT and continued feeding.

Table CH.8: **Oral Rehydration Therapy with Continued Feeding and Other Treatments**

❖ Percentage of children aged 0-59 months with diarrhoea in the last two weeks who were given oral rehydration therapy with continued feeding
❖ Percentage who were given other treatments
   Sudan MICS, 2014

Background characteristics	Zinc	ORS or increased fluids	ORT (ORS or recommended homemade fluids or increased fluids)	ORT with continued feeding [1]	Children with diarrhoea who were given: Other treatment: Pill or syrup: Antibiotic	Pill or syrup: Antimotility	Pill or syrup: Other	Pill or syrup: Unknown	Injection: Antibiotic	Injection: Non-antibiotic	Injection: Unknown	Intrave-nous	Home remedy, herbal medicine	Other	Not given any treatment or drug	Number of children age 0-59 months with diarrhoea in the last two weeks
Sudan	15.2	33.7	91.0	59.3	15.0	13.8	0.8	5.0	1.3	0.1	0.3	0.3	5.9	5.6	5.6	4,088
Sex																
Male	15.1	33.7	90.9	57.7	17.3	15.0	0.7	5.4	1.6	0.0	0.4	0.3	5.3	5.5	5.8	2,125
Female	15.4	33.8	91.1	61.1	12.6	12.4	0.9	4.7	0.9	0.2	0.1	0.3	6.6	5.7	5.4	1,963
State																
Northern	7.0	33.6	97.1	64.4	13.0	22.2	0.0	4.5	0.0.0	0.0	0.0	2.8	22.5	4.4	.9	56
River Nile	10.8	47.9	97.2	62.3	30.1	13.6	0.3	1.9	3.4	0.0	0.0	0.0	6.7	3.9	2.0	88
Red Sea	(27.9)	(45.8)	(95.2)	(47.2)	(16.3)	(26.2)	(1.8)	(6.2)	(0.0)	(0.0)	(0.0)	(0.0)	(22.2)	(5.1)	(2.7)	23
Kassala	22.5	45.8	86.4	54.0	8.0	16.8	1.5	1.4	0.0	0.0	0.0	0.0	7.5	1.4	8.3	164
Gadarif	22.4	35.6	92.3	74.9	33.2	13.0	1.2	1.6	2.3	0.0	.4	0.0	6.7	6.7	3.2	168
Khartoum	14.5	36.8	94.8	59.7	25.4	26.5	0.6	2.8	2.3	0.2	.0	.6	5.5	.8	2.8	742
Gezira	8.9	29.2	89.0	58.0	8.5	10.4	0.3	4.4	0.9	0.3	1.3	.2	3.4	8.4	7.6	749
White Nile	13.4	31.3	93.0	66.6	16.4	17.5	0.0	1.9	0.9	0.0	.4	1.2	7.0	3.0	4.4	257
Sinnar	13.9	39.8	95.7	59.8	14.6	21.0	0.0	4.1	0.3	0.0	0.0	.7	2.5	2.6	1.7	156
Blue Nile	11.0	41.1	95.8	63.7	15.6	19.7	0.5	21.5	0.0	0.0	0.0	0.0	3.0	8.7	1.3	141
North Kordofan	27.2	25.4	89.7	56.3	18.5	3.6	2.4	.6	2.7	0.0	0.0	0.0	4.6	3.7	5.5	158
South Kordofan	17.9	22.4	93.7	72.1	6.4	15.5	6.0	8.1	2.1	0.0	0.0	0.0	6.3	8.5	3.3	132
West Kordofan	10.7	16.9	85.7	53.8	23.7	7.6	.7	.0	4.3	0.0	0.0	0.0	4.3	10.5	8.9	68
North Darfur	13.7	28.3	90.9	57.2	11.9	5.8	1.0	7.7	.4	0.0	0.0	0.0	2.0	4.5	7.4	450
West Darfur	26.6	41.4	90.3	61.4	12.4	5.1	0.0	1.8	1.6	0.0	0.0	0.0	9.5	4.4	5.1	117

Table CH.8: Oral Rehydration Therapy with Continued Feeding and Other Treatments

- ❖ Percentage of children aged 0-59 months with diarrhoea in the last two weeks who were given oral rehydration therapy with continued feeding
- ❖ Percentage who were given other treatments
  Sudan MICS, 2014

Background characteristics	Zinc	ORS or increased fluids	ORT (ORS or recommended homemade fluids or increased fluids)	ORT with continued feeding [1]	Other treatment: Pill or syrup: Antibiotic	Pill or syrup: Antimotility	Pill or syrup: Other	Pill or syrup: Unknown	Injection: Antibiotic	Injection: Non-antibiotic	Injection: Unknown	Intrave-nous	Home remedy, herbal medicine	Other	Not given any treatment or drug	Number of children age 0-59 months with diarrhoea in the last two weeks
South Darfur	22.3	37.5	91.1	56.8	7.8	9.5	0.0	7.7	0.9	0.0	0.0	0.0	12.8	10.1	6.2	360
Central Darfur	31.9	31.1	76.2	49.0	7.7	4.8	1.1	11.1	0.6	0.4	0.0	0.0	6.3	7.4	11.0	79
East Darfur	5.4	35.4	78.8	47.2	7.4	1.0	0.0	8.6	0.3	0.0	0.0	0.0	7.8	14.5	13.6	178
Area																
Urban	20.1	38.8	93.4	58.4	16.9	20.3	0.7	3.6	1.5	0.2	0.1	.5	6.0	3.5	3.7	1,216
Rural	13.2	31.6	90.0	59.7	14.2	11.0	0.8	5.7	1.2	0.1	0.4	.2	5.9	6.6	6.4	2,872
Age																
0-11	16.1	24.3	74.1	30.8	13.0	11.5	0.4	4.2	0.7	0.0	1.0	.2	4.8	4.1	16.6	933
12-23	15.8	35.5	95.2	62.2	18.5	14.8	0.6	5.3	1.7	0.0	0.1	.5	5.7	6.2	3.1	1,028
24-35	14.7	34.9	96.7	69.2	14.8	15.7	0.7	5.0	1.3	0.0	0.2	.1	5.7	5.4	2.4	870
36-47	14.0	37.6	95.6	69.9	13.1	12.4	1.6	6.3	1.4	0.0	0.0	.4	6.8	7.0	2.2	763
48-59	15.1	39.9	97.3	73.5	15.1	14.5	0.5	4.2	1.2	0.0	0.0	.1	7.7	5.5	0.8	494
Wealth index quintile											0.0					
Poorest	14.2	31.3	87.7	55.5	13.0	5.7	0.8	6.6	0.7	0.0	0.0	0.0	7.4	6.5	8.2	845
Second	19.0	30.1	89.9	61.8	11.5	10.3	1.0	6.7	1.2	0.0	0.2	0.0	7.5	7.8	6.2	750
Middle	13.6	35.8	92.3	56.0	18.4	17.0	0.6	7.2	.9	0.3	1.1	.5	4.2	6.7	3.4	834
Fourth	15.0	34.9	90.9	60.5	13.4	15.7	1.0	2.7	2.1	0.2	0.0	.4	4.8	4.3	6.1	995
Richest	14.6	36.6	95.1	63.9	19.8	20.9	0.2	2.0	1.1	0.0	0.1	.5	6.4	2.7	3.6	662

[1] MICS indicator 3.12 - Diarrhoea treatment with oral rehydration therapy (ORT) and continued feeding
( ) Figures that are based on 25-49 unweighted cases

Figure CH.3 shows a slight difference between urban and rural areas in the case of the children under five with diarrhoea who received the distribution of ORT (ORS, RHF, or increased fluids) and continued feeding. A higher percentage of children in urban areas (58.4 percent) received ORT with continued feeding than those in rural areas - with 59.7 percent. The apparent minimal difference among the children along the wealth index spectrum on ORT with continued feeding treatment of children with diarrhoea, can be attributed to the free access to ORT in public health facilities for all families.

Figure CH.3: Children under age 5 with diarrhoea who received ORT (ORS, RHF, or increased fluids) and continued feeding, Sudan MICS, 2014

	Percent
States	
Gadarif	75
South Kordofan	72
White Nile	67
Northern	64
Blue Nile	64
River Nile	62
West Darfor	61
Sinnar	60
Khartoum	60
Gezira	58
North Darfor	57
South Darfor	57
North Kordofan	56
Kassala	54
West Kordofan	54
Central Darfor	49
Red Sea	47
East Darfor	47
Area	
Urban	58
Rural	60
Wealth Index Quintile	
Poorest	56
Second	62
Middle	56
Fourth	60
Richest	64
Sudan	59
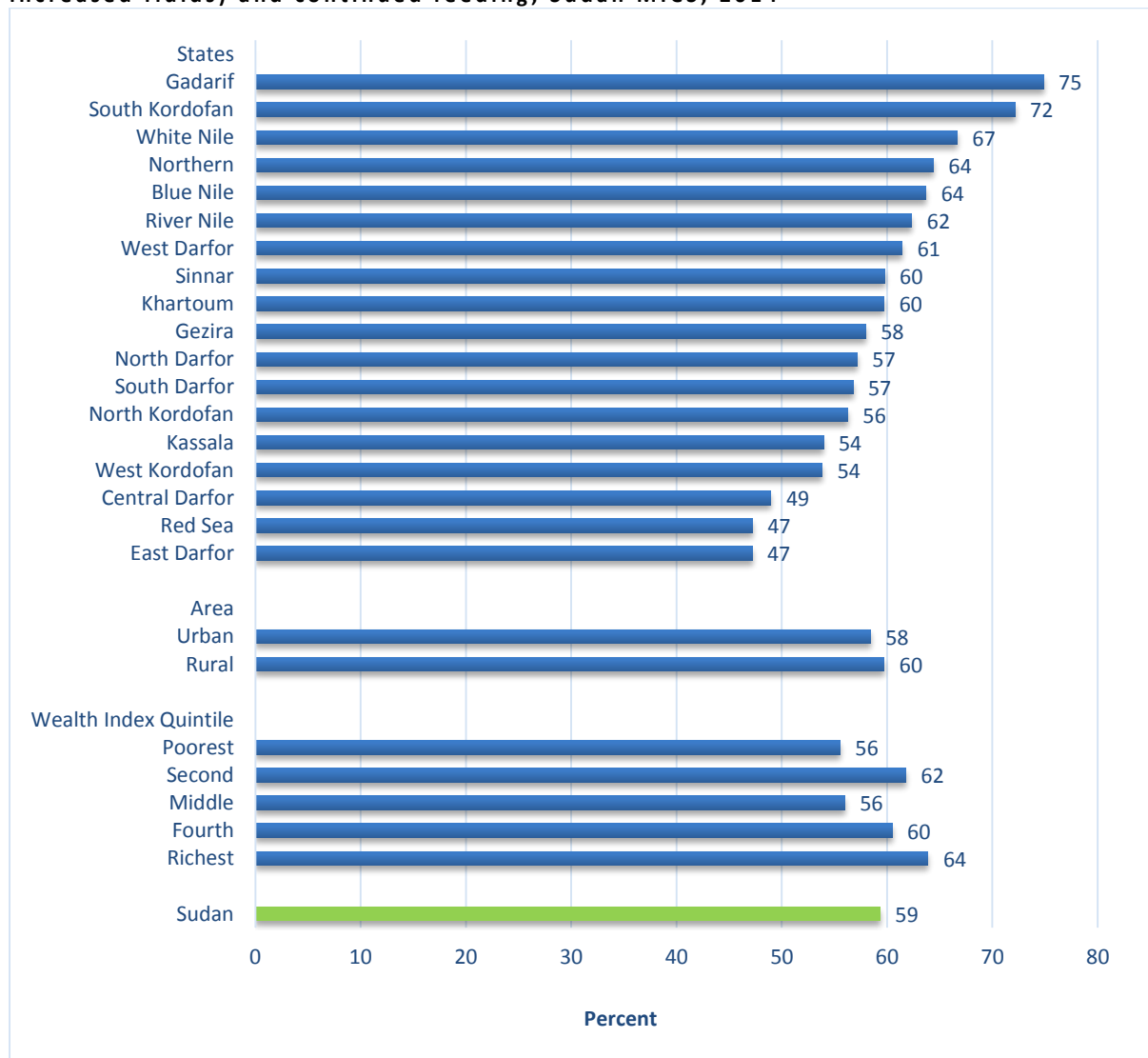
Table CH.9 provides information on the source of ORS and zinc for children who benefitted from these treatments; ORS (63.8 percent) and zinc (59.5 percent). The percentage of children who were given ORS and zinc as treatment for diarrhoea were 19.6 percent and 15.2 percent respectively. For both ORS and zinc, the main source is traced to providers in the public health facilities. The source of ORS is 25.1 percent in public health facilities as compared to 3.6 percent from private service providers. Similar observations were reported for the source of zinc supply as treatment for diarrhoea.

Figure CH.3a: Source of ORS and ZINC, Sudan MICS, 2014
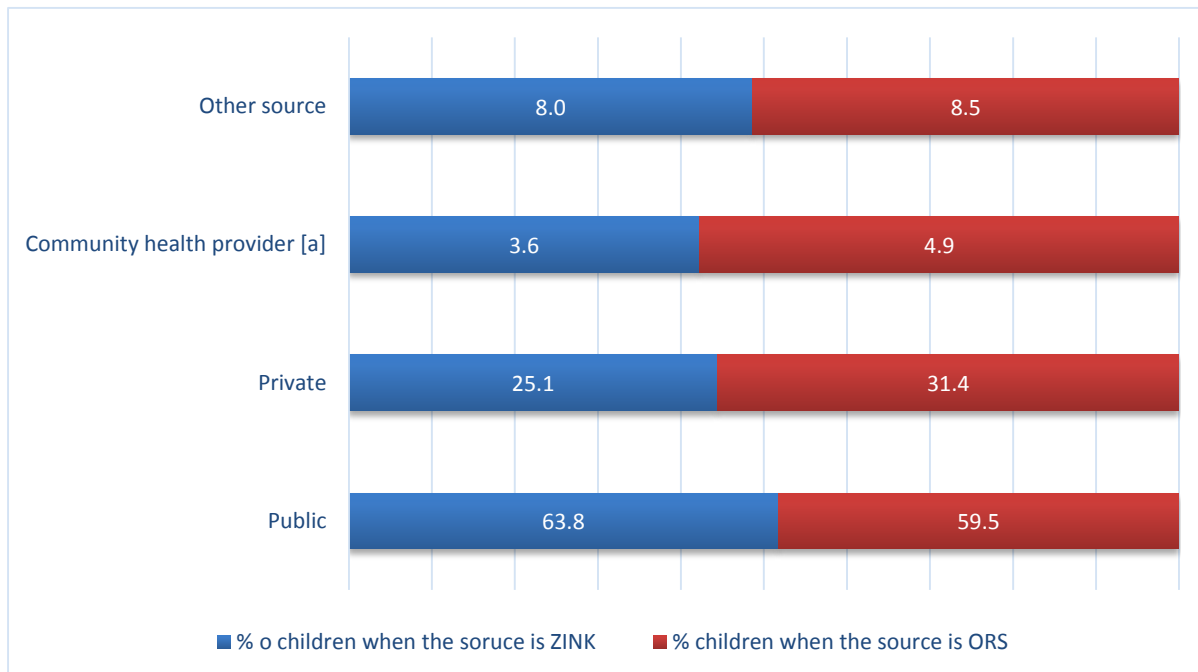
Table CH.9: Source of ORS and Zinc

❖ Percentage of children aged 0-59 months with diarrhoea in the last two weeks who were given ORS, and
❖ Percentage given zinc, by the source of ORS and zinc
  Sudan MICS, 2014

Background characteristics	Percentage of children who were given as treatment for diarrhoea: ORS	Zinc	Number of children age 0-59 months	Percentage of children for whom the source of ORS was: Health facilities or providers Public	Private	Community health provider [a]	Other source	DK/ Missing	A health facility or provider [b]	Number of children age 0-59 months	Percentage of children for whom the source of zinc was: Health facilities or providers Public	Private	Community health provider [a]	Other source	DK/ Missing	A health facility or provider [b]	Number of children age 0-59 months
Sudan	19.6	15.2	4,088	63.8	25.1	3.6	8.0	3.1	88.9	803	59.5	31.4	4.9	8.5	0.7	90.9	622
Sex																	
Male	19.8	15.1	2,125	61.4	26.3	3.0	9.9	2.4	87.6	421	58.1	32.1	4.9	9.1	0.8	90.1	321
Female	19.5	15.4	1,963	66.4	23.8	4.3	6.0	3.8	90.2	382	61.0	30.6	5.0	7.9	0.5	91.6	301
State																	
Northern	11.3	7.0	56	*	*	*	*	*	*	6	*	*	*	*	*	*	4
River Nile	27.4	10.8	88	(68.5)	(23.7)	(3.4)	(3.8)	(3.9)	(92.2)	24	*	*	*	*	*	*	10
Red Sea	37.5	27.9	23	*	*	*	*	*	*	9	*	*	*	*	*	*	7
Kassala	41.8	22.5	164	90.9	4.5	4.2	3.7	.9	95.4	68	(73.8)	(21.5)	(.0)	(4.7)	(0.0)	(95.3)	37
Gadarif	19.8	22.4	168	(64.5)	(16.4)	(1.2)	(17.5)	(1.6)	(80.9)	33	(76.4)	(23.6)	(2.5)	(.0)	(0.0)	(100.0)	38
Khartoum	22.3	14.5	742	54.0	31.5	.0	9.6	4.9	85.5	165	58.6	41.4	5.4	0.0	0.0	100.0	108
Gezira	15.2	8.9	749	(46.8)	(51.8)	(4.5)	(1.4)	(0.0)	(98.6)	114	(41.7)	(45.1)	(0.0)	(13.2)	(0.0)	(86.8)	66
White Nile	15.7	13.4	257	(71.8)	(22.1)	(3.0)	(6.1)	(0.0)	(93.9)	40	(72.2)	(21.7)	(.0)	(3.5)	(2.6)	(93.9)	35
Sinnar	13.9	13.9	156	(67.5)	(4.2)	(0.0)	(11.2)	(17.0)	(71.8)	22	(58.6)	(37.6)	(3.8)	(3.9)	(0.0)	(96.1)	22
Blue Nile	27.6	11.0	141	(91.2)	(3.9)	(0.0)	(4.9)	(0.0)	(95.1)	39	(80.1)	(15.5)	(0.0)	(4.5)	(0.0)	(95.5)	15
North Kordofan	11.4	27.2	158	*	*	*	*	*	*	18	(56.1)	(37.6)	(10.6)	(6.3)	(0.0)	(93.7)	43
South Kordofan	15.9	17.9	132	(73.3)	(12.1)	(11.6)	(6.4)	(8.3)	(85.3)	21	(75.6)	(23.1)	(2.2)	(0.0)	(1.3)	(98.7)	24
West Kordofan	13.6	10.7	68	*	*	*	*	*	*	9	*	*	*	*	*	*	7
North Darfur	20.2	13.7	450	61.4	15.7	8.1	18.6	4.3	77.1	91	66.0	16.7	7.2	13.6	3.7	82.7	62
West Darfur	32.8	26.6	117	84.2	12.6	0.0	0.9	2.3	96.8	38	79.6	18.0	5.7	2.4)	0.0	97.6	31
South Darfur	15.5	22.3	360	39.7	47.5	10.1	8.1	4.7	87.2	56	26.1	44.4	12.6	29.4	.0	70.6	80

Table CH.9: Source of ORS and Zinc

❖ Percentage of children aged 0-59 months with diarrhoea in the last two weeks who were given ORS, and
❖ Percentage given zinc, by the source of ORS and zinc
Sudan MICS, 2014

Background characteristics	Percentage of children who were given as treatment for diarrhoea: ORS	Zinc	Number of children age 0-59 months	Source of ORS – Public	Private	Community health provider [a]	Other source	DK/Missing	A health facility or provider [b]	Number of children age 0-59 months	Source of zinc – Public	Private	Community health provider [a]	Other source	DK/Missing	A health facility or provider [b]	Number of children age 0-59 months
Central Darfur	26.4	31.9	79	84.1	3.7	0.0	8.7	3.4	87.9	21	73.7	12.4	2.3	11.6	2.3	86.1	25
East Darfur	15.2	5.4	178	69.4	(26.1)	(3.7)	(4.5)	(.0)	(95.5)	27	*	*	*	*	*	*	10
Area																	
Urban	24.8	20.1	1,216	63.9	25.7	.2	7.3	3.1	89.7	302	63.1	35.9	.7	.4	.7	98.9	244
Rural	17.5	13.2	2,872	63.7	24.7	5.6	8.5	3.1	88.4	501	57.2	28.5	7.7	13.7	.6	85.6	378
Age																	
0-11	16.7	16.1	933	72.4	18.3	2.4	6.3	3.0	90.7	156	67.8	25.2	4.4	6.4	.6	93.0	150
12-23	21.6	15.8	1,028	65.4	23.6	4.7	7.8	3.2	89.0	222	58.4	36.1	2.0	4.3	1.2	94.5	163
24-35	20.9	14.7	870	57.8	32.3	5.4	6.2	3.7	90.1	182	47.0	39.2	7.6	13.7	.1	86.2	127
36-47	20.6	14.0	763	52.2	32.1	.6	14.3	1.4	84.3	157	56.7	34.1	6.9	9.3	.0	90.7	107
48-59	17.5	15.1	494	77.7	13.3	4.3	4.4	4.5	91.0	86	70.4	16.3	5.2	11.7	1.5	86.8	75
Wealth index quintile																	
Poorest	15.9	14.2	845	66.2	17.6	10.7	12.9	3.3	83.8	135	46.2	25.4	10.0	26.5	1.9	71.6	120
Second	19.1	19.0	750	71.0	20.7	6.9	6.8	1.5	91.7	143	69.6	24.8	7.4	4.6	1.0	94.3	143
Middle	21.1	13.6	834	67.4	16.3	1.9	14.0	2.3	83.7	176	69.0	26.2	1.4	4.5	.3	95.2	114
Fourth	21.2	15.0	995	60.3	35.3	.3	3.4	1.1	95.6	211	62.2	31.9	.6	5.9	.0	94.1	149
Richest	20.7	14.6	662	54.6	32.7	.4	4.2	8.6	87.3	137	45.8	53.7	6.0	.5	.0	99.5	97

[a] Community health provider includes both public (Community health worker and Mobile/Outreach clinic) and private (Mobile clinic) health facilities
[b] Includes all public and private health facilities and providers
[*] Based on less than 25 unweighted cases and has been suppressed
( ) Figures that are based on 25-49 unweighted cases

6.3.2 Acute Respiratory Infections

Symptoms of ARI are collected during the Sudan MICS to capture information on pneumonia disease - the leading cause of death in children under five. Once diagnosed, pneumonia is treated effectively with antibiotics. Studies have shown a limitation in the survey approach of measuring pneumonia because many of the suspected cases identified through surveys are in fact, not true pneumonia.[20] While this limitation does not affect the level and patterns of care-seeking for suspected cases, it limits the validity of the level of treatment of pneumonia with antibiotics, as reported through household surveys.

The treatment indicator described in this report must therefore be taken with caution, keeping in mind that the accurate level is likely higher.

	Table CH.10: Care-seeking for and Antibiotic Treatment of Symptoms of Acute Respiratory Infection ARI							
❖ Percentage of children aged 0-59 months with symptoms of ARI in the last two weeks for whom advice or treatment was sought, by source of advice or treatment, and ❖ Percentage of children with symptoms who were given antibiotics Sudan MICS, 2014								
Background characteristics	Percentage of children with symptoms of ARI for whom:					No advice or treatment sought	Percentage of children with symptoms of ARI in the last two weeks who were given antibiotics [2]	Number of children age 0-59 months with symptoms of ARI in the last two weeks [d]
	Advice or treatment was sought from:				A health facility or provider [1], [b]			
	Health facilities or providers: Public	Health facilities or providers: Private	Health facilities or providers: Community health provider [a]	Other source				
Sudan	42.1	15.1	4.5	9.2	48.3	34.8	59.0	2,500
Sex								
Male	41.5	16.2	4.1	9.8	48.1	33.9	59.5	1,316
Female	42.8	13.8	4.9	8.6	48.5	35.8	58.4	1,185
State								
Northern	55.5	17.8	.0	1.7	64.3	26.7	71.6	29
River Nile	62.3	16.3	5.2	(4.5)	74.4	15.4	78.0	44
Red Sea	*	*	*	*	*	*	*	14
Kassala	51.6	7.7	5.0	2.6	56.0	38.0	63.4	75
Gadarif	60.8	11.7	5.3	3.8	69.6	27.7	72.8	81
Khartoum	41.1	20.4	.0	10.4	49.0	29.0	61.4	229
Gezira	58.8	11.9	4.6	3.9	63.6	25.4	65.5	361
White Nile	54.6	13.7	5.5	12.4	64.0	22.2	75.4	180
Sinnar	52.3	9.1	2.1	13.7	56.3	25.8	60.8	130
Blue Nile	58.6	8.7	.4	6.4	59.5	28.5	62.6	89
North Kordofan	49.6	11.5	9.4	7.8	54.9	31.1	66.7	144
South Kordofan	42.5	8.7	1.7	8.0	43.3	39.7	68.0	129
West Kordofan	52.6	15.8	14.4	7.5	60.2	27.6	59.2	45
North Darfur	25.3	15.5	2.6	5.1	29.2	54.2	46.5	373
West Darfur	63.1	12.2	2.5	8.5	67.8	21.6	54.2	44
South Darfur	21.7	23.4	10.1	11.1	34.8	45.1	49.0	342
Central Darfur	45.7	5.2	0.5	17.8	46.5	33.6	54.1	38
East Darfur	17.1	21.7	3.1	30.1	19.5	37.2	42.0	154

[20]Campbell, H. et al. 2013.*Measuring Coverage in MNCH: Challenges in Monitoring the Proportion of Young Children with Pneumonia Who Receive Antibiotic Treatment*. PLoS Med 10(5): e1001421. doi:10.1371/journal.pmed.1001421

Table CH.10: Care-seeking for and Antibiotic Treatment of Symptoms of Acute Respiratory Infection ARI								
❖ Percentage of children aged 0-59 months with symptoms of ARI in the last two weeks for whom advice or treatment was sought, by source of advice or treatment, and ❖ Percentage of children with symptoms who were given antibiotics Sudan MICS, 2014								
Background characteristics	Percentage of children with symptoms of ARI for whom:					No advice or treatment sought	Percentage of children with symptoms of ARI in the last two weeks who were given antibiotics [2]	Number of children age 0-59 months with symptoms of ARI in the last two weeks [d]
	Advice or treatment was sought from:							
	Health facilities or providers: Public	Health facilities or providers: Private	Health facilities or providers: Community health provider [a]	Other source	A health facility or provider [1], [b]			
Area								
Urban	42.7	24.4	1.2	8.1	54.7	26.8	64.3	677
Rural	41.9	11.6	5.7	9.7	45.9	37.8	57.0	1,823
Age								
0-11	43.7	13.4	3.8	11.5	49.9	32.9	60.7	447
12-23	44.0	17.0	4.7	8.4	52.3	32.2	58.4	488
24-35	43.2	12.6	4.6	6.4	48.6	38.3	58.8	518
36-47	39.1	17.0	4.2	10.1	46.1	35.0	61.3	609
48-59	41.3	14.8	5.1	10.1	44.7	35.5	54.9	438
Wealth index quintile								
Poorest	21.9	14.0	7.3	13.7	27.2	51.4	43.3	627
Second	39.3	16.6	6.0	10.7	45.4	35.6	58.5	580
Middle	58.3	9.3	3.1	5.7	61.9	27.2	65.2	556
Fourth	49.1	13.4	1.5	7.4	54.1	30.8	61.0	406
Richest	49.6	26.0	2.4	6.6	63.3	19.9	76.6	331

[1] MICS indicator 3.13 - Care-seeking for children with acute respiratory infection (ARI) symptoms
[2] MICS indicator 3.14 - Antibiotic treatment for children with ARI symptoms
[a] Community health providers includes both public (Community health worker and Mobile/Outreach clinic) and private (Mobile clinic) health facilities
[b] Includes all public and private health facilities and providers, but excludes private pharmacy
[c] Includes all public and private health facilities and providers
[d] Children with symptoms of ARI are those who had an illness with a cough accompanied by rapid or difficult breathing
Sudan MICS did not include questions on symptoms due to a problem in the chest, or both a problem in the chest and a blocked nose
( ) Figures that are based on 25-49 unweighted cases [*] Based on less than 25 unweighted cases and has been suppressed

Table CH.10 presents the percentage of children with symptoms of ARI in the two weeks preceding the survey for whom care was sought, by source of care and the percentage who received antibiotics. Approximately half (48.3 percent) of children aged 0-59 months with symptoms of ARI, were taken to a qualified provider.

Table CH.10 also presents the use of antibiotics for the treatment of children under 5 years with symptoms of ARI by sex, age, state, area, age, and socioeconomic factors.

In Sudan, 59.0 percent of under-5 children with symptoms of ARI received antibiotics during the two weeks prior to the survey. The percentage was considerably higher in urban (64.3 percent) than in rural areas (57.0 percent), and ranged from 49.0 percent in South Darfur state to 78.0 percent in River Nile state. The table also shows that antibiotic treatment of ARI symptoms is low among the poorest households and among children whose mother's/caretaker's have less than a secondary education. The use of antibiotics increases with the age of the child.

With regard to the point of treatment among children with symptoms of ARI who were treated with antibiotics, Table CH. 10 shows treatment was mostly received from public health facilities (42.1 percent). Treatment was received in 4.5 percent of cases from community health workers.

The mothers' knowledge of danger signs is an important determinant of care-seeking behaviour. In the Sudan MICS 2014, mothers or caretakers were asked to report symptoms that would cause them to take a child under-five for care immediately at a health facility. Issues related to knowledge of danger signs of pneumonia are presented in Table CH.11. Awareness of at least the two danger signs of pneumonia, i.e. fast and/or difficult breathing would cause women aged 15-49 years who are mothers or caretakers of under 5 children, to take them immediately to a health facility for treatment.

Table CH.11: Knowledge of the Two Danger Signs of Pneumonia									
❖ Percentage of women aged 15-49 years who are mothers or caretakers of children under age 5 by symptoms that would cause them to take a child under age 5 immediately to a health facility, and ❖ Percentage of mothers who recognize fast or difficult breathing as signs for seeking care immediately Sudan MICS, 2014									
Background characteristics	Percentage of mothers / caretakers who think that a child should be taken immediately to a health facility if the child:							Mothers/ caretakers who recognize at least one of the two danger signs of pneumonia (fast and/or difficult breathing)	Number of mothers / caretakers of children age 0-59 months
	Is not able to drink or breastfeed	Becomes sicker	Develops a fever	Has fast breathing	Has difficulty breathing	Has blood in stool	Drinking poorly	Has other symptoms		
Sudan	11.2	21.3	80.8	11.7	20.9	8.0	7.5	64.8	26.9	8,715
State										
Northern	7.2	7.6	85.6	6.0	17.6	5.5	4.8	84.1	21.5	164
River Nile	13.2	21.2	86.6	20.4	28.3	2.7	6.2	64.8	44.3	258
Red Sea	7.0	19.6	85.0	18.7	19.1	3.9	9.3	48.2	33.9	167
Kassala	6.1	14.2	82.8	6.0	17.7	5.6	3.2	43.7	20.7	328
Gadarif	20.7	28.4	92.9	13.3	25.2	13.9	15.0	63.4	27.2	476
Khartoum	36.2	32.5	89.1	29.4	43.0	31.8	21.5	71.3	51.3	1,113
Gezira	5.2	27.4	74.4	5.2	19.1	1.0	1.1	75.6	21.8	1,311
White Nile	3.6	4.7	84.6	8.3	23.4	1.6	1.2	65.4	29.6	420
Sinnar	2.7	34.2	73.8	13.0	29.4	2.9	.4	59.6	34.3	331
Blue Nile	5.0	6.8	94.0	4.8	9.4	2.7	1.2	79.6	13.9	405
North Kordofan	3.6	10.9	77.2	7.6	20.4	1.0	6.0	62.7	23.5	587
South Kordofan	4.6	14.7	80.7	6.4	9.9	1.8	1.9	51.1	14.3	297
West Kordofan	20.3	33.3	72.4	20.3	24.6	9.1	24.8	44.9	40.1	541
North Darfur	1.1	11.8	73.0	2.8	7.7	1.1	2.9	83.6	10.4	756
West Darfur	17.1	23.3	82.6	15.1	18.7	12.4	7.6	67.8	28.7	314
South Darfur	9.0	19.8	81.9	12.2	15.5	10.5	4.9	39.7	23.5	787
Central Darfur	4.5	12.6	77.9	4.4	14.1	5.0	3.9	71.2	17.8	151
East Darfur	1.1	21.9	71.4	2.2	2.3	.4	1.3	66.7	4.3	308
Area										
Urban	17.7	22.1	85.5	19.2	29.1	14.9	11.2	63.3	37.5	2,430
Rural	8.7	21.0	79.0	8.8	17.7	5.4	6.1	65.3	22.8	6,284
Mother's education										
None	8.4	21.6	79.7	9.3	14.7	5.8	6.4	60.6	20.8	3,611
Primary	11.8	20.3	81.0	11.2	22.0	7.5	7.2	66.5	27.8	2,999

97

Table CH.11: Knowledge of the Two Danger Signs of Pneumonia

❖ Percentage of women aged 15-49 years who are mothers or caretakers of children under age 5 by symptoms that would cause them to take a child under age 5 immediately to a health facility, and
❖ Percentage of mothers who recognize fast or difficult breathing as signs for seeking care immediately
Sudan MICS, 2014

| Background characteristics | Percentage of mothers / caretakers who think that a child should be taken immediately to a health facility if the child: | | | | | | | | Mothers/ caretakers who recognize at least one of the two danger signs of pneumonia (fast and/or difficult breathing) | Number of mothers / caretakers of children age 0-59 months |
	Is not able to drink or breastfeed	Becomes sicker	Develops a fever	Has fast breathing	Has difficulty breathing	Has blood in stool	Drinking poorly	Has other symptoms		
Secondary	14.3	20.8	82.7	15.8	28.0	12.1	8.5	69.8	33.9	1,443
Higher	17.1	25.0	82.7	18.5	34.7	14.0	13.1	68.6	41.0	658
Missing/DK	*	*	*	*	*	*	*	*	*	3

Overall, 26.9 percent of women knew at least one of the two danger signs of pneumonia – fast and/or difficult breathing. The most commonly identified symptom for taking a child to a health facility is fever, accounting for more than 80 percent of respondents.

About 11.7 percent and 20.9 percent of mothers identified fast breathing and difficult breathing respectively, as symptoms for taking children immediately to a health care provider.

The percentage of mothers/caretakers who recognised the two danger signs of pneumonia was higher among mothers with higher education (41.0 percent) compared to a lower percentage of 20.8 percent for mothers with no education. The percentage of mothers/caretakers who recognized the two danger signs of pneumonia was highest in Khartoum state (51.3 percent) and lowest in East Darfur state (4.3 percent). Also, there was higher percentage recognition of the two danger signs of pneumonia among urban (37.5 percent) respondents than rural (22.8 percent) respondents.

6.3.3 Solid Fuel Use
More than 3 billion people around the world rely on solid fuels for their basic energy needs, including cooking and heating. Solid fuels include biomass fuels, such as wood, charcoal, crops or other agricultural waste, dung, shrubs and straw, and coal.

Cooking and heating with solid fuels leads to high levels of indoor smoke, which contains a complex mix of health-damaging pollutants. The main problem with the use of solid fuels is their incomplete combustion, which produces toxic elements such as carbon monoxide, polyaromatic hydrocarbons, and sulphur dioxide (SO_2), among others. Use of solid fuels can increase the risks of incurring acute respiratory illness, pneumonia, chronic obstructive lung disease, cancer, and possibly tuberculosis, asthma, or cataracts. It may also contribute to low birth weight of babies born to pregnant women exposed to smoke.

The primary indicator for monitoring use of solid fuels is the proportion of the population using solid fuels as the primary source of domestic energy for cooking - shown in Table CH.12. Solid fuel use. Percent distribution of household members according to type of cooking fuel mainly used by the household, and percentage of household members living in households using solid fuels for cooking, Sudan MICS, 2014

Overall, 58.2 percent of the household population in Sudan use solid fuels for cooking, consisting mainly of wood (40.7 percent). Use of solid fuels is low in urban areas (40.7 percent) but high in rural areas, where they are used by two thirds of households members (66.1 percent).

Differentials with respect to household wealth and the educational level of the houshold head, need more attention. There is also a large difference between the poorest and richest, which is related very much to ability and purchasing power for the options other than access wood. The findings show that use of solid fuels ranges from 99.9 percent in Central Darfur to 12.5 percent in Khartoum state.

Table CH.12: Solid fuel use by Place of Cooking

Percent distribution of household members in households using solid fuels by place of cooking
Sudan MICS, 2014

Background characteristics	Percentage of household members in households using:														Solid fuels for cooking [1]	Number of household members
	Electricity	Liquefied Petroleum Gas (LPG)	Kerosine	Solid fuels: Coal / Lignite	Solid fuels: Charcoal	Solid fuels: Wood	Solid fuels: Straw / Shrubs / Grass	Solid fuels: Animal dung	Solid fuels: Agricultural crop residue	Solar	No food cooked in household	Other	Missing	Total		
Sudan	0.4	41.3	0.0	1.2	15.7	40.7	0.5	0.1	0.0	0.0	0.0	0.0	0.0	100.0	58.2	98,883
State																
Northern	2.1	81.3	0.1	0.9	1.2	14.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0	100.0	16.4	2,181
River Nile	3.2	83.1	0.4	0.1	1.7	10.8	0.7	0.0	0.0	0.0	0.0	0.1	0.0	100.0	13.3	3,715
Red Sea	0.6	42.1	0.0	8.2	28.4	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	57.2	2,489
Kassala	0.0	25.3	0.0	0.7	35.3	37.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	100.0	74.7	4,117
Gadarif	0.1	29.8	.2	4.2	32.5	31.8	0.7	0.0	0.3	0.1	0.2	0.0	0.0	100.0	69.6	5,005
Khartoum	0.5	87.0	0.0	1.6	7.6	3.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	100.0	12.5	13,830
Gezira	0.4	83.3	0.0	0.2	7.1	8.8	0.0	0.1	0.0	0.0	0.0	0.0	0.0	100.0	16.2	16,270
White Nile0	0.1	61.7	0.0	3.3	13.3	19.7	0.8	1.0	0.0	0.0	0.1	0.0	0.0	100.0	38.2	5,016
Sinnar	0.0	42.0	0.0	0.4	18.9	37.8	0.3	0.1	0.0	0.1	0.2	0.0	0.3	100.0	57.4	3,763
Blue Nile	0.1	11.3	0.0	1.8	35.7	50.8	0.2	0.0	0.0	0.0	0.1	0.0	0.0	100.0	88.5	4,094
North Kordofan	0.1	17.2	0.0	0.2	22.0	60.0	0.4	0.0	0.0	0.0	0.1	0.1	0.0	100.0	82.5	6,359
South Kordofan	.0	2.5	0.0	3.8	24.9	66.2	2.4	0.0	0.1	0.0	0.0	0.0	0.0	100.0	97.5	2,983
West Kordofan	0.1	1.6	0.0	0.1	15.0	82.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	98.3	5,745
North Darfur	0.1	2.5	0.0	0.2	7.2	86.8	3.2	0.0	0.0	0.0	0.0	0.0	0.1	100.0	97.4	7,776
West Darfur	0.1	0.1	0.0	0.0	20.2	79.5	0.0	0.0	0.0	0.0	0.1	0.0	0.0	100.0	99.7	3,023
South Darfur	0.4	1.8	0.0	1.0	23.2	73.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	100.0	97.7	7,712
Central Darfur	0.0	.0	0.0	1.0	11.9	86.8	0.2	.0	0.0	0.0	0.0	0.0	0.1	100.0	99.9	1,646
East Darfur	0.0	1.1	0.0	0.1	13.1	85.6	0.1	.0	0.0	0.0	0.0	0.0	0.0	100.0	98.9	3,158
Area																
Urban	0.4	58.8	0.0	2.5	26.0	12.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	100.0	40.7	30,476
Rural	0.4	33.5	0.0	.6	11.1	53.4	0.8	0.1	0.0	0.0	0.0	0.0	0.0	100.0	66.1	68,407

Table CH.12: Solid fuel use by Place of Cooking

Percent distribution of household members in households using solid fuels by place of cooking
Sudan MICS, 2014

Background characteristics	Percentage of household members in households using:														Solid fuels for cooking [1]	Number of household members
	Electricity	Liquefied Petroleum Gas (LPG)	Kerosine	Solid fuels: Coal / Lignite	Solid fuels: Charcoal	Solid fuels: Wood	Solid fuels: Straw / Shrubs / Grass	Solid fuels: Animal dung	Solid fuels: Agricultural crop residue	Solar	No food cooked in household	Other	Missing	Total		
Education of the household head																
None	0.2	23.8	0.0	1.2	16.8	57.0	0.8	0.1	0.0	0.0	0.0	0.0	0.0	100.0	76.0	45,740
Primary	0.7	46.7	0.1	1.2	16.2	34.7	0.3	0.1	0.1	0.0	0.1	0.0	0.0	100.0	52.5	28,007
Secondary	0.3	64.9	0.1	1.3	14.2	18.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0	34.7	18,812
Higher	0.6	79.6	0.0	1.2	9.4	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	19.8	5,564
Missing/DK	0.6	30.3	0.0	6.7	11.6	50.6	0.0	0.0	0.0	0.0	0.2	0.0	0.0	100.0	68.9	761
Wealth index quintile																
Poorest	0.0	0.0	0.0	0.0	2.9	96.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	99.9	19,775
Second	0.0	3.0	0.0	1.5	19.1	74.6	1.4	.3	0.1	0.0	0.1	0.0	0.0	100.0	96.9	19,776
Middle	0.3	33.6	0.1	2.9	35.4	27.2	0.2	.1	0.1	0.0	0.1	0.0	0.0	100.0	65.9	19,779
Fourth	1.0	74.5	0.1	1.2	17.9	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	100.0	24.3	19,773
Richest	0.6	95.1	0.0	.5	3.1	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	4.2	19,781

[1] MICS indicator 3.15 - Use of solid fuels for cooking

Solid fuel use by place of cooking is shown in Table CH.13. The presence and extent of indoor pollution are dependent on cooking practices, places used for cooking, as well as types of fuel used. According to the Sudan MICS, 67.8 percent of the population living in households using solid fuels for cooking, make the food in a separate room that is used as a kitchen.

The percentage of households that cook food within the dwelling unit is slightly higher in urban areas (69.8 percent) than in rural areas (67.3 percent). Percentage of households using separate rooms as a kitchen are correlated positively with the level of education and with the level of income.

Table CH.13: Solid Fuel Use by Place of Cooking							
Percent distribution of household members in households using solid fuels by place of cooking Sudan MICS, 2014							
Background characteristics	Place of cooking:						Number of household members in households using solid fuels for cooking
	In the house: In a separate room used as kitchen	In the house: Else-where in the house	In a separate building	Outdoors	Other place	Missing	
Sudan	67.8	18.8	4.7	5.6	2.7	0.3	57,587
State							
Northern	83.8	13.7	1.4	0.3	0.3	0.5	358
River Nile	78.1	21.1	0.0	0.7	.2	0.0	493
Red Sea	43.0	38.5	1.8	13.0	1.8	1.8	1,425
Kassala	31.1	43.8	4.1	17.4	3.2	0.4	3,076
Gadarif	54.7	29.3	0.5	8.7	6.7	0.1	3,481
Khartoum	60.3	28.6	1.0	7.3	2.8	0.0	1,726
Gezira	54.5	34.7	0.8	3.3	5.1	1.6	2,633
White Nile0	41.1	52.1	4.0	1.4	0.3	1.1	1,915
Sinnar	48.0	40.3	1.2	10.3	0.1	0.0	2,161
Blue Nile	51.1	26.4	3.2	18.4	0.8	0.1	3,623
North Kordofan	77.6	9.5	10.1	0.9	1.9	0.1	5,249
South Kordofan	46.0	27.8	17.1	6.6	2.1	0.4	2,909
West Kordofan	86.4	5.2	2.5	5.1	0.5	0.3	5,648
North Darfur	87.4	2.2	6.5	0.7	3.1	0.1	7,571
West Darfur	67.0	11.5	18.1	2.3	0.9	0.2	3,014
South Darfur	82.4	10.5	0.4	2.0	4.2	0.5	7,538
Central Darfur	68.6	14.8	1.9	9.7	4.8	0.3	1,645
East Darfur	79.6	10.9	0.8	3.7	4.8	0.2	3,123
Area							
Urban	69.8	18.8	3.6	4.0	3.2	0.6	12,402
Rural	67.3	18.8	5.0	6.1	2.6	0.3	45,185
Education of household head							
None	63.7	21.1	4.6	7.4	3.0	0.3	34,745
Primary	72.3	16.5	4.7	3.3	2.9	0.3	14,694
Secondary	76.3	12.6	6.1	2.5	1.7	0.7	6,523
Higher	83.5	12.2	3.0	0.8	0.5	0.0	1,101
Missing/DK	77.5	18.3	3.5	0.3	0.3	0.0	525
Wealth index quintile							
Poorest	73.1	14.3	4.8	4.3	3.4	0.1	19,761
Second	63.3	21.0	5.5	7.3	2.6	0.3	19,167
Middle	63.2	23.5	4.1	6.5	2.4	0.3	13,032
Fourth	74.2	16.9	3.5	2.4	2.1	0.8	4,798
Richest	83.8	8.5	1.6	1.1	0.0	4.9	829

Water and Sanitation

68.0 percent of the population uses an improved source of drinking water

7. Water and Sanitation

Safe drinking water is a basic necessity for good health. Unsafe drinking water can be a significant determinant of diseases such as cholera, typhoid, and schistosomiasis. Drinking water can also be both chemically and physically contaminated, with harmful effects on human health. In addition to preventing disease, improved access to drinking water may be particularly important for women and children, especially in rural areas, who bear the primary responsibility for carrying water, often for long distances.[21]

Inadequate disposal of human excreta and personal hygiene are associated with a range of diseases including diarrhoeal diseases, polio, and are important determinants of malnutrition such as stunting. Improved sanitation can reduce diarrhoeal disease by more than a third[22], and can substantially lessen the adverse health impacts of other disorders among millions of children in many countries.

The MDG target (7, C) is to reduce by half, between 1990 and 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

For more details on water and sanitation and to access some reference documents, please visit data.unicef.org[23] or the website of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation[24].

7.1 Use of Improved Water Sources

The water and sanitation module was adapted and customized to observe the water sources in Sudan. The population using *improved sources* of drinking water are those using any of the following types of supply: piped water (into dwelling, compound, yard or plot, to neighbour, public tap/standpipe), tube well/borehole, protected well, protected spring and rainwater collection. Bottled water is considered as an improved water source only if the household is using an improved water source for handwashing and cooking. The rain water collection source is not part of Sudan's MICS 2014 questionnaire (reference to questionnaire in page 340).

The distribution of the population by main source of drinking water is shown in Table WS.1. with the indicator: percent distribution of household population according to main sources of drinking water and percentage of household population using improved drinking water sources.

Table WS.1 shows use of improved water sources. Overall, 68.0 percent of the population uses an improved source of drinking water. The situation in Gadarif State is considerably worse than in other states; only 27.7 percent of the population in this state gets its drinking water from an improved source.

The table also shows that 10.2 percent of the household population used drinking water that was piped into dwelling, while 26.7 percent used drinking water that was piped into their compound. Overall, more than two-fifths (41.4 percent) of the household members used drinking water that was piped into their dwelling or into their compound, yard or plot or into public tap/standpipe. Other improved sources of drinking water used by the household members include water yard/hand pump

---

[21] WHO/UNICEF. 2012. *Progress on Drinking water and Sanitation: 2012 update*.
[22] Cairncross, S. 2010. *Water, sanitation and hygiene for the prevention of diarrhoea*. Int. J. Epidemiology 39: i193-i205.
[23] http://data.unicef.org/water-sanitation
[24] http:// www.wssinfo.org

(22.4 percent), protected/covered well (3.1 percent), and protected spring (0.1 percent) and bottled water (0.1 percent). See also Figure WS.1

Figure WS.1: Distribution of household members by source of drinking water, Sudan MICS, 2014
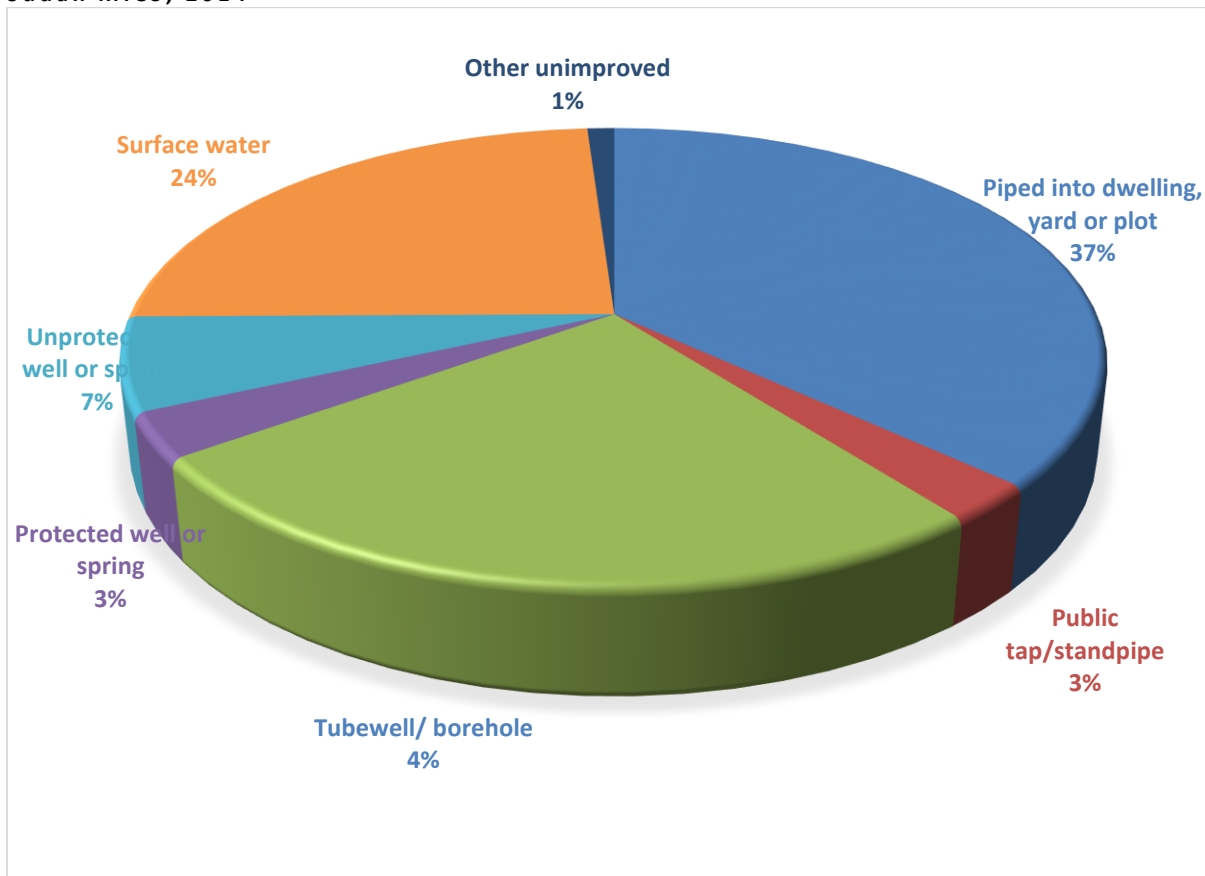
Access to improved water sources by state is shown in Figure WS.1a). Differences exist between access to improved water sources by urban households, which reaches 78.3 percent, compared to 63.5 percent of households in rural areas. Among wealth index quintiles, significant differences were observed; ranging from 45.5 percent in poorest households to 96.0 percent in the richest households (WS. Figure 1b).

Figure WS.1a: Household members with access to improved water sources by State, Sudan MICS, 2014

State	Value
Northern	93.8
Gezira	88.9
Sinnar	88.7
River Nile	88.3
Khartoum	86.9
West Kordofan	86.0
Blue Nile	71.3
North Kordofan	69.8
Sudan	68.0
West Darfor	67.5
South Kordofan	60.1
Kassala	57.2
North Darfor	50.6
Central Darfor	50.6
South Darfor	46.6
East Darfor	45.1
Red Sea	33.2
White Nile	32.7
Gadarif	27.7
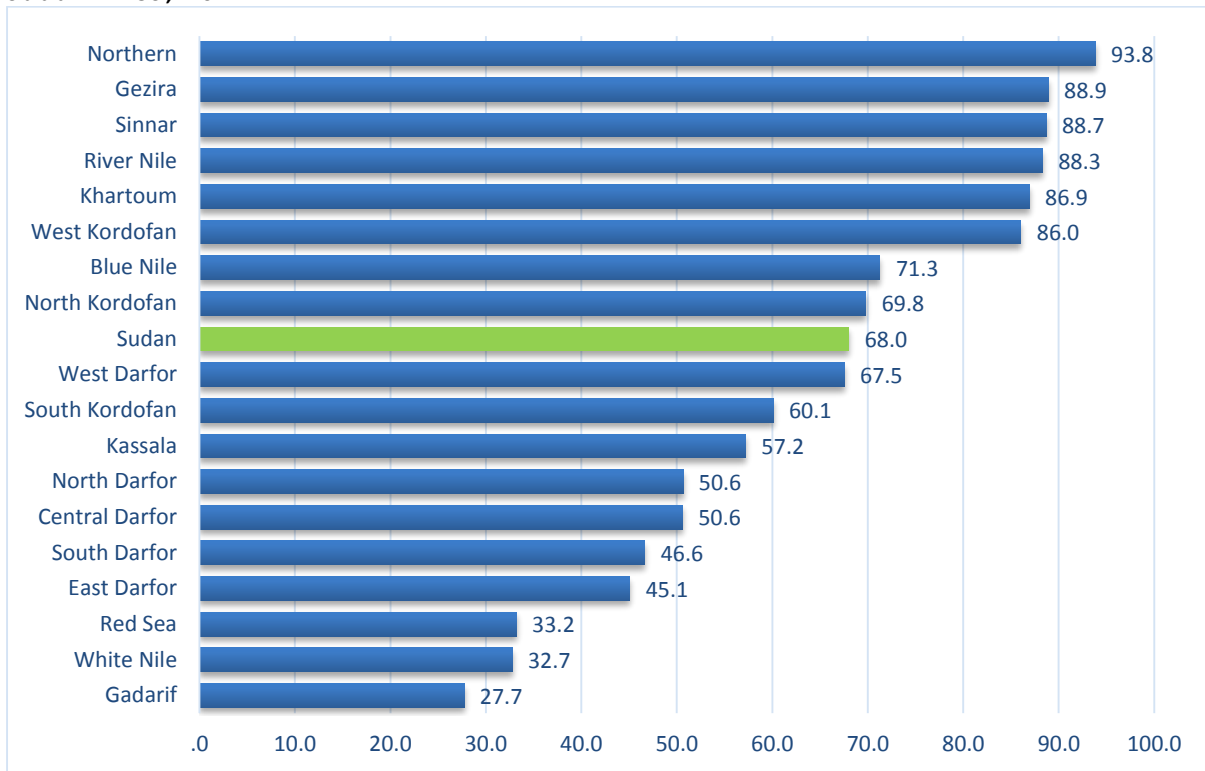
Figure WS.1b: Household members with access to improved water sources by urban and rural residence and by wealth index quintiles, Sudan MICS, 2014

Category	Value
Sudan	68.0
Urban	78.3
Rural	63.5
Poorest	45.5
Second	53.4
Middle	60.0
Fourth	85.3
Richest	96.0

Table WS.1: Use of Improved Water Sources

❖ Percent distribution of household population according to main source of drinking water, and
❖ Percentage of household population using improved drinking water sources
Sudan MICS, 2014

Background characteristics	Main source of drinking water																		Percentage using improved sources of drinking water [1]	Number of household members
	Improved sources								Unimproved sources											
	Piped into dwelling	Piped into compound, yard or plot	Piped to neighbour	Public tap / stand pipe	Elevated tank, hand pump (Kharjaka)	Protected well	Protected spring	Bottled water [a]	Un-protected well	Un-protected spring	Filtered Surface water	Un-Filtered Surface water	Tanker-truck from protected sources	Tanker-truck from un-protected sources	Tanker-truck from un-known sources	Bottled water [a]	Other	Missing		
Sudan	10.2	26.7	2.9	2.6	22.4	3.1	0.1	0.0	5.3	1.3	2.4	8.3	11.5	1.9	0.3	0.0	0.9	0.2	68.0	98,883
State																				
Northern	12.7	59.2	1.4	1.6	17.9	1.1	0.0	0.0	0.1	0.0	0.7	2.2	2.2	0.3	0.0	0.0	0.8	0.0	93.8	2,181
River Nile	40.3	33.8	2.9	0.8	8.9	1.6	0.0	0.0	0.6	0.0	0.3	5.8	3.3	1.7	0.0	0.0	0.0	0.0	88.3	3,715
Red Sea	7.3	4.8	1.4	1.5	14.9	2.9	0.0	0.4	0.8	0.3	0.0	0.2	55.8	0.0	7.9	1.2	0.3	0.4	33.2	2,489
Kassala	2.9	25.3	6.2	9.9	7.3	5.6	0.0	0.0	0.5	0.3	6.4	19.6	12.8	2.6	0.0	0.0	0.7	0.0	57.2	4,117
Gadarif	1.8	4.3	.2	13.5	6.4	1.4	0.0	0.0	1.7	0.0	4.3	20.7	35.7	8.8	0.6	0.0	0.0	0.5	27.7	5,005
Khartoum	22.3	57.3	2.4	0.8	4.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	9.5	0.2	0.0	0.0	3.4	0.0	86.9	13,830
Gezira	18.1	62.7	5.3	0.2	2.3	0.2	0.0	0.1	0.1	0.0	2.2	1.6	6.2	0.9	0.0	0.0	0.1	0.0	88.9	16,270
White Nile	8.4	15.6	3.1	4.5	0.3	0.5	0.4	0.0	4.9	2.0	8.0	23.9	23.0	5.0	0.1	0.0	0.5	0.0	32.7	5,016
Sinnar	5.0	31.9	9.2	5.5	36.0	1.0	0.2	0.0	0.0	0.3	2.0	2.7	3.6	2.3	0.0	0.0	0.0	0.3	88.7	3,763
Blue Nile	5.8	31.0	6.0	0.7	27.7	0.0	0.1	0.0	0.7	1.0	1.1	20.0	4.4	1.5	0.0	0.0	0.0	0.0	71.3	4,094
North Kordofan	2.0	10.3	4.0	4.4	38.2	11.0	0.0	0.0	6.0	0.0	1.8	6.2	15.7	0.5	0.0	0.0	0.0	0.0	69.8	6,359
South Kordofan	1.0	1.2	0.6	0.3	49.5	7.4	0.0	0.0	4.4	1.2	1.2	8.2	24.6	0.0	0.0	0.0	0.1	0.2	60.1	2,983
West Kordofan	0.1	0.2	0.0	0.9	83.3	1.5	0.0	0.0	6.4	0.7	2.8	1.0	1.2	0.1	0.4	0.0	0.1	1.3	86.0	5,745
North Darfur	2.6	0.2	0.6	0.1	38.9	8.3	0.0	0.0	15.2	3.7	4.8	19.0	5.6	0.7	0.1	0.0	0.0	0.2	50.6	7,776
West Darfur	8.1	7.2	1.8	5.0	36.5	8.9	0.1	0.0	19.8	9.2	00.4	1.4	1.0	0.2	0.0	0.0	0.1	0.3	67.5	3,023
South Darfur	4.3	.4	0.7	2.7	32.9	5.3	0.2	0.1	24.6	5.4	1.9	8.4	8.0	4.4	0.3	0.0	0.2	0.2	46.6	7,712
Central Darfur	1.4	1.3	0.7	1.5	33.4	11.1	1.4	0.0	12.3	5.9	0.3	17.1	.2	0.0	0.0	0.0	13.1	0.4	50.6	1,646

Table WS.1: Use of Improved Water Sources

- Percent distribution of household population according to main source of drinking water, and
- Percentage of household population using improved drinking water sources

Sudan MICS, 2014

| Background characteristics | Main source of drinking water | | | | | | | | | | | | | | | | | | Percentage using improved sources of drinking water [1] | Number of household members |
| | Improved sources | | | | | | | | Unimproved sources | | | | | | | | | | | |
	Piped into dwelling	Piped into compound, yard or plot	Piped to neighbour	Public tap / stand pipe	Elevated tank, hand pump (Kharjaka)	Protected well	Protected spring	Bottled water [a]	Un-protected well	Un-protected spring	Filtered Surface water	Un-Filtered Surface water	Tanker-truck from protected sources	Tanker-truck from un-protected sources	Tanker-truck from un-known sources	Bottled water [a]	Other	Missing		
East Darfur	1.7	4.9	1.5	1.2	35.7	0.1	0.0	0.0	0.4	0.0	3.9	16.6	25.2	6.9	0.0	0.0	2.0	0.0	45.1	3,158
Area																				
Urban	19.8	37.6	4.7	3.3	11.4	1.4	0.0	0.1	0.8	0.0	.4	0.7	16.1	1.0	0.7	0.1	1.7	0.1	78.3	30,476
Rural	5.9	21.9	2.1	2.3	27.3	3.9	0.1	0.0	7.3	1.9	3.3	11.6	9.4	2.2	0.1	0.0	0.5	0.2	63.5	68,407
Education of the household head																				
None	4.3	17.6	2.7	2.8	28.3	3.8	0.1	0.1	6.9	2.3	3.0	11.9	12.5	2.3	0.2	0.0	1.0	0.2	59.7	45,740
Primary	9.1	31.0	3.8	2.9	21.2	2.9	0.1	0.0	4.7	0.7	2.2	6.7	11.7	1.7	0.3	0.0	0.7	0.3	71.0	28,007
Secondary	19.9	38.2	2.5	2.0	14.1	2.1	0.0	0.0	3.2	0.4	1.7	3.6	9.3	1.4	0.4	0.1	1.1	0.0	78.8	18,812
Higher	30.9	43.5	1.9	1.3	7.1	1.7	0.0	0.2	1.2	0.0	0.6	2.0	7.8	0.5	0.5	0.1	0.4	0.4	86.5	5,564
Missing/ DK	8.3	12.8	0.6	2.6	30.8	2.3	0.0	0.0	7.5	1.4	0.7	8.3	22.8	1.9	0.0	0.0	0.0	0.1	57.4	761
Wealth index quintile																				
Poorest	0.0	0.0	0.0	1.2	38.2	5.8	0.2	0.0	17.4	4.8	3.7	17.0	8.1	2.7	0.0	0.0	0.7	0.2	45.5	19,775
Second	0.2	0.0	0.6	4.7	42.5	5.2	0.2	0.0	6.3	1.7	4.1	13.9	15.4	3.8	0.2	0.0	0.9	0.4	53.4	19,776
Middle	2.6	17.0	7.3	5.1	24.5	3.4	0.0	0.1	2.4	0.2	3.6	8.2	22.1	1.8	0.4	0.0	1.0	0.3	60.0	19,779
Fourth	12.9	58.7	5.4	1.4	5.8	1.0	0.0	0.0	0.1	0.0	0.7	1.7	9.3	0.8	0.6	0.0	1.4	0.0	85.3	19,773
Richest	35.2	58.0	1.2	.4	1.0	0.1	0.0	0.2	0.1	0.0	0.0	0.4	2.5	0.2	0.3	0.2	0.3	0.0	96.0	19,781

1 MICS indicator 4.1; MDG indicator 7.8 - Use of improved drinking water sources

Use of household water treatment is presented in Table WS.2. Households were asked about ways they may be treating water at home to make it safer to drink. Boiling water, adding bleach or chlorine, using a water filter, and using solar disinfection are considered as effective treatment of drinking water.

The next table, shows water treatment by all household members and the percentage of those living in households using unimproved water sources, but using appropriate water treatment methods. The data indicates no significant variation between urban and rural areas in terms of water treatment for drinking. For example, the percentage of urban households using unimproved sources of drinking water and reporting treatment of drinking water was 3.7 percent compared with 4.2 percent of rural households.

The overall percent of the households in the country who are treating water from unimproved sources is 4.1 percent, with wide disparities among the states. Gezira state reported the highest treatment of water for drinking purposes at 11.5 percent of households using unimproved sources, followed by Red Sea state at 8.5. Households in South Kordofan state reported almost zero percent for water treatment. There was no considerable variation between wealth quintiles for this indicator, with 2.9 percent of households using unimproved sources in the poorest quintile reporting an appropriate water treatment method compared to 7.0 percent of households in the richest quintile.

Table WS.2: Household Water Treatment

❖ Percentage of household population by drinking water treatment method used in the household, and for household members living in households where an unimproved drinking water source is used
❖ Percentage who are using an appropriate treatment method
  Sudan MICS, 2014

| Background characteristics | Water treatment method used in the household | | | | | | | | | Number of household members | Percent of househld' members in households using unimproved drinking water sources and using an appropriate water treatment method [1] | Number of household members in households using unimproved drinking water sources |
	None	Boil	Add bleach / chlorine	Strain through a cloth	Use water filter	Solar dis-infection	Let it stand and settle	Other	Don't know			
Sudan	70.9	2.2	1.3	4.0	0.8	0.2	22.4	1.4	0.1	98,883	4.1	31,603
State												
Northern	36.7	0.1	0.8	0.9	1.9	0.1	58.7	4.5	0.0	2,181	7.7	135
River Nile	6.6	1.1	2.8	1.1	0.6	0.2	92.2	4.6	0.0	3,715	1.2	435
Red Sea	64.3	4.7	4.0	20.7	0.4	0.0	16.0	0.0	0.2	2,489	8.5	1,663
Kassala	96.7	0.0	1.1	0.4	1.2	0.0	0.6	0.1	0.0	4,117	3.2	1,762
Gadarif	80.5	0.1	6.1	1.4	0.0	0.2	11.8	0.7	0.0	5,005	8.0	3,618
Khartoum	73.0	1.1	0.7	0.4	2.3	0.5	21.1	1.5	0.1	13,830	1.1	1,810
Gezira	40.9	10.2	0.0	2.4	1.1	0.2	54.4	1.7	0.0	16,270	11.5	1,806
White Nile	66.1	0.9	4.4	25.5	0.2	0.4	7.3	1.4	0.0	5,016	4.9	3,374
Sinnar	85.6	0.5	0.4	2.6	0.3	0.0	10.0	1.9	0.0	3,763	2.8	426
Blue Nile	85.3	0.0	0.5	1.7	0.1	0.0	12.5	3.1	0.0	4,094	1.0	1,176
North Kordofan	85.8	0.1	0.7	2.7	0.0	0.4	10.1	0.8	0.0	6,359	1.7	1,922
South Kordofan	71.5	0.0	1.1	4.5	0.0	0.1	21.5	1.2	0.5	2,983	0.1	1,191
West Kordofan	97.2	0.1	0.0	0.9	0.0	0.1	0.9	0.3	0.4	5,745	0.0	803
North Darfur	85.6	0.2	2.2	7.7	0.0	0.1	3.3	0.8	0.1	7,776	4.3	3,838
West Darfur	51.0	0.0	0.0	3.6	2.8	0.5	42.7	0.6	0.0	3,023	1.6	982
South Darfur	90.4	0.8	0.9	2.8	0.0	0.1	6.1	0.0	0.0	7,712	1.9	4,115
Central Darfur	94.8	0.0	0.9	3.0	0.1	0.0	0.8	0.4	0.0	1,646	0.7	814
East Darfur	89.0	0.4	2.3	2.7	0.6	0.1	0.2	5.1	0.1	3,158	5.2	1,735
Area												
Urban	74.7	1.3	1.6	3.0	1.3	0.2	19.0	1.0	0.1	30,476	3.7	6,612
Rural	69.3	2.6	1.2	4.5	0.5	0.2	23.9	1.6	0.0	68,407	4.2	24,991

Table WS.2:   Household Water Treatment

❖ Percentage of household population by drinking water treatment method used in the household, and for household members living in households where an unimproved drinking water source is used
❖ Percentage who are using an appropriate treatment method
Sudan MICS, 2014

Background characteristics	Water treatment method used in the household									Number of household members	Percent of househld' members in households using unimproved drinking water sources and using an appropriate water treatment method [1]	Number of household members in households using unimproved drinking water sources
	None	Boil	Add bleach / chlorine	Strain through a cloth	Use water filter	Solar dis-infection	Let it stand and settle	Other	Don't know			
Main source of drinking water												
Improved	69.8	2.6	0.8	1.4	1.0	0.2	26.4	1.0	0.1	67,280	.	.
Unimproved	73.3	1.1	2.5	9.6	0.3	0.2	13.9	2.3	0.1	31,603	4.1	31,603
Education of household head												
None	75.0	1.7	1.4	4.8	0.4	0.1	17.9	1.4	0.1	45,740	4.0	18,414
Primary	68.8	2.4	1.3	3.4	0.4	0.5	25.1	1.4	0.1	28,007	5.1	8,128
Secondary	65.4	2.8	1.2	3.7	1.2	0.1	28.8	1.3	0.1	18,812	3.0	3,984
Higher	65.0	2.8	2.2	2.1	3.6	0.0	25.5	2.3	0.0	5,564	5.1	753
Missing/DK	84.9	0.0	0.0	2.0	0.0	0.0	10.6	1.9	0.0	761	0.0	324
Wealth index quintile												
Poorest	84.4	0.3	1.3	4.4	0.2	0.1	8.3	1.4	0.0	19,775	2.9	10,786
Second	80.9	1.0	1.5	5.0	0.4	0.1	11.6	1.4	0.2	19,776	4.4	9,213
Middle	71.6	2.0	1.3	6.2	0.4	0.2	20.6	1.3	0.1	19,779	4.3	7,914
Fourth	58.1	3.2	1.1	2.9	0.4	0.3	37.3	1.4	0.0	19,773	6.4	2,898
Richest	59.6	4.4	1.6	1.6	2.5	0.3	34.0	1.6	0.0	19,781	7.0	792

[1] MICS indicator 4.2 - Water treatment
na: not applicable

The amount of time it takes household members to obtain water in Sudan is presented in Table WS.3. The person who usually collects the water is presented in Table WS.4.

Note that in Table WS.3, household members using water on premises are also shown and for Table WS.4, the results refer to one roundtrip from the household to the drinking water source. Information on the number of trips made in one day was not collected.

Table WS.3 shows that for 41.1 percent of the household population, the drinking water source is on the premises. The availability of water on the premises is associated with greater use, better family hygiene practices and better health outcomes. For a water collection round trip of 30 minutes or more, it has been observed that households carry progressively less water and are likely to compromise on the minimal basic drinking water needs of the household.[25] For almost a third (31.4 percent) of the household population, it takes the household more than 30 minutes to get to the water source and bring water.

On the other hand, only 14.5 percent of those using an improved drinking water source, spend 30 minutes or more per round trip to get water into their households. In rural areas, a higher percentage of household members live in households that spend more time in collecting water, compared to those in urban areas. In total, 63 percent of members in urban households have improved drinking water sources on their premises versus 31 percent of members of rural households having access to improved drinking water sources on their premises.

One striking find is that households with greater access to improved water sources on their premises, include the states of:

- Northern (90.6 percent)
- Gezira (86.1 percent)
- River Nile (84.4 percent)
- Khartoum (82.3 percent)

Households in the West Kordofan state, have the least access (1.1 percent) to improved water sources for drinking on the premises of their households.

Table WS.3 indicates that the percentage of households with improved water on premises increased with the level of education of the household head. The percentage of household heads with no education, who have improved water on premises is 25.5 percent compared to 77.5 percent for household heads with a higher education. Similarly, the wealth index analysis validated the correlation between water on premises and wealth; 95.5 percent of households in the richest quintile had improved water on their premises, compared with 0.3 percent of households in the poorest quintile.

---

[25] Cairncross, S and Cliff, JL. 1987. *Water use and Health in Mueda, Mozambique.* Transactions of the Royal Society of Tropical Medicine and Hygiene 81: 51-4.

Table WS.3:   Time to Source of Drinking Water

Percent distribution of household population according to time to go to source of drinking water, get water and return, for users of improved and unimproved drinking water sources
Sudan MICS, 2014

Background characteristics	Time to source of drinking water								Number of household members
	Users of improved drinking water sources				Users of unimproved drinking water sources				
	Water on premises	Less than 30 minutes	30 minutes or more	Missing / DK	Water on premises	Less than 30 minutes	30 minutes or more	Missing/ DK	
Sudan	41.1	10.7	14.5	1.7	2.3	8.3	16.9	4.5	98,883
State									
Northern	90.6	1.2	1.3	0.7	2.1	1.1	2.3	0.7	2,181
River Nile	84.4	0.6	2.7	.6	5.7	0.7	4.7	0.7	3,715
Red Sea	14.3	5.0	11.5	2.8	.2	8.9	14.3	43.0	2,489
Kassala	34.8	9.9	9.7	2.8	0.3	11.9	20.3	10.4	4,117
Gadarif	8.9	13.4	3.4	2.0	35.4	15.0	17.6	4.3	5,005
Khartoum	82.3	2.4	1.2	1.0	0.2	2.6	2.3	8.0	13,830
Gezira	86.1	0.8	1.8	0.1	0.6	5.4	4.9	0.1	16,270
White Nile	27.7	2.7	1.9	0.4	0.0	24.4	31.7	11.1	5,016
Sinnar	46.0	12.8	29.7	0.2	0.1	2.0	8.7	0.5	3,763
Blue Nile	43.0	9.2	18.9	0.2	0.1	6.8	21.3	0.5	4,094
North Kordofan	16.9	25.0	18.1	9.9	0.2	13.8	14.4	1.8	6,359
South Kordofan	2.9	28.2	24.3	4.6	0.1	18.2	20.8	0.8	2,983
West Kordofan	1.1	33.5	48.7	2.7	0.0	4.3	7.7	2.0	5,745
North Darfur	3.6	10.2	34.7	2.2	0.7	6.5	38.7	3.5	7,776
West Darfur	17.1	20.2	28.7	1.5	0.0	7.5	24.1	0.9	3,023
South Darfur	8.6	14.6	23.1	0.4	0.3	9.2	41.0	2.9	7,712
Central Darfur	4.0	23.4	22.5	0.7	0.1	14.7	32.7	1.9	1,646
East Darfur	8.2	19.3	16.8	0.8	0.1	15.6	33.9	5.3	3,158
Area									
Urban	63.1	5.5	7.0	2.7	3.1	3.9	5.6	9.1	30,476
Rural	31.3	13.0	17.9	1.3	2.0	10.2	21.9	2.4	68,407
Education of household head									
None	25.5	13.6	18.9	1.7	2.2	10.3	22.8	4.9	45,740
Primary	45.3	10.0	13.8	1.9	2.4	7.7	14.7	4.3	28,007
Secondary	62.7	7.0	7.5	1.7	2.4	5.3	9.2	4.2	18,812
Higher	77.5	3.8	4.4	0.9	1.5	3.2	5.4	3.3	5,564
Missing/DK	23.1	6.2	27.2	1.0	8.1	15.5	14.7	4.3	761
Wealth index quintile									
Poorest	.3	13.8	30.7	.7	0.2	10.8	41.8	1.8	19,775
Second	2.0	23.6	25.5	2.4	3.4	15.7	22.8	4.7	19,776
Middle	28.3	13.7	14.0	4.0	4.4	11.6	14.7	9.3	19,779
Fourth	79.3	2.2	2.2	1.6	3.0	2.6	4.1	5.0	19,773
Richest	95.6	0.2	0.2	0.0	0.6	0.6	0.9	1.7	19,781

Table WS.4 shows that more than half of the households (57.7 percent) are without water on premises, with 33.7 percent in the urban areas and 67.9 percent in rural areas.

The survey findings indicated that 36.0 percent of households had an adult female primarily responsible for collecting drinking water for the household when the source of drinking water is not on the premises. There was no significant difference between adult men (35.5 percent) on this indicator. Similarly, responsibility of children less than 15 years of age for collecting drinking water for the households was 10.8 percent and 11.3 percent for female and male children, respectively.

The proportion of adult women collecting drinking water for the household was significantly lower (21.3 percent) than adult males (46.7 percent) in households where the head of the household had a higher educational level, collecting drinking water for the household.

36.0 percent of households had an adult female primarily responsible for collecting drinking water for the household

Background characteristics	Percentage of households without drinking water on premises	Number of households	Person usually collecting drinking water						Number of households without drinking water on premises
			Adult woman (age 15+ years)	Adult man (age 15+ years)	Female child (under 15)	Male child (under 15)	DK	Missing	
Table WS.4: Persons Collecting Water									

Background characteristics	Percentage of households without drinking water on premises	Number of households	Adult woman (age 15+ years)	Adult man (age 15+ years)	Female child (under 15)	Male child (under 15)	DK	Missing	Number of households without drinking water on premises
Sudan	57.7	16,801	36.0	35.5	10.8	11.3	5.4	1.0	9,696
State									
Northern	6.3	423	56.0	38.2	2.4	3.4	0.0	0.0	27
River Nile	11.1	666	42.8	28.2	10.8	13.6	3.3	1.3	74
Red Sea	85.2	519	5.6	63.5	.9	4.4	21.1	4.5	443
Kassala	66.8	722	16.5	55.0	8.3	12.2	6.5	1.4	482
Gadarif	56.7	858	24.0	47.8	14.2	12.7	0.4	0.9	487
Khartoum	18.4	2,317	11.7	38.1	4.3	28.3	15.8	1.8	427
Gezira	14.1	2,629	42.2	34.0	7.8	14.3	0.4	1.2	370
White Nile	73.5	874	16.0	32.2	11.5	16.9	22.2	1.1	642
Sinnar	54.8	661	47.9	25.7	12.9	12.4	0.7	0.5	362
Blue Nile	59.0	656	29.4	39.7	15.2	15.1	0.3	0.3	387
North Kordofan	84.5	1,125	28.5	47.1	9.2	10.9	3.5	0.8	951
South Kordofan	96.5	462	58.6	23.4	8.3	5.5	3.8	0.4	446
West Kordofan	99.0	1,003	32.2	44.0	10.1	7.9	4.2	1.6	993
North Darfur	96.0	1,243	46.7	32.3	9.8	9.5	1.4	0.3	1,193
West Darfur	87.0	553	61.8	11.4	14.9	9.1	2.3	0.6	482
South Darfur	91.5	1,282	48.1	26.8	14.3	8.0	2.2	0.6	1,173
Central Darfur	96.5	299	65.0	11.7	15.7	5.6	1.4	0.5	289
East Darfur	92.3	508	36.7	24.5	15.8	17.2	5.7	0.0	469
Area									
Urban	33.7	5,000	19.4	46.7	5.5	9.0	16.9	2.6	1,683
Rural	67.9	11,801	39.6	33.2	11.9	11.7	3.0	0.6	8,013
Education of household head									
None	74.4	7,799	38.8	32.6	12.7	11.0	4.1	0.8	5,806
Primary	52.8	4,730	34.7	38.5	9.0	11.5	5.1	1.1	2,499
Secondary	35.0	3,137	27.4	42.4	6.3	11.8	11.0	1.1	1,099
Higher	20.8	1,013	21.3	46.7	3.9	12.4	12.9	2.7	211
Missing/DK	67.6	122	34.0	29.2	12.3	14.7	8.4	1.4	82
Wealth index quintile									
Poorest	99.6	3,368	46.0	29.0	13.2	10.6	0.9	0.2	3,354
Second	95.0	3,592	39.4	34.5	11.7	10.3	3.3	0.7	3,411
Middle	67.2	3,339	23.7	42.0	8.5	14.3	9.6	1.9	2,243
Fourth	17.7	3,209	12.2	50.9	2.4	10.2	22.1	2.1	568
Richest	3.6	3,293	4.0	53.4	1.4	4.9	30.6	5.8	120

[1] MICS indicator 4.1;
MDG indicator 7.8 - Use of improved drinking water sources

[a] Households using bottled water as the main source of drinking water are classified into improved or unimproved drinking water users according to the water source used for other purposes such as cooking and handwashing.

7.2 Use of Improved Sanitation

An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. Improved sanitation facilities include flush or pour flush to a piped sewer system, septic tank, or pit latrine; ventilated improved pit latrine, pit latrine with slab, and use of a composting toilet. The data on the use of improved sanitation facilities in the country are provided in Figure WS.2 and Table WS.5.

Figure WS.2a: Households using Improved sanitation facility by state, Sudan MICS,2014
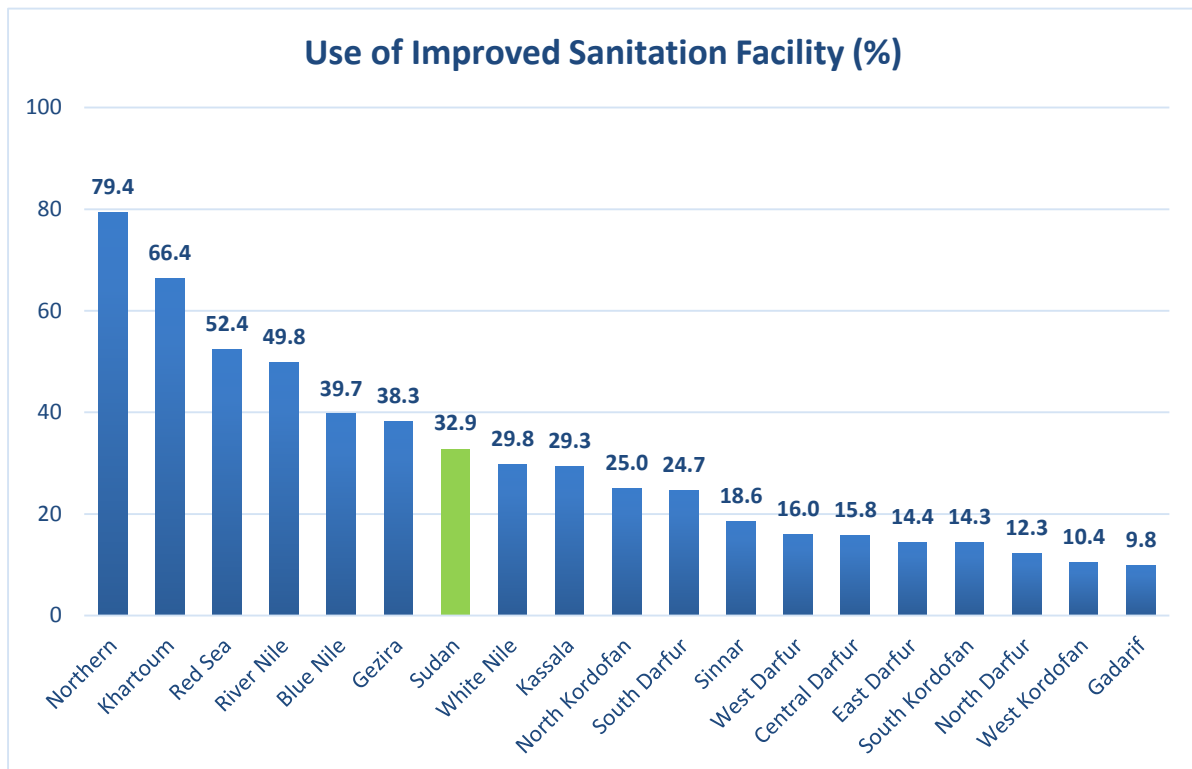
Use of Improved Sanitation Facility (%)

State	%
Northern	79.4
Khartoum	66.4
Red Sea	52.4
River Nile	49.8
Blue Nile	39.7
Gezira	38.3
Sudan	32.9
White Nile	29.8
Kassala	29.3
North Kordofan	25.0
South Darfur	24.7
Sinnar	18.6
West Darfur	16.0
Central Darfur	15.8
East Darfur	14.4
South Kordofan	14.3
North Darfur	12.3
West Kordofan	10.4
Gadarif	9.8

116

Table WS.5:   Types of Sanitation Facilities

Percent distribution of household population according to type of toilet facility used by the household, Sudan MICS, 2014

| Background characteristics | Type of toilet facility used by household | | | | | | | | | | | | | Number of household members |
| | Improved sanitation facility | | | | | | | | Unimproved sanitation facility | | | | Open defecation (no facility, bush field) | |
	Flush to piped sewer system	Flush to septic tank	Flush to pit latrine	Flush to some-where else	Flush to unknown place / Not sure / DK where	Ventilated Improved Pit latrine (VIP)	Pit latrine with slab	Composting toilet	Pit latrine without slab / Open pit	Bucket	Other	Missing/ DK		
Sudan	0.8	4.9	1.9	0.2	0.1	11.7	21.0	0.3	27.6	0.0	2.0	0.2	29.2	98,883
State														
Northern	0.0	9.8	2.5	0.3	0.0	27.9	54.5	0.0	0.9	0.0	1.8	0.0	2.2	2,181
River Nile	0.5	2.9	1.6	0.0	0.0	6.6	50.3	0.0	26.6	0.0	0.4	0.1	11.0	3,715
Red Sea	1.0	11.5	4.1	0.3	0.0	31.5	7.6	0.0	6.6	0.0	2.0	0.6	35.0	2,489
Kassala	0.0	8.1	2.0	0.0	0.0	9.8	11.9	2.3	20.4	0.0	0.5	0.1	44.9	4,117
Gadarif	0.0	0.1	0.8	0.1	0.0	3.3	8.3	0.0	43.8	0.0	0.3	0.2	43.0	5,005
Khartoum	2.8	16.0	2.1	0.5	0.0	16.5	47.4	0.1	10.4	0.0	2.3	0.2	1.7	13,830
Gezira	0.8	3.2	2.3	0.0	0.0	13.1	30.5	0.0	14.0	0.2	3.6	0.1	32.4	16,270
White Nile	2.5	4.9	1.9	0.1	0.1	16.2	13.1	0.0	15.9	0.0	2.0	0.2	43.0	5,016
Sinnar	0.5	3.2	1.9	0.0	0.0	4.5	16.9	1.9	33.1	0.0	3.0	0.3	34.6	3,763
Blue Nile	0.0	2.1	3.6	0.0	0.0	1.7	35.4	0.0	45.0	0.0	0.8	0.0	11.4	4,094
North Kordofan	0.0	3.6	2.2	0.0	0.0	12.3	11.9	0.0	22.3	0.0	2.9	0.4	44.5	6,359
South Kordofan	0.8	1.1	3.3	0.0	0.2	9.3	5.7	0.5	37.5	0.0	0.8	0.0	40.7	2,983
West Kordofan	0.3	0.1	0.7	0.1	0.0	4.4	5.6	0.4	67.2	0.0	0.2	1.3	19.7	5,745
North Darfur	0.0	0.4	0.7	0.0	0.0	3.3	7.9	1.5	40.1	0.1	4.5	0.4	41.1	7,776
West Darfur	0.0	3.2	2.0	0.0	0.0	7.8	5.3	0.0	48.6	0.0	1.3	0.0	31.8	3,023
South Darfur	0.6	3.5	2.0	0.8	0.7	20.1	1.2	0.1	28.7	0.0	0.9	0.0	41.3	7,712
Central Darfur	2.0	0.3	1.7	0.0	0.0	9.7	5.4	0.0	35.2	0.0	1.0	0.2	44.6	1,646
East Darfur	0.1	1.0	0.7	0.0	0.0	11.9	3.2	0.1	55.4	0.0	0.7	0.2	26.6	3,158
Area														
Urban	2.4	14.0	4.6	0.5	0.2	17.6	29.7	0.3	23.6	0.0	1.9	0.2	5.0	30,476
Rural	0.1	0.8	0.7	0.0	0.0	9.1	17.1	0.4	29.5	.1	2.1	0.2	40.0	68,407

Table WS.5:	Types of Sanitation Facilities

Percent distribution of household population according to type of toilet facility used by the household, Sudan MICS, 2014

Background characteristics	Type of toilet facility used by household												Open defecation (no facility, bush field)	Number of household members
	Improved sanitation facility								Unimproved sanitation facility					
	Flush to piped sewer system	Flush to septic tank	Flush to pit latrine	Flush to some-where else	Flush to unknown place / Not sure / DK where	Ventilated Improved Pit latrine (VIP)	Pit latrine with slab	Composting toilet	Pit latrine without slab / Open pit	Bucket	Other	Missing/ DK		
Education of household head														
None	0.5	1.5	0.8	0.1	0.0	9.7	13.7	0.3	31.1	0.0	1.7	0.2	40.4	45,740
Primary	0.4	3.7	1.8	0.1	0.0	12.3	21.7	0.5	28.0	.1	3.1	0.4	28.1	28,007
Secondary	1.9	8.7	4.1	0.4	0.2	15.5	33.2	0.3	23.1	0.0	1.4	0.2	11.1	18,812
Higher	2.8	26.2	4.6	0.3	0.4	12.3	36.1	0.1	12.5	0.0	0.8	0.3	3.6	5,564
Missing/DK	0.8	2.9	0.5	0.0	0.0	11.2	14.0	0.0	31.5	0.0	8.5	0.0	30.5	761
Wealth index quintile														
Poorest	0.0	0.0	0.0	0.0	0.0	4.6	1.2	0.5	30.2	0.0	1.8	0.1	61.6	19,775
Second	0.1	0.1	0.3	0.0	0.0	7.4	3.5	0.5	40.6	0.0	1.8	0.5	45.1	19,776
Middle	0.2	0.7	0.8	0.2	0.0	12.2	17.3	0.2	39.4	0.0	3.5	0.2	25.4	19,779
Fourth	0.6	2.8	2.0	0.1	0.1	18.8	38.1	0.2	21.1	.1	2.5	0.2	13.4	19,773
Richest	3.4	20.9	6.5	0.5	0.2	15.5	44.6	0.4	6.8	0.0	0.6	0.2	0.5	19,781

Over two-fifths (40.9 percent) of the population are living in households using improved sanitation facilities (Table WS.5). Urban households account for 69.3 percent, while 28.2 percent live in rural areas.

Use of improved sanitation facilities varies across states ranging from residents of West Kordofan (11.6 percent) to residents in the Northern (95.0 percent). The table also indicates that use of improved sanitation facilities is strongly correlated with wealth, with 6.2 percent access in poorest quintile of the population, followed by the second poorest (12.0 percent), the middle quintile (31.5 percent), fourth richest at (62.7 percent), and the richest at (91.9 percent).

Access to improved sanitation is also positively associated with living in urban areas (69.3 percent) compared with residence in rural areas (28.2 percent). In rural areas, the population primarily uses pit latrines without slabs, or simply have no facilities. In contrast, the most common facilities in urban areas are flush toilets with connection to a sewage system or septic tank. use of ventilated Improved Pit (VIP) latrine, widely varied across states with Red Sea (31.5 percent) followed by Northern (27.9 percent), and Blue Nile (1.7) percent recording the least for use of VIP as an improved sanitation facility.

About one in three of the households in Sudan, practiced open defecation (no facility, bush field). The practice of open defecation ranged from 1.7 percent in Khartoum state to 44.9 percent in Kassala State.

The MDGs and the WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation, classify otherwise acceptable sanitation facilities which are public or shared between two or more households as *unimproved*. Therefore, "use of improved sanitation" is used both in the context of this report and as an MDG indicator to refer to improved sanitation facilities, which are not public or shared. Data on the use of improved sanitation are presented in Tables WS.6 and WS.7.

As shown in Table WS.6, 32.9 percent of the household population is using an improved sanitation facility that is not shared. Only 7.6 percent of households use an improved sanitation facility that is public or shared with other households. Urban households were more likely to share an improved sanitation facility than rural households (11.6 percent and 5.8 percent, respectively). Khartoum state recorded the highest percentage (15.6 percent) of households who use shared improved toilet facilities, compared with West Kordofan state (0.7 percent).

Use of an improved sanitation facility that is not shared, is positively associated with the level of economic status of the household; ranging from 5.4 percent in the poorest quintile to 78.1 percent in the highest quintile.

Table WS.6: Use and Sharing of Sanitation Facilities

Percent distribution of household population by use of private and public sanitation facilities and use of shared facilities, by users of improved and unimproved sanitation facilities, Sudan MICS, 2014

Background characteristics	Users of improved sanitation facilities					Users of unimproved sanitation facilities					Open defecation (no facility, bush field)	Number of household members
	Not shared [1]	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/ DK	Not shared	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/ DK		
Sudan	32.9	0.4	6.2	1.0	0.4	23.8	0.7	4.6	0.6	0.3	29.2	98,883
State												
Northern	79.4	0.8	12.7	2.1	0.1	1.0	0.0	1.7	0.1	0.0	2.2	2,181
River Nile	49.8	1.2	9.2	1.1	0.5	23.5	0.1	3.3	0.1	0.0	11.0	3,715
Red Sea	52.4	0.2	1.5	1.1	0.7	8.1	0.2	.6	0.1	0.1	35.0	2,489
Kassala	29.3	0.1	2.7	1.2	0.7	19.9	0.1	1.0	0.1	0.0	44.9	4,117
Gadarif	9.8	0.0	1.1	0.9	0.9	36.0	0.1	5.8	0.9	1.4	43.0	5,005
Khartoum	66.4	1.7	15.5	1.3	0.4	8.8	00.6	3.3	0.1	0.1	1.7	13,830
Gezira	38.3	0.2	9.6	1.6	0.1	9.9	2.4	5.1	0.3	0.1	32.4	16,270
White Nile	29.8	0.1	7.7	0.7	0.5	12.4	0.2	4.5	1.0	0.1	43.0	5,016
Sinnar	18.6	0.1	9.1	1.1	0.0	22.2	0.1	12.5	1.4	0.2	34.6	3,763
Blue Nile	39.7	0.0	3.1	0.0	0.0	38.4	0.2	6.7	0.5	0.1	11.4	4,094
North Kordofan	25.0	0.3	3.1	1.4	0.1	15.9	0.3	7.5	1.7	0.2	44.5	6,359
South Kordofan	14.3	0.2	4.5	0.9	1.1	27.2	0.5	7.5	1.8	1.4	40.7	2,983
West Kordofan	10.4	0.1	0.4	0.2	0.5	64.7	0.3	2.3	0.8	0.6	19.7	5,745
North Darfur	12.3	0.1	0.8	0.4	0.2	43.2	0.0	1.9	0.0	0.1	41.1	7,776
West Darfur	16.0	0.1	1.4	0.4	0.3	44.9	0.8	2.4	1.4	0.5	31.8	3,023
South Darfur	24.7	0.1	2.8	1.0	0.4	21.8	0.6	6.0	0.9	0.4	41.3	7,712
Central Darfur	15.8	0.6	1.8	0.8	0.0	25.9	1.8	5.8	2.1	0.8	44.6	1,646
East Darfur	14.4	0.1	1.8	0.3	0.3	50.2	0.6	4.2	1.2	0.2	26.6	3,158
Area												
Urban	57.0	0.6	10.0	1.0	0.6	20.4	.4	4.2	0.4	0.3	5.0	30,476
Rural	22.1	0.3	4.5	1.0	0.3	25.3	.8	4.7	0.7	0.2	40.0	68,407

Table WS.6:	Use and Sharing of Sanitation Facilities											
Percent distribution of household population by use of private and public sanitation facilities and use of shared facilities, by users of improved and unimproved sanitation facilities, Sudan MICS, 2014												
Background characteristics	Users of improved sanitation facilities					Users of unimproved sanitation facilities					Open defecation (no facility, bush field)	Number of household members
	Not shared [1]	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/ DK	Not shared	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/ DK		
Education of household head												
None	21.3	0.3	4.0	0.8	0.3	27.0	.9	4.1	0.7	0.2	40.4	45,740
Primary	32.1	0.4	6.5	0.9	0.3	23.5	.8	6.3	0.7	0.3	28.1	28,007
Secondary	51.5	0.4	10.2	1.7	0.4	19.6	.2	3.9	0.6	0.4	11.1	18,812
Higher	69.7	1.3	10.2	0.6	1.0	11.4	.1	1.9	0.2	0.0	3.6	5,564
Missing/DK	24.6	0.0	4.9	0.0	0.0	34.0	.0	5.3	0.0	0.7	30.5	761
Wealth index quintile												
Poorest	5.4	0.1	.5	0.2	0.0	28.4	.3	2.8	0.5	0.2	61.6	19,775
Second	9.2	0.1	1.6	0.7	0.4	35.1	.4	6.0	1.0	0.4	45.1	19,776
Middle	24.3	0.7	4.7	1.5	0.4	31.2	2.3	7.9	1.1	0.6	25.4	19,779
Fourth	47.2	0.4	13.0	1.7	0.4	17.6	.4	5.1	0.6	0.1	13.4	19,773
Richest	78.1	0.9	11.4	0.9	0.6	6.5	.0	1.0	0.0	0.1	0.5	19,781

[1] MICS indicator 4.3; MDG indicator 7.9 - Use of improved sanitation

Figure WS.2: Household members by use and sharing of sanitation facilities, Sudan MICS, 2014

Open Defecation
29%

Improved sanitation facility - not shared
33%

Unimproved public facility
1%

Unimproved sanitation facility - shared
6%

Improved public facility
0%

Unimproved sanitation facility - not shared
24%

Improved sanitation facility - shared
7%
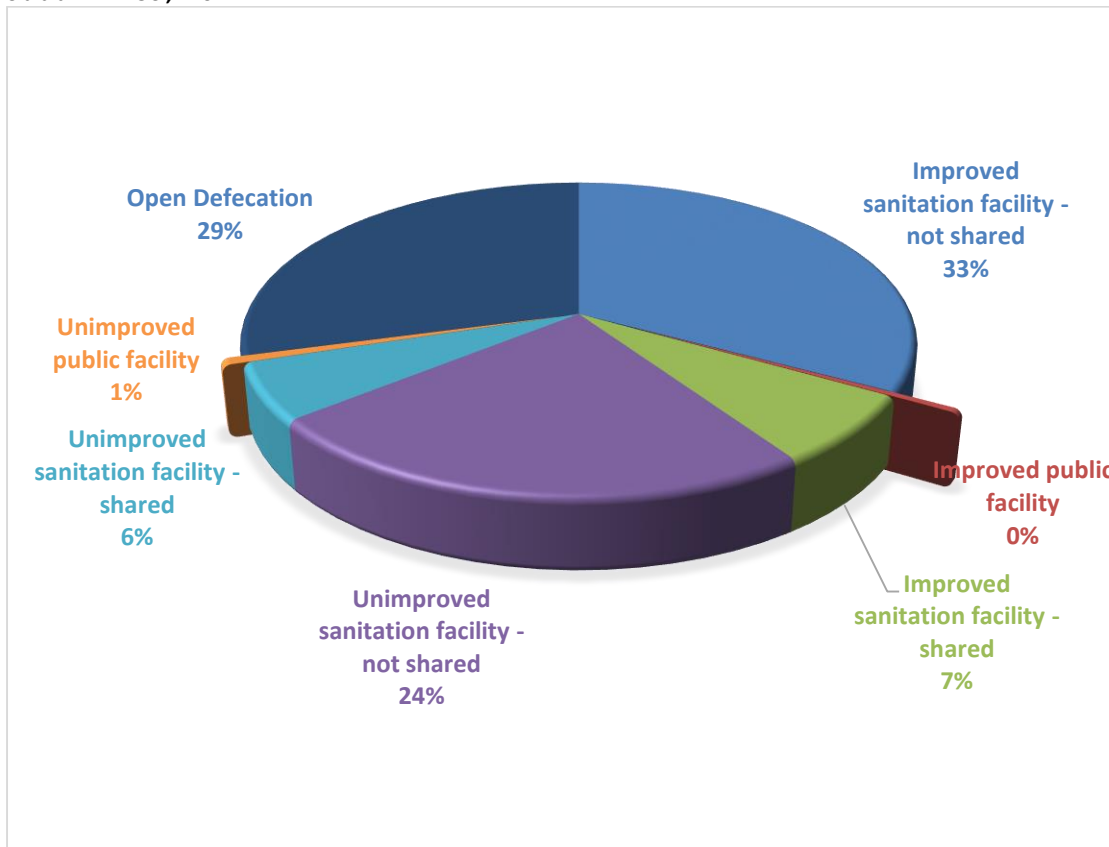
Figure WS.2b: Household members practicing open defecation by urban and rural residence and by state, Sudan MICS, 2014

Open defecation (no facility, bush field)

State	Percent
Rural	40
Urban	5
Kassala	44.9
Central Darfur	44.6
North Kordofan	44.5
White Nile	43
Gadarif	43
South Darfur	41.3
North Darfur	41.1
South Kordofan	40.7
Red Sea	35
Sinnar	34.6
Gezira	32.4
West Darfur	31.8
Sudan	29.2
East Darfur	26.6
West Kordofan	19.7
Blue Nile	11.4
River Nile	11
Northern	2.2
Khartoum	1.7

Percent
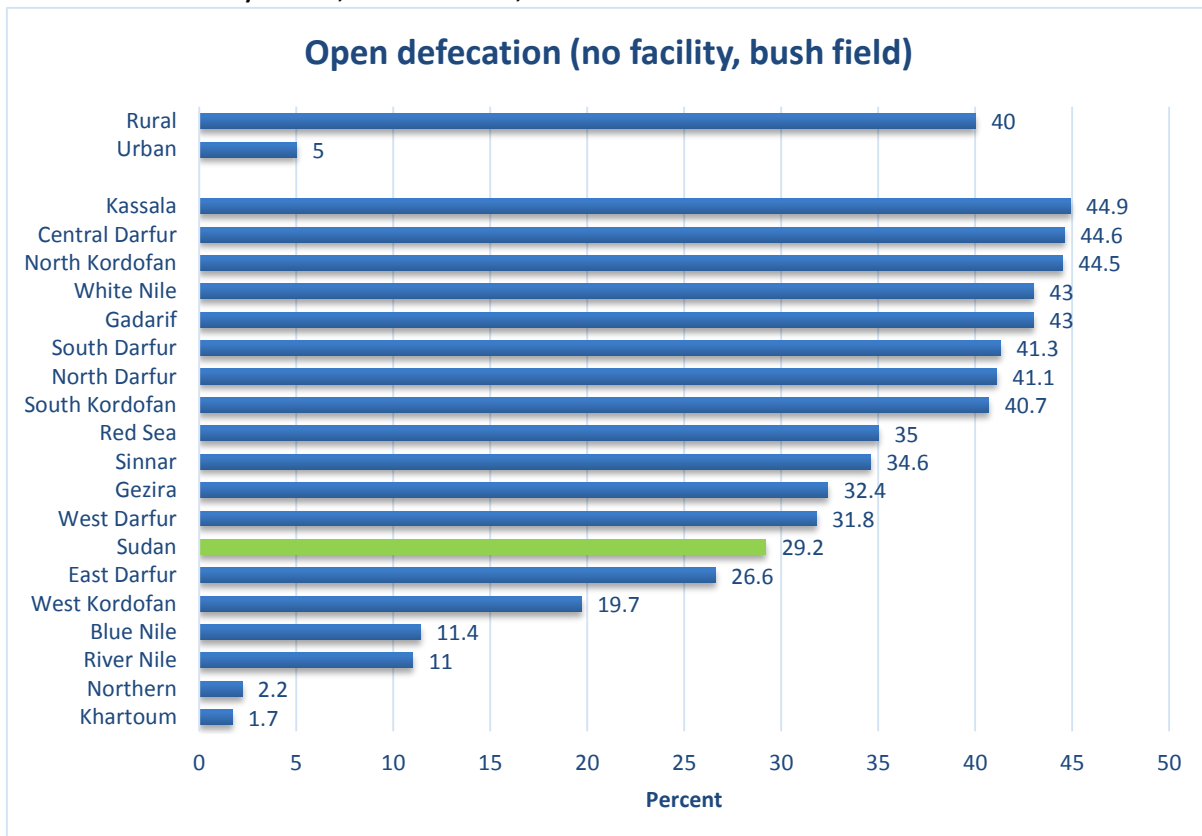
Having access to both an improved drinking water source and an improved sanitation facility, brings the largest public health benefits to a household.[26]

In its 2008 report[27], the JMP developed a new way of presenting the access figures, by disaggregating and refining the data on drinking-water and sanitation and reflecting them in "ladder" format. This ladder allows a disaggregated analysis of trends in a three rung ladder for drinking-water and a four-rung ladder for sanitation. For sanitation, this gives an understanding of the proportion of population with no sanitation facilities at all – who revert to open defecation, of those reliant on technologies defined by JMP as "unimproved," of those sharing sanitation facilities of otherwise acceptable technology, and those using "improved" sanitation facilities.

Table WS.7 presents the percentage of household population by these drinking water and sanitation ladders. The table also shows the percentage of household members using both improved sources of drinking water[28] and an improved sanitary means of excreta disposal.

In Sudan, the percentage of the household population using both improved drinking water sources and improved sanitation facilities was only 28.2 percent. The percentage of household populations using both improved drinking water sources and improved sanitation facilities showed an increasing trend with the educational level of the household head. In the case of households which had a household head with no education, 17.2 percent used an improved drinking water source and an improved sanitation facility, compared with 27.6 percent of households which had a head of household with primary education and 64.5 percent of households with a household head having secondary or higher levels of education.

The percentage of household population using both improved drinking water sources and improved sanitation facilities also varied significantly with household wealth. The percentage of household population using both improved drinking water sources and improved sanitation facilities was only 3.4 percent in the case of the poorest households compared to 75.1 percent in the case of the richest.

---

[26] Wolf, J et al. 2014. *Systematic review: Assessing the impact of drinking water and sanitation on diarrhoeal disease in low- and middle-income settings: systematic review and meta-regression*. Tropical Medicine and International Health 2014. DfID. 2013. *Water, Sanitation and Hygiene: Evidence Paper*. DfID: http://r4d.dfid.gov.uk/pdf/outputs/sanitation/WASH-evidence-paper-april2013.pdf

[27] WHO/UNICEF JMP. 2008. *MDG assessment report*. *http://www.wssinfo.org/fileadmin/user_upload/resources/1251794333-JMP_08_en.pdf*

[28] Those indicating bottled water as the main source of drinking water are distributed according to the water source used for other purposes such as cooking and handwashing.

Table WS.7: Drinking Water and Sanitation Ladders

Percentage of household population by drinking water and sanitation ladders, Sudan MICS, 2014

Background characteristics	Percentage of household population using:								Number of household members
	Improved drinking water [1] [a]		Un improved drinking water	Improved sanitation [2]	Unimproved sanitation			Improved drinking water sources and improved sanitation	
	Piped into dwelling, plot or yard	Other improved			Shared improved facilities	Un improved facilities	Open defecation		
Sudan	36.9	31.1	32.0	32.9	8.0	29.9	29.2	28.2	98,883
State									
Northern	71.9	22.0	6.2	79.4	15.7	2.7	2.2	76.3	2,181
River Nile	74.1	14.2	11.7	49.8	12.1	27.1	11.0	44.7	3,715
Red Sea	12.5	20.7	66.8	52.4	3.4	9.2	35.0	11.4	2,489
Kassala	28.2	29.0	42.8	29.3	4.6	21.1	44.9	24.8	4,117
Gadarif	6.2	21.5	72.3	9.8	2.9	44.3	43.0	4.0	5,005
Khartoum	79.7	7.2	13.1	66.4	19.0	12.9	1.7	62.7	13,830
Gezira	80.9	8.0	11.1	38.3	11.5	17.8	32.4	37.7	16,270
White Nile	23.9	8.8	67.3	29.8	9.0	18.2	43.0	20.1	5,016
Sinnar	36.8	51.8	11.3	18.6	10.4	36.4	34.6	17.5	3,763
Blue Nile	36.8	34.5	28.7	39.7	3.1	45.8	11.4	36.5	4,094
North Kordofan	12.2	57.5	30.2	25.0	4.9	25.6	44.5	22.5	6,359
South Kordofan	2.2	57.9	39.9	14.3	6.6	38.3	40.7	9.6	2,983
West Kordofan	.3	85.7	14.0	10.4	1.2	68.7	19.7	9.7	5,745
North Darfur	2.8	47.8	49.4	12.3	1.5	45.1	41.1	7.9	7,776
West Darfur	15.2	52.3	32.5	16.0	2.3	50.0	31.8	14.2	3,023
South Darfur	4.8	41.8	53.4	24.7	4.3	29.6	41.3	18.9	7,712
Central Darfur	2.6	47.9	49.4	15.8	3.2	36.4	44.6	8.9	1,646
East Darfur	6.6	38.5	54.9	14.4	2.6	56.4	26.6	6.3	3,158
Area									
Urban	57.5	20.8	21.7	57.0	12.2	25.7	5.0	48.7	30,476
Rural	27.8	35.7	36.5	22.1	6.1	31.8	40.0	19.1	68,407
Education of household head									
None	22.0	37.7	40.3	21.3	5.4	32.9	40.4	17.2	45,740
Primary	40.1	30.9	29.0	32.1	8.2	31.6	28.1	27.6	28,007
Secondary	58.1	20.7	21.2	51.5	12.7	24.6	11.1	45.9	18,812
Higher	74.6	11.9	13.5	69.7	13.1	13.6	3.6	64.4	5,564
Missing/DK	21.1	36.3	42.6	24.6	4.9	40.0	30.5	13.3	761
Wealth index quintile									
Poorest	.0	45.5	54.5	5.4	0.8	32.2	61.6	3.4	19,775
Second	.2	53.2	46.6	9.2	2.7	43.0	45.1	6.5	19,776
Middle	19.6	40.4	40.0	24.3	7.3	43.1	25.4	16.3	19,779
Fourth	71.6	13.7	14.7	47.2	15.5	23.9	13.4	39.9	19,773
Richest	93.3	2.7	4.0	78.1	13.8	7.6	0.5	75.1	19,781

[1] MICS indicator 4.1; MDG indicator 7.8 - Use of improved drinking water sources
[2] MICS indicator 4.3; MDG indicator 7.9 - Use of improved sanitation;
[a] Those indicating bottled water as the main source of drinking water are distributed according to the water source used for other purposes such as cooking

124
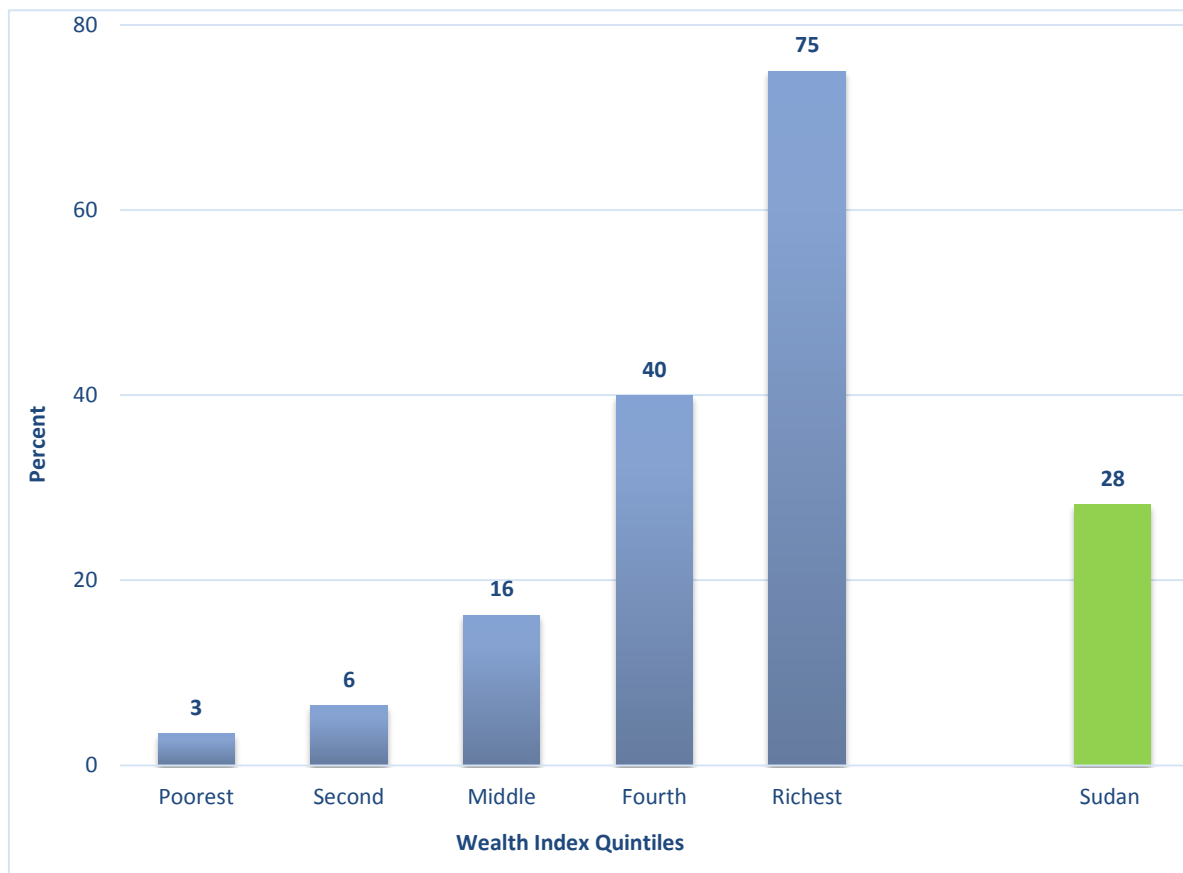
Safe disposal of a child's faeces is classified as disposing of the stool by the child, using a toilet or by rinsing the stool into a toilet or latrine. Putting disposable diapers with solid waste (a very common practice throughout the world) has thus far been identified as an inadequate means of disposal of child faeces for concerns about poor disposal of solid waste itself. This classification is currently under review. Disposal of faeces of children 0-2 years of age, is presented in Table WS.8.

Overall, the percentage of children whose stools were disposed of safely was 53.0 percent.
A significant difference was evident between children whose stools were disposed of safely in rural (43.4 percent) and urban areas (78.3 percent).

There was also a considerable difference between the proportion of children whose stools were disposed of safely among children whose mothers had no education (36.5 percent) and among children whose mothers had secondary or higher levels of education (81.2 percent).

An additional noteworthy difference lies between those in households in the richest (81.6 percent) and poorest quintiles (22.9) in terms of the proportion of children whose stools were disposed of safely.

Table WS.8: Disposal of Child's Faeces

- Percent distribution of children aged 0-2 years according to place of disposal of child's faeces, and
- Percentage of children aged 0-2 years whose stools were disposed of safely the last time the child passed stools

Sudan MICS, 2014

Background characteristics	Place of disposal of child's faeces									Percentage of children whose last stools were disposed of safely [1]	Number of children age 0-2 years
	Child used toilet / latrine	Put / Rinsed into toilet or latrine	Put / Rinsed into drain or ditch	Thrown into garbage (solid waste)	Buried	Left in the open	Other	DK	Missing		
Sudan	3.8	49.2	7.8	11.2	9.7	12.1	3.8	0.9	1.5	53.0	8,263
Type of sanitation facility in dwelling											
Improved	8.2	74.1	2.8	7.4	1.3	2.5	1.8	0.7	1.3	82.3	3,022
Unimproved	2.3	62.9	12.1	8.2	5.4	4.1	2.7	0.9	1.4	65.3	2,576
Open defecation	0.4	7.7	9.4	18.5	23.3	30.7	7.2	1.0	1.8	8.1	2,665
State											
Northern	8.8	71.0	1.3	15.3	0.4	2.2	.9	0.0	0.0	79.8	142
River Nile	3.3	65.6	4.0	8.3	4.2	10.2	3.3	0.3	0.9	68.9	224
Red Sea	6.6	47.8	4.5	15.6	4.2	12.0	6.0	2.5	0.6	54.4	145
Kassala	1.7	26.9	5.3	14.3	10.0	39.9	.1	0.3	1.5	28.6	298
Gadarif	2.1	35.6	11.3	12.3	10.9	19.1	6.5	0.8	1.2	37.8	471
Khartoum	15.0	65.1	2.8	12.1	0.2	1.9	.7	0.6	1.6	80.0	1,016
Gezira	2.1	55.2	9.1	11.0	4.8	12.7	4.2	0.6	0.2	57.4	1,257
White Nile	3.9	37.5	5.9	12.8	4.3	21.4	11.7	0.4	2.1	41.5	435
Sinnar	1.5	55.3	5.0	22.4	5.6	6.6	2.3	0.0	1.3	56.8	333
Blue Nile	1.6	68.0	5.2	12.2	3.7	4.8	3.5	0.2	0.8	69.7	426
North Kordofan	3.4	38.4	4.0	12.2	18.9	9.6	9.1	1.8	2.7	41.8	501
South Kordofan	2.3	41.3	7.8	14.8	9.0	9.0	12.3	1.1	2.4	43.6	302
West Kordofan	0.3	63.5	11.0	4.5	7.5	11.6	0.0	0.2	1.4	63.7	499
North Darfur	0.9	30.9	18.1	19.6	7.6	16.5	1.0	1.7	3.7	31.8	684
West Darfur	0.2	59.0	2.7	3.4	19.8	7.5	2.5	1.1	3.8	59.2	278
South Darfur	3.2	37.6	3.8	4.1	32.9	12.2	3.9	1.8	0.4	40.7	823
Central Darfur	0.6	33.3	12.0	4.6	25.0	17.4	2.8	2.1	2.1	34.0	141
East Darfur	2.0	49.4	25.4	2.4	5.4	12.9	1.0	0.0	1.5	51.4	289
Area											
Urban	9.1	69.2	3.4	8.0	2.1	2.6	2.9	0.9	1.7	78.3	2,273
Rural	1.8	41.6	9.5	12.4	12.6	15.6	4.2	0.9	1.4	43.4	5,990
Education of household head											
None	1.9	34.5	9.9	12.3	15.3	18.2	5.3	0.8	1.6	36.5	3,361
Primary	4.0	52.4	8.0	10.9	8.3	10.6	3.5	1.1	1.2	56.4	2,976
Secondary	6.8	67.9	4.6	9.5	2.6	4.3	1.9	0.2	2.2	74.7	1,308
Higher	7.3	73.9	2.4	10.4	0.9	1.5	1.5	1.5	0.6	81.2	607
Missing/DK	*	*	*	*	*	*	*	*	*	*	10
Wealth index quintile											
Poorest	0.6	22.3	10.1	11.8	26.2	20.4	4.9	1.8	1.8	22.9	1,795
Second	1.8	37.1	11.6	14.1	10.7	17.7	5.0	0.4	1.8	38.8	1,786
Middle	2.3	55.1	8.3	12.0	5.2	10.3	4.6	0.6	1.6	57.4	1,775
Fourth	5.8	68.7	5.0	6.2	2.5	7.4	2.8	0.8	0.9	74.5	1,608
Richest	10.8	70.8	2.3	11.5	0.6	0.9	1.1	0.7	1.2	81.6	1,299

[1] MICS indicator 4.5 - Place for handwashing

[*] Based on less than 25 unweighted cases and has been suppressed

126

7.3 Handwashing

Handwashing with water and soap is the most cost effective health intervention to reduce both the incidence of diarrhoea and pneumonia in children under five[29]. It is most effective when done using water and soap after visiting a toilet or cleaning a child, before eating or handling food and, before feeding a child. Monitoring correct handwashing behaviour at these critical times is challenging.

A reliable alternative to observations or self-reported behaviour is assessing the likelihood that correct handwashing behaviour takes place, by asking if a household has a specific place where people wash their hands and, if yes, observing whether water and soap (or other local cleansing materials) are available at this place.

Table WS.9 indicates that in only 40.9 percent of the households, was a specific place for handwashing in the dwelling, yard or plot observed.
The proportion of households where the interviewers could not observe a specific place where household members usually wash their hands, was 46.1 percent. In a further 17.5 percent of households, permission to see a handwashing facility was not granted. The data suggests that more than half of the population have no specific place for handwashing in the dwelling, yard or plot.

In only one fourth (25.0 percent) of the households, both water and soap (or another cleansing agent) were present at the specific place for handwashing, while a small proportion of households had only water available at the specific place (0 .8 percent) or soap but no water (1.3 percent).

The proportion of households with a specific place for handwashing with water and soap in urban areas was 34.0 percent, and that of rural areas was 21.8 percent. It was observed that the availability of places for handwashing with water and soap increased with the level of education of the head of the household as well as the wealth index quintile of the household.

Nearly 20 percent of the households were not able, or refused to show the presence of any soap in the household. Another 26 percent did not have any soap in the households, leaving the remaining 55.4 percent of households, in which either the soap was observed or shown to the interviewer. (Table WS.10)

Table WS9. Water and soap at place for handwashing
Percentage of households where place for handwashing was observed, percentage with no specific place for handwashing and percent distribution of households by availability of water and soap at specific place for handwashing, Sudan MICS, 2014

Table WS 10. Availability of soap or other cleansing agent.
Percent distribution of households by availability of soap or other cleansing agent in dwelling, Sudan MICS, 2014

---

[29] Cairncross, S and Valdmanis, V. 2006. *Water supply, sanitation and hygiene promotion* Chapter 41 in *Disease Control Priorities in Developing Countries*. 2nd Edition, Edt. Jameson et al. The World Bank.

Table WS.9: Water and Soap at Place for Handwashing

- ❖ Percentage of households where place for handwashing was observed
- ❖ Percentage with no specific place for handwashing, and
- ❖ Percent distribution of households by availability of water and soap at specific place for handwashing

Sudan MICS, 2014

Basic Characteristics	Percentage of households: Where place for handwashing was observed	Percentage of households: With no specific place for handwashing in the dwelling, yard, or plot	Number of households	Place for handwashing observed: Water is available and: Soap present	Place for handwashing observed: Water is available and: No soap: Ash, mud, or sand present	Place for handwashing observed: Water is available and: No soap: No other cleansing agent present	Place for handwashing observed: Water is not available and: Soap present	Place for handwashing observed: Water is not available and: No soap: Ash, mud, or sand present	Place for handwashing observed: Water is not available and: No soap: No other cleansing agent present	No specific place for handwashing in the dwelling, yard, or plot	Total	Percentage of households with a specific place for handwashing where water and soap or other cleansing agent are present [1]	Number of households where place for handwashing was observed or with no specific place for handwashing
Sudan	40.9	46.1	16,801	25.0	0.8	13.5	1.3	0.2	6.3	53.0	100.0	25.8	14,625
State													
Northern	48.0	20.8	423	33.3	0.0	34.5	0.5	0.0	1.5	30.2	100.0	33.3	290
River Nile	64.5	33.5	666	48.0	0.0	17.2	0.2	0.0	0.4	34.2	100.0	48.0	653
Red Sea	15.9	79.3	519	12.8	0.0	0.7	2.5	0.0	0.7	83.3	100.0	12.8	494
Kassala	19.8	79.3	722	10.6	0.0	7.4	0.2	0.0	1.8	80.0	100.0	10.6	715
Gadarif	1.9	67.4	858	2.0	0.0	0.6	0.1	0.0	0.2	97.2	100.0	2.0	595
Khartoum	53.0	44.0	2,317	42.0	0.1	10.5	1.3	0.0	0.8	45.4	100.0	42.1	2,248
Gezira	57.4	40.3	2,629	18.9	0.5	31.2	0.9	0.0	7.2	41.3	100.0	19.4	2,567
White Nile	49.8	29.3	874	33.0	0.1	13.4	3.3	0.0	13.0	37.1	100.0	33.1	691
Sinnar	53.9	45.4	661	44.0	0.0	3.9	0.6	0.0	5.8	45.7	100.0	44.0	656
Blue Nile	52.3	22.5	656	17.8	9.4	30.4	1.4	0.7	10.3	30.1	100.0	27.2	491
North Kordofan	3.5	96.0	1,125	2.6	0.0	0.4	0.1	0.0	0.5	96.5	100.0	2.6	1,120
South Kordofan	61.6	24.8	462	35.5	0.0	12.1	3.2	0.0	20.5	28.7	100.0	35.5	400
West Kordofan	22.7	64.8	1,003	6.7	0.0	2.6	3.5	0.0	13.1	74.0	100.0	6.7	878
North Darfur	62.4	10.0	1,243	49.5	5.8	14.7	1.4	1.9	12.9	13.8	100.0	55.3	900
West Darfur	47.1	41.6	553	30.5	0.0	6.6	1.5	0.3	14.2	46.9	100.0	30.5	491
South Darfur	17.2	46.7	1,282	17.0	0.0	6.8	0.8	0.0	2.3	73.1	100.0	17.0	819

Table WS.9: Water and Soap at Place for Handwashing

❖ Percentage of households where place for handwashing was observed
❖ Percentage with no specific place for handwashing, and
❖ Percent distribution of households by availability of water and soap at specific place for handwashing
Sudan MICS, 2014

Basic Characteristics	Percentage of households: Where place for handwashing was observed	Percentage of households: With no specific place for handwashing in the dwelling, yard, or plot	Number of households	Place for handwashing observed: Water is available and: Soap present	Place for handwashing observed: Water is available and: No soap: Ash, mud, or sand present	Place for handwashing observed: Water is available and: No soap: No other cleansing agent present	Place for handwashing observed: Water is not available and: Soap present	Place for handwashing observed: Water is not available and: No soap: Ash, mud, or sand present	Place for handwashing observed: Water is not available and: No soap: No other cleansing agent present	No specific place for handwashing in the dwelling, yard, or plot	Total	Percentage of households with a specific place for handwashing where water and soap or other cleansing agent are present [1]	Number of households where place for handwashing was observed or with no specific place for handwashing
Central Darfur	93.3	3.3	299	22.4	0.5	32.7	2.7	0.5	37.9	3.4	100.0	22.9	289
East Darfur	8.3	55.9	508	8.3	0.9	1.8	0.4	0.0	1.6	87.0	100.0	9.2	326
Area													
Urban	47.3	46.9	5,000	33.8	0.2	11.2	1.5	0.0	3.4	49.8	100.0	34.0	4,711
Rural	38.2	45.8	11,801	20.7	1.1	14.6	1.1	0.2	7.7	54.5	100.0	21.8	9,913
Education of household head													
None	34.1	50.4	7,799	17.8	1.1	12.5	0.8	0.2	7.9	59.6	100.0	18.9	6,585
Primary	39.2	48.6	4,730	22.4	0.9	14.6	1.4	0.2	5.2	55.4	100.0	23.3	4,154
Secondary	52.6	38.1	3,137	36.2	0.2	14.4	2.2	0.0	4.9	42.0	100.0	36.5	2,845
Higher	65.7	27.1	1,013	52.8	0.1	13.5	0.7	0.0	3.7	29.2	100.0	52.9	940
Missing/DK	39.8	42.9	122	18.0	2.7	11.9	1.8	0.0	13.7	51.9	100.0	20.7	101
Wealth index quintile													
Poorest	23.3	52.2	3,368	13.0	1.5	4.7	1.2	0.6	9.8	69.2	100.0	14.4	2,543
Second	30.6	54.1	3,592	16.4	1.0	9.3	1.1	0.1	8.2	63.9	100.0	17.5	3,041
Middle	37.7	49.9	3,339	19.1	0.8	13.5	1.4	0.1	8.1	57.0	100.0	19.9	2,925
Fourth	43.3	48.4	3,209	18.9	0.6	21.8	1.0	0.0	5.0	52.7	100.0	19.4	2,942
Richest	71.2	25.2	3,293	53.8	0.3	16.8	1.5	0.0	1.5	26.1	100.0	54.0	3,174

[1] MICS indicator 4.5 - Place for handwashing

Table WS.10: Availability of Soap or Other Cleansing Agent

Percent distribution of households by availability of soap or other cleansing agent in the dwelling, Sudan, 2014

Background Characteristics	Place for handwashing observed					Place for handwashing not observed				Total	Percentage of households with soap or other cleansing agent anywhere in the dwelling [1]	Number of households
	Soap or other cleansing agent observed	Soap or other cleansing agent not observed: Soap or other cleansing agent shown	Soap or other cleansing agent not observed at place for handwashing: No soap or other cleansing agent in household	Soap or other cleansing agent not observed at place for handwashing: Not able/Does not want to show cleansing agent	Missing	Soap or other cleansing agent not observed: Soap or other cleansing agent shown	Soap or other cleansing agent not observed at place for handwashing: No soap or other cleansing agent in household	Soap or other cleansing agent not observed at place for handwashing: Not able/Does not want to show cleansing agent	Missing			
Sudan	23.7	7.2	6.9	3.0	0.2	24.5	19.1	15.3	0.1	100.0	55.4	16,801
State												
Northern	23.2	19.0	1.9	3.8	0.0	33.5	5.5	13.1	0.0	100.0	75.7	423
River Nile	47.3	4.9	2.4	10.0	0.0	19.2	4.5	11.8	0.0	100.0	71.3	666
Red Sea	14.6	0.2	0.6	0.5	0.0	21.0	38.1	24.7	0.4	100.0	35.7	519
Kassala	10.7	4.7	3.0	1.5	0.0	24.1	42.1	14.0	0.0	100.0	39.4	722
Gadarif	1.4	0.4	0.1	0.1	0.0	41.4	39.3	17.3	0.0	100.0	43.2	858
Khartoum	42.1	8.1	0.9	1.5	0.5	31.7	5.6	9.5	0.2	100.0	81.9	2,317
Gezira	19.8	14.6	19.0	3.9	0.0	25.9	5.9	10.8	0.0	100.0	60.3	2,629
White Nile	28.8	4.9	7.0	8.4	0.7	12.4	27.0	10.7	0.2	100.0	46.1	874
Sinnar	44.3	1.8	2.5	5.2	0.1	11.6	19.9	14.5	0.1	100.0	57.7	661
Blue Nile	21.9	26.6	2.8	1.0	0.1	32.6	12.5	2.6	0.0	100.0	81.0	656
North Kordofan	2.6	0.6	0.0	0.2	0.0	44.0	20.6	31.6	0.3	100.0	47.3	1,125
South Kordofan	33.4	4.0	21.1	2.7	0.3	8.7	19.1	10.6	0.0	100.0	46.1	462
West Kordofan	9.0	1.9	7.6	4.2	0.0	17.8	28.5	30.5	0.4	100.0	28.8	1,003
North Darfor	42.4	8.8	7.7	3.4	0.2	6.2	10.2	21.0	0.2	100.0	57.3	1,243
West Darfor	28.6	3.1	11.3	4.1	0.0	23.6	10.2	18.6	0.6	100.0	55.3	553
South Darfor	11.3	2.7	2.1	0.8	0.3	26.4	36.9	19.5	0.1	100.0	40.4	1,282
Central Darfor	25.1	16.3	43.6	7.4	0.8	1.2	4.8	0.7	0.0	100.0	42.7	299
East Darfor	6.2	0.3	1.7	0.2	0.0	26.7	58.9	6.0	0.0	100.0	33.2	508
Area												
Urban	33.5	7.1	4.1	2.2	0.3	27.3	13.7	11.6	0.1	100.0	67.9	5,000
Rural	19.5	7.2	8.1	3.3	0.1	23.4	21.3	16.9	0.2	100.0	50.1	11,801

Table WS.10: Availability of Soap or Other Cleansing Agent												
Percent distribution of households by availability of soap or other cleansing agent in the dwelling, Sudan, 2014												
Background Characteristics	Place for handwashing observed					Place for handwashing not observed				Total	Percentage of households with soap or other cleansing agent anywhere in the dwelling [1]	Number of households
	Soap or other cleansing agent observed	Soap or other cleansing agent not observed: Soap or other cleansing agent shown	Soap or other cleansing agent not observed at place for handwashing: No soap or other cleansing agent in household	Soap or other cleansing agent not observed at place for handwashing: Not able/Does not want to show cleansing agent	Missing	Soap or other cleansing agent not observed: Soap or other cleansing agent shown	Soap or other cleansing agent not observed at place for handwashing: No soap or other cleansing agent in household	Soap or other cleansing agent not observed at place for handwashing: Not able/Does not want to show cleansing agent	Missing			
Education of household head												
None	16.8	6.2	8.0	2.9	0.1	23.5	25.7	16.5	0.2	100.0	46.5	7,799
Primary	21.8	7.8	6.3	3.3	0.0	27.1	16.7	16.8	0.1	100.0	56.8	4,730
Secondary	35.1	8.5	5.8	2.7	0.5	25.1	10.4	11.9	0.1	100.0	68.6	3,137
Higher	49.7	9.0	3.7	3.0	0.2	18.7	5.9	9.6	0.1	100.0	77.5	1,013
Missing/DK	18.6	2.8	16.4	1.9	0.0	20.2	20.0	20.0	0.0	100.0	41.6	122
Wealth index quintile												
Poorest	12.3	2.5	6.3	2.2	0.0	18.8	34.8	22.9	0.2	100.0	33.6	3,368
Second	15.8	4.6	7.5	2.6	0.1	22.3	28.7	18.2	0.2	100.0	42.7	3,592
Middle	18.8	7.8	8.1	2.7	0.1	29.4	18.3	14.5	0.1	100.0	56.0	3,339
Fourth	18.8	11.4	9.6	3.4	0.2	33.1	9.8	13.5	0.2	100.0	63.2	3,209
Richest	53.6	10.1	3.1	4.1	0.4	19.5	2.2	7.1	0.0	100.0	83.2	3,293

[1] MICS indicator 4.6 - Availability of soap or other cleansing agent

Reproductive Health

Antenatal care is crucial for pregnant women, it should continue throughout the entire pregnancy.

8. Reproductive Health

8.1 Fertility

Measures of current fertility are presented in Table RH.1 for the three-year period preceding the survey. A three-year period was chosen for calculating these rates to provide the most current information, while also allowing the rates to be calculated for a sufficient number of cases so as not to compromise the statistical precision of the estimates. Age-specific fertility rates (ASFRs), expressed as the number of births per 1,000 women in a specified age group, show the age pattern of fertility. Numerators for ASFRs are calculated by identifying live births that occurred in the three-year period preceding the survey, classified according to the age of the mother (in five-year age groups) at the time of the child's birth.

The denominators of the rates represent the number of woman-years lived by the survey respondents in each of the five-year age groups during the specified period. The total fertility rate (TFR) is a synthetic measure that denotes the number of live births a woman would have if she were subject to the current age-specific fertility rates throughout her reproductive years (15-49 years). The general fertility rate (GFR) is the number of live births occurring during the specified period per 1,000 women age 15-49.The crude birth rate (CBR) is the number of live births per 1,000 population, during the specified period.

Measures of current fertility are presented in Table RH.1 for the three year period preceding the survey. In MICS5, age specific and Sudan fertility rates are calculated by using information on the date of last the birth for each woman and are based on the one-year period (1-12 months) preceding the survey.

Rates are underestimated by a very small margin due to absence of information on multiple births (twins, triplets, etc.) and on women who may have had multiple deliveries during the one year period preceding the survey. The total fertility rate (TFR) is calculated by summing the age-specific fertility rates calculated for each of the 5-year age groups of women, from age 15 through to age 49.

The total fertility rate (TFR) is a synthetic measure that denotes the number of live births a woman would have if she were subject to the current age-specific fertility rates throughout her reproductive years (15-49 years). The general fertility rate (GFR) is the number of live births occurring during the specified period per 1,000 women age 15-49. The crude birth rate (CBR) is the number of live births per 1,000 population during the specified period.

Table RH.1:	Fertility Rates			
Adolescent birth rate, age-specific and Sudan fertility rates, the general fertility rate, and the crude birth rate for the one-year / three-year period preceding the survey, by area, Sudan MICS, 2014				
Age	Area		Sudan	
	Urban	Rural		
15-19 [1]	53	103	87	
20-24	167	225	207	
25-29	238	268	259	
30-34	194	243	226	
35-39	151	165	160	
40-44	58	78	71	
45-49	13	29	23	
TFR [a]	4.4	5.6	5.2	
GFR [b]	139.5	181.3	167.5	
CBR [c]	30.6	35.7	34.2	

1 MICS indicator 5.1; MDG indicator 5.4 - Adolescent birth rate
[a] TFR: total fertility rate expressed per woman age 15-49
[b] GFR: General fertility rate expressed per 1,000 women age 15-49
[c] CBR: Crude birth rate expressed per 1,000 population

Table RH.1 shows current fertility in Sudan, at the national level and by urban-rural area. The TFR for the three years preceding the survey MICS5 is 5.2 births per woman. Fertility is considerably higher in rural areas (5.6 births per woman) than in the urban areas (4.4 births per woman).

As the ASFRs show, the pattern of higher rural fertility is prevalent in all age groups. These results are shown in Figure RH.1 as well.

Figure RH.1: Age-specific fertility rates by area, Sudan MICS, 2014
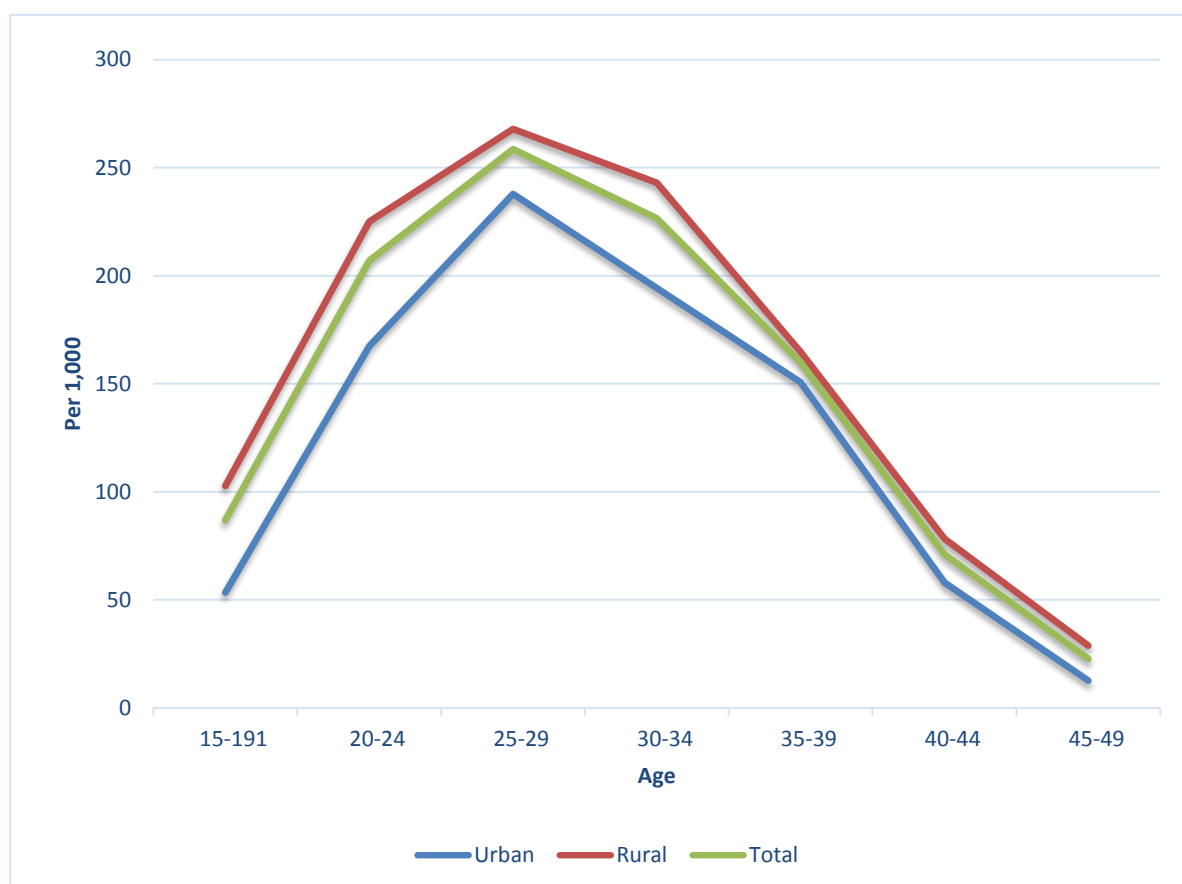
The urban-rural difference in fertility is most pronounced for women in the 20-24 age group: 167 births per 1,000 women in urban areas versus 225 births per 1,000 women in rural areas. The overall age pattern of fertility, as reflected in the ASFRs, indicates that childbearing begins early. Fertility is low among adolescents, increases to a peak of 259 births per 1,000 among women aged 25-29, and declines thereafter.

Table RH.2 shows adolescent birth rates and Sudan fertility rates. The adolescent birth rate (age-specific fertility rate for women aged 15-19) is defined as the number of births to women aged 15-19 years during the three year period preceding the survey, divided by the average number of women aged 15-19 (number of women-years lived between ages 15 through 19, inclusive) during the same period, expressed per 1,000 women.

The adolescent birth rates at a national level according to Table RH.2, is 87 births per 1000 women. Considerable variations between states are observed. For example, adolescent birth rates for Khartoum state is 47 compared to 125 births for South Darfur. Similar variations in TFR are also observed between the states. The highest TFR of 6.9 births is registered for South Darfur, as compared with a rate of 3.2 births for Red Sea state, as the lowest.

According to Table RH.2 the level of education of the woman is inversely correlated with her fertility. Women with secondary or higher education levels show lower fertility compared with women with primary or no education.

Table RH.2:	Adolescent Birth Rate and Total Fertility Rate	
Adolescent birth rates and Sudan fertility rates for the one-year / three-year period preceding the survey, Sudan MICS, 2014		
Background characteristics	Adolescent birth rate [1] (Age-specific fertility rate for women age 15-19)	TFR [a]
Sudan	87	5.2
State		
Northern	52	3.8
River Nile	49	3.6
Red Sea	49	3.2
Kassala	113	4.8
Gadarif	115	5.9
Khartoum	47	4.2
Gezira	65	4.3
White Nile	91	5.2
Sinnar	86	5.3
Blue Nile	114	6.7
North Kordofan	113	4.8
South Kordofan	119	5.8
West Kordofan	91	5.8
North Darfur	100	6.8
West Darfur	117	6.7
South Darfur	125	6.9
Central Darfur	113	5.7
East Darfur	112	6.2
Education		
None	169	6.4
Primary	112	5.4
Secondary	34	4.2
Higher	8	3.2

[1] MICS indicator 5.1; MDG indicator 5.4 - Adolescent birth rate

Table RH.3:	Early Child-bearing						

❖ Percentage of women aged 15-19 years who have had a live birth, are pregnant with the first child, have begun childbearing, and who have had a live birth before age 15
❖ Percentage of women age 20-24 years who have had a live birth before age 18
Sudan MICS, 2014

Background characteristics	Percentage of women age 15-19 who:				Number of women age 15-19	Percentage of women age 20-24 who have had a live birth before age 18 [1]	Number of women age 20-24
	Have had a live birth	Are pregnant with first child	Have begun childbearing	Have had a live birth before age 15			
Sudan	11.8	3.3	15.1	1.4	3,709	21.5	3,162
State							
Northern	4.9	3.8	8.6	0.3	81	6.3	65
River Nile	10.8	4.3	15.1	1.1	123	10.7	131
Red Sea	10.8	4.7	15.5	2.6	74	10.2	76
Kassala	19.0	3.6	22.6	2.6	147	24.4	125
Gadarif	14.7	4.1	18.8	4.2	164	25.4	163
Khartoum	6.3	3.0	9.4	1.2	583	10.5	470
Gezira	9.7	3.8	13.5	0.9	681	15.1	550
White Nile	9.5	5.0	14.5	0.0	165	21.7	147
Sinnar	10.8	2.3	13.1	1.3	124	24.1	133
Blue Nile	15.2	8.1	23.4	1.6	167	27.8	130
North Kordofan	19.1	1.8	20.9	1.8	249	23.5	222
South Kordofan	15.1	0.8	15.9	3.7	112	36.8	86
West Kordofan	12.1	1.9	14.0	1.0	168	24.8	172
North Darfur	8.5	3.3	11.8	0.1	265	30.4	214
West Darfur	11.9	2.7	14.6	2.6	125	33.8	89
South Darfur	17.2	1.9	19.1	0.8	307	33.5	260
Central Darfur	13.3	1.1	14.4	1.5	63	38.4	41
East Darfur	18.7	1.1	19.8	2.7	114	29.6	88
Area							
Urban	6.5	2.1	8.7	1.0	1219	12.3	1,044
Rural	14.4	3.8	18.2	1.6	2491	26.0	2,118
Education							
None	28.4	4.5	32.9	6.3	519	42.4	802
Primary	14.4	4.1	18.5	1.0	1622	26.4	1,040
Secondary	3.9	2.1	6.0	0.2	1409	8.0	771
Higher	1.7	0.7	2.4	0.8	160	.7	548
Wealth index quintile							
Poorest	15.5	2.7	18.2	1.5	629	32.4	536
Second	17.8	3.8	21.6	2.2	720	35.8	617
Middle	14.9	3.2	18.1	2.4	777	20.1	608
Fourth	7.3	3.6	11.0	0.3	753	16.8	731
Richest	5.1	2.9	8.0	0.7	831	6.2	669

1 MICS indicator 5.2 - Early childbearing

Table RH.4: Trends in Early Child-bearing

Percentage of women who have had a live birth, by age 15 and 18, by area and age group, Sudan MICS, 2014

Background characteristics	Urban				Rural				All			
	% of women with a live birth before age 15	Number of women age 15-49 years	% of women with a live birth before age 18	Number of women age 20-49 years	% of women with a live birth before age 15	Number of women age 15-49 years	% of women with a live birth before age 18	Number of women age 20-49 years	% of women with a live birth before age 15	Number of women age 15-49 years	% of women with a live birth before age 18	Number of women age 20-49 years
Sudan	3.6	6029	18.1	4810	6.0	12273	25.5	9783	5.2	18302	23.0	14,593
Age												
15-19	1.0	1219	*	0	1.6	2491	*	0	1.4	3709	*	0
20-24	1.7	1044	12.3	1044	7.1	2118	26.0	2118	5.3	3162	21.5	3,162
25-29	4.9	1030	17.4	1030	7.9	2329	28.4	2329	7.0	3359	25.0	3,359
30-34	4.9	859	20.1	859	6.3	1698	27.6	1698	5.8	2558	25.1	2,558
35-39	4.6	834	20.9	834	6.1	1707	22.1	1707	5.6	2542	21.7	2,542
40-44	5.9	578	20.7	578	7.6	1055	22.0	1055	7.0	1633	21.6	1,633
45-49	4.6	464	20.2	464	7.8	875	22.9	875	6.7	1339	21.9	1,339

[*] Based on less than 25 unweighted cases and has been suppressed.

Table RH.3 presents some early childbearing[30] indicators for women aged 15-19 and 20-24, while Table RH.4 presents the trends for early childbearing.

As shown in Table RH.3, 11.8 percent of women aged 15-19 have already had a birth, 3.3 percent are pregnant with their first child, and 1.4 percent have had a live birth before age 15. The table also shows that 21.5 percent of women aged 20-24 have had a live birth before age 18.

Generally speaking, Table RH.3 shows some variations among the states in all the indicators. Urban women show comparatively lower indicators than rural women.

The table also shows that women with a secondary or higher education show lower indicators compared with women with primary or no education.

In Table RH.4, the percentage of women who experienced child bearing before age 15 was 5.2 percent. Child bearing before age 15 is significantly higher among rural women (6 percent) compared with those in urban areas (3.6 percent).

Considering child bearing before age 15 by current age of women, the table shows no clear pattern according to the age neither at national nor at urban or rural settings.

Table RH4 also shows percentage distribution of women according to their experience with child bearing before age 18 and their current age. The table reveals that at a national level, 23 percent of the women have experienced child bearing before age 18, as compared with 18.1 percent for the urban and 25.5 percent for the rural women.

---

[30]Childbearing is the process of giving birth to children. While early childbearing is defined as having had live births before specific young ages, for the purposes of Table RH.3, women age 15-19 years who have begun childbearing includes those who have had a live birth as well as those who have not had a live birth but are pregnant with their first child.

Considering child bearing before age 18 by current age of women, the table shows that:

- Age by age, fewer women in the urban areas experienced child bearing before age 18 compared with their rural counterparts.
- Child bearing before age 18 is more prevalent among the older generation of urban women, while in the rural areas child bearing before age 18 is more prevalent among younger women.

8.2 Contraception

Appropriate family planning is important to the health of women and children by:
1) Preventing pregnancies that are too early or too late
2) Extending the period between births,
3) Limiting the Sudan number of children

Access by all couples to information and services to prevent pregnancies that are too early, too closely spaced, too late or too many - is critical.

Table RH.5: Use of Contraception

Percentage of women age 15-49 years currently married who are using (or whose partner is using) a contraceptive method, Sudan MICS, 2014

Background characteristics	Percent of women currently married who are using (or whose partner is using):													Any modern method	Any traditional method	Any method [1]	Number of women currently married
	Not method	IUD	Injectab	Implants	Pill	Male condom	Female condom	Diaphragm / foam /jelly	LAM	Periodic abstinence /Rhythm	Wit-drawal	Other	Missing				
Sudan	87.8	0.4	1.4	0.3	9.0	0.0	0.0	0.0	0.4	0.2	0.0	0.3	0.1	11.7	0.5	12.2	11,867
State																	
Northern	77.1	0.9	2.4	1.2	15.0	0.1	0.0	0.0	0.2	1.3	0.0	1.8	0.0	19.7	3.1	22.9	280
River Nile	78.7	0.3	2.4	0.1	15.7	0.1	0.0	0.0	1.3	0.5	0.4	0.4	0.0	19.9	1.4	21.3	409
Red Sea	90.4	0.5	1.4	0.5	7.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.0	9.6	323
Kassala	92.1	0.1	0.8	0.2	6.2	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.2	7.3	0.4	7.9	506
Gadarif	90.5	0.1	1.1	0.0	8.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	9.2	0.3	9.5	630
Khartoum	73.5	1.7	3.3	1.5	17.3	0.1	0.0	0.0	1.0	0.5	0.0	1.0	0.2	24.9	1.5	26.5	1,623
Gezira	87.8	0.2	1.6	0.0	9.6	0.0	0.1	0.0	0.4	0.1	0.1	0.0	0.1	11.9	0.2	12.2	1,961
White Nile	84.4	0.2	1.6	0.0	11.9	0.1	0.0	0.0	0.4	0.0	0.0	0.9	0.5	14.2	0.9	15.6	577
Sinnar	86.5	0.1	0.9	0.1	11.8	0.0	0.0	0.0	0.6	0.1	0.1	0.0	0.0	13.4	0.1	13.5	450
Blue Nile	92.9	0.1	1.1	0.3	4.5	0.0	0.0	0.0	0.9	0.0	0.0	0.2	0.0	6.9	0.2	7.1	525
North Kordofan	85.3	0.1	0.7	0.0	13.3	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.2	14.2	0.2	14.7	743
South Kordofan	91.0	0.1	1.1	0.0	7.2	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.1	8.8	0.1	9.0	355
West Kordofan	93.9	0.1	0.2	0.1	4.8	0.0	0.0	0.3	0.4	0.0	0.0	0.0	0.0	6.0	0.0	6.1	687
North Darfur	96.3	0.5	0.2	0.1	2.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	3.7	0.0	3.7	913
West Darfur	95.9	0.3	0.8	0.0	2.4	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.0	3.9	0.2	4.1	383
South Darfur	94.6	0.0	1.6	0.1	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	5.3	0.1	5.4	933
Central Darfur	97.1	0.0	0.2	0.0	2.4	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	2.7	0.2	2.9	188
East Darfur	93.8	0.4	0.5	0.1	3.8	0.0	0.0	0.0	1.0	0.0	0.0	0.2	0.1	5.8	0.2	6.2	378
Area																	
Urban	79.9	1.0	1.9	0.8	14.5	0.1	0.0	0.0	0.7	0.3	0.1	0.7	0.0	19.0	1.0	20.1	3,437
Rural	91.0	0.2	1.2	0.1	6.8	0.0	0.0	0.0	0.3	0.1	0.0	0.1	0.1	8.7	0.3	9.0	8,430
Age																	
15-19	93.6	0.0	0.2	0.0	5.5	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0	5.9	0.5	6.4	741
20-24	89.3	0.2	1.1	0.3	8.3	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.2	10.5	0.0	10.7	1,737
25-29	86.0	0.2	0.8	0.5	11.8	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.2	13.7	0.1	14.0	2,617
30-34	86.7	0.5	1.3	0.5	9.5	0.1	0.0	0.1	0.7	0.1	0.0	0.3	0.1	12.8	0.4	13.3	2,130
35-39	85.3	0.3	2.9	0.2	10.0	0.0	0.0	0.0	0.5	0.1	0.0	0.6	0.0	14.1	0.7	14.7	2,160

Table RH.5: Use of Contraception

Percentage of women age 15-49 years currently married who are using (or whose partner is using) a contraceptive method, Sudan MICS, 2014

Background characteristics	Percent of women currently married who are using (or whose partner is using):													Any modern method	Any traditional method	Any method [1]	Number of women currently married
	Not method	IUD	Injectab	Implants	Pill	Male condom	Female condom	Diaphragm / foam /jelly	LAM	Periodic abstinence /Rhythm	Wit-drawal	Other	Missing				
40-44	88.1	0.8	2.2	0.1	7.8	0.1	0.1	0.0	0.2	0.5	0.0	0.2	0.0	11.3	0.6	11.9	1,374
45-49	92.2	1.2	0.4	0.0	4.4	0.0	0.0	0.0	0.2	0.4	0.3	1.0	0.0	6.2	1.6	7.8	1,107
Number of living children																	
0	99.6	0.0	0.1	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	.4	1,156
1	89.6	0.0	0.2	0.3	9.2	0.0	0.0	0.0	0.2	0.3	0.0	0.1	0.0	9.9	0.4	10.4	1,506
2	83.9	0.5	1.3	0.7	12.9	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.2	15.9	0.0	16.1	1,590
3	82.5	0.6	2.0	0.3	13.4	0.1	0.0	0.0	0.5	0.1	0.1	0.2	0.2	17.0	0.3	17.5	1,653
4+	87.5	0.5	1.9	0.2	8.4	0.0	0.0	0.0	0.5	0.2	0.0	0.5	0.1	11.7	0.8	12.5	5,962
Education																	
None	95.6	0.1	0.5	0.0	3.2	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0	4.2	0.1	4.4	4,778
Primary	86.7	0.3	1.8	0.2	9.7	0.1	0.0	0.1	0.5	0.2	0.0	0.3	0.2	12.6	0.5	13.3	3,961
Secondary	79.0	0.8	2.6	0.5	15.4	0.0	0.1	0.0	0.6	0.4	0.2	0.4	0.0	20.0	1.0	21.0	2,228
Higher	72.4	1.4	1.9	1.8	21.1	0.1	0.0	0.0	0.3	0.2	0.1	0.5	0.1	26.6	0.9	27.6	895
Missing/DK	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	5
Wealth index quintile																	
Poorest	96.2	0.1	0.2	0.0	3.3	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	3.8	0.0	3.8	2,341
Second	94.9	0.1	0.7	0.0	3.7	0.0	0.0	.1	0.3	0.1	0.0	0.0	0.1	4.9	0.2	5.1	2,412
Middle	90.9	0.1	1.2	0.1	7.1	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0	8.8	0.3	9.1	2,417
Fourth	82.7	0.5	2.5	0.2	12.4	0.0	0.1	0.0	0.9	0.1	0.0	0.2	0.3	16.7	0.3	17.3	2,333
Richest	74.0	1.3	2.6	1.2	18.7	0.1	0.0	0.0	0.4	0.5	0.2	0.9	0.0	24.4	1.7	26.0	2,364

[1] MICS indicator 5.3; MDG indicator 5.3 - Contraceptive prevalence rate,

[*] Based on less than 25 unweighted cases and has been suppressed.

Current use of contraception was reported by 12.2 percent of married[31] women (See Table RH.5). The most popular contraception methods are:

- The pill, which is used by about one in ten married women in Sudan (9.0 percent)
- The second most popular method is injectable, which accounts for 1.4 percent of married women
- Between 0.4 percent and 1.4 percent of married women reported the use of IUDs, and injectable.
- Less than 1 percent use periodic abstinence, withdrawal, female condom, male condom, implants, diaphragm/foam/jelly or the lactational amenorrhea method (LAM).
- Almost 87.8 percent of the married women reported that they are not using any form of contraception.

The survey results show that contraceptive prevalence ranges from 2.9 percent in Central Darfur to 26.5 percent in Khartoum state. About 20.1 percent of married women in urban and 9.0 percent in rural areas, use a method of contraception. The findings by state and area are shown in Figure RH.5. Only 6.4 percent of married women aged 15-19 currently use a method of contraception, compared to 10.7 percent of 20-24 year olds - while the use of contraception among older women ranges from 7.8 percent to 14.7 percent. Adolescents are far less likely to use contraception than older women.

A woman's level of education has also been shown to be strongly associated with contraceptive prevalence. The percentage of married women using any method of contraception rises from 4.4 percent among those with no education, to 13.3 percent among those with primary education, and to 21.0 percent and 27.6 percent among those with secondary and higher educations, respectively. Despite the differences in overall prevalence, the pattern of use by specific methods does not vary significantly with the level of education.

---

[31] All references to "married women" in this chapter include women in marital union as well.

Figure RH.2: Differentials in contraceptive use, Sudan MICS, 2014
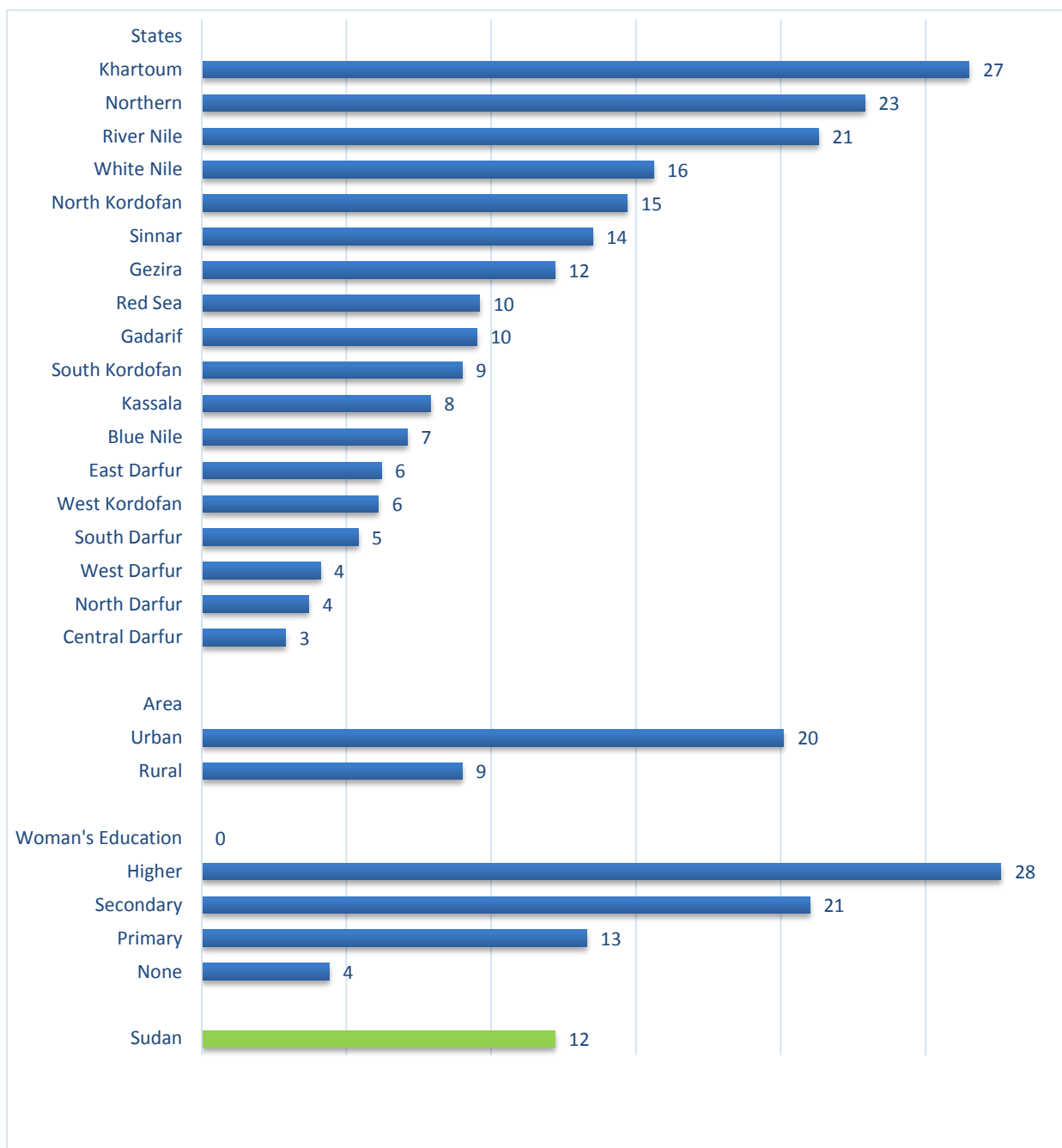
8.3 Unmet Need

Unmet need for contraception refers to fecund women who are married and are not using any method of contraception, but who wish to postpone the next birth (spacing), or who wish to stop childbearing altogether (limiting). Unmet need is identified in MICS by using a set of questions eliciting current behaviours and preferences pertaining to contraceptive use, fecundity, and fertility preferences.

Table RH.6 shows the levels of met need for contraception, unmet need, and the demand for contraception satisfied.

Unmet need for spacing is defined as the percentage of women who are married and are not using a method of contraception AND:

- are not pregnant, and not postpartum amenorrheic[32], and are fecund[33], and say they want to wait two or more years for their next birth OR,
- are not pregnant, and not postpartum amenorrheic, and are fecund, and unsure whether they want another child OR,
- are pregnant, and say that pregnancy was mistimed/ would have wanted to wait OR,
- are postpartum amenorrheic, and say that the birth was mistimed/ would have wanted to wait

Unmet need for limiting is defined as percentage of women who are married and are not using a method of contraception AND:

- are not pregnant, and not postpartum amenorrheic, and are fecund, and say they do <u>not</u> want any more children OR,
- are pregnant, and say they did <u>not</u> want to have a child OR,
- Are postpartum amenorrheic, and say that they did <u>not</u> want the birth.

Sudan's unmet need for contraception, is the sum of unmet need for spacing and unmet need for limiting.

This indicator is also known as unmet need for family planning and is one of the indicators used to track progress toward achieving the Millennium Development Goal 5 of improving maternal health. Met need for limiting includes married women who are using (or whose partner is using) a contraceptive method[34], and who want no more children, are using male or female sterilization, or declare themselves as infecund. Met need for spacing includes women who are using (or whose partner is using) a contraceptive method, and who want to have another child, or are undecided whether to have another child. The Sudan met need for spacing and limiting, adds up to the Sudan met need for contraception.

---

[32] A woman is postpartum amenorrheic if she had a birth in the last two years and is not currently pregnant, and her menstrual period has not returned since the birth of the last child

[33] A woman is considered infecund if she is neither pregnant nor postpartum amenorrheic, and
(1a) has not had menstruation for at least six months, or (1b) never menstruated, or (1c) her last menstruation occurred before her last birth, or (1d) in menopause/has had hysterectomy OR,
(2) She declares that she has had hysterectomy, or that she has never menstruated, or that she is menopausal, or that she has been trying to get pregnant for 2 or more years without result, in response to questions on why she thinks she is not physically able to get pregnant at the time of survey OR,
(3) She declares she cannot get pregnant when asked about desire for future birth OR,
(4) She has not had a birth in the preceding 5 years, is currently not using contraception and is currently married and was continuously married during the last 5 years preceding the survey.

[34] In this chapter, whenever reference is made to the use of a contraceptive by a woman, this may refer to her partner using a contraceptive method (such as male condom).

The Sudan demand for contraception includes women who currently have an unmet need (for spacing or limiting), plus those who are currently using contraception.

Using information on contraception and unmet need, the percentage of the demand for contraception satisfied, is also estimated from the MICS data. The percentage of demand satisfied is defined as the proportion of women currently married who are currently using contraception, over the Sudan demand for contraception.

Table RH.6 shows that the Sudan met need (13.4 percent) is higher than the Sudan unmet need (26.6 percent) for family planning. Unmet need is also highest among rural (27.5 percent) compared to urban women (24.4 percent). Unmet need is higher among women with no education (26.9 percent) or primary education (28.8 percent) compared to those with secondary (24.0 percent) and higher educations (21.5 percent).

The table also highlights that the Sudan demand for satifactory family planning is 33.4 percent, with some discrepancies according to location with satifactory demand in urban areas as 47.4 percent, while in rural areas it is still relatively low at 26.4 percent.

Table RH.6:	Unmet Need for Contraception								
❖	Percentage of women aged 15-49 years currently married with an unmet need for family planning, and								
❖	Percentage of demand for contraception satisfied Sudan MICS, 2014								
Background characteristics	Met need for contraception			Unmet need for contraception			Number of women currently married	Percentage of demand for contraception satisfied	Number of women currently married with need for contraception
	For spacing	For limiting	Total	For spacing	For limiting	Total [1]			
Sudan	9.1	4.2	13.4	19.1	7.5	26.6	11,867	33.4	4,739
State									
Northern	15.1	9.5	24.6	15.6	14.3	29.9	280	45.1	153
River Nile	16.1	7.0	23.1	16.4	8.4	24.8	409	48.3	196
Red Sea	7.5	3.0	10.5	13.0	6.1	19.1	323	35.5	96
Kassala	5.0	3.8	8.8	12.0	4.7	16.7	506	34.5	129
Gadarif	7.4	2.6	10.0	19.4	4.6	24.0	630	29.4	214
Khartoum	18.4	11.1	29.5	14.6	6.6	21.3	1,623	58.2	824
Gezira	9.4	3.2	12.6	22.5	6.2	28.7	1,961	30.5	811
White Nile	11.4	5.8	17.2	19.8	9.1	28.8	577	37.4	266
Sinnar	10.6	4.1	14.7	19.7	6.5	26.1	450	36.1	184
Blue Nile	6.2	1.6	7.8	20.7	5.1	25.8	525	23.1	176
North Kordofan	11.9	4.6	16.5	19.9	12.5	32.4	743	33.7	363
South Kordofan	7.6	1.8	9.4	24.1	9.7	33.8	355	21.7	153
West Kordofan	4.6	1.7	6.2	16.0	8.0	23.9	687	20.7	207
North Darfur	3.4	0.9	4.4	21.2	8.4	29.7	913	12.8	311
West Darfur	3.2	1.2	4.4	16.1	5.1	21.2	383	17.2	98
South Darfur	4.0	2.3	6.4	22.9	8.9	31.8	933	16.7	356
Central Darfur	3.2	0.6	3.8	19.8	8.0	27.9	188	11.9	60
East Darfur	3.6	3.0	6.6	22.4	8.5	30.9	378	17.5	142
Area									
Urban	13.9	8.1	22.0	16.3	8.1	24.4	3,437	47.4	1,595
Rural	7.2	2.7	9.8	20.2	7.3	27.5	8,430	26.4	3,144

145

Table RH.6:	Unmet Need for Contraception								
❖ Percentage of women aged 15-49 years currently married with an unmet need for family planning, and ❖ Percentage of demand for contraception satisfied Sudan MICS, 2014									
Background characteristics	Met need for contraception			Unmet need for contraception			Number of women currently married	Percentage of demand for contraception satisfied	Number of women currently married with need for contraception
	For spacing	For limiting	Total	For spacing	For limiting	Total [1]			
Age									
15-19	6.7	0.3	6.9	23.8	1.0	24.8	741	21.9	235
20-24	10.2	1.6	11.8	23.3	1.7	25.0	1,737	32.1	641
25-29	13.1	2.6	15.7	22.9	4.9	27.8	2,617	36.1	1,137
30-34	10.7	4.2	14.9	21.6	8.6	30.2	2,130	33.1	961
35-39	9.1	6.5	15.6	17.7	9.8	27.5	2,160	36.2	932
40-44	4.4	8.1	12.5	11.3	15.3	26.6	1,374	32.0	538
45-49	2.2	6.0	8.2	7.6	11.0	18.6	1,107	30.6	297
Education									
None	2.8	1.9	4.7	18.4	8.5	26.9	4,778	14.9	1,509
Primary	10.2	4.4	14.5	21.5	7.2	28.8	3,961	33.6	1,716
Secondary	15.0	8.3	23.3	16.3	7.7	24.0	2,228	49.2	1,053
Higher	23.5	6.3	29.8	18.5	3.0	21.5	895	58.1	459
Missing/DK	*	*	*	*	*	*	5	*	2

[[1] MICS indicator 5.4; MDG indicator 5.6 - Unmet need

[*] Based on less than 25 unweighted cases and has been suppressed.

Table RH.6 shows that unmet need for contraception is highest (33.8 percent) among women in South Kordofan state and lowest (16.7 percent) among women in Kassala state. The results show no large differences in the unmet need of different age groups, which ranges from 24.8 percent for women between the age of 15-19 to 30.2 percent among those falling in the age group 30–34.

8.4 Antenatal Care (ANC)

The antenatal period presents important opportunities for reaching pregnant women with a number of interventions that may be vital to their health and well-being, and that of their infant. Better understanding of foetal growth and development and its relationship to the mother's health has resulted in increased attention to the potential of antenatal care as an intervention to improve both maternal and newborn health. For example, antenatal care can be used to inform women and families about risks and symptoms in pregnancy, labour and delivery. Therefore, this may also provide the route to ensuring that pregnant women do, in practice, deliver with the assistance of a skilled health care provider. Antenatal visits also provide an opportunity to supply information on birth spacing, which is recognized as an important factor in improving infant survival.

Tetanus immunization during pregnancy can be life-saving for both the mother and the infant. The prevention and treatment of malaria among pregnant women, management of anaemia during pregnancy and treatment of sexually transmitted infections (STIs) can also significantly improve foetal outcomes and improve maternal health. Adverse outcomes such as low birth weight, can be reduced through a combination of interventions to improve women's nutritional status and prevent infections (e.g. malaria and STIs) during pregnancy.

More recently, the potential of the antenatal care as an entry point for HIV prevention and care, in particular for the prevention of HIV transmission from mother to child - has led to renewed interest in access to and use of antenatal services.

WHO recommends a minimum of four antenatal visits based on a review of the effectiveness of different models of antenatal care. WHO guidelines are specific on the content regarding antenatal care visits, which include:

- Blood pressure measurement
- Urine testing for bacteriuria and proteinuria
- Blood testing to detect syphilis and severe anaemia
- Weight/height measurement (optional).

It is of crucial importance for pregnant women to start attending antenatal care visits as early on in pregnancy as possible, in order to prevent and detect pregnancy conditions that could affect both the woman and her baby. Antenatal care should continue throughout the entire pregnancy.

Antenatal care coverage indicators (at least one visit with a skilled provider and 4 or more visits with any providers) are used to track progress toward the Millennium Development Goal 5 of improving maternal health.

The type of personnel providing antenatal care to women aged 15-49 years who gave birth in the two years preceding, is presented in Table RH.7.

Overall, the proportion of women who received ANC from any skilled provider was 79.1 percent, while women who did not receive ANC was 19.9 percent. There exists rural-urban differentials in favour of women who received antenatal care, in urban areas this was 90.8 percent, compared to 74.9 percent of women in rural areas.

There was also significant differences among the states for women who received ANC from any provider - ranging from 61.8 percent of women in South Darfur state, to 97.1 percent of the women in Khartoum state.

Differences also exist among women in the wealth index households who received ANC - ranging from 61.7 in the poorest households to 97.2 percent in the richest households.

Table RH.7:	Antenatal Care Coverage									

Percent distribution of women aged 15-49 years with a live birth in the last two years by antenatal care provider during the pregnancy for the last birth Sudan MICS, 2014

Background characteristics	Provider of antenatal care [a]									Any skilled provider [1]	Number of women with a live birth in the last two years
	Medical doctor	Nurse / Midwife	Auxiliary midwife	Certified midwife	Medical assistant	Traditional birth attendant	Community health worker	Other/ missing	No antenatal care		
Sudan	55.4	1.5	2.9	17.5	1.7	0.8	0.1	0.1	19.9	79.1	5,622
State											
Northern	94.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	94.7	92
River Nile	88.8	0.0	1.2	4.4	0.7	0.0	0.0	0.0	4.8	95.2	**151**
Red Sea	64.2	1.7	1.4	5.1	0.0	0.9	0.0	0.0	26.7	72.4	92
Kassala	60.4	0.3	4.8	11.5	6.0	0.0	0.0	0.5	16.5	83.0	199
Gadarif	58.5	2.9	2.5	16.7	0.0	0.6	0.0	0.0	18.9	80.5	307
Khartoum	84.2	1.8	4.8	6.3	0.0	0.0	0.5	0.0	2.4	97.1	684
Gezira	74.9	1.0	2.4	4.9	0.0	0.0	0.0	0.0	16.7	83.3	852
White Nile	71.1	0.2	0.0	6.2	1.2	0.0	0.1	0.0	21.1	78.8	273
Sinnar	59.3	2.0	3.0	11.0	0.0	0.0	0.0	0.0	24.7	75.3	226
Blue Nile	46.9	0.5	1.0	23.0	0.4	0.2	0.0	0.0	28.0	71.8	287
North Kordofan	66.3	0.6	1.9	12.7	4.2	0.0	0.0	0.0	14.4	85.6	352
South Kordofan	38.8	1.1	7.4	36.7	0.9	0.3	0.2	1.0	13.4	85.1	194
West Kordofan	37.2	3.8	3.0	18.3	3.0	0.6	0.2	0.0	34.0	65.3	341
North Darfur	35.5	2.1	5.8	22.2	2.9	2.3	0.4	0.0	28.7	68.7	525
West Darfur	15.6	2.3	0.9	55.7	0.7	2.8	0.0	0.0	22.0	75.2	179
South Darfur	25.3	1.5	3.2	27.3	4.5	2.3	0.0	0.3	35.7	61.8	556
Central Darfur	16.1	1.2	0.5	42.1	7.9	8.1	0.0	0.4	23.6	67.9	99
East Darfur	24.3	1.8	0.0	56.4	0.5	0.6	0.2	0.0	16.3	82.9	211
Area											
Urban	68.3	2.4	4.9	14.9	0.2	0.3	0.0	0.1	8.9	90.8	1,488
Rural	50.8	1.2	2.2	18.5	2.2	1.0	0.2	0.1	23.9	74.9	4,134
Mother's age at birth											
Less than 20	56.8	0.9	1.6	19.6	2.5	0.7	0.0	0.0	17.9	81.4	640
20-34	56.2	1.3	3.2	17.2	1.6	0.9	0.2	0.1	19.5	79.4	4,001
35-49	51.4	2.9	2.9	17.6	1.7	0.6	0.1	0.0	22.9	76.4	980
Missing	*	*	*	*	*	*	*	*	*	*	1
Education											
None	35.8	1.3	2.8	23.1	2.7	1.5	0.1	0.1	32.5	65.7	2,247
Primary	59.3	2.0	3.1	18.0	1.3	0.3	0.2	0.1	15.7	83.8	2,022
Secondary	77.4	1.5	3.6	9.2	0.8	0.2	0.0	0.0	7.2	92.5	942
Higher	93.1	0.0	1.3	4.0	0.2	0.4	0.1	0.0	.9	98.6	410
Wealth index quintile											
Poorest	27.8	1.0	2.1	26.0	4.7	2.1	0.1	0.3	35.8	61.7	1,251
Second	41.3	2.2	2.5	25.5	2.3	1.1	0.1	0.1	24.8	73.9	1,232
Middle	53.6	1.6	4.9	17.3	0.5	0.5	0.3	0.0	21.3	78.0	1,192
Fourth	77.9	1.6	3.1	9.3	0.1	0.0	0.1	0.0	7.9	92.0	1,096
Richest	90.0	0.8	1.8	4.5	0.1	0.0	0.0	0.0	2.8	97.2	851

In Sudan, antenatal care is mostly provided by medical doctors (55.4 percent) while a minority of women receive care from a traditional birth attendant (0.8 percent), mostly in rural areas.

Figure RH.3 below shows the distribution of people that provide antenatal care to the pregnant women.

Figure RH.3a: Antenatal Care Service Providers, Sudan MICS, 2014

Person Providing ANC

Provider	Percent
Medical doctor	55.4
Certified midwife	17.5
Auxiliary midwife	2.9
Medical assistant	1.7
Nurse / Midwife	1.5
Traditional birth attendant	.8
Community health worker	.1
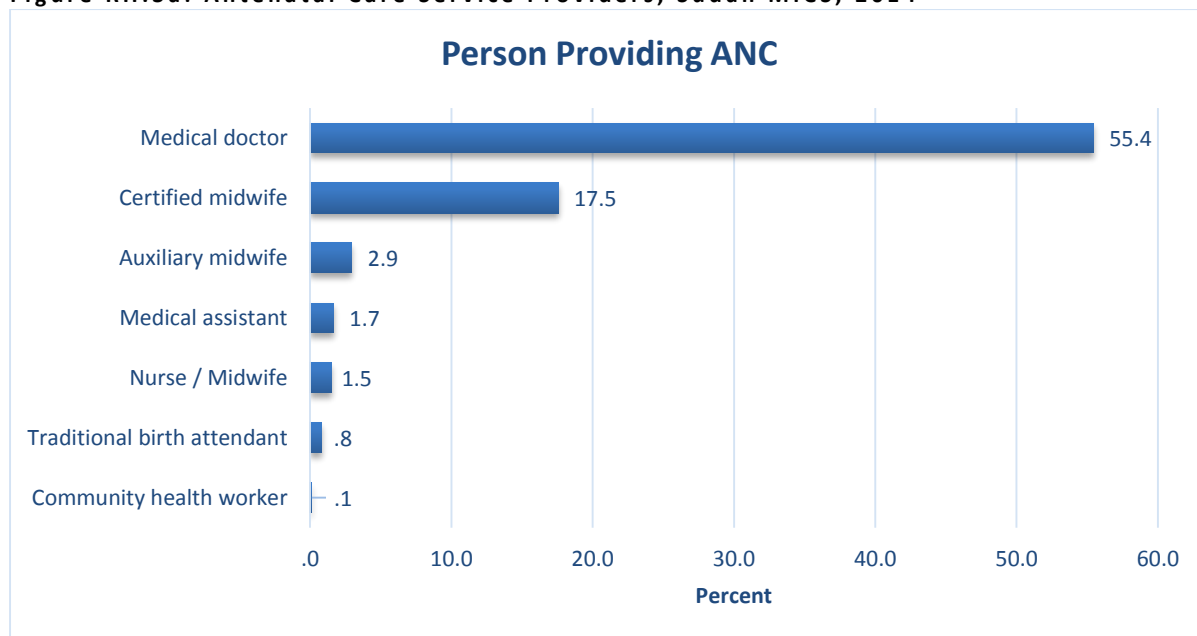
The percentage of women who received ANC was found to be influenced by the women's educational and household wealth levels. Only 65.7 percent of women with no formal education received ANC at least once by skilled personnel, while 83.8 percent of women with primary education, 92.5 percent with secondary and 98.6 percent of women with higher levels of education, received ANC at least once by skilled personnel.

There were significant differentials among women who received ANC from households in the richest quintile (97.2 percent) and those in the poorest quintile (61.7 percent) respectively.

Table RH.8 shows the number of antenatal care visits during the latest pregnancy that took place within the two years preceding the survey, regardless of provider - by selected characteristics. Almost four in five mothers (82.3 percent) received antenatal care more than once and over half of mothers received antenatal care at least four times (50.7 percent).

Mothers from the poorest households and those with primary or no education, are less likely than more advantaged mothers to receive antenatal care four or more times. For example, while only 35.1 percent of the women with no education reported four or more antenatal care visits, as much as 83.1 percent of the women with higher education have been seen to four times or more.

Along the same line, 31.9 percent of the women living in poorest households reported four or more antenatal care visits compared with 81.3 percent among those living in richest households.

Table RH.8 also provides information about the timing of the first antenatal care visit. Overall, 59.2 percent of women with a live birth in the last two years, had their first antenatal care visit during the first trimester of their last pregnancy. A median of 2.0 months of pregnancy at the first visit among those who received antenatal care, was observed.

Figure RH.3b: Women aged 15-49 years with a live birth in the last two years who made 4 or more antenatal care visits, by state, area and mother's education, Sudan MICS, 2014

None	35
Primary	53
Secondary	69
Higher	83
Mother's Education	
Rural	43
Urban	72
Area	
West Kordofan	28
North Darfur	37
South Darfur	41
Blue Nile	43
Sinnar	44
Gadarif	45
White Nile	46
East Darfur	47
Central Darfur	47
Gezira	51
Sudan	51
River Nile	53
Red Sea	53
Kassala	54
West Darfur	56
North Kordofan	58
South Kordofan	59
Northern	67
Khartoum	82

150

Table RH.8: Number of Antenatal Care Visits

Percent distribution of women aged 15-49 years with a live birth in the last two years by number of antenatal care visits by any provider and by the timing of first antenatal care visits, Sudan MICS, 2014

Background characteristics	Percent distribution of women who had:						Percent distribution of women by number of months pregnant at the time of first antenatal care visit						Number of women with a live birth in the last two years	Median months pregnant at first ANC visit	Number of women with a live birth in the last two years who had at least one ANC visit
	No antenetal care visits	1 visit	2 visits	3 visits	4 or more visits [1]	Missing/ DK	No antenatal care visits	First trimester	4-5 months	6-7 months	8+ months	DK/ Missing			
Sudan	19.9	4.6	9.3	14.4	50.7	1.0	20.1	46.5	21.3	9.4	2.4	0.4	5,622	3	4,468
State															
Northern	5.6	5.2	9.3	13.5	66.5	0.0	5.3	63.1	17.8	9.4	4.1	0.3	92	2	87
River Nile	4.8	7.8	11.8	22.6	52.9	0.0	4.8	49.6	28.8	11.7	4.6	0.4	151	3	143
Red Sea	26.7	1.1	6.3	11.5	53.4	1.0	27.2	44.4	22.6	4.2	0.4	1.2	92	3	66
Kassala	16.5	6.8	8.8	13.3	54.0	0.7	17.4	44.8	22.9	11.4	2.9	0.6	199	3	164
Gadarif	18.9	5.8	12.5	16.7	44.8	1.4	18.9	43.3	27.4	7.3	1.6	1.6	307	3	244
Khartoum	2.4	1.8	5.1	8.2	81.9	0.6	2.7	65.8	22.7	7.9	0.3	0.6	684	3	661
Gezira	16.7	4.9	10.8	16.8	50.5	0.2	16.7	55.0	18.1	8.5	1.7	0.0	852	3	710
White Nile	21.1	8.7	8.3	16.1	45.5	0.4	21.1	39.8	23.6	9.2	6.0	0.3	273	3	215
Sinnar	24.7	6.2	12.2	13.5	43.5	0.0	24.7	48.5	17.9	7.5	1.5	0.0	226	3	170
Blue Nile	28.0	5.0	9.3	14.8	42.7	0.3	28.0	46.2	14.9	8.0	2.7	0.2	287	3	206
North Kordofan	14.4	1.6	6.9	15.6	57.7	3.9	14.8	54.7	18.0	10.5	2.0	0.0	352	3	300
South Kordofan	13.6	2.7	9.4	14.2	59.3	0.9	13.6	36.4	32.8	14.3	2.5	0.4	194	4	167
West Kordofan	34.0	5.7	13.7	17.9	28.1	0.6	34.1	32.7	15.1	11.8	5.2	1.0	341	3	221
North Darfur	28.8	5.8	12.9	14.8	36.9	0.8	28.7	30.8	27.7	10.7	1.8	0.3	525	4	373
West Darfur	22.0	3.3	8.9	9.8	56.1	0.0	23.1	43.8	21.2	8.6	2.9	0.3	179	3	137
South Darfur	35.7	2.9	6.8	11.8	40.9	1.9	35.7	38.0	14.8	8.5	2.3	0.7	556	3	354
Central Darfur	23.6	3.6	5.7	17.7	47.1	2.3	23.6	40.5	22.8	11.0	1.9	0.2	99	3	75
East Darfur	16.3	8.8	7.2	18.9	46.8	2.1	16.8	37.4	29.8	11.6	4.3	0.2	211	4	175
Area															
Urban	9.0	2.4	4.8	10.5	71.8	1.5	9.2	58.3	23.4	6.8	1.6	0.7	1,488	3	1,340
Rural	23.9	5.4	10.9	15.9	43.2	0.8	24.0	42.2	20.6	10.3	2.7	0.3	4,134	3	3,128

Table RH.8: Number of Antenatal Care Visits

Percent distribution of women aged 15-49 years with a live birth in the last two years by number of antenatal care visits by any provider and by the timing of first antenatal care visits, Sudan MICS, 2014

Background characteristics	Percent distribution of women who had:						Percent distribution of women by number of months pregnant at the time of first antenatal care visit						Number of women with a live birth in the last two years	Median months pregnant at first ANC visit	Number of women with a live birth in the last two years who had at least one ANC visit
	No antenetal care visits	1 visit	2 visits	3 visits	4 or more visits [1]	Missing/ DK	No antenatal care visits	First trimester	4-5 months	6-7 months	8+ months	DK/ Missing			
Mother's age at birth															
Less than 20	17.9	6.0	9.4	16.9	49.0	0.8	18.0	52.2	19.1	7.9	2.4	0.3	640	3	523
20-34	19.5	4.4	9.8	14.7	50.7	1.0	19.7	46.5	21.7	9.3	2.4	0.4	4,001	3	3,196
35-49	22.9	4.8	7.4	12.0	52.2	0.8	23.0	42.5	21.2	10.5	2.3	0.5	980	3	750
Education															
None	32.5	5.6	11.6	14.3	35.1	1.0	32.6	33.8	19.6	10.2	3.0	0.7	2,247	3	1,498
Primary	15.8	4.8	10.2	15.5	53.0	0.7	15.9	47.0	24.6	10.2	2.1	0.1	2,022	3	1,698
Secondary	7.2	3.3	5.0	14.0	69.1	1.5	7.3	60.5	21.4	8.5	1.9	0.4	942	3	870
Higher	0.9	1.7	2.3	11.1	83.1	0.9	1.5	80.7	13.7	2.1	1.5	0.5	410	2	402

The coverage of key services that pregnant women are expected to receive during antenatal care are shown in Table RH.9 below. Among those women who had a live birth during the two years preceding the survey, 66.1 percent reported that a blood sample was taken during antenatal care visits, 66.9 percent had their blood pressure checked, and 66.1 percent reported that a urine specimen was taken.

In general, 62.8 percent of these women reported that their blood and urine samples were taken and blood pressure measured. The proportion of women who had had two samples and one measurement taken, was higher in urban (81.3 percent) than rural areas (56.1 percent). This also increases with the education levels of the mother - with 43.4 percent for those with no education, 68.3 percent for mothers with primary, 82.7 for those with secondary, and 96.2 percent for women with higher educations.

Khartoum state, had the highest proportion (95.6 percent) of women who received antenatal care and had their blood pressure measured, urine sample and blood test taken during ANC visits. The lowest proportion of women who received these services during ANC visits was in Central Darfur state (30.7 percent).

The survey results also indicated significant differentials according to household wellbeing, with 38.1 percent in the poorest quintile and 92.7 percent of the women in the richest quintile having had their blood pressure measured, urine sample taken and blood test done during the ANC visit.

Table RH.9:	Content of Antenatal Care				
Percentage of women aged 15-49 years with a live birth in the last two years who, at least once, had their blood pressure measured, urine and blood samples taken as part of antenatal care, during the pregnancy for the last birth, Sudan MICS, 2014					
Background characteristics	Percentage of women who, during the pregnancy of their last birth, had:				Number of women with a live birth in the last two years
	Blood pressure measured	Urine sample taken	Blood sample taken	Blood pressure measured, urine and blood sample taken [1]	
Sudan	66.9	66.1	66.1	62.8	5,622
State					
Northern	91.3	94.0	94.1	90.6	92
River Nile	90.2	88.7	89.9	87.3	151
Red Sea	72.6	72.0	67.6	66.1	92
Kassala	73.2	74.4	73.8	71.5	199
Gadarif	66.3	65.9	65.2	64.4	307
Khartoum	96.3	96.9	96.1	95.6	684
Gezira	74.8	72.8	74.1	68.9	852
White Nile	70.3	69.0	68.8	65.6	273
Sinnar	62.5	63.8	64.1	58.8	226
Blue Nile	50.7	54.8	53.6	46.8	287
North Kordofan	74.1	75.3	73.9	73.1	352
South Kordofan	80.4	81.6	81.1	79.5	194
West Kordofan	55.0	54.8	54.8	53.0	341
North Darfur	51.8	49.8	49.8	46.7	525
West Darfur	51.9	48.7	48.5	45.0	179
South Darfur	37.7	37.7	37.5	35.2	556
Central Darfur	47.3	35.0	42.1	30.7	99
East Darfur	58.2	48.3	49.0	38.3	211
Area					
Urban	83.6	84.1	83.7	81.3	1,488
Rural	60.9	59.6	59.7	56.1	4,134

Table RH.9:	Content of Antenatal Care				
Percentage of women aged 15-49 years with a live birth in the last two years who, at least once, had their blood pressure measured, urine and blood samples taken as part of antenatal care, during the pregnancy for the last birth, Sudan MICS, 2014					
Background characteristics	Percentage of women who, during the pregnancy of their last birth, had:				Number of women with a live birth in the last two years
	Blood pressure measured	Urine sample taken	Blood sample taken	Blood pressure measured, urine and blood sample taken [1]	
Mother's age at birth					
Less than 20	64.4	65.4	66.3	61.2	640
20-34	67.9	67.0	66.7	63.7	4,001
35-49	64.6	63.0	63.4	60.2	980
Missing	*	*	*	*	1
Mother's education					
None	48.2	46.7	47.2	43.4	2,247
Primary	72.7	71.9	71.4	68.3	2,022
Secondary	85.7	86.2	86.2	82.7	942
Higher	97.2	97.8	97.0	96.2	410
Wealth index quintile					
Poorest	44.0	41.3	41.5	38.1	1,251
Second	55.2	55.0	54.8	51.5	1,232
Middle	66.4	66.6	66.4	63.0	1,192
Fourth	85.1	84.3	84.0	80.2	1,096
Richest	94.7	94.3	95.0	92.7	851

[1] MICS indicator 5.6 - Content of antenatal care
[*] Based on less than 25 unweighted cases and has been suppressed.

8.5 Assistance at Delivery

About three quarters of all maternal deaths occur due to direct obstetric causes.[35] The single most critical intervention for safe motherhood is to ensure that a competent health worker with midwifery skills is present at every birth, and in case of emergency - that transport is available to a referral facility for obstetric care. The skilled attendant at delivery indicator is used to track progress toward the Millennium Development Goal 5 of improving maternal health.

The MICS included a number of questions to assess the proportion of births attended by a skilled attendant. *A skilled attendant* includes a doctor, nurse, certified midwife, Traditional Birth Attendants, nurse/midwife, and community health workers.

More than seventy (77.7) percent of births occurring in the two years preceding the MICS 2014 survey, were delivered by the assistance of skilled personnel (Table RH.10). This percentage is higher in urban areas with 93.2 percent of deliveries by skilled personnel compared with 71.9 percent in rural areas. Deliveries by skilled personnel varied widely in the states, ranging from 36.4 percent in Central Darfur state to 99.6 percent in Khartoum State.

The results also demonstrate that delivery by skilled personnel is found to be strongly influenced by the level of education. Assistance by a skilled delivery attendant for women with no education was 58.5 percent, while among those with primary education it reached 86.2 percent, and among women with secondary and higher education levels, this rose to 95.7 percent and 97.6 percent respectively.

---

[35] Say, L et al. 2014. ***Global causes of maternal death: a WHO systematic analysis***. *The Lancet Global Health* 2(6): e323-33. DOI: 10.1016/S2214-109X(14)70227-X

More than half of the births (55.0 percent) in the two years preceding the MICS survey, were delivered with the assistance of a certified midwife. Medical doctors assisted with the delivery of 19.2 percent of births and the births delivered by assistance of Traditional Birth Attendants (TBAs) was 18 percent.

Figure RH.3: Person assisting at delivery, Sudan MICS, 2014
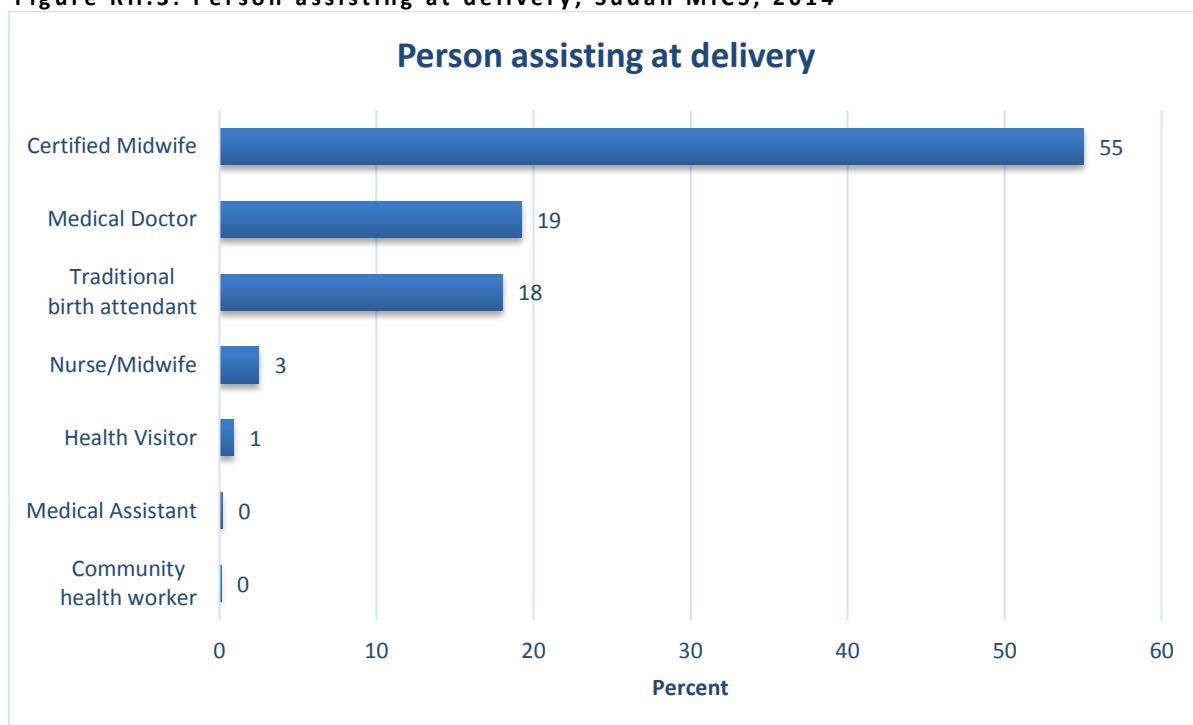
Table RH.10 also shows information on women who delivered by caesarean section (C-section) and provides additional information on the timing of the decision to conduct a C-section (before labour pains began or after). The objective was to better assess if such decisions are mostly driven by medical or non–medical reasons.

Overall, 9.1 percent of women who delivered in the last two years had a C-section. For 6.1 percent of women, the decision was taken before the onset of labour pains and for 3 percent of them, it was after. A mother's age at delivery was found to considerably affect the decision for opting for a C-section, as shown in the data.

The percentage of women who delivered and had a C-section among those under 20 years of age, is 6.4 percent. This figure rises to 8.8 percent in the age group 20-34, and to 11.9 percent among women in the age group 35-49. It is clear that women who delivered in the last two years and had a C-section among urban areas (14.7 percent) doubled that of the percentage of the women who had a C-section in rural areas (7 percent).

Table RH.10: Assistance During Delivery and Caesarean Section

❖ Percent distribution of women aged 15-49 years with a live birth in the last two years by person providing assistance at delivery
❖ Percentage of births delivered by C-section
Sudan MICS, 2014

Basic Characteristics	Person assisting at delivery								Delivery assisted by any skilled attendant [1]	Percent delivered by C-section			Number of women who had a live birth in the last two years
	Medical doctor	Nurse / Mid-wife	Health visitor	Certified mid-wife	TBA	Community health worker	Other/ missing	No attendant		Decided before onset of labour pains	Decided after onset of labour pains	C-section total [2]	
Sudan	19.2	2.5	0.9	55.0	18.0	0.1	3.4	1.0	77.5	6.1	3.0	9.1	5,622
State													
Northern	49.1	8.7	0.0	41.2	0.0	0.0	1.0	0.0	99.0	23.1	12.2	35.2	92
River Nile	37.7	4.7	1.3	53.3	2.9	0.0	0.0	0.0	97.1	14.0	4.8	18.8	151
Red Sea	25.9	12.8	0.9	38.2	20.2	0.0	2.1	0.0	77.8	8.3	0.6	9.0	92
Kassala	14.3	1.4	0.7	60.3	22.3	0.0	1.0	0.0	76.8	4.7	1.0	5.6	199
Gadarif	13.8	3.8	0.0	65.1	10.1	0.0	5.8	1.4	82.7	3.6	2.9	6.5	307
Khartoum	48.0	1.6	1.7	48.3	0.4	0.0	0.0	0.0	99.6	14.4	6.4	20.7	684
Gezira	25.5	2.2	2.0	62.8	4.0	0.0	2.0	1.4	92.5	7.3	5.1	12.4	852
White Nile	25.1	2.9	0.0	64.2	6.1	0.0	1.6	0.0	92.3	11.5	5.9	17.4	273
Sinnar	16.5	7.5	0.0	65.1	2.8	0.0	6.6	1.4	89.1	3.3	4.0	7.2	226
Blue Nile	7.4	1.6	0.3	51.8	8.9	0.0	21.7	8.4	61.0	2.9	1.1	4.0	287
North Kordofan	18.9	0.7	0.3	67.0	9.6	0.0	3.1	0.3	86.9	5.9	2.2	8.1	352
South Kordofan	4.5	3.5	1.0	71.0	15.6	0.2	3.0	1.2	80.0	3.3	0.8	4.1	194
West Kordofan	6.6	1.7	0.8	57.3	29.0	0.6	3.6	0.4	66.3	1.9	0.2	2.1	341
North Darfur	6.4	1.6	1.7	51.0	38.5	0.0	0.6	0.2	60.7	2.3	1.9	4.2	525
West Darfur	6.7	0.5	0.2	50.3	36.8	0.0	5.4	0.0	57.7	1.9	0.2	2.0	179
South Darfur	9.8	1.8	0.7	36.3	47.9	0.0	2.5	0.9	48.7	2.0	0.5	2.5	556
Central Darfur	3.0	0.0	0.0	33.4	56.7	0.7	5.8	0.5	36.4	1.1	0.5	1.5	99
East Darfur	2.8	2.4	0.0	55.3	36.5	0.3	2.6	0.0	60.6	0.8	0.2	1.0	211
Area													
Urban	33.1	3.8	1.5	54.8	4.7	0.0	1.7	0.3	93.2	10.5	4.2	14.7	1,488
Rural	14.2	2.0	0.7	55.0	22.8	0.1	4.0	1.2	71.9	4.4	2.6	7.0	4,134

❖ Percent distribution of women aged 15-49 years with a live birth in the last two years by person providing assistance at delivery
❖ Percentage of births delivered by C-section
Sudan MICS, 2014

Basic Characteristics	Person assisting at delivery								Delivery assisted by any skilled attendant [1]	Percent delivered by C-section			Number of women who had a live birth in the last two years
	Medical doctor	Nurse / Mid-wife	Health visitor	Certified mid-wife	TBA	Community health worker	Other/ missing	No attendant		Decided before onset of labour pains	Decided after onset of labour pains	C-section total [2]	
Mother's age at birth													
Less than 20	14.2	2.5	0.3	59.8	19.2	0.0	3.3	0.7	76.8	3.5	2.9	6.4	640
20-34	19.2	2.3	1.1	55.6	17.9	0.1	3.1	0.8	78.1	5.6	3.2	8.8	4,001
35-49	22.2	3.3	0.8	49.3	17.9	0.1	4.3	1.9	75.7	9.6	2.3	11.9	980
Missing	*	*	*	*	*	*	*	*	*	*	*	*	1
Place of delivery													
Home	1.5	1.6	1.0	65.8	25.1	0.1	3.6	1.3	69.9	0.0	0.0	0.0	4,006
Health facility	65.1	4.9	0.8	28.4	0.3	0.0	0.5	0.0	99.2	21.9	10.8	32.7	1,559
Public	64.8	4.7	0.7	29.0	0.4	0.0	0.5	0.0	99.1	21.1	10.9	32.0	1,468
Private	70.2	8.1	3.0	18.7	0.0	0.0	0.0	0.0	100.0	34.6	9.6	44.3	91
Other/ DK/Missing	6.1	0.0	0.0	19.5	2.8	0.0	68.6	3.0	25.6	0.0	0.0	0.0	57
Mother's education													
None	7.1	2.0	0.8	48.7	33.0	0.0	6.4	2.1	58.5	1.8	1.3	3.1	2,247
Primary	16.0	2.8	0.8	66.7	11.6	0.1	1.7	0.2	86.2	4.6	2.7	7.4	2,022
Secondary	37.8	2.9	1.2	53.8	3.0	0.0	1.0	0.3	95.7	13.7	5.1	18.8	942
Higher	58.2	3.1	2.4	34.0	2.1	0.0	0.2	0.0	97.6	18.8	9.0	27.8	410
Wealth index quintile													
Poorest	5.0	1.1	0.2	41.6	48.9	0.0	2.4	0.8	.0	1.9	0.7	2.5	1,251
Second	9.6	1.9	0.8	58.2	23.7	0.2	4.6	1.1	47.9	2.1	1.4	3.6	1,232
Middle	13.1	2.2	0.9	68.4	6.8	0.1	6.1	2.3	70.5	4.0	3.0	6.9	1,192
Fourth	27.4	3.6	0.7	63.4	2.5	0.0	1.9	0.4	84.6	7.9	4.8	12.6	1,096
Richest	51.6	4.2	2.7	40.2	0.3	0.0	1.0	0.1	95.2	18.4	6.5	25.0	851

8.6 Place of Delivery

Increasing the proportion of births that are delivered in health facilities is an important factor in reducing the health risks to both the mother and the baby. Proper medical attention and hygienic conditions during delivery can reduce the risks of complications and infections that can cause morbidity and mortality to either the mother or baby. Table RH.11 presents the percentage distribution of women aged 15-49 years who had a live birth in the two years preceding the survey by place of delivery, and the percentage of births delivered in a health facility according to their background characteristics.

Slightly more than a quarter (27.7 percent) of births in Sudan, are delivered in a health facility; of which 26.1 percent occured in public sector facilities, while only 1.6 percent of the deliveries occured in private sector facilities. The MICS results also indicate that 71.3 percent of the deliveries take place at home.

Women in urban areas (45.2 percent) are more than twice as likely to deliver in a health facility as their rural counterparts (21.5 percent). Women with higher levels of educational attainment are also more likely to deliver in a health facility than women with less education or no education. Specifically; 11.5 percent of women who had no education delivered in a health facility, compared to 25.8 percent of the women with primary education, to 49.8 percent of the women with secondary, and 75.5 percent of the women with a higher level of education.

Institutional deliveries vary from as low as 7.5 percent in West Kordofan, to almost ten times more (72.5 percent) in Northern state. Similarly, the proportion of births occurring in a health facility steadily increases with wealth, from as low as 8.9 percent among women in the poorest households to 70.8 percent among women in the richest households. The majority of the women (87.1 percent) who received no antenatal care services, delivered at home.

Table RH.11: Place of Delivery							
Percent distribution of women aged 15-49 years with a live birth in the last two years by place of delivery of their last birth Sudan MICS, 2014							
Background characteristics	Place of delivery					Delivered in health facility [1]	Number of women with a live birth in the last two years
	Public sector health facility	Private sector health facility	Home	Other	Missing/ DK		
Sudan	26.1	1.6	71.3	0.2	0.9	27.7	5,622
State							
Northern	69.9	2.6	27.1	0.0	0.4	72.5	92
River Nile	54.0	2.4	43.6	0.0	0.0	56.4	151
Red Sea	36.3	10.2	51.5	0.0	2.1	46.5	92
Kassala	26.0	0.9	71.5	0.5	1.1	26.9	199
Gadarif	20.2	0.0	79.5	0.1	0.2	20.2	307
Khartoum	55.5	8.6	35.7	0.0	0.2	64.1	684
Gezira	36.4	0.7	62.5	0.0	0.3	37.1	852
White Nile	33.8	1.4	63.4	0.3	1.1	35.2	273
Sinnar	24.4	0.6	73.7	0.4	0.9	25.0	226
Blue Nile	13.6	0.0	86.1	0.2	0.1	13.6	287
North Kordofan	21.8	0.4	76.1	0.0	1.7	22.2	352

Table RH.11: Place of Delivery

Percent distribution of women aged 15-49 years with a live birth in the last two years by place of delivery of their last birth Sudan MICS, 2014

Background characteristics	Place of delivery					Delivered in health facility [1]	Number of women with a live birth in the last two years
	Public sector health facility	Private sector health facility	Home	Other	Missing/ DK		
South Kordofan	12.8	0.3	85.0	0.3	1.6	13.1	194
West Kordofan	7.3	0.2	91.4	0.0	1.1	7.5	341
North Darfur	10.7	0.0	88.9	0.1	0.4	10.7	525
West Darfur	12.9	0.4	82.5	0.0	4.2	13.3	179
South Darfur	10.0	0.0	88.6	0.4	1.0	10.0	556
Central Darfur	9.3	0.2	88.1	1.3	1.0	9.5	99
East Darfur	13.3	0.0	84.2	0.5	2.0	13.3	211
Area							
Urban	40.0	5.2	53.7	0.2	1.0	45.2	1,488
Rural	21.1	0.3	77.6	0.2	0.8	21.5	4,134
Mother's age at birth							
Less than 20	27.6	0.9	70.7	0.1	0.7	28.5	640
20-34	26.0	1.5	71.6	0.1	0.8	27.5	4,001
35-49	25.7	2.6	70.1	0.3	1.2	28.4	980
Missing	*	*	*	*	*	*	1
Percent of women who had:							
None	6.8	0.1	89.2	0.2	3.7	6.8	1,120
1-3 visits	18.7	0.7	80.4	0.2	0.1	19.4	1,596
4+ visits	37.9	2.7	59.1	0.1	0.1	40.6	2,852
Missing/DK	23.8	3.7	70.2	0.0	2.4	27.4	54
Mother's education							
None	11.4	0.1	87.1	0.3	1.2	11.5	2,247
Primary	24.6	1.2	73.6	0.1	0.6	25.8	2,022
Secondary	46.3	3.5	49.3	0.1	0.8	49.8	942
Higher	67.7	7.8	23.7	0.0	0.8	75.5	410
Wealth index quintile							
Poorest	8.9	0.0	90.3	0.2	0.6	8.9	1,251
Second	15.1	0.2	83.4	0.3	1.1	15.3	1,232
Middle	18.6	0.6	79.5	0.2	1.0	19.2	1,192
Fourth	37.9	1.1	60.3	0.0	0.7	39.0	1,096
Richest	62.7	8.2	28.3	0.0	0.8	70.8	851

[*] Based on less than 25 unweighted cases and has been suppressed.

8.7 Post-natal Health Checks

The time of birth and immediately after, is a critical window of opportunity to deliver lifesaving interventions for both the mother and newborn. Across the world, approximately 3 million newborns die annualy during the first month of life[36]. The majority of these deaths occur within a day or two of birth[37], which is also the time when the majority of maternal deaths occur[38].

Despite the importance of the first few days following birth, large-scale, nationally representative household survey programmes have not systematically included questions on the post-natal period and care for the mother and newborn. In 2008, the Countdown to 2015 initiative, which monitors progress on maternal, newborn and child health interventions, highlighted this data gap, and called not only for post-natal care (PNC) programmes to be strengthened, but also for better data availability and quality[39].

Following the establishment and discussions of an Inter-Agency Group on PNC and drawing on lessons learned from earlier attempts of collecting PNC data, a new questionnaire module for MICS was developed and validated. Named the Post-natal Health Checks (PNHC) module, the objective is to collect information on newborns' and mothers' contact with a provider - not content of care. The rationale for this is that as PNC programmes scale up, it is important to measure the coverage of that scale up and ensure that the platform for providing essential services is in place. Content is considered more difficult to measure, particularly because the respondent is asked to recall services delivered up to two years preceding the interview.

Table RH.12 below, shows the percentage distribution of women aged 15-49 years that gave birth in a health facility in the two years preceding the survey by duration of stay in the facility following the delivery, according to background characteristics.

Overall, 51.5 percent of women who gave birth in a health facility stay 12 hours or more in the facility after delivery. Across the country, the percentage of women who stay 12 hours or more, varies from 29.3 percent in Central Darfur to 73.2 percent in White Nile state. The survey results indicated a small difference between proportions of those delivering in public and private facilities and who stay 12 hours or more in the facility.

The proportion of women delivering in private facilities who stay 12 hours or more, is 55.2 percent while those delivering in public facilities make up 51.2 percent. The same applies to differences between women who deliver in rural areas (55.8 percent) and those who deliver in urban areas (45.8 percent). As expected, nearly all women (95.9 percent) giving birth through C-section stay 12 hours or more in the facility after giving birth. There are no clear patterns with regards to background characteristics of a woman's age at delivery and her education.

Safe motherhood programmes have recently increased emphasis on the importance of post-natal care, recommending that all women and newborns receive a health check within two days of delivery. To assess the extent of post-natal care utilization, women were asked whether they and their newborn received a health check after the delivery, the timing of the first check, and the type of health provider for the woman's last birth in the two years preceding the survey.

---

[36] UN Interagency Group for Child Mortality Estimation. 2013. *Levels and Trends in Child Mortality: Report 2013*

[37] Lawn, JE et al. 2005. *4 million neonatal deaths: When? Where? Why?* Lancet 2005; 365:891–900.

[38] WHO, UNICEF, UNFPA, The World Bank. 2012. *Trends in Maternal Mortality: 1990-2010*. World Health Organization.

[39] HMN, UNICEF, WHO. 2008. *Countdown to 2015: Tracking Progress in Maternal, Newborn & Child Survival, The 2008 Report*. UNICEF.

Table RH.12: Post-partum Stay in Health Facility

Percent distribution of women age 15-49 years with a live birth in the last two years who had their last birth delivered in a health facility by duration of stay in health facility, Sudan MICS, 2014

Background characteristics	Duration of stay in health facility:						12 hours or more [1]	Number of women who had their last birth delivered in a health facility in the last 2 years
	Less than 6 hours	6-11 hours	12-23 hours	1-2 days	3 days or more	Missing/ DK		
Sudan	44.5	3.7	1.7	18.1	31.7	0.3	51.5	1,559
State								
Northern	35.4	5.7	0.4	15.7	42.8	0.0	58.9	67
River Nile	61.6	1.2	0.7	6.5	30.0	0.0	37.2	85
Red Sea	68.9	0.0	5.6	5.1	20.5	0.0	31.1	43
Kassala	36.6	2.4	0.0	38.6	22.4	0.0	61.0	54
Gadarif	43.3	1.1	0.0	23.5	32.2	0.0	55.7	62
Khartoum	51.4	3.9	2.3	12.2	30.3	0.0	44.8	438
Gezira	40.0	3.8	2.2	20.9	33.1	0.0	56.2	316
White Nile	23.1	3.4	3.1	21.9	48.2	0.3	73.2	96
Sinnar	46.6	2.5	1.2	22.5	27.2	0.0	50.9	56
Blue Nile	(52.8)	(1.8)	(2.6)	(25.1)	(17.7)	(0.0)	(45.4)	39
North Kordofan	45.0	4.6	0.7	22.1	27.6	0.0	50.4	78
South Kordofan	(30.7)	(5.3)	(0.0)	(36.7)	(25.8)	(1.5)	(62.5)	25
West Kordofan	(39.9)	(1.4)	(0.0)	(10.8)	(47.9)	(0.0)	(58.7)	26
North Darfur	(32.5)	(11.8)	(0.0)	(15.8)	(40.0)	(0.0)	(55.8)	56
West Darfur	33.0	2.9	-	39.2	23.7	1.2	100.0	24
South Darfur	(34.6)	(1.7)	(0.0)	(22.0)	(35.4)	(6.3)	(57.4)	55
Central Darfur	70.7	-	-	7.2	22.1	-	100.0	9
East Darfur	(58.1)	(8.8)	(2.8)	(17.9)	(10.7)	(1.7)	(31.4)	28
Area								
Urban	49.5	4.3	2.0	13.7	30.1	0.4	45.8	672
Rural	40.8	3.2	1.4	21.4	32.9	0.3	55.8	887
Mother's age at birth								
Less than 20	46.3	2.8	4.9	23.9	21.2	0.9	50.0	182
20-34	45.2	3.9	1.0	18.4	31.2	0.2	50.7	1,099
35-49	40.8	3.3	2.1	13.1	40.4	0.3	55.6	278
Type of health facility								
Public	44.7	3.7	1.8	18.3	31.2	0.3	51.2	1,468
Type of delivery	41.5	3.3	0.3	15.0	39.9	0.0	55.2	91
Vaginal birth	65.1	4.7	2.4	21.6	5.8	0.4	29.8	1,046
C-section	2.5	1.5	.1	10.9	84.8	0.1	95.9	511
Missing	*	*	*	*	*	*	*	1
Mother's education								
None	45.6	2.4	1.7	21.8	27.0	1.5	50.5	259
Primary	47.2	2.9	1.3	19.9	28.7	0.1	49.9	521
Secondary	45.4	2.9	2.4	16.1	33.0	0.2	51.5	469
Higher	37.9	7.2	1.0	15.0	38.8	0.0	54.8	310

Background characteristics	Duration of stay in health facility:						12 hours or more [1]	Number of women who had their last birth delivered in a health facility in the last 2 years
	Less than 6 hours	6-11 hours	12-23 hours	1-2 days	3 days or more	Missing/ DK		
Wealth index quintile								
Poorest	40.8	5.5	0.0	24.5	27.8	1.3	52.3	111
Second	47.0	2.4	1.7	23.2	25.5	0.2	50.4	188
Middle	35.8	2.1	0.9	25.1	35.3	0.9	61.2	229
Fourth	45.2	2.9	1.7	18.1	32.1	0.1	51.8	428
Richest	47.3	4.9	2.3	12.7	32.7	0.1	47.7	603

Table RH.12: Post-partum Stay in Health Facility

Percent distribution of women age 15-49 years with a live birth in the last two years who had their last birth delivered in a health facility by duration of stay in health facility, Sudan MICS, 2014

( ) Figures that are based on 25-49 unweighted cases
[*] Based on less than 25 unweighted cases and has been suppressed.

Table RH.13 shows the percentage of newborns delivered in the last two years, who received health checks and post-natal care visits from any health provider after birth. Please note that *health checks following birth* while in facility or at home, refer to checks provided by any health provider regardless of timing (column 1), whereas *post-natal care visits* refer to <u>a separate visit</u> to check on the health of the newborn and provide preventive care services and therefore <u>do not</u> include *health checks following birth* while in facility or at home.

The indicator *Post-natal health checks* includes any health check after birth received while in the health facility and at home (column 1), regardless of timing, as well as PNC visits within two days of delivery (columns 2, 3, and 4).

Overall, 23.4 percent of newborns receive a health check following birth while in a facility or at home. With regards to PNC visits, these predominantly occur either on the first or between 3 - 6 days following the delivery (2.9 percent and 3.6 percent, respectively). As a result, 27.7 percent of all newborns in Sudan receive a post-natal health check. This percentage varies from 12.2 percent in Central Darfur to 57.4 percent in Khartoum. Newborns in urban areas are more likely to receive a health check, both following birth (39.3 percent) and including PNC visits (41.8 percent), than their rural counterparts (17.6 percent and 22.6 percent, respectively).

There is a very clear correlation with both education and household wealth, with the percentage of post-natal health checks of newborns increasing with level of education and wealth. For example, the percentage of post-natal health checks of newborns is lower (15.2 percent) among those with no education than those with higher education (63.9 percent). Likewise, the percentage of post-natal health checks of newborns is 16.6 percent among those belonging to the poorest quintile compared to 61.5 percent among those who live in the richest quintile.

Generally, health checks occur following birth whether in a health facility or home deliveries (77.8 percent for public, 78.6 percent for private facility). Looking only at those newborns that did not receive a PNC visit, an expected pattern is seen. However, it is worth noting that newborns to young women, age less than 20 years, have the highest rate of no PNC visits among age groups of women (88.7 percent).

Table RH.13: Post-natal Health Checks for Newborns

❖ Percentage of women aged 15-49 years with a live birth in the last two years whose last live birth received health checks while in a facility or at home following birth

❖ Percent distribution whose last live birth received post-natal care (PNC) visits from any health provider after birth, by timing of visit, and

❖ Percentage who received post-natal health checks
Sudan MICS, 2014

Background characteristics	Health check following birth while in facility or at home [a]	PNC visit for newborns [b]							Post-natal health check for the newborn [1], [c]	Number of last live births in the last two years
		Same day	1 day following birth	2 days following birth	3-6 days following birth	After the first week following birth	No post-natal care visit	Missing / DK		
Sudan	23.4	2.6	2.9	2.7	3.6	2.7	85.2	0.2	27.7	5,622
State										
Northern	47.5	1.8	0.0	2.1	3.1	5.0	88.0	0.0	48.2	92
River Nile	43.0	5.8	1.2	1.1	2.3	5.5	84.0	0.0	45.7	151
Red Sea	30.8	3.2	0.3	0.0	1.6	3.6	91.2	0.0	32.4	92
Kassala	23.4	3.5	1.3	2.5	2.7	.6	89.2	0.3	27.2	199
Gadarif	17.2	1.7	2.4	2.7	2.3	3.2	86.9	0.8	20.8	307
Khartoum	55.0	3.1	0.8	3.2	5.5	3.2	84.2	0.0	57.4	684
Gezira	27.3	.7	1.9	2.5	5.6	2.0	87.0	0.3	28.5	852
White Nile	31.3	2.3	0.0	4.1	2.8	3.2	87.4	0.2	32.7	273
Sinnar	21.7	0.7	2.3	3.4	5.0	3.7	84.7	0.2	24.5	226
Blue Nile	11.5	0.7	4.5	2.1	0.4	1.2	91.1	0.0	15.8	287
North Kordofan	21.0	4.7	6.7	4.3	4.4	4.5	74.9	0.4	31.3	352
South Kordofan	13.4	2.4	2.4	2.8	4.4	3.0	84.6	0.4	16.2	194
West Kordofan	6.9	3.6	2.5	1.4	5.0	3.0	83.6	0.9	12.4	341
North Darfur	10.0	2.4	3.7	3.3	1.3	.9	88.4	0.0	15.8	525
West Darfur	12.4	7.4	10.7	2.1	2.8	1.7	75.1	0.3	27.1	179
South Darfur	12.1	3.8	4.7	2.7	2.2	2.6	84.0	0.0	19.0	556
Central Darfur	5.3	2.1	4.8	3.5	3.1	1.9	84.6	0.0	12.2	99
East Darfur	14.1	1.7	3.5	0.2	3.1	5.3	86.2	0.0	17.6	211
Area										
Urban	39.3	2.4	2.0	3.7	5.0	3.1	83.6	0.2	41.8	1,488
Rural	17.6	2.7	3.3	2.3	3.1	2.6	85.8	0.2	22.6	4,134
Mother's age at birth										
Less than 20	22.3	1.2	3.5	1.4	2.7	2.0	88.7	0.5	26.0	640
20-34	23.0	3.2	2.9	2.7	3.9	2.4	84.7	0.2	27.8	4,001
35-49	25.4	1.3	2.9	3.2	2.6	4.7	85.0	0.2	28.5	980
Missing	*	*	*	*	*	*	*	*	*	1
Place of delivery										
Home	2.5	2.7	3.6	3.3	3.9	2.3	84.2	0.1	8.4	4,006
Health facility	77.8	2.7	1.5	1.2	2.8	3.9	87.4	0.6	78.2	1,559
Public	77.7	2.7	1.5	1.0	2.8	3.8	87.5	0.6	78.2	1,468
Private	78.6	2.9	.5	3.9	2.6	5.6	84.6	0.0	78.6	91
Other/DK/ Missing	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	57
Mother's education										
None	10.1	2.0	3.8	2.0	2.4	1.6	88.2	0.0	15.2	2,247
Primary	21.1	3.3	2.7	3.1	4.4	3.1	83.1	0.4	26.1	2,022

Table RH.13: Post-natal Health Checks for Newborns

❖ Percentage of women aged 15-49 years with a live birth in the last two years whose last live birth received health checks while in a facility or at home following birth
❖ Percent distribution whose last live birth received post-natal care (PNC) visits from any health provider after birth, by timing of visit, and
❖ Percentage who received post-natal health checks
  Sudan MICS, 2014

Background characteristics	Health check following birth while in facility or at home [a]	PNC visit for newborns [b]							Post-natal health check for the newborn [1], [c]	Number of last live births in the last two years
		Same day	1 day following birth	2 days following birth	3-6 days following birth	After the first week following birth	No post-natal care visit	Missing / DK		
Secondary	42.7	2.5	2.7	3.1	4.8	4.1	82.7	0.1	45.3	942
Higher	62.8	2.8	.6	3.4	3.2	4.1	85.3	0.6	63.9	410
Wealth index quintile										
Poorest	8.3	3.5	5.8	2.6	1.8	2.4	84.0	0.0	16.6	1,251
Second	13.8	2.7	2.9	2.1	2.7	2.8	86.4	0.5	18.7	1,232
Middle	16.7	2.0	2.2	2.9	4.3	1.6	87.0	0.2	19.9	1,192
Fourth	30.3	1.7	1.7	2.7	5.8	2.4	85.7	0.1	32.6	1,096
Richest	59.8	3.4	1.6	3.5	3.6	5.2	82.3	0.4	61.5	851

[*] Based on less than 25 unweighted cases and has been suppressed.

In Table RH.14, the percentage of newborns who received the first PNC visit within one week of birth, is shown by location and type of provider of service. As defined above, a visit does not include a check in the facility or at home following birth.

Survey results indicated that one in ten (10.0 percent) of the first PNC visits for newborns occur in a public facility. There exists no wide variations regarding this proportion across the different background characteristics such as education and wealth of the household. However, there are large differences according to background characteristics when looking at the proportions of newborns taking place at home or in private facilities.

Note that there was minimal or almost no newborns delivered at home that attended a private facility for PNC visit, whereas 55.8 percent of the newborns delivered in a private facility also attended a private facility for the PNC visit. Also, it is quite clear that public facility visits are predominantly seen among women in the wealthiest households (20.1 percent) as well as with mothers with a high education (25.5 percent).

Again, in Sudan, around four in five (84.1 percent) of the first PNC visits for newborns are provided by a doctor, nurse or midwife and certified midwife combined. Urban-rural distribution shows that 93.7 percent and 80.1 percent of the first visits among newborns are attended by a doctor, nurse, or mid-wife, in urban and rural areas respectively.

It is interesting to observe that the presence of a traditional birth attendant (TBA) is more prevalent in Central Darfur (48.2 percent), South Darfur (42.5 percent), East Darfur (29.5 percent), Kassala (29.4 percent), and West Darfur state (26.8 percent), than in other states. The less or lack of education a woman has, the more likely she would have delivered at home. For instance, the percentage of women who delivered at home was 30.2 percent in the case of women with no education compared to 7.1 percent among women with primary education and 2.0 percent among women with a secondary level of education.

The percentage of women who delivered at home was 32.7 percent among women belonging to the poorest households as compared to 0.5 percent among those living in the richest households.

Table RH.14: Post-natal Care Visits for Newborns within One Week of Birth

Percent distribution of women age 15-49 years with a live birth in the last two years whose last live birth received a post-natal care (PNC) visit within one week of birth, by location and provider of the first PNC visit, Sudan MICS, 2014

Background characteristics	Location of first PNC visit for newborns				Provider of first PNC visit for newborns					Number of last live births in the last two years with a PNC visit within the first week of life
	Home	Public sector	Private sector	Missing	Doctor/ nurse/ mid-wife /certified midwife	Health visitor	Medical assistant	Comm-unity health worker	Traditional birth attendant	
Sudan	88.9	10.0	0.8	0.3	84.1	1.4	.4	.4	13.7	665
State										
Northern	*	*	*	*	*	*	*	*	*	6
River Nile	(52.9)	(47.1)	(0.0)	(0.0)	(100.0)	(97.1)	(2.9)	(0.0)	(0.0)	16
Red Sea	*	*	*	*	*	*	*	*	*	5
Kassala	(78.6)	(21.4)	(0.0)	(0.0)	(100.0)	(63.9)	(4.0)	(2.6)	(0.0)	20
Gadarif	(95.0)	(5.0)	(0.0)	(0.0)	(96.4)	(0.0)	(0.0)	(0.0)	(3.6)	28
Khartoum	(79.0)	(17.2)	(3.7)	(0.0)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	86
Gezira	(95.2)	(4.8)	(0.0)	(0.0)	(90.9)	(4.0)	(0.0)	(2.0)	(3.1)	91
White Nile	(90.8)	(7.2)	(2.0)	(0.0)	(93.9)	(0.0)	(0.0)	(0.0)	(6.1)	25
Sinnar	(92.3)	(6.6)	(0.0)	(1.1)	(90.1)	(1.1)	(0.0)	(0.0)	(8.8)	26
Blue Nile	(92.4)	(7.6)	(0.0)	(0.0)	(100.0)	(89.2)	(0.0)	(0.0)	(0.0)	22
North Kordofan	96.0	2.2	1.8	0.0	94.7	0.0	1.2	0.0	4.1	71
South Kordofan	79.0	19.4	1.6	0.0	100.0	93.3	0.0	0.0	0.0	23
West Kordofan	(88.0)	(12.0)	(0.0)	(0.0)	(81.2)	(4.3)	(0.0)	(2.6)	(11.9)	43
North Darfur	(97.5)	(2.5)	(0.0)	(0.0)	(76.6)	(2.8)	(1.8)	(0.0)	(18.8)	56
West Darfur	91.0	9.0	0.0	0.0	72.2	1.1	0.0	0.0	26.8	41
South Darfur	88.0	9.9	0.0	2.1	57.5	0.0	0.0	0.0	42.5	74
Central Darfur	(95.7)	(4.3)	(0.0)	(0.0)	(100.0)	(51.8)	(0.0)	(0.0)	(0.0)	13
East Darfur	(94.1)	(5.9)	(0.0)	(0.0)	(100.0)	(70.5)	(0.0)	(0.0)	(0.0)	18
Area										
Urban	84.1	13.9	1.8	0.2	93.7	1.3	0.0	0.0	5.0	195
Rural	90.9	8.3	0.4	0.3	80.1	1.5	.5	0.6	17.3	469
Mother's age at birth										
Less than 20	88.3	11.7	0.0	0.0	85.5	0.0	0.0	0.0	14.5	56
20-34	89.0	9.9	0.8	0.4	83.1	1.6	0.3	0.6	14.4	509
35-49	89.0	9.6	1.4	0.0	88.3	1.4	0.9	0.0	9.4	99
Place of delivery										
Home	98.5	1.1	0.0	0.4	81.2	1.3	0.3	0.2	16.9	538
Health facility	48.2	47.5	4.2	0.0	96.4	1.8	0.4	1.4	0.0	127
Public	48.5	51.1	0.3	0.0	96.5	1.6	0.4	1.5	0.0	118
Private	*	*	*	*	*	*	*	*	*	9
Mother's education										
None	92.4	7.6	0.0	0.0	68.6	0.5	0.2	0.5	30.2	229
Primary	91.8	6.1	1.5	0.6	91.2	1.4	0.3	0.0	7.1	271
Secondary	81.0	17.6	1.1	0.2	92.0	3.7	0.8	1.5	2.0	123
Higher	(74.5)	(25.5)	(0.0)	(0.0)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	41

Table RH.14: Post-natal Care Visits for Newborns within One Week of Birth									
Percent distribution of women age 15-49 years with a live birth in the last two years whose last live birth received a post-natal care (PNC) visit within one week of birth, by location and provider of the first PNC visit, Sudan MICS, 2014									
Background characteristics	Location of first PNC visit for newborns				Provider of first PNC visit for newborns					Number of last live births in the last two years with a PNC visit within the first week of life
	Home	Public sector	Private sector	Missing	Doctor/ nurse/ mid-wife /certified midwife	Health visitor	Medical assistant	Comm- unity health worker	Traditional birth attendant	
Wealth index quintile										
Poorest	92.7	6.4	0.0	0.9	66.2	0.0	0.8	0.3	32.7	171
Second	93.6	5.3	1.0	0.0	78.3	1.2	0.8	0.4	19.3	127
Middle	90.6	9.1	0.3	0.0	91.5	2.3	0.0	0.0	6.2	134
Fourth	87.2	12.2	0.4	0.2	96.8	0.6	0.0	1.4	1.2	129
Richest	76.8	20.1	3.1	0.0	95.5	4.0	0.0	0.0	0.5	103

( ) Figures that are based on 25-49 unweighted cases
[*] Based on less than 25 unweighted cases and has been suppressed.

Tables RH.15 and RH.16 present information collected on post-natal health checks and visits of the mother and are identical to Tables RH.13 and RH.14 that presented the data collected for newborns. Table RH.15 presents a pattern somewhat similar to Table RH.13, but with some important differences.

Overall, 23.4 percent of mothers receive a health check following birth while in a facility or at home. With regards to PNC visits, the majority take place 3-6 days following birth or after the first week following birth (3.0 percent and 3.6 percent, respectively). As a result, 26.6 percent of all mothers receive a post-natal health check in Sudan. This percentage varies from 10.3 percent in West Kordofan state to 56.1 percent in Khartoum state. Urban mothers are much more likely to receive a health check, both following birth (39.2 percent) and PNC visits (41.7 percent), than their rural counterparts (17.7 percent and 21.2 percent, respectively).

There is again a very clear correlation to both education and household wealth, with the percentage of post-natal health checks of mothers increasing with education and wealth. Health checks following birth occur mainly in health facility deliveries (77.6 percent public, 83.9 percent private facilities), whereas for mothers delivering at home, the figure is very low (2.5 percent).

The main difference between the table for newborns and the table for mothers is that the percentage with health checks, both following the birth and through a visit, is lower for mothers than for newborns. As was the case for the newborn, the age group of mothers younger than 20, has a very low percentage receiving a health check through a timely visit.

Table RH.15: Post-natal Health Checks for Mothers

- Percentage of women aged 15-49 years with a live birth in the last two years who received health checks while in facility or at home following birth
- Percent distribution who received post-natal care (PNC) visits from any health provider after birth at the time of last birth, by timing of visit, and
- Percentage who received post-natal health checks
  Sudan MICS, 2014

| Background characteristics | Health check after birth while in facility or at home [a] | PNC visit for mothers [b] | | | | | | | Post-natal health check for the mother [1], [c] | Number of women who gave birth in the two years preceding the survey |
		Same day	1 day after birth	2 days after birth	3-6 days after birth	After the first week after birth	No post-natal care visit	Missing/ DK		
Sudan	23.4	2.1	2.1	2.0	3.0	3.1	87.3	0.3	26.6	5,622
State										
Northern	53.8	1.0	0.0	1.0	3.8	11.4	82.2	0.6	54.4	92
River Nile	42.9	3.2	0.4	0.3	2.5	6.7	86.8	0.0	43.3	151
Red Sea	34.6	2.3	0.8	0.0	1.2	1.8	94.0	0.0	35.3	92
Kassala	23.2	1.3	1.0	1.6	2.2	1.0	92.2	0.8	24.9	199
Gadarif	16.9	1.0	2.2	2.3	2.6	3.6	88.4	0.0	19.3	307
Khartoum	54.3	2.7	0.7	1.4	2.6	5.4	86.5	0.8	56.1	684
Gezira	27.2	0.0	0.5	2.1	4.4	1.6	91.2	0.2	27.6	852
White Nile	31.5	1.0	1.1	2.5	5.3	5.5	84.6	0.0	32.7	273
Sinnar	22.0	.6	2.3	3.3	4.3	4.1	85.2	0.2	24.4	226
Blue Nile	11.7	2.2	3.8	1.6	0.9	1.2	90.3	0.0	16.8	287
North Kordofan	20.3	2.4	4.5	4.1	6.7	6.4	75.1	0.7	25.9	352
South Kordofan	13.4	1.4	0.9	2.7	2.6	2.5	89.8	0.2	15.3	194
West Kordofan	6.9	2.5	1.5	1.5	2.8	1.3	90.4	0.0	10.3	341
North Darfur	10.5	3.8	0.6	3.3	0.9	1.4	89.7	0.2	13.8	525
West Darfur	11.6	9.2	11.3	1.0	3.5	0.6	74.3	0.0	28.9	179
South Darfur	12.1	3.2	4.4	1.8	1.9	2.4	86.0	0.2	18.6	556
Central Darfur	6.0	2.1	2.7	2.5	3.4	0.6	88.7	0.0	10.8	99
East Darfur	13.2	.9	2.6	0.1	2.8	2.9	90.7	0.0	15.5	211
Area										
Urban	39.2	2.5	1.4	2.8	3.5	4.3	85.1	0.3	41.7	1,488
Rural	17.7	2.0	2.3	1.8	2.9	2.7	88.1	0.3	21.2	4,134
Mother's age at birth										
Less than 20	22.7	.6	2.9	0.9	3.0	2.6	89.9	0.1	25.6	640
20-34	23.1	2.3	2.0	2.2	3.1	2.6	87.5	0.3	26.5	4,001
35-49	25.1	2.3	1.8	2.3	2.7	5.4	85.2	0.3	27.7	980
Missing	*	*	*	*	*	*	*	*	*	1
Place of delivery										
Home	2.5	2.1	2.6	2.5	3.0	2.0	87.4	0.3	6.9	4,006
Health facility	78.0	2.2	0.7	0.9	3.2	5.9	86.9	0.2	78.1	1,559
Public	77.6	2.0	0.7	0.9	3.4	5.8	86.9	0.2	77.7	1,468
Private	83.9	5.2	0.0	0.4	0.0	7.5	86.9	0.0	83.9	91
Other/Missing	0.0	1.0	0.0	0.0	0.9	1.1	96.9	0.0	1.0	57

167

		PNC visit for mothers [b]						Post-natal health check for the mother [1], [c]	Number of women who gave birth in the two years preceding the survey
Background characteristics	**Health check after birth while in facility or at home [a]**	**Same day**	**1 day after birth**	**2 days after birth**	**3-6 days after birth**	**After the first week after birth**	**No post-natal care visit**	**Missing/ DK**		
Type of delivery										
Vaginal birth	71.2	2.2	0.9	1.2	1.9	2.4	91.3	0.1	71.4	1,047
C-section	91.7	2.3	0.3	0.4	5.8	13.0	77.8	0.4	91.7	511
Missing	2.7	0.0	0.0	0.0	1.1	1.3	97.6	0.0	2.7	49
Mother's education										
None	10.2	2.1	3.0	1.7	1.8	2.0	89.2	0.1	14.7	2,247
Primary	21.2	2.1	1.9	2.5	3.9	2.8	86.4	0.5	24.1	2,022
Secondary	42.5	2.5	1.3	1.9	3.9	5.1	85.1	0.2	44.5	942
Higher	62.9	1.9	0.1	2.0	3.6	6.0	86.4	0.1	63.3	410
Wealth index quintile										
Poorest	8.3	3.0	3.4	2.1	1.9	2.1	87.4	0.1	14.0	1,251
Second	13.7	2.4	3.2	1.8	1.9	2.4	88.1	0.2	18.4	1,232
Middle	17.3	1.1	1.4	2.7	4.2	2.3	87.9	0.4	19.0	1,192
Fourth	29.9	1.5	1.2	1.8	3.8	4.2	87.2	0.3	31.7	1,096
Richest	59.7	2.9	0.4	1.6	3.9	5.3	85.7	0.2	61.1	851

Table RH.15: Post-natal Health Checks for Mothers

❖ Percentage of women aged 15-49 years with a live birth in the last two years who received health checks while in facility or at home following birth
❖ Percent distribution who received post-natal care (PNC) visits from any health provider after birth at the time of last birth, by timing of visit, and
❖ Percentage who received post-natal health checks
Sudan MICS, 2014

[*] Based on less than 25 unweighted cases and has been suppressed.

Table RH.16 matches Table RH.14, but now deals with PNC visits for mothers by location and type of provider. As defined above, a visit does not include a check in the facility or at home following birth. Overall, 11.7 percent of the first PNC visits occur in a public facility. This proportion varies across background characteristics.

The largest variation is found according to household wealth; where as high as 94.5 percent of the women belonging to the poorest households have their first PNC visit in a public facility, compared to 67.4 percent of the women of the richest households who have their first PNC visit in a public facility.

With regards to the provider of the first PNC visit for mothers, the variations across background characteristics are not large, although there is a higher prevalence among urban women whose first PNC visit provider is a doctor/ nurse/ midwife or certified midwife at 90.7 percent against their rural counterparts at 78.9 percent. One in six (17.3 percent) of rural women are receiving their PNC by traditional birth attendants. It is expected, but nevertheless interesting, to note that almost 86.4 percent of the women giving birth by C-section are seen by a doctor/nurse/midwife at their first PNC visit.

Table RH.16: Post-natal Care Visits for Mothers within One Week of Birth

Percent distribution of women aged 15-49 years with a live birth in the last two years who received a post-natal care (PNC) visit within one week of birth, by location and provider of the first PNC visit, Sudan MICS, 2014

Background characteristics	Location of first PNC visit				Provider of first PNC visit for newborns					Number of women who gave birth in the two years preceding survey and received a PNC visit within one week of delivery
	Home	Public Sector	Private Sector	Missing/ DK	Doctor/ nurse/ midwife /certified midwife	Health visitor	Medical assistant	Community health worker	TBA	
Sudan	87.7	11.7	0.5	0.2	82.3	2.3	0.7	0.7	13.9	523
State										
Northern	*	*	*	*	*	*	*	*	*	5
River Nile	*	*	*	*	*	*	*	*	*	10
Red Sea	*	*	*	*	*	*	*	*	*	4
Kassala	*	*	*	*	*	*	*	*	*	12
Gadarif	(87.1)	(12.9)	(0.0)	(0.0)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	25
Khartoum	*	*	*	*	*	*	*	*	*	50
Gezira	*	*	*	*	*	*	*	*	*	59
White Nile	(76.5)	(23.5)	(0.0)	(0.0)	(91.1)	(3.2)	(0.0)	(0.0)	(5.6)	27
Sinnar	(95.0)	(5.0)	(0.0)	(0.0)	(100.0)	(94.0)	(0.0)	(0.0)	(0.0)	24
Blue Nile	(94.6)	(5.4)	(0.0)	(0.0)	(100.0)	(92.6)	(0.0)	(3.7)	(0.0)	24
North Kordofan	96.3	3.7	0.0	0.0	95.9	0.0	1.4	0.0	2.8	63
South Kordofan	(91.0)	(9.0)	(0.0)	(0.0)	(100.0)	(73.6)	(3.3)	(0.0)	(2.6)	15
West Kordofan	(78.1)	(21.9)	(0.0)	(0.0)	(85.6)	(3.3)	(0.0)	(2.0)	(9.2)	28
North Darfur	(90.0)	(7.6)	(2.4)	(0.0)	(67.2)	(5.4)	(2.3)	(2.4)	(22.7)	45
West Darfur	94.1	.9	1.0	0.0	69.1	1.0	0.0	0.0	29.9	45
South Darfur	86.9	11.6	0.0	1.5	56.5	2.5	0.0	0.0	41.0	63
Central Darfur	(84.4)	(15.6)	(0.0)	(0.0)	(100.0)	(70.0)	(0.0)	(2.5)	(0.0)	11
East Darfur	*	*	*	*	*	*	*	*	*	14
Area										
Urban	81.8	16.9	1.2	0.0	90.7	2.7	0.0	0.9	5.7	153
Rural	90.1	9.5	0.1	0.3	78.9	2.2	1.0	0.6	17.3	370
Mother's age at birth										
Less than 20	97.1	2.9	0.0	0.0	80.3	1.0	0.0	0.0	18.7	47
20-34	89.0	10.1	0.6	0.3	80.9	2.9	0.6	1.0	14.6	386
35-49	76.9	23.1	0.0	0.0	89.8	0.5	1.3	0.0	8.4	89
Place of delivery										
Home	98.8	1.2	0.0	0.0	79.5	2.1	0.7	0.2	17.5	413
Health facility	45.6	51.3	2.2	0.9	93.3	3.3	0.7	2.6	0.0	109
Public	44.6	52.6	1.9	0.9	93.0	3.5	0.7	2.8	0.0	104
Private	*	*	*	*	*	*	*	*	*	5
Other/Missing	*	*	*	*	*	*	*	*	*	1
Type of delivery										
Vaginal birth	62.0	35.8	0.7	1.5	98.1	0.7	1.2	0.0	0.0	65
C-section	(22.5)	(73.0)	(4.4)	(0.0)	(86.4)	(7.1)	(0.0)	(6.4)	(0.0)	45
Missing	*	*	*	*	*	*	*	*	*	1
Mother's education										
None	93.3	6.7	0.0	0.0	67.3	1.3	0.9	0.3	30.3	194
Primary	88.3	10.7	0.5	0.5	89.3	3.1	0.4	0.7	6.5	208
Secondary	78.5	21.0	0.5	0.0	92.7	3.8	1.1	2.0	0.4	90
Higher	(75.1)	(22.0)	(2.9)	(0.0)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	31

Background characteristics	Location of first PNC visit				Provider of first PNC visit for newborns					Number of women who gave birth in the two years preceding survey and received a PNC visit within one week of delivery
	Home	Public Sector	Private Sector	Missing/ DK	Doctor/ nurse/ midwife /certified midwife	Health visitor	Medical assistant	Community health worker	TBA	
Wealth index quintile										
Poorest	94.5	4.7	0.0	0.7	60.7	1.2	1.0	0.4	36.6	130
Second	95.0	5.0	0.0	0.0	79.7	1.4	1.6	0.0	17.4	115
Middle	89.6	10.4	0.0	0.0	92.6	2.4	0.3	0.3	4.3	112
Fourth	83.0	15.2	1.8	0.0	95.0	1.5	0.0	3.2	0.3	91
Richest	67.4	31.5	1.1	0.0	93.3	6.7	0.0	0.0	0.0	75

Table RH.16: Post-natal Care Visits for Mothers within One Week of Birth

Percent distribution of women aged 15-49 years with a live birth in the last two years who received a post-natal care (PNC) visit within one week of birth, by location and provider of the first PNC visit, Sudan MICS, 2014

( ) Figures that are based on 25-49 unweighted cases

[*] Based on less than 25 unweighted cases and has been suppressed.

Table RH.17 presents the distribution of women with a live birth in the two years preceding the survey by receipt of health checks or PNC visits within 2 days of birth for the mother and the newborn, thus combining the indicators presented in Tables RH.13 and RH.15.

Sudan MICS 2014 shows that for 23.7 percent of live births, both the mothers and their newborns receive either a health check following birth or a timely PNC visit, whereas 69.4 percent of births neither receive health checks *nor* timely visits. There are quite large discrepancies across the background characteristics. Births in Urban areas (37.3 percent) are twice better served with health checks or timely visits as compared to births in rural areas (18.7 percent).

The figures between states vary from 8.5 percent in Central Darfur to 51.0 percent in Khartoum. There are also very clear correlations to household wealth and the education level of the woman, where increasing wealth and education tends to be associated with better coverage. As expected, the opposite is true for births without health checks or timely visits. For example, births belonging to the wealthiest households (55.0 percent) are more than four times better served with health checks or timely visits as compared to births in households in the poorest quintile (12.7 percent).

The picture is less clear when it comes to patterns on health checks or timely visits for either the mother or the newborn alone, although there is generally a higher level of coverage for newborns.

Table RH.17: Post-natal Health Checks for Mothers and Newborns

Percent distribution of women age 15-49 years with a live birth in the last two years by post-natal health checks for the mother and new-born, within two days of the most recent birth, Sudan MICS, 2014

Background characteristics	Health checks or PNC visits within 2 days of birth for:					Number of women age 15-49 years who gave birth in the 2 years preceding the survey
	Both mothers and newborns	Mothers only	Newborns only	Neither mother nor newborn	Missing	
Sudan	23.7	2.9	4.0	69.4	0.0	5,622
State						
Northern	43.8	10.6	4.3	41.3	0.0	92
River Nile	40.0	3.3	5.7	51.0	0.0	151
Red Sea	28.8	6.6	3.6	61.0	0.0	92
Kassala	21.7	3.3	5.6	69.5	0.0	199
Gadarif	18.2	1.1	2.7	78.0	0.0	307
Khartoum	51.0	5.1	6.3	37.5	0.0	684
Gezira	24.5	3.1	4.0	68.4	0.0	852
White Nile	29.9	2.7	2.8	64.6	0.0	273
Sinnar	21.9	2.2	2.4	73.3	0.2	226
Blue Nile	13.3	3.5	2.5	80.7	0.0	287
North Kordofan	22.8	3.0	8.4	65.7	0.0	352
South Kordofan	12.8	2.5	3.4	81.3	0.0	194
West Kordofan	9.3	1.0	3.0	86.6	0.0	341
North Darfur	12.6	1.2	3.2	83.0	0.0	525
West Darfur	22.7	6.2	4.4	66.7	0.0	179
South Darfur	16.6	1.9	2.4	79.1	0.0	556
Central Darfur	8.5	2.3	3.7	85.5	0.0	99
East Darfur	15.1	0.4	2.5	82.0	0.0	211
Area						
Urban	37.3	4.3	4.4	53.9	0.0	1,488
Rural	18.7	2.4	3.9	74.9	0.0	4,134
Mother's age at birth	22.1	3.5	3.9	70.5	0.0	640
Less than 20	23.6	2.9	4.2	69.3	0.0	4,001
20-34	24.9	2.8	3.5	68.8	0.0	980
35-49	*	*	*	*	*	1
Place of delivery						
Home	5.5	1.5	3.0	90.1	0.0	4,006
Health facility	71.3	6.8	6.9	15.0	0.0	1,559
Public	71.2	6.5	7.0	15.3	0.0	1,468
Private	73.2	10.7	5.4	10.7	0.0	91
Other/DK/Missing	0.0	1.0	0.0	99.0	0.0	57
Type of delivery						
Vaginal birth	66.0	5.4	8.7	19.8	0.0	1,047
C-section	82.0	9.6	3.0	5.2	0.1	511
Missing	2.7	0.0	0.0	97.3	0.0	49
Mother's education						
None	12.7	2.0	2.6	82.8	0.0	2,247
Primary	21.5	2.6	4.5	71.3	0.0	2,022
Secondary	39.7	4.8	5.5	50.0	0.0	942
Higher	57.8	5.5	6.0	30.7	0.0	410
Wealth index quintile						
Poorest	12.7	1.3	3.9	82.1	0.0	1,251
Second	15.6	2.7	3.1	78.5	0.0	1,232
Middle	16.6	2.4	3.3	77.7	0.0	1,192
Fourth	28.5	3.2	4.1	64.2	0.0	1,096
Richest	55.0	6.1	6.5	32.4	0.0	851

( ) Figures that are based on 25-49 unweighted cases
[*] Based on less than 25 unweighted cases and has been suppressed.

Child Developement

Attendance to pre-school education is important for the readiness of children to school.

9. Child Development

9.1 Early Childhood Care and Education

Readiness of children for primary school can be improved through attendance to early childhood education programmes or through pre-school attendance. Early childhood education programmes include organised learning components as opposed to babysitting and day-care, which do not typically have organised education and learning.

For Sudan, structural changes were introduced in the general education system in 1998, when the old system of 6+3+3 grades (adopted in the 1970s) was changed into 2+8+3 to include two years pre-school, 8 years at the basic stage and three years of secondary school.

Currently, Basic Education in Sudan includes pre-school education (Khalwa and kindergarten) - two consecutive years targeting children of four to five years of age at a basic education level, eight consecutive years of schooling from 6 to 13 years of age, at the end of which students sit for the basic level certificate examination qualifying them for admission to secondary school.

Observing the context of Sudan and during the customization of the Child development module, only the questions that will allow the production of Tables CD.1 and CD.3 were kept as part of the under-five questionnaires.

Table CD.1: indicates that 22.3 percent of children aged 36-59 months are attending an organised early childhood education programme (Table CD.1). Urban-rural and state differentials are notable – the figure is as high as 44.6 percent in urban areas, compared to 13.9 percent in rural areas.

Among children aged 36-59 months, attendance to early childhood education programmes is more prevalent in Khartoum state (56.2 percent), and lowest in West Kordofan (4.3 percent). No gender differential exists, but a degree of difference by socioeconomic status seems to be significant; 59.4 percent of children living in the richest households while the figure drops to 6.9 percent among children in the poorest households.

The data indicates that there is a noteworthy variation between children attending early childhood education programmes at ages 36-47 months and 48-59 months (13.5 percent and 33.5 percent, respectively).

Table CD.1: Early Childhood Education		
Percentage of children age 36-59 months who are attending an organized early childhood education programme, Sudan MICS, 2014		
Background characteristics	Percentage of children age 36-59 months attending early childhood education [1]	Number of children age 36-59 months
Sudan	22.3	5,827
Sex		
Male	21.9	2,957
Female	22.7	2,869
State		
Northern	47.3	94
River Nile	36.1	169
Red Sea	37.6	98
Kassala	12.2	200
Gadarif	16.2	295
Khartoum	56.2	721

Table CD.1: Early Childhood Education

Percentage of children age 36-59 months who are attending an organized early childhood education programme, Sudan MICS, 2014

Background characteristics	Percentage of children age 36-59 months attending early childhood education [1]	Number of children age 36-59 months
Gezira	21.0	892
White Nile	26.2	275
Sinnar	24.8	223
Blue Nile	13.3	268
North Kordofan	9.4	407
South Kordofan	21.9	227
West Kordofan	4.3	394
North Darfur	13.7	529
West Darfur	13.5	211
South Darfur	17.3	503
Central Darfur	9.1	113
East Darfur	11.8	207
Area		
Urban	44.6	1,594
Rural	13.9	4,233
Age of child		
36-47 months	13.5	3,268
48-59 months	33.5	2,559
Mother's education		
None	8.8	2,636
Primary	22.7	1,965
Secondary	46.0	844
Higher	62.0	375
Missing/DK	*	7
Wealth index quintile		
Poorest	6.9	1,393
Second	9.2	1,232
Middle	17.2	1,182
Fourth	30.0	1,076
Richest	59.4	943

[1] MICS indicator 6.1 - Attendance to early childhood education
[*] Based on less than 25 unweighted cases and has been suppressed.

9.2 Quality of Care

Exposure to books during the early years, not only provides the child with greater understanding of the nature of print, but may also gives the child opportunities to see others reading, such as older siblings doing school work. Presence of books is important for later school performance.

The mothers/caretakers of all children under 5 were asked about the number of children's books or picture books they have for the child, and the types of playthings that are available at home.

In Sudan, only 1.3 percent of children aged 0-59 months live in households where at least 3 children's books are present for the child (Table CD.3). Overall, there exists a very small number of households with 10 or more children's books.

While no gender differentials are observed, a higher percentage of urban children appear to have access to children's books than the children living in rural households. The proportion of under-5 children who have 3 or more children's books is 4.4 percent in urban areas, compared to 0.4 percent in rural areas.

Table CD.3:	Learning Materials						
Percentage of children under age 5 by numbers of children's books present in the household, and by playthings available Sudan MICS, 2014							
Background characteristics	Percentage of children living in households that have for the child:		Percentage of children who play with:				Number of children under age 5
	3 or more children's books [1]	10 or more children's books	Home-made toys	Toys from a shop/ manufactured toys	Household objects/ objects found outside	Two or more types of playthings [2]	
Sudan	1.5	0.0	41.1	39.8	54.8	45.5	14,081
Sex							
Male	1.6	0.0	42.1	40.9	55.0	46.2	7,157
Female	1.4	0.0	40.1	38.8	54.7	44.8	6,924
State							
Northern	0.8	0.2	47.6	78.0	75.3	73.1	236
River Nile	2.1	0.2	32.2	57.7	51.3	44.6	393
Red Sea	2.0	0.0	27.0	34.6	40.3	30.6	244
Kassala	0.5	0.0	15.6	22.3	38.6	18.6	498
Gadarif	0.5	0.0	37.3	43.1	69.0	49.4	765
Khartoum	7.2	0.0	30.0	72.2	42.5	45.6	1,736
Gezira	1.0	0.0	53.5	39.6	63.8	56.1	2,149
White Nile	0.9	0.0	39.8	46.3	62.7	51.8	711
Sinnar	1.3	0.1	43.5	52.2	51.6	47.7	555
Blue Nile	0.3	0.0	43.8	31.7	77.2	54.3	691
North Kordofan	0.3	0.0	46.9	34.5	47.2	44.3	907
South Kordofan	0.1	0.0	58.5	32.9	60.8	55.6	529
West Kordofan	0.6	0.1	38.4	39.5	50.6	39.4	893
North Darfur	0.4	0.0	21.8	17.7	45.2	20.7	1,211
West Darfur	0.5	0.0	53.4	26.6	46.0	44.2	487
South Darfur	0.6	0.0	59.2	31.2	60.0	57.1	1,326
Central Darfur	0.2	0.0	18.8	10.5	40.3	15.9	254
East Darfur	0.5	0.0	37.8	22.2	55.4	40.9	495
Area							
Urban	4.4	0.1	37.7	58.9	50.7	48.6	3,862
Rural	0.4	0.0	42.4	32.7	56.3	44.4	10,219
Age of child							
36-47 months	0.4	0.0	27.0	31.3	35.7	30.0	5,636
48-59 months	2.2	0.0	50.5	45.6	67.5	55.9	8,445
Mother's education							
None	0.3	0.0	41.5	24.5	56.3	41.3	5,994
Primary	0.7	0.0	40.5	40.2	53.1	44.8	4,936
Secondary	3.3	0.0	41.9	64.4	55.5	55.0	2,152
Higher	8.6	0.2	40.1	78.1	53.2	55.2	982
Missing/DK	*	*	*	*	*	*	17

Table CD.3:	Learning Materials						
Percentage of children under age 5 by numbers of children's books present in the household, and by playthings available Sudan MICS, 2014							
Background characteristics	Percentage of children living in households that have for the child:		Percentage of children who play with:				Number of children under age 5
	3 or more children's books [1]	10 or more children's books	Home-made toys	Toys from a shop/ manufactured toys	Household objects/ objects found outside	Two or more types of playthings [2]	
Wealth index quintile							
Poorest	0.2	0.0	38.1	20.1	52.5	36.2	3,188
Second	0.1	0.0	40.5	26.7	52.3	39.3	3,015
Middle	0.5	0.0	45.9	36.8	60.0	49.5	2,956
Fourth	1.1	0.0	42.3	50.0	57.0	51.1	2,684
Richest	7.0	0.1	38.5	77.6	52.0	55.3	2,238

[1] MICS indicator 6.5 - Availability of children's books
[2] MICS indicator 6.6 - Availability of playthings

Table CD.3 also shows that 45.5 percent of children aged 0-59 months had 2 or more types of playthings available in their homes. The types of playthings included in the questionnaires were:

- Homemade toys (such as dolls and cars, or other toys made at home)
- Toys that came from a store
- Household objects (such as pots and bowls)
- Objects and materials found outside the home (such as sticks, rocks, animal shells, or leaves)

It is interesting to note that less than four out of ten (39.8 percent) of children play with toys that come from a store as compared to 54.8 percent of the toys coming from the homes. The proportion of children who have 2 or more types of playthings to play with is 46.2 percent among male children and 44.8 percent among female children.

Urban-rural differentials are evident in this respect; significant differences are observed in terms of mother's education – 55.2 percent of children whose mothers have a secondary or higher education have 2 or more types of playthings as compared to 41.3 percent for children whose mothers have no education. In regards to the socioeconomic status of the household, differentials range from 36.2 percent among the poorest households to 55.3 percent among the richest households.

Literacy and Education

59.8 percent of young women in Sudan are literate

10. Literacy and Education

10.1 Literacy among Young Women

The Youth Literacy Rate reflects the outcomes of primary education over the previous 10 years or so. As a measure of the effectiveness of the primary education system, it is often seen as a proxy measure of social progress and economic achievement. In Sudan Multiple Indicator Cluster Survey (MICS 2014), since only a women's questionnaire was administered, the results are based only on females aged 15-24. Literacy is assessed on the ability of the respondent to read a short simple statement or based on school attendance.

The percent literate is presented in Table ED.1. This table indicates that 59.8 percent of young women in Sudan are literate and that literacy status varies greatly by area (79.8 percent in urban and 50.0 percent in rural areas). Of women who stated that primary school was their highest level of education, just 43.7 percent were actually able to read the statement shown to them.

The proportion of women who were literate was higher at 63.4 percent among women age 15-19 years than that among women age 20-24 years (55.6 percent). The proportion of literate women (aged 15-24 years) also varied by their household wealth. The proportion of literate women was much higher among those belonging to households in the richest quintile (92.2 percent) than those belonging to households in the poorest quintile (31.2 percent).

Table ED.1: Literacy Among Young Women			
Percentage of women age 15-24 years who are literate, Sudan MICS, 2014			
Background characteristics	**Percentage literate [1]**	**Percentage not known**	**Number of women age 15-24 years**
Sudan	59.8	1.4	6,871
State			
Northern	91.5	0.2	146
River Nile	79.8	2.5	253
Red Sea	71.9	3.4	150
Kassala	48.4	0.7	272
Gadarif	42.8	0.4	327
Khartoum	82.6	1.8	1,053
Gezira	66.4	0.8	1,231
White Nile	67.5	2.5	312
Sinnar	54.0	2.3	257
Blue Nile	36.1	0.6	297
North Kordofan	58.8	1.5	471
South Kordofan	49.2	1.3	197
West Kordofan	32.9	0.6	341
North Darfur	56.0	0.9	479
West Darfur	50.1	1.8	214
South Darfur	49.3	1.1	567
Central Darfur	27.4	2.7	104
East Darfur	40.0	4.0	201
Area			
Urban	79.8	1.7	2,262
Rural	50.0	1.2	4,609

Table ED.1: Literacy Among Young Women			
Percentage of women age 15-24 years who are literate, Sudan MICS, 2014			
Background characteristics	Percentage literate [1]	Percentage not known	Number of women age 15-24 years
Education			
None	4.2	0.7	1,321
Primary	43.7	3.2	2,662
Secondary	100.0	0.0	2,180
Higher	100.0	0.0	708
Age			
15-19	63.4	1.7	3,709
20-24	55.6	1.0	3,162
Wealth index quintile			
Poorest	31.2	1.0	1,165
Second	38.1	1.2	1,338
Middle	55.6	1.6	1,385
Fourth	72.9	1.8	1,483
Richest	92.2	1.2	1,500

[1] MICS indicator 7.1; MDG indicator 2.3 - Literacy rate among young women

10.2 School Readiness

Attendance to pre-school education is important for the readiness of children to school. Table ED.2 shows the proportion of children in the first grade of primary school (regardless of age) who attended pre-school the previous year[40]. Overall, 69.7 percent of children who are currently attending the first grade of primary school were attending pre-school the previous year. The proportion among males is lower (66.0 percent) than females (73.4 percent), while a higher proportion of children in first grade in urban areas (81.0 percent) had attended pre-school the previous year compared to children living in rural areas (64.7 percent).

State differentials are also very significant; the likelihood of first graders in Khartoum state to have attended pre-school is nearly 3 times more likely (87.0 percent) as their counterparts in Central Darfur state (30.5 percent). Socioeconomic status appears to have a positive correlation with school readiness – while the indicator is only 50.6 percent among the poorest households, it increases to 86.9 percent among the children living in the richest households.

---

[40] The computation of the indicator does not exclude repeaters, and therefore is inclusive of both children who are attending primary school for the first time, as well as those who were in the first grade of primary school the previous school year and are repeating. Children repeating may have attended pre-school prior to the school year during which they attended the first grade of primary school for the first time; these children are not captured in the numerator of the indicator

Table ED.2:   School Readiness

Percentage of children attending first grade of primary school who attended pre-school the previous year
Sudan MICS, 2014

Background characteristics	Percentage of children attending first grade who attended preschool in previous year [1]	Number of children attending first grade of primary school
Sudan	69.7	2,580
Sex		
Male	66.0	1,299
Female	73.4	1,281
State		
Northern	79.9	56
River Nile	86.6	94
Red Sea	66.9	57
Kassala	65.7	77
Gadarif	72.3	145
Khartoum	87.0	329
Gezira	77.0	486
White Nile	82.9	140
Sinnar	72.1	90
Blue Nile	77.0	107
North Kordofan	68.2	172
South Kordofan	64.7	84
West Kordofan	51.5	116
North Darfur	61.8	221
West Darfur	59.5	75
South Darfur	39.3	211
Central Darfur	30.5	46
East Darfur	60.2	75
Area		
Urban	81.0	790
Rural	64.7	1,790
Wealth index quintile		
Poorest	50.6	471
Second	57.7	472
Middle	69.5	573
Fourth	80.6	569
Richest	86.9	495

[1] MICS indicator 7.2 - School readiness

180

10.3 Primary and Secondary School Participation

Universal access to basic education and the completion of primary education by the world's children, is one of the Millennium Development Goals. Education is a vital prerequisite for combating poverty, empowering women, protecting children from hazardous and exploitative labour and sexual exploitation, promoting human rights and democracy, protecting the environment, and influencing population growth.

In Sudan, children enter primary school at age 6 and enter secondary school at age 14. There are 8 grades in primary school and 3 grades in secondary school. In primary school, grades are referred to as year 1 basic to year 8 basic. For secondary school, grades are referred to as grade 1 to grade 3. The school year typically runs from June and ends the following March.

Of children who are of primary school entry age in Sudan, 36.8 percent are attending the first grade of primary school (Table ED.3). Sex differentials do not exist. However, significant differentials are present by state and urban-rural areas. In Northern state, for instance, the percentage of children entering grade one is 73.6 percent, while those entering at grade one in Western Kordofan state is 13.4 percent. Those entering grade one in urban urban areas (56.6 percent) is nearly twice as much as those in rural areas (29.5 percent). A positive correlation with socioeconomic status is observed for children age 6 who were attending the first grade. In richest households, the proportion is around 77.6 percent, while it is 14.5 percent among children living in the poorest households.

Table ED.3: Primary School Entry		
Percentage of children of primary school entry age entering grade 1 (net intake rate) Sudan MICS, 2014		
Background characteristics	**Percentage of children of primary school entry age entering grade 1 [1]**	**Number of children of primary school entry age**
Sudan	36.8	3,142
Sex		
Male	36.1	1,560
Female	37.5	1,582
State		
Northern	73.6	54
River Nile	66.5	88
Red Sea	44.1	78
Kassala	27.5	141
Gadarif	34.4	180
Khartoum	68.0	372
Gezira	46.0	456
White Nile	39.7	163
Sinnar	31.9	129
Blue Nile	28.4	141
North Kordofan	36.6	225
South Kordofan	28.5	111
West Kordofan	13.4	180
North Darfur	19.7	263
West Darfur	23.0	122
South Darfur	22.6	272
Central Darfur	22.9	58
East Darfur	19.6	108

Table ED.3:	Primary School Entry	
Percentage of children of primary school entry age entering grade 1 (net intake rate) Sudan MICS, 2014		
Background characteristics	Percentage of children of primary school entry age entering grade 1 [1]	Number of children of primary school entry age
Area		
Urban	56.6	843
Rural	29.5	2,299
Wealth index quintile		
Poorest	14.5	727
Second	20.3	693
Middle	33.2	704
Fourth	56.9	548
Richest	77.6	469

[1] MICS indicator 7.3 - Net intake rate in primary education

Table ED.4 provides the percentage of children of primary school age (6 to 13 years) who are attending primary or secondary school[41] and those who are out of school. Over three-quarters (76.4 percent) of children of primary school age are attending school. A large proportion (21.6 percent) of the children are out of school primarily due to a very low attendance rate (45.1 percent) for children age 6, who appear to be starting late in school, as seen by a relatively high percentage attending pre-school. In urban areas, 91.4 percent of children attend school while 70.6 percent of those in rural areas attend.

There were also considerable variations in the net primary school attendance ratios among states. The net primary school attendance ratio ranged from 54.1 percent in Western Kordofan state to 95.5 percent in Northern state . The net attendance also varied among genders in states (see fig. ED.1a)

The household wealth also appears to have an influence on the net primary school attendance ratio. The net primary school attendance ratio was only 57.4 percent among children belonging to households in the poorest quintile, compared to 96.9 percent among children from households in the richest quintile.

---

[41] Ratios presented in this table are "adjusted" since they include not only primary school attendance, but also secondary school attendance in the numerator.

Figure ED.1a: Children of primary school age attending primary (adjusted attendance ratio) for boys and girls by state and by urban/rural area, Sudan MICS, 2014

183

Table ED.4: Primary School Attendance and out of School Children

Percentage of children of primary school age attending primary or secondary school (adjusted net attendance ratio), percentage attending preschool, and percentage out of school
Sudan MICS, 2014

Background characteristics	Male					Female					Sudan				
		Percentage of children:					Percentage of children:					Percentage of children:			
	Net attendance ratio (adjusted) [1]	Not attending school or pre-school	Attending pre-school	Out of school [a]	Number of children	Net attendance ratio (adjusted) [1]	Not attending school or preschool	Attending preschool	Out of school [a]	Number of children	Net attendance ratio (adjusted) [1]	Not attending school or pre-school	Attending pre-school	Out of school [a]	Number of children
Sudan	77.4	12.5	8.5	21.0	11,522	75.5	13.9	8.4	22.3	11,454	76.4	13.2	8.5	21.6	22,977
State															
Northern	95.7	2.8	3.1	5.8	204	95.3	2.2	3.3	5.5	200	95.5	2.5	3.2	5.7	404
River Nile	90.4	4.4	5.5	9.8	321	91.7	5.5	2.3	7.8	344	91.1	4.9	3.9	8.8	665
Red Sea	85.3	9.0	8.5	17.5	263	83.5	9.9	7.9	17.8	249	84.4	9.4	8.2	17.7	512
Kassala	68.7	14.1	11.7	25.7	547	67.9	14.9	17.5	32.4	469	68.3	14.4	14.4	28.8	1,016
Gadarif	75.9	12.9	12.1	25.0	621	68.6	16.2	10.1	26.3	600	72.3	14.5	11.1	25.6	1,220
Khartoum	95.5	3.0	7.4	10.4	1,377	95.0	2.1	6.2	8.3	1,411	95.3	2.6	6.8	9.3	2,788
Gezira	85.2	9.3	5.9	15.2	1,801	83.2	8.9	7.6	16.5	1,783	84.2	9.1	6.7	15.8	3,585
White Nile	79.7	12.8	5.5	18.3	564	79.0	12.9	5.2	18.1	584	79.3	12.9	5.3	18.2	1,148
Sinnar	83.0	10.7	14.5	25.2	408	80.2	13.0	15.6	28.6	409	81.6	11.9	15.1	26.9	816
Blue Nile	78.6	14.3	28.2	42.5	500	77.3	14.7	27.8	42.5	479	78.0	14.5	28.0	42.5	979
North Kordofan	76.8	13.1	3.8	16.9	748	71.0	17.2	2.9	20.1	758	73.9	15.2	3.3	18.5	1,506
South Kordofan	69.3	17.2	5.5	22.7	399	69.6	13.8	8.3	22.1	380	69.5	15.6	6.8	22.4	779
West Kordofan	56.0	21.6	5.0	26.7	715	52.4	27.5	8.2	35.8	769	54.1	24.7	6.7	31.4	1,483
North Darfur	76.0	15.0	9.3	24.3	989	77.4	14.1	7.6	21.7	959	76.7	14.6	8.4	23.0	1,949
West Darfur	63.5	19.1	8.4	27.5	436	56.8	28.0	5.1	33.1	405	60.3	23.4	6.8	30.2	841
South Darfur	65.0	17.2	9.6	26.7	979	67.4	18.6	8.9	27.5	996	66.2	17.9	9.2	27.1	1,975
Central Darfur	57.6	22.9	6.4	29.3	219	50.9	25.3	5.5	30.9	230	54.1	24.1	6.0	30.1	449
East Darfur	66.3	16.2	8.0	24.2	431	57.8	23.0	6.6	29.6	428	62.0	19.6	7.3	26.9	859
Area															
Urban	91.6	5.1	6.0	11.1	3,205	91.3	4.0	5.5	9.5	3,241	91.4	4.5	5.7	10.3	6,446
Rural	71.9	15.3	9.5	24.8	8,317	69.2	17.8	9.6	27.4	8,213	70.6	16.5	9.6	26.1	16,531

Table ED.4: Primary School Attendance and out of School Children

Percentage of children of primary school age attending primary or secondary school (adjusted net attendance ratio), percentage attending preschool, and percentage out of school
Sudan MICS, 2014

Background characteristics	Male					Female					Sudan				
	Net attendance ratio (adjusted) [1]	Percentage of children:			Number of children	Net attendance ratio (adjusted) [1]	Percentage of children:			Number of children	Net attendance ratio (adjusted) [1]	Percentage of children:			Number of children
		Not attending school or pre-school	Attending pre-school	Out of school [a]			Not attending school or preschool	Attending preschool	Out of school [a]			Not attending school or pre-school	Attending pre-school	Out of school [a]	
Age at beginning of school year															
6	62.7	20.9	24.7	45.6	1,560	64.5	19.7	24.9	44.6	1,582	63.6	20.3	24.8	45.1	3,142
7	71.8	16.1	11.3	27.4	1,605	70.7	15.1	10.7	25.8	1,706	71.2	15.6	11.0	26.6	3,311
8	76.3	12.7	7.3	20.0	1,637	76.8	12.9	7.5	20.4	1,567	76.5	12.8	7.4	20.2	3,204
9	84.2	8.3	5.3	13.5	1,357	80.9	10.7	6.1	16.8	1,284	82.6	9.4	5.7	15.1	2,640
10	79.9	10.2	4.3	14.4	1,607	80.5	10.8	4.2	15.0	1,456	80.2	10.5	4.2	14.7	3,063
11	85.6	6.5	3.6	10.1	1,127	82.3	10.9	4.1	15.0	1,161	84.0	8.7	3.9	12.6	2,289
12	83.1	10.5	5.2	15.7	1,541	76.8	13.0	2.9	15.9	1,509	80.0	11.7	4.1	15.8	3,051
13	79.5	12.4	3.1	15.4	1,088	74.7	16.8	3.5	20.3	1,189	77.0	14.7	3.3	18.0	2,277
Wealth index quintile															
Poorest	58.8	20.7	8.2	28.9	2,710	56.0	24.1	7.8	31.9	2,644	57.4	22.4	8.0	30.4	5,353
Second	66.5	18.7	10.2	28.9	2,473	62.1	22.0	10.6	32.6	2,469	64.3	20.4	10.4	30.8	4,942
Middle	81.6	11.5	13.5	25.0	2,462	80.0	12.5	13.0	25.6	2,326	80.8	12.0	13.3	25.3	4,788
Fourth	92.6	5.2	5.1	10.3	2,154	91.5	4.4	6.5	10.9	2,197	92.0	4.8	5.8	10.6	4,352
Richest	97.2	1.0	3.8	4.9	1,724	96.7	1.1	2.9	4.0	1,818	96.9	1.1	3.3	4.4	3,542

[1] MICS indicator 7.4; MDG indicator 2.1 - Primary school net attendance ratio (adjusted)
[a] The percentage of children of primary school age out of school are those not attending school and those attending preschool

The secondary school net attendance ratio is presented in Table ED.5[42]. More dramatic than in primary school, only 28.4 percent of the children of secondary school age are attending secondary school or higher. Of those who are not attending secondary schools, some were attending primary schools while the rest were out of school. Approximately 37.0 percent of the children of secondary school age were attending primary schools while the remaining 24.2 percent were out of school.

The net secondary school attendance ratios were highest (38.4 percent) among children aged 16 years and lowest (20.1 percent) among those aged 14 years. In the case of boys, the net attendance rate was highest (36.1 percent) among those aged 16 years and lowest (19.3 percent) among boys aged 14 years. Net secondary school attendance ratios for girls was highest (40.9 percent) among 16 year-olds and lowest (20.7 percent) among those aged 14 years.

There were variations in net secondary school attendance ratios for children living in urban (42.2 percent) and rural areas (22.2 percent).

There were also considerable variations in the net secondary school attendance ratios among states, which ranged from 12.2 percent in Central Darfur to 56.1 percent in Khartoum. Even within states, variations exists between boys and girls. The net secondary school attendance ratios for boys ranges from 10.7 percent in Blue Nile state to 53.6 percent in Khartoum state.

Noticeable variations also exist among states in net secondary school attendance ratio for girls, ranging from 11.4 percent in Central Darfur to 58.2 percent in Khartoum. (see figure ED.2)

The household wealth also appears to have an influence on the net secondary school attendance ratio, which was only 9.1 percent among children belonging to households in the poorest quintile compared to 68.5 percent among children from the households in the richest quintile.

---

[42] Ratios presented in this table are "adjusted" since they include not only secondary school attendance, but also attendance to higher levels in the numerator.

Figure ED.1b: Children of secondary school age attending secondary school (adjusted net attendance ratio) for boys and girls by state and by urban/rural area, Sudan MICS, 2014

State / Area	Female	Male
Rural	22	22
Urban	45	40
East Darfor	16	14
Central Darfor	11	13
South Darfor	17	20
West Darfor	18	28
North Darfor	22	22
West Kordofan	12	17
South Kordofan	21	15
North Kordofan	15	16
Blue Nile	15	11
Sinnar	26	18
White Nile	28	25
Gezira	39	38
Khartoum	58	54
Gadarif	18	16
Kassala	16	14
Red Sea	38	33
River Nile	52	49
Northern	58	35
Sudan	29	27

■ Female ■ Male
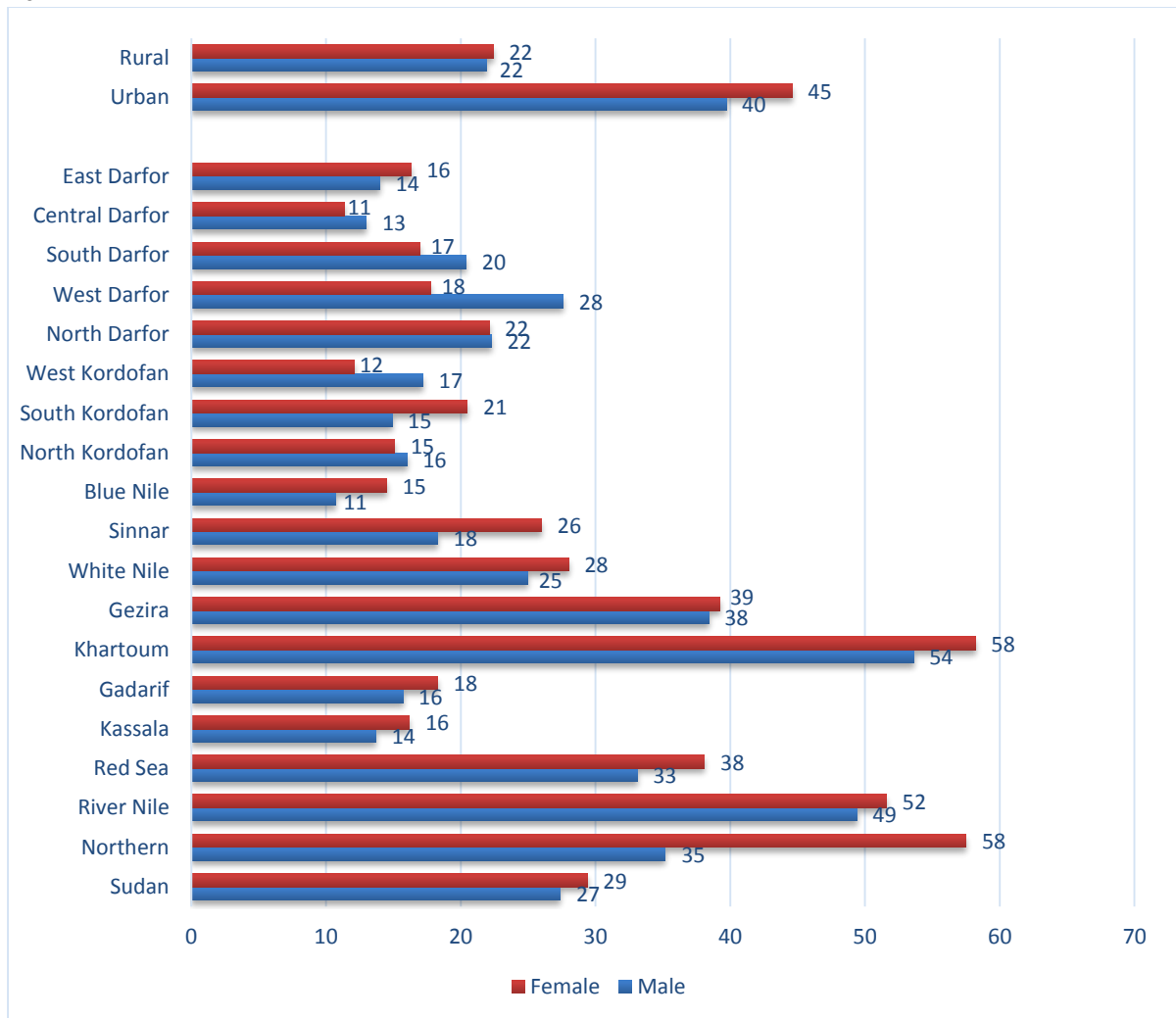
Table ED.5: Secondary School Attendance and out of School Children

- Percentage of children of secondary school age attending secondary school or higher (adjusted net attendance ratio)
- Percentage attending primary school, and
- Percentage out of school

Sudan MICS, 2014

Background characteristics	Male				Female				Sudan			
	Net attendance ratio (adjusted) [1]	Percentage of children: Attending primary school	Percentage of children: Out of school [a]	Number of children	Net attendance ratio (adj.) [1]	Percentage of children: Attending primary school	Percentage of children: Out of school [a]	Number of children	Net attendance ratio (adjusted) [1]	Percentage of children: Attending primary school	Percentage of children: Out of school [a]	Number of children
Sudan	27.4	41.6	20.8	3087	29.4	32.6	27.5	3214	28.4	37.0	24.2	6,300
State												
Northern	35.2	43.4	20.0	77	57.5	30.4	11.5	64	45.4	37.5	16.1	141
River Nile	49.4	29.0	17.7	118	51.6	19.3	26.4	104	50.5	24.4	21.8	222
Red Sea	33.1	45.8	13.2	79	38.1	33.3	19.8	58	35.2	40.5	16.0	137
Kassala	13.7	44.9	32.7	148	16.2	29.2	37.8	127	14.8	37.7	35.1	275
Gadarif	15.7	44.7	21.8	167	18.3	37.3	29.2	154	16.9	41.2	25.4	321
Khartoum	53.6	27.1	11.9	369	58.2	29.4	9.1	422	56.1	28.3	10.4	790
Gezira	38.4	40.3	18.3	464	39.2	17.2	32.2	567	38.9	27.5	25.9	1,031
White Nile	25.0	40.4	30.2	172	28.0	34.0	32.3	150	26.4	37.4	31.2	322
Sinnar	18.3	43.8	31.8	102	26.0	35.9	21.9	100	22.1	39.9	26.9	202
Blue Nile	10.7	34.2	29.0	137	14.5	25.9	30.6	137	12.6	30.0	29.8	274
North Kordofan	16.0	40.6	32.2	213	15.1	38.8	34.9	192	15.6	39.7	33.5	405
South Kordofan	14.9	43.6	29.1	73	20.5	31.8	35.9	92	18.0	37.0	32.9	165
West Kordofan	17.2	39.2	24.6	178	12.1	36.8	33.3	197	14.5	37.9	29.2	374
North Darfur	22.3	53.8	15.6	248	22.1	48.6	23.1	285	22.2	51.1	19.6	533
West Darfur	27.6	52.3	8.5	105	17.8	41.3	29.8	114	22.5	46.6	19.6	219
South Darfur	20.4	49.3	13.6	263	17.0	43.9	32.1	273	18.7	46.6	23.0	536
Central Darfur	13.0	47.0	20.4	63	11.4	38.2	38.3	66	12.2	42.5	29.6	130
East Darfur	14.0	51.0	23.9	112	16.3	38.5	28.6	111	15.2	44.8	26.2	224
Area												
Urban	39.7	42.2	12.4	959	44.6	37.6	12.3	1007	42.2	39.9	12.3	1,966
Rural	21.9	41.4	24.6	2128	22.4	30.3	34.4	2207	22.2	35.7	29.6	4,334

188

Background characteristics	**Male**				**Female**				**Sudan**			
	Net attendance ratio (adjusted) [1]	Percentage of children: Attending primary school	Percentage of children: Out of school [a]	Number of children	Net attendance ratio (adj. [1]	Percentage of children: Attending primary school	Percentage of children: Out of school [a]	Number of children	Net attendance ratio (adjusted) [1]	Percentage of children: Attending primary school	Percentage of children: Out of school [a]	Number of children
Age at beginning of school year												
14	19.3	55.4	14.3	1094	20.7	45.2	22.4	1499	20.1	49.5	19.0	2,593
15	28.0	39.8	22.8	1025	32.9	28.2	29.4	848	30.2	34.5	25.8	1,873
16	36.1	28.1	25.9	969	40.9	15.1	34.3	866	38.4	22.0	29.9	1,835
Melevel												
Cannot be determined [b]	26.7	33.0	20.0	166	14.1	16.8	51.9	253	19.1	23.2	39.3	419
Missing	27.5	42.1	20.8	2921	30.7	33.9	25.4	2960	29.1	38.0	23.1	5,882
Wealth index quintile												
Poorest	9.6	46.5	25.1	658	8.6	36.5	39.3	679	9.1	41.4	32.3	1,337
Second	17.6	40.1	27.3	674	13.2	36.7	36.6	645	15.5	38.4	31.9	1,320
Middle	15.0	50.9	25.6	590	15.3	36.1	34.4	640	15.1	43.2	30.2	1,230
Fourth	34.6	42.3	19.1	565	40.2	34.4	18.8	645	37.6	38.1	19.0	1,210
Richest	63.6	28.2	5.5	599	73.3	18.1	6.2	604	68.5	23.1	5.8	1,204

[1] MICS indicator 7.5; MDG indicator 2.1 - Secondary school net attendance ratio (adjusted)

[a] The percentage of children of secondary school age out of school are those who are not attending primary, secondary, or higher education

189

The percentage of children entering first grade who eventually reach the last grade of primary school, is presented in Table ED.6. Of all the children starting grade one, the majority (80.4 percent) will eventually reach grade 8. The MICS included only questions on school attendance in the current and previous year. Thus, the indicator is calculated synthetically by computing the cumulative probability of survival from the first to the last grade of primary school.

This method, is as opposed to calculating the indicator for a real cohort which would need to be followed from the time a group of children entered primary school, up to the time they reached the last grade of primary school. Repeaters are excluded from the calculation of the indicator, because it is not known whether they will eventually graduate. As an example, the probability that a child will move from the first grade to the second grade, is computed by dividing the number of children who moved from the first grade to the second grade (during the two consecutive school years covered by the survey) by the number of children who have moved from the first to the second grade, plus the number of children who were in the first grade the previous school year, but dropped out. Both the numerator and denominator excludes children who repeated during the two school years under consideration.

The percentage of children entering first grade who eventually reach grade 8 of primary school, was 93.2 in urban areas compared to 73.8 in rural areas. The percentage of children entering first grade of primary school in a given year and who eventually reach grade 8, was associated with household wealth. The percentage of children reaching grade 8 was 97.4 among children from households in the richest quintile compared to 66.1 among children from households in the poorest quintile.

Table ED.6:	Children Reaching Last Grade of Primary School							
Percentage of children entering first grade of primary school who eventually reach the last grade of primary school (Survival rate to last grade of primary school) Sudan MICS, 2014								
Background characteristics	Percent attending grade 1 last school year who are in grade 2 this school year	Percent attending grade 2 last school year who are attending grade 3 this school year	Percent attending grade 3 last school year who are attending grade 4 this school year	Percent attending grade 4 last school year who are attending grade 5 this school year	Percent attending grade 5 last school year who are attending grade 6 this school year	Percent attending grade 6 last school year who are attending grade 7 this school year	Percent attending grade 7 last school year who are attending grade 8 this school year	Percent who reach grade 8 of those who enter grade 1 [1]
Sudan	97.3	98.5	97.6	97.4	97.4	96.4	94.0	80.4
Sex								
Male	96.8	98.5	98.1	97.6	97.4	95.8	93.9	80.0
Female	97.9	98.6	97.0	97.2	97.4	97.0	94.0	80.8
State								
Northern	100.0	99.5	99.0	98.6	95.7	95.7	92.2	81.9
River Nile	100.0	98.8	98.4	98.8	98.9	97.1	96.8	89.2
Red Sea	100.0	98.7	99.2	95.9	100.0	98.0	97.9	90.1
Kassala	99.0	98.6	100.0	99.2	100.0	98.4	96.9	92.4
Gadarif	98.3	99.5	98.0	97.4	96.0	98.9	88.8	78.8
Khartoum	100.0	100.0	98.8	98.9	99.4	97.9	99.3	94.4
Gezira	96.9	99.7	97.9	98.5	98.9	96.4	95.0	84.4
White Nile	98.3	97.9	97.5	97.7	97.6	97.3	91.8	80.0
Sinnar	100.0	98.6	97.9	98.2	98.7	97.1	86.8	78.9
Blue Nile	93.6	93.3	92.1	95.5	96.4	88.9	90.1	59.4
North Kordofan	99.0	99.6	98.8	100.0	97.6	93.1	86.6	76.7

Table ED.6:	Children Reaching Last Grade of Primary School							

Percentage of children entering first grade of primary school who eventually reach the last grade of primary school (Survival rate to last grade of primary school)
Sudan MICS, 2014

Background characteristics	Percent attending grade 1 last school year who are in grade 2 this school year	Percent attending grade 2 last school year who are attending grade 3 this school year	Percent attending grade 3 last school year who are attending grade 4 this school year	Percent attending grade 4 last school year who are attending grade 5 this school year	Percent attending grade 5 last school year who are attending grade 6 this school year	Percent attending grade 6 last school year who are attending grade 7 this school year	Percent attending grade 7 last school year who are attending grade 8 this school year	Percent who reach grade 8 of those who enter grade 1 [1]
South Kordofan	96.8	99.0	100.0	98.0	95.2	93.8	93.2	78.2
West Kordofan	97.8	97.1	93.2	93.5	94.4	97.6	89.7	68.3
North Darfur	98.7	98.3	98.5	95.9	96.3	95.6	92.1	77.8
West Darfur	89.5	95.2	93.5	92.2	90.5	92.2	92.0	56.4
South Darfur	91.5	96.0	95.6	95.4	95.0	97.3	93.5	69.3
Central Darfur	92.3	98.0	94.5	95.4	87.7	96.5	98.5	67.9
East Darfur	96.0	100.0	97.4	97.6	98.7	98.9	98.4	87.6
Area								
Urban	99.4	99.8	99.0	99.3	99.2	99.2	97.1	93.2
Rural	96.2	98.0	96.9	96.4	96.2	94.8	91.8	73.8
Wealth index quintile								
Poorest	94.5	98.2	96.1	93.6	94.3	94.2	89.3	66.1
Second	96.2	96.7	96.1	96.9	94.5	96.4	91.3	72.1
Middle	96.6	98.3	97.0	96.8	97.4	93.8	90.8	74.0
Fourth	99.4	99.4	98.9	99.3	99.0	97.4	97.4	91.2
Richest	100.0	100.0	99.7	100.0	99.7	99.5	98.4	97.4

[1] MICS indicator 7.6; MDG indicator 2.2 - Children reaching last grade of primary

The primary school completion and transition rate to secondary education, are presented in Table ED.7. The primary completion rate is the ratio of the number of students in Sudan, regardless of age, entering the last grade of primary school for the first time, to the number of children of the primary graduation age at the beginning of the current (or most recent) school year.

Over nine-tenths (90.7 percent) of the children who were attending the last grade of primary school in the previous school year, were found to be attending the first grade of secondary school in the school year of the survey. The table also provides "effective" transition rate taking into account the presence of repeaters in the final grade of primary school. This indicator better reflects situations in which pupils repeat the last grade of primary education but eventually make the transition to the secondary level. The simple transition rate tends to underestimate pupils' progression to secondary school as it assumes that the repeaters never reach secondary school.

The table shows that in Sudan, 97.9 percent of the children in the last grade of primary school are expected to move on and transition to secondary school.

At the time of the survey, the primary school completion rate was 79.3 percent (84.8 percent for boys and 74.3 percent for girls). The primary school completion rate was 111.2 percent for children in urban areas compared to 65.8 percent for children in rural areas. It appears that in urban areas there exist a number of overaged children in the last grade of primary schools

The primary school completion rate seems to increase with the household wealth. It was only 57.7 percent among children from households in the poorest quintile compared to 118.6 percent among children from households in the richest quintile.

Table ED.7:	Primary School Completion and Transition to Secondary School					
Primary school completion rates and transition and effective transition rates to secondary school Sudan MICS, 2014						
Background characteristics	Primary school completion rate [1]	Number of children of primary school completion age	Transition rate to secondary school [2]	Number of children who were in the last grade of primary school the previous year	Effective transition rate to secondary school	Number of children who were in the last grade of primary school the previous year and are not repeating that grade in the current school year
Sudan	79.3	2,277	90.7	1,161	97.9	1,075
Sex						
Male	84.8	1,088	90.4	587	99.5	534
Female	74.3	1,189	91.0	574	96.4	542
State						
Northern	95.9	45	92.4	27	92.4	27
River Nile	90.8	67	96.1	48	97.0	47
Red Sea	(102.7)	41	*	15	*	14
Kassala	63.1	104	(65.8)	27	*	22
Gadarif	53.0	129	87.6	56	93.4	53
Khartoum	119.6	285	92.6	165	96.7	158
Gezira	70.2	363	90.9	249	96.7	234
White Nile	90.0	110	96.8	63	106.1	57
Sinnar	59.6	85	(90.1)	30	(105.4)	25
Blue Nile	49.1	91	(81.2)	33	(94.2)	28
North Kordofan	58.5	160	(86.7)	46	(118.2)	33
South Kordofan	78.8	64	86.9	27	91.7	26
West Kordofan	55.2	148	(83.0)	37	(83.8)	36
North Darfur	91.3	176	88.7	154	96.9	141
West Darfur	87.8	81	94.8	47	104.1	43
South Darfur	95.9	188	90.1	90	94.6	86
Central Darfur	71.1	47	93.7	17	(110.9)	14
East Darfur	69.2	91	93.7	32	97.6	31
Area						
Urban	111.2	677	93.9	441	100.6	411
Rural	65.8	1,600	88.7	720	96.2	664
Wealth index quintile						
Poorest	57.7	510	84.4	167	94.0	150
Second	57.0	489	91.3	193	98.1	180
Middle	79.0	447	87.0	194	96.6	175
Fourth	95.4	452	89.9	289	99.1	262
Richest	118.6	378	96.6	318	99.5	309

[1] MICS indicator 7.7 - Primary completion rate
[2] MICS indicator 7.8 - Transition rate to secondary school
( ) Figures that are based on 25-49 unweighted cases
[*] Based on less than 25 unweighted cases and has been suppressed.

The ratio of girls to boys attending primary and secondary education is provided in Table ED.8. These ratios are better known as the Gender Parity Index (GPI). Notice that the ratios included here are obtained from net attendance ratios rather than gross attendance ratios. The latter provide an erroneous description of the GPI mainly because in most cases, the majority of over-aged children attending primary education tend to be boys.

The table shows that gender parity for primary school is (0.98) close to 1.00, indicating no difference in the attendance of girls and boys to primary school. However, the indicator increases to 1.07 for secondary education. The disadvantage of girls at the primary stage of education is particularly pronounced in Eastern Darfur state (GPI: 0.87), as well as among children living in the poorest households (GPI: 0.95).

The GPI at the secondary stage for children belonging to households in the richest quintile was 1.15 compared to 0.90 for children belonging to households in the poorest quintile. The GPI at the secondary stage of education ranged between 0.64 in Western Darfur state to 1.63 in Northern state.

Table ED.8:	Education Gender Parity					
Ratio of adjusted net attendance ratios of girls to boys, in primary and secondary school Sudan MICS, 2014						
Background characteristics	Primary school adjusted net attendance ratio (NAR), girls	Primary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for primary school adjusted NAR [1]	Secondary school adjusted net attendance ratio (NAR), girls	Secondary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for secondary school adjusted NAR [2]
Sudan	75.5	77.4	0.98	29.4	27.4	1.07
State						
Northern	95.3	95.7	1.00	57.5	35.2	1.63
River Nile	91.7	90.4	1.01	51.6	49.4	1.04
Red Sea	83.5	85.3	0.98	38.1	33.1	1.15
Kassala	67.9	68.7	0.99	16.2	13.7	1.18
Gadarif	68.6	75.9	0.90	18.3	15.7	1.17
Khartoum	95.0	95.5	1.00	58.2	53.6	1.09
Gezira	83.2	85.2	0.98	39.2	38.4	1.02
White Nile	79.0	79.7	0.99	28.0	25.0	1.12
Sinnar	80.2	83.0	0.97	26.0	18.3	1.42
Blue Nile	77.3	78.6	0.98	14.5	10.7	1.35
North Kordofan	71.0	76.8	0.92	15.1	16.0	0.94
South Kordofan	69.6	69.3	1.00	20.5	14.9	1.38
West Kordofan	52.4	56.0	0.93	12.1	17.2	0.71
North Darfur	77.4	76.0	1.02	22.1	22.3	0.99
West Darfur	56.8	63.5	0.89	17.8	27.6	0.64
South Darfur	67.4	65.0	1.04	17.0	20.4	0.83
Central Darfur	50.9	57.6	0.88	11.4	13.0	0.88
East Darfur	57.8	66.3	0.87	16.3	14.0	1.16
Area						
Urban	91.3	91.6	1.00	44.6	39.7	1.12
Rural	69.2	71.9	0.96	22.4	21.9	1.02
Wealth index quintile						
Poorest	56.0	58.8	0.95	8.6	9.6	0.90
Second	62.1	66.5	0.93	13.2	17.6	0.75
Middle	80.0	81.6	0.98	15.3	15.0	1.02

Table ED.8:	Education Gender Parity					
Ratio of adjusted net attendance ratios of girls to boys, in primary and secondary school Sudan MICS, 2014						
Background characteristics	Primary school adjusted net attendance ratio (NAR), girls	Primary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for primary school adjusted NAR [1]	Secondary school adjusted net attendance ratio (NAR), girls	Secondary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for secondary school adjusted NAR [2]
Fourth	91.5	92.6	0.99	40.2	34.6	1.16
Richest	96.7	97.2	0.99	73.3	63.6	1.15

[1] MICS indicator 7.9; MDG indicator 3.1 - Gender parity index (primary school)
[2] MICS indicator 7.10; MDG indicator 3.1 - Gender parity index (secondary school)
[a] Children age 15 or higher at the time of the interview whose mothers were not living in the household

The percentage of girls in Sudan out of the primary and secondary school population, are provided in Table ED.9. The table shows that at the primary level, girls account for about half (51.4 percent) of the out-of-school population. The girls' share increased to 56.4 percent, however, at the secondary level.

There were also considerable variations in the out-of-school at primary level among states, with West Kordofan recording up to 59.1 percent of girls of primary school age out of school. At secondary level, there also exists considerable variations among states in terms of the out-of-school for girls of primary school age, with south Darfur recoding up 65.8 percent.

Figure ED.1c: Girls out of school in primary and secondary by wealth index quintiles,Sudan MICS, 2014
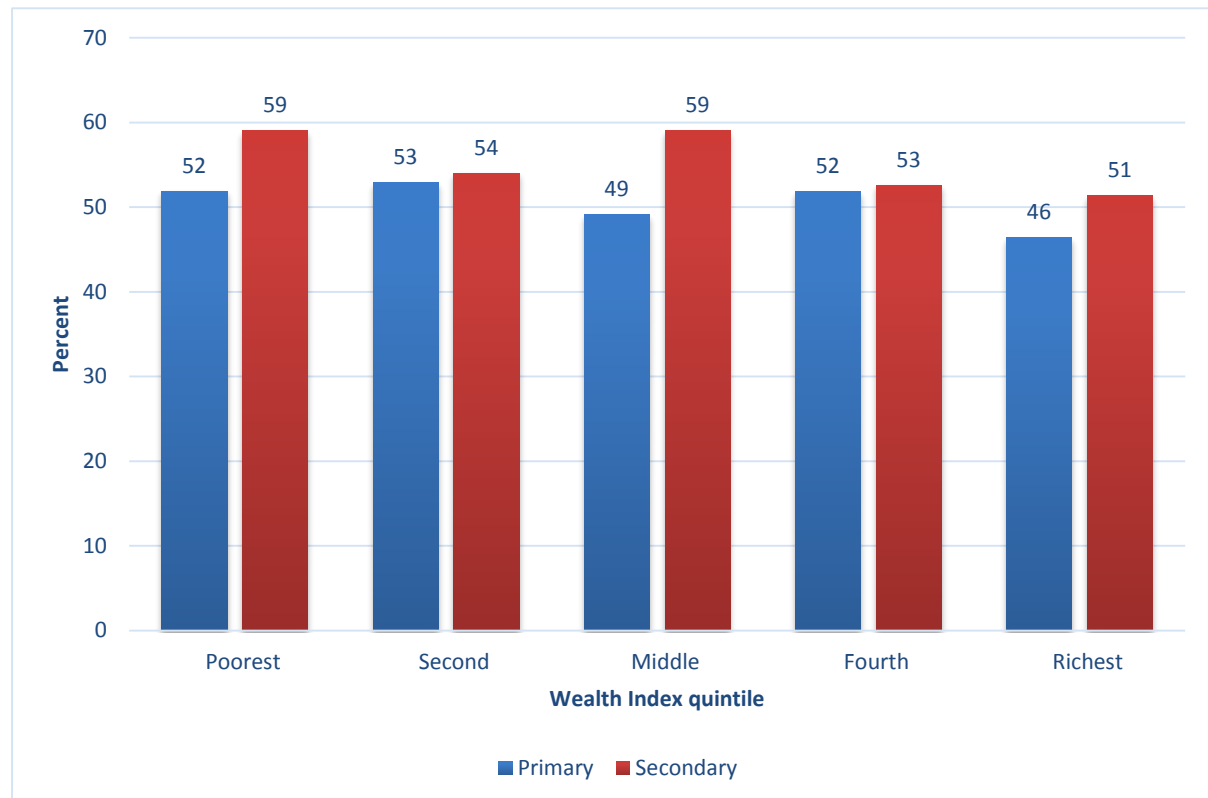
Table ED.9: Out of School Gender Parity

Percentage of girls in the Sudan out of school population, in primary and secondary school
Sudan MICS, 2014

Background characteristics	Primary school				Secondary school			
	% of out of school children	Number of children of primary school age	% of girls in the Sudan out of school population of primary school age	Number of children of primary school age out of school	% of out of school children	Number of children of secondary school age	% of girls in the Sudan out of school population of secondary school age	Number of children of secondary school age out of school
Sudan	21.6	22,977	51.4	4,974	26.7	6,300	56.4	1,682
State								
Northern	5.7	404	*	23	16.3	141	*	23
River Nile	8.8	665	46.0	59	22.3	222	57.7	50
Red Sea	17.7	512	49.0	90	17.9	137	(46.6)	25
Kassala	28.8	1,016	51.9	293	39.6	275	49.9	109
Gadarif	25.6	1,220	50.3	313	30.2	321	49.6	97
Khartoum	9.3	2,788	45.0	260	12.4	790	44.3	98
Gezira	15.8	3,585	51.8	568	26.5	1,031	68.0	274
White Nile	18.2	1,148	50.5	209	32.1	322	48.9	103
Sinnar	26.9	816	53.2	220	31.7	202	44.7	64
Blue Nile	42.5	979	48.9	416	47.7	274	52.2	131
North Kordofan	18.5	1,506	54.7	279	33.5	405	49.4	136
South Kordofan	22.4	779	48.2	175	34.5	165	61.5	57
West Kordofan	31.4	1,483	59.1	466	31.6	374	57.9	118
North Darfur	23.0	1,949	46.4	448	20.1	533	61.3	107
West Darfur	30.2	841	52.8	254	20.5	219	(76.8)	45
South Darfur	27.1	1,975	51.1	536	25.3	536	65.8	136
Central Darfur	30.1	449	52.5	135	33.5	130	(63.0)	43
East Darfur	26.9	859	54.9	231	30.3	224	51.0	68
Area								
Urban	10.3	6,446	46.3	662	13.2	1,966	50.5	259
Rural	26.1	16,531	52.1	4,312	32.8	4,334	57.4	1,423
Wealth index quintile								
Poorest	30.4	5,353	51.9	1,628	35.0	1,337	59.0	468
Second	30.8	4,942	52.9	1,521	36.0	1,320	54.0	474
Middle	25.3	4,788	49.1	1,209	34.9	1,230	59.0	429
Fourth	10.6	4,352	51.8	460	19.6	1,210	52.6	237
Richest	4.4	3,542	46.4	156	6.1	1,204	51.4	74

[a] Children age 15 or higher at the time of the interview whose mothers were not living in the household
[*] Based on less than 25 unweighted cases and has been suppressed.

Figure ED.1 Brings together all of the attendance and progression related education indicators covered in this chapter, by sex. Information on attendance to early childhood education is also included, which was covered in Chapter 9, in Table CD.1.

Figure ED.1: Education indicators by sex, Sudan MICS, 2014

School readiness		
66	73	

Net intake rate in primary education		Primary school completion rate	Transition rate to secondary school
36	38	85 74	90 91

Attendance to early childhood education	Primary school attendance	Secondary school attendance
22 23	77 76	27 29

Children reaching last grade of primary	
80	81

Boys   Girls
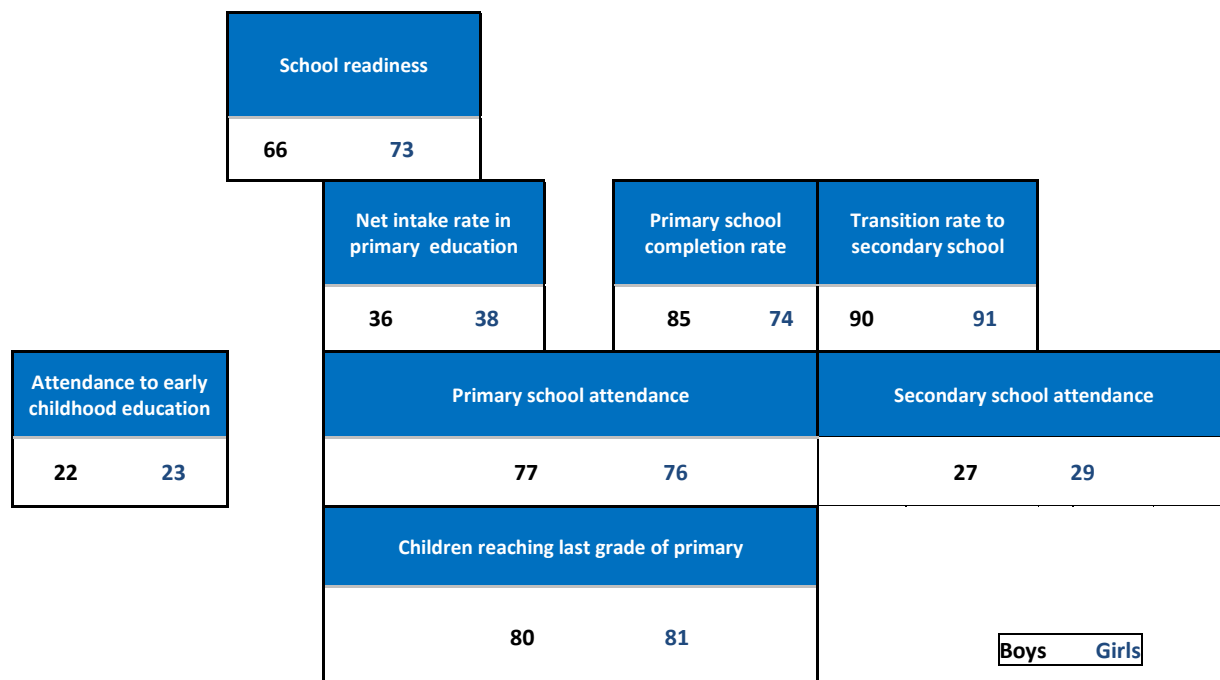
Note: All indicator values are in percent

Child Protection

The births of around one in four children under the age of five worldwide have never been recorded

11. Child Protection

11.1 Birth Registration

A name and nationality is every child's right, enshrined in the Convention on the Rights of the Child (CRC) and other international treaties. Yet the births of around one in four children under the age of five worldwide have never been recorded.[43] This lack of formal recognition by the State usually means that a child is unable to obtain a birth certificate. As a result, he or she may be denied health care or education later in life.

The lack of official identification documents can mean that a child may enter into marriage or the labour market, or be conscripted into the armed forces before the legal age. In adulthood, birth certificates may be required to obtain social assistance or a job in the formal sector, to buy or prove the right to inherit property, to vote, and to obtain a passport.

Registering children at birth is the first step in securing their recognition before the law, safeguarding their rights, and ensuring that any violation of these rights does not go unnoticed.[44]

Table CP.1:	Birth Registration						
❖ Percentage of children under age 5 by whether birth is registered, and							
❖ Percentage of children not registered whose mothers/caretakers know how to register birth							
Sudan MICS, 2014							
Background characteristics	Children under age 5 whose birth is registered with civil authorities				Number of children under age 5	Children under age 5 whose birth is not registered	
	Has birth certificate		No birth certificate	Total registered [1]		Percent of children whose mother/ caretaker knows how to register birth	Number of children under age 5 without birth registration
	Seen	Not seen					
Sudan	23.4	26.4	17.5	67.3	14,081	35.2	4,599
Sex							
Male	24.3	27.2	17.4	68.8	7,157	35.2	2,230
Female	22.5	25.6	17.7	65.8	6,924	35.3	2,369
State							
Northern	43.4	41.9	13.0	98.3	236	*	4
River Nile	26.1	50.6	20.2	96.8	393	*	13
Red Sea	37.8	34.0	8.8	80.5	244	28.3	47
Kassala	24.4	20.2	14.7	59.2	498	13.9	203
Gadarif	19.9	32.7	27.1	79.8	765	40.7	155
Khartoum	39.8	41.9	15.2	96.9	1736	*	55
Gezira	37.6	22.5	19.8	79.9	2149	57.1	433
White Nile	19.9	27.8	23.1	70.8	711	62.2	207
Sinnar	29.7	29.0	16.9	75.6	555	46.7	135
Blue Nile	31.2	14.9	12.9	58.9	691	36.1	284
North Kordofan	23.8	25.5	26.5	75.8	907	47.7	219
South Kordofan	17.5	17.6	26.0	61.2	529	39.3	205
West Kordofan	4.2	24.1	10.5	38.7	893	34.5	547
North Darfur	8.0	26.7	15.0	49.7	1,211	27.9	609
West Darfur	11.6	27.0	9.1	47.8	487	28.0	254

---

[43] UNICEF. 2014. *The State of the World's Children 2015*. UNICEF.
[44] UNICEF. 2013. *Every Child's Birth Right: Inequities and trends in birth registration*. UNICEF.

Background characteristics	Children under age 5 whose birth is registered with civil authorities				Number of children under age 5	Children under age 5 whose birth is not registered	
	Has birth certificate		No birth certificate	Total registered [1]		Percent of children whose mother/ caretaker knows how to register birth	Number of children under age 5 without birth registration
	Seen	Not seen					
South Darfur	9.9	19.4	15.4	44.7	1,326	23.7	733
Central Darfur	7.0	9.4	14.5	30.9	254	22.9	176
East Darfur	11.0	7.6	16.8	35.5	495	32.4	320
Area							
Urban	38.2	37.4	13.4	89.0	3,862	51.4	426
Rural	17.8	22.3	19.1	59.2	10,219	33.6	4,173
Age							
0-11	16.8	19.7	25.5	62.0	2,964	40.1	1,125
12-23	21.8	25.6	21.9	69.2	2,672	36.6	822
24-35	26.4	27.2	14.9	68.4	2,618	32.0	827
36-47	25.6	30.5	12.4	68.4	3,268	31.0	1,031
48-59	26.9	29.0	13.1	69.0	2,559	35.8	794
Mother's education							
None	13.1	18.7	15.3	47.2	5,994	30.2	3,163
Primary	24.7	27.7	22.9	75.4	4,936	41.3	1,215
Secondary	37.3	37.4	16.1	90.8	2,152	73.2	197
Higher	48.1	42.4	7.4	97.9	982	*	21
Missing/DK	*	*	*	*	17	*	2
Wealth index quintile							
Poorest	5.5	17.0	14.5	37.0	3,188	26.2	2,008
Second	11.3	20.3	21.8	53.4	3,015	36.8	1,405
Middle	23.8	26.2	23.8	73.8	2,956	42.9	773
Fourth	36.0	33.2	17.1	86.4	2,684	57.3	366
Richest	49.4	40.0	8.5	97.9	2,238	(76.6)	46

[1] MICS indicator 8.1 - Birth registration
( ) Figures that are based on 25-49 unweighted cases
 * Based on less than 25 unweighted cases and has been suppressed.

The births of 67.3 percent of children under five years in MICS 2014 have been registered; 23.4 percent of the registration certificates have been seen by the interviewers, 26.4 percent have not been seen by the interviewers, and 17.5 were reported to have no birth certificate (Table CP.1). Registration of birth becomes more likely as a child grows older. There are no significant variations in birth registration depending on the sex of the child, with male children registered at 68.8 percent and females at 65.8 percent.

Children in Central Darfur state (30.9 percent) were the least to have their births registered than children from other states, with Northern states (98.3 percent) recording the highest number of children under five whose births are registered. While only 37.0 percent of the children in the poorest households were registered, nearly all children (97.9 percent) of the under five who belong to richest households, were registered.

The data shows significant differences between the proportion of children whose births are reported as registered and those who actually have a birth certificate. Overall, only 49.8 of children possess a birth certificate.

These findings are also presented in Figure CP.1. Urban-rural differentials indicated that 89.0 percent and 59.2 percent of under five children were registered in urban and rural areas, respectively.

Figure CP.1: Children under age five whose births are registered, Sudan MICS, 2014
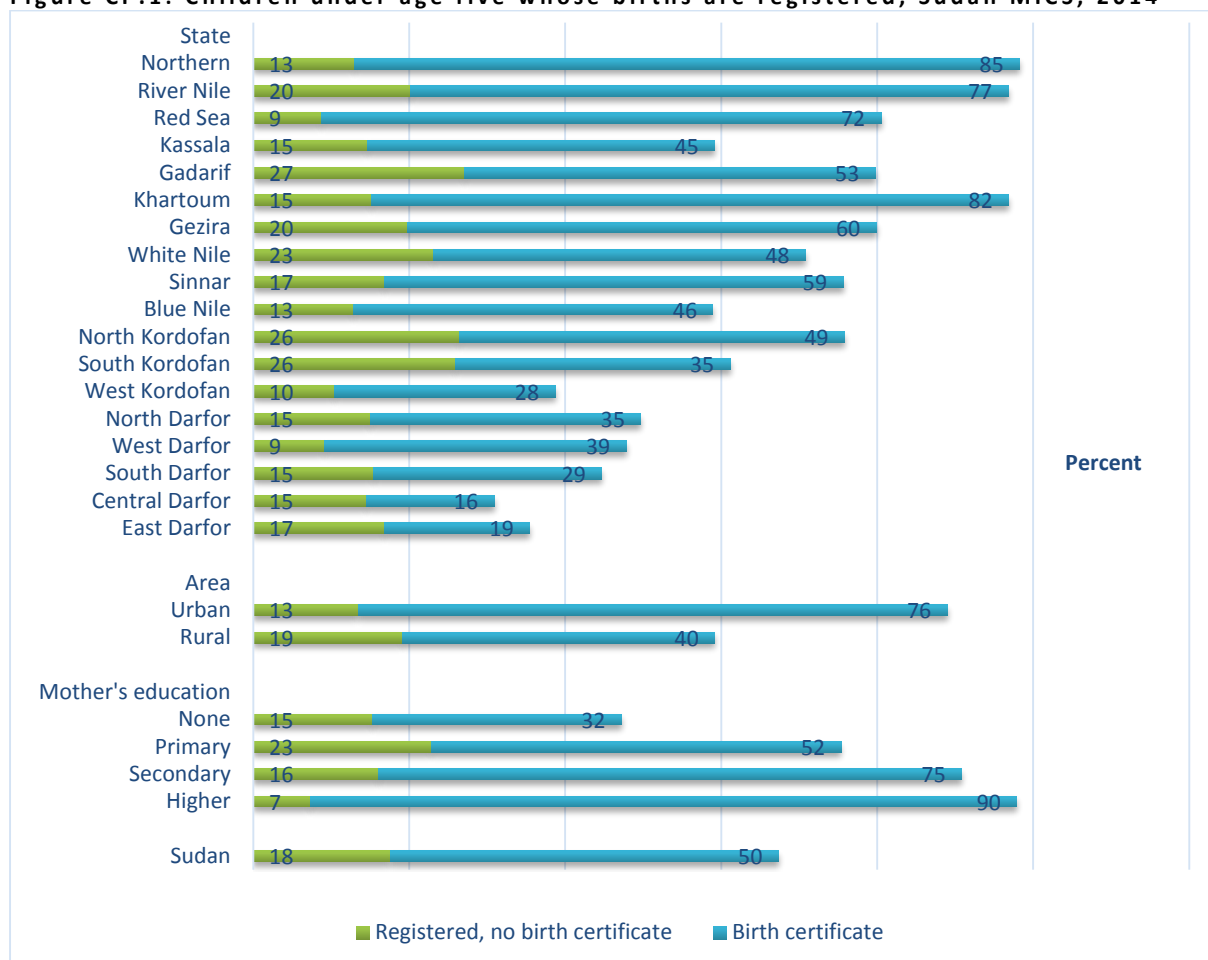
The lack of adequate knowledge of how to register a child can present another major obstacle to the fulfilment of a child's right to identity. Data show that only 35.2 percent of mothers of unregistered children report knowing how to register a child's birth or the majority of mothers without registered children appear not to be aware of the registration process. This is further shown that while only 47.2 percent of under five children whose mothers have no education have been registered, as high as 97.9 percent of those whose mothers are highly educated, have been registered.

11.2 Child Labour

Children around the world are routinely engaged in paid and unpaid forms of work that are not harmful to them. However, they are classified as child labourers when they are either too young to work or are involved in hazardous activities that may compromise their physical, mental, social or educational development. Article 32 (1) of the Convention on the Rights of the Child states: "States Parties recognize the right of the child to be protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development".

The child labour module was administered for children age 5-17 and includes questions on the type of work a child does and the number of hours he or she is engaged in it. Data are collected on both economic activities (paid or unpaid work for someone who is not a member of the household, work for a family farm or business) and domestic work (household chores such as cooking, cleaning or caring for children, as well as collecting firewood or fetching water). The module also collects information on hazardous working conditions. [45, 46]

Table CP.2 presents children's involvement in economic activities. The methodology of the MICS Indicator on Child Labour uses three age-specific thresholds for the number of hours a child can perform economic activity without it being classified as in child labour. A child that performed economic activities during the last week for more than the age-specific number of hours is classified as in child labour:

   i.   age 5-11: 1 hour or more
  ii.   age 12-14: 14 hours or more
 iii.   age 15-17: 43 hours or more

While 39.1 percent of children age 12-14 are engaged in some forms of economic activities, 9 percent are performing such tasks for fourteen or more hours. The involvement in economic activities change with age: 21.0 percent of children age 5-11 years is engaged in economic activities, compared to 39.1 percent of children age 12-14 years, and 41.2 percent of children age 15-17 years.

It is also clear from the MICS results that engagement in economic activities increases with movement from wealthiest to poorest households. For instance, among children aged 5 – 11 years engaged in economic activity, 9.2 percent of them belong to the wealthiest households while 35.0 percent of them fall in the poorest category. Similarly, involvement in economic activities varies with State ranging from 4.9 percent in Khartoum to 46.8 percent in South Darfur among children aged 5-11.

---

[45] UNICEF. 2012. *How Sensitive Are Estimates of Child Labour to Definitions?* MICS Methodological Paper No. 1. UNICEF.
[46] The Child Labour module and the Child Discipline module were administered using random selection of a single child in all households with one or more children age 1-17 (See Appendix F: Questionnaires). The Child Labour module was administered if the selected child was age 5-17 and the Child Discipline module if the child was age 1-14 years old. To account for the random selection, the household sample weight is multiplied by the total number of children age 1-17 in each household.

Background characteristics	Percentage of children age 5-11 years involved in economic activity for at least one hour	Number of children age 5-11 years	Percentage of children age 12-14 years involved in:		Number of children age 12-14 years	Percentage of children age 15-17 years involved in:		Number of children age 15-17 years
			Economic activity less than 14 hours	Economic activity for 14 hours or more		Economic activity less than 43 hours	Economic activity for 43 hours or more	
Sudan	21.0	20,809	30.1	9.0	7,942	38.0	3.2	5,526
Sex								
Male	23.6	10,457	32.1	10.4	3,916	40.5	4.8	2,881
Female	18.4	10,352	28.2	7.7	4,024	35.4	1.4	2,645
Missing	*	0	*	*	2	*	*.	0
State								
Northern	12.2	348	22.5	5.1	148	20.2	1.7	137
River Nile	7.3	606	15.4	4.1	279	23.0	0.7	183
Red Sea	11.9	470	25.5	0.3	151	18.2	0.0	129
Kassala	8.0	850	11.7	0.2	346	20.4	0.0	279
Gadarif	22.2	1,024	20.0	16.3	484	34.8	4.4	276
Khartoum	4.9	2,592	13.1	2.1	930	18.7	3.1	818
Gezira	15.1	3,092	23.9	2.2	1284	31.0	3.0	877
White Nile	12.1	1,104	33.1	0.2	359	31.8	0.2	261
Sinnar	18.7	690	32.4	9.8	306	34.3	4.9	169
Blue Nile	33.9	928	31.1	16.5	334	45.1	14.8	249
North Kordofan	16.0	1,404	30.2	16.6	562	41.2	4.3	337
South Kordofan	33.0	750	50.4	9.0	235	65.6	0.3	151
West Kordofan	26.2	1,282	40.8	7.6	508	51.2	0.0	356
North Darfur	22.8	1,806	42.1	9.1	611	47.7	5.3	484
West Darfur	28.9	827	44.9	6.6	231	49.8	3.9	190
South Darfur	46.8	1,870	40.4	24.0	660	67.3	0.0	383
Central Darfur	39.4	422	64.5	8.6	151	71.5	5.6	106
East Darfur	36.0	744	46.9	23.9	364	70.3	6.1	141
Area								
Urban	11.0	5,777	20.7	2.8	2,473	20.9	0.9	1,695
Rural	24.9	15,032	34.4	11.8	5,469	45.6	4.2	3,831
School attendance								
Yes	20.5	14,961	27.6	7.5	6,235	31.4	1.0	3,349
No	22.4	5,848	39.3	14.4	1,707	48.3	6.5	2,177
M0ther education level								
Cannot be determined [a]	*	3	*	*	8	34.9	4.4	574
Wealth index quintile								
Poorest	35.0	4,932	42.7	18.9	1,785	63.7	4.9	1,084
Second	25.1	4,577	42.2	10.7	1,633	54.3	3.4	1,066
Middle	18.1	4,563	30.6	9.9	1,450	32.2	5.7	1,120
Fourth	10.6	3,732	15.2	3.2	1,616	21.7	1.3	1,073
Richest	9.2	3,006	17.4	0.6	1,459	20.2	0.7	1,184

Table CP.2: Children's Involvement in Economic Activities

Percentage of children by involvement in economic activities during the last week, according to age groups
Sudan MICS, 2014

* Based on less than 25 unweighted cases and has been suppressed.

Table CP.3 presents children's involvement in household chores. As for economic activity above, the methodology also uses age-specific thresholds for the number of hours a child can perform household chores without it being classified as child labour. A child that performed household chores during the last week for more than the age-specific number of hours is classified as in child labour:

i.   age 5-11 and age 12-14: 28 hours or more
ii.   age 15-17: 43 hours or more

The survey revealed that girls are more likely to perform household chores than boys across all three age groups. The percentage of children involved seem consistently higher in rural areas than in urban areas as well as strongly correlated to mother's education and household wealth. For example, in age group 15 – 17 years, 85.4 percent are engaged in chores less than 43 hours in urban areas; while in rural settings it is 75.4 percent with Blue Nile state recording the highest percentage (92.1 percent) and North Darfur state reporting the lowest (59.2 percent).

Similarly, within the same age group, interesting results show that the percentage of children engaged in chores less than 43 hours declines as we move from wealthiest (85.6 percent) households to the poorest ones (71.1 Percent).

Table CP.3:	Children's Involvement in Household Chores								
Percentage of children by involvement in household chores during the last week, according to age groups Sudan MICS, 2014									
Backgound characteristics	Percentage of children age 5-11 years involved in:		Number of children age 5-11 years	Percentage of children age 12-14 years involved in:		Number of children age 12-14 years	Percentage of children age 15-17 years involved in:		Number of children age 15-17 years
	Household chores less than 28 hours	Household chores for 28 hours or more		Household chores less than 28 hours	Household chores for 28 hours or more		Household chores less than 43 hours	Household chores for 43 hours or more	
Sudan	64.3	1.5	20,809	78.2	4.0	7,942	78.4	2.3	5,526
Sex									
Male	60.5	1.1	10,457	76.8	2.2	3,916	70.0	2.0	2,881
Female	68.1	2.0	10,352	79.6	5.9	4,024	87.7	2.5	2,645
Missing	*	*	0	*	*	2	*	*	0
State									
Northern	70.8	1.6	348	82.0	6.1	148	91.0	2.7	137
River Nile	75.0	0.4	606	88.2	1.0	279	83.1	0.0	183
Red Sea	54.1	0.2	470	83.6	0.0	151	66.6	1.4	129
Kassala	36.6	0.2	850	52.8	0.2	346	59.5	0.3	279
Gadarif	58.8	3.1	1,024	70.4	5.2	484	77.4	5.7	276
Khartoum	72.2	0.0	2,592	85.1	0.0	930	86.1	0.0	818
Gezira	71.5	0.4	3,092	89.1	1.5	1,284	78.7	0.0	877
White Nile	66.0	0.1	1,104	82.4	0.3	359	84.1	2.1	261
Sinnar	74.8	1.1	690	84.9	2.5	306	83.5	3.6	169
Blue Nile	80.5	2.3	928	81.7	7.3	334	92.1	3.5	249
North ordofan	60.3	2.0	1,404	79.7	1.7	562	73.7	1.0	337
South Kordofan	62.6	4.3	750	86.3	7.9	235	94.1	1.5	151
West Kordofan	54.1	2.1	1,282	76.8	6.9	508	77.9	2.5	356
North Darfur	43.4	1.1	1,806	57.5	4.3	611	59.2	0.0	484
West Darfur	63.9	4.1	827	60.9	9.5	231	71.4	6.4	190
South Darfur	73.4	3.3	1,870	76.5	11.7	660	85.6	11.0	383
Central Darfur	58.0	3.2	422	76.5	6.2	151	68.4	9.2	106
East Darfur	67.0	2.8	744	76.9	9.2	364	83.3	2.6	141

Backgound characteristics	Percentage of children age 5-11 years involved in:		Number of children age 5-11 years	Percentage of children age 12-14 years involved in:		Number of children age 12-14 years	Percentage of children age 15-17 years involved in:		Number of children age 15-17 years
	Household chores less than 28 hours	Household chores for 28 hours or more		Household chores less than 28 hours	Household chores for 28 hours or more		Household chores less than 43 hours	Household chores for 43 hours or more	
Area									
Urban	68.3	0.8	5,777	82.4	1.9	2,473	85.4	0.5	1,695
Rural	62.8	1.8	15,032	76.3	5.0	5,469	75.4	3.0	3,831
School attendance									
Yes	68.6	1.5	14,961	78.3	3.6	6,235	81.7	1.9	3,349
No	53.2	1.7	5,848	78.1	5.8	1,707	73.5	2.8	2,177
melevel									
Cannot be determined [a]	*	*	3	*	*	8	68.9	3.8	574
Wealth index quintile									
Poorest	56.7	2.7	4,932	72.5	7.6	1,785	71.1	2.9	1,084
Second	60.0	2.0	4,577	72.9	5.0	1,633	74.0	6.2	1,066
Middle	65.7	1.3	4,563	79.6	4.2	1,450	84.1	1.5	1,120
Fourth	73.7	1.0	3,732	87.7	1.5	1,616	76.4	0.8	1,073
Richest	69.7	0.0	3,006	79.3	1.4	1,459	85.6	0.1	1,184

Table CP.3:   Children's Involvement in Household Chores

Percentage of children by involvement in household chores during the last week, according to age groups Sudan MICS, 2014

[a] Children age 15 or higher at the time of the interview whose mothers were not living in the household
na: not applicable
[*] Based on less than 25 unweighted cases and has been suppressed

Table CP.4 combines the children working and performing household chores at or above and below the age-specific thresholds as detailed in the previous tables, as well as those children reported working under hazardous conditions, into the Sudan child labour indicator.

The results show that there is discrepancy between those males and females at or above the age specific threshold or below the age specific threshold among all children aged 5-17 with regards to economic activities; with a higher percentage of males (17.5 percent) than females (13.2 percent) of those at or above the age specific threshold for a household. Contrarily, there is a higher percentage of females (73.9 percent) than males (65.8 percent) among those below the age specific threshold.

The MICS results indicate that working in hazardous conditions is higher among the age group 15 – 17 years (28.5 percent) with clear differentials in the proportion of children working under hazardous conditions who live in urban areas (8.1 percent) than those dwelling in rural areas (21.8 percent). State differentials also show that Khartoum state records the lowest percentage of children working under hazardous conditions (5.9 percent), while East Darfur state has the highest percentage of children working under hazardous conditions (40.4 percent).

Not surprisingly, working in hazardous conditions seems to be strongly related to the well-being of the household, with those higher percentages of children working under hazardous conditions among children whose families are classified among the poorest households (28.3 percent) compared to 6.8 percent of working children from the wealthiest households.

Table CP.4:	Child Labour						
❖ Percentage of children age 5-17 years by involvement in economic activities or household chores during the last week							
❖ Percentage working under hazardous conditions during the last week, and							
❖ Percentage engaged in child labour during the last week							
Sudan MICS, 2014							

Background Characteristics	Children involved in economic activities for a total number of hours during last week:		Children involved in household chores for a total number of hours during last week:		Children working under hazardous conditions	Total child labour [1]	Number of children age 5-17 years
	Below the age specific threshold	At or above the age specific threshold	Below the age specific threshold	At or above the age specific threshold			
Sudan	14.3	15.4	69.8	2.2	17.8	24.9	34,278
Sex							
Male	15.0	17.5	65.8	1.5	20.7	27.9	17,255
Female	13.6	13.2	73.9	3.0	14.8	21.8	17,021
Missing	*	*	*	*	*	*	2
State							
Northern	13.6	8.2	77.8	2.9	9.4	15.3	634
River Nile	8.8	5.4	79.8	0.5	9.5	11.2	1,068
Red Sea	8.3	7.5	62.1	0.4	10.9	12.7	750
Kassala	7.9	4.6	44.7	0.2	7.6	9.6	1,475
Gadarif	11.1	17.9	64.8	4.1	15.2	26.7	1,784
Khartoum	7.0	4.0	77.6	0.0	5.9	7.5	4,340
Gezira	11.8	9.9	77.0	0.6	13.5	17.2	5,253
White Nile	12.7	7.8	72.1	0.4	12.4	15.9	1,724
Sinnar	14.7	14.4	78.7	1.8	17.7	25.4	1,166
Blue Nile	16.4	26.9	82.7	3.6	28.7	38.1	1,512
North Kordofan	13.7	14.5	67.0	1.8	16.5	23.4	2,303
South Kordofan	24.6	23.7	71.7	4.7	34.6	41.4	1,135
West Kordofan	18.9	17.4	63.4	3.3	24.7	31.4	2,147
North Darfur	17.7	17.0	49.0	1.6	23.2	29.4	2,902
West Darfur	19.2	21.0	64.5	5.5	17.2	29.8	1,248
South Darfur	19.0	35.5	75.7	6.2	25.4	48.2	2,913
Central Darfur	28.3	27.3	63.8	4.8	32.7	45.1	678
East Darfur	23.1	29.1	71.7	4.6	40.4	49.4	1,249
Area							
Urban	9.8	7.2	74.7	1.0	8.1	13.0	9,945
Rural	16.1	18.7	67.8	2.7	21.8	29.8	24,332
Age							
5-11	2.0	21.0	64.3	1.5	12.3	22.2	20,809
12-14	30.1	9.0	78.2	4.0	24.7	28.7	7,942
15-17	38.0	3.2	78.4	2.3	28.5	29.7	5,526
School attendance							
Yes	12.4	14.5	72.9	2.1	15.7	22.6	24,544
No	19.1	17.5	62.1	2.7	23.1	30.8	9,733
Mother education level							
Cannot be determined [a]	34.2	4.5	68.4	3.7	26.6	29.2	585

Table CP.4:   Child Labour

❖ Percentage of children age 5-17 years by involvement in economic activities or household chores during the last week
❖ Percentage working under hazardous conditions during the last week, and
❖ Percentage engaged in child labour during the last week
   Sudan MICS, 2014

Background Characteristics	Children involved in economic activities for a total number of hours during last week:		Children involved in household chores for a total number of hours during last week:		Children working under hazardous conditions	Total child labour [1]	Number of children age 5-17 years
	Below the age specific threshold	At or above the age specific threshold	Below the age specific threshold	At or above the age specific threshold			
Wealth index quintile							
Poorest	19.8	27.1	62.3	3.8	28.3	40.6	7,800
Second	18.7	18.7	64.9	3.3	25.1	32.7	7,276
Middle	12.7	14.5	71.4	1.9	17.1	23.2	7,133
Fourth	8.5	7.2	77.7	1.1	7.3	11.8	6,420
Richest	9.7	5.2	75.5	0.4	6.8	10.2	5,648

[1] MICS indicator 8.2 - Child labour
[a] Children age 15 or higher at the time of the interview whose mothers were not living in the household
[*] Based on less than 25 unweighted cases and has been suppressed.

206

11.3 Child Discipline

Teaching children self-control and acceptable behaviour is an integral part of child discipline in all cultures. Positive parenting practices involve providing guidance on how to handle emotions or conflicts in manners that encourage judgment and responsibility and preserve children's self-esteem, physical and psychological integrity and dignity. Too often; however, children are raised through the use of punitive methods that rely on the use of physical force or verbal intimidation to obtain desired behaviors.

Studies[47] have found that exposing children to violent discipline has harmful consequences, which range from immediate impact to long-term harm that children carry forward into adult life. Violence hampers children's development, learning abilities and school performance; it inhibits positive relationships, provokes low self-esteem, emotional distress and depression. At times, it also leads to risk taking and self-harm.

In the MICS, respondents to the household questionnaire were asked a series of questions on the methods adults in the household used to discipline a selected child during the month prior to the survey.[46]

In MICS Table CP.5, 63.9 percent of children age 1-14 years were subjected to at least one form of psychological or physical punishment by household members during the month prior to the survey.

Generally, households employ a combination of violent disciplinary practices, reflecting caregivers' motivation to control children's behaviour by any means possible. While 52.8 percent of children experienced psychological aggression, about 61.3 percent experienced physical punishment. The most severe forms of physical punishment (hitting the child on the head, ears or face or hitting the child hard and repeatedly) are overall less common: 13.6 percent of children were subjected to severe punishment.

The survey reveals no significant variations between male and female children who were subjected to physical discipline: male (61.6 percent) and female children (60.8 percent). Differentials with respect to many of the background variables were relatively small. Children living in poor households (54.1 percent) were more likely to be subjected to any violent disciplinary methods when compared to those living in rural areas (62.3 percent), urban areas (68.2 percent), or more affluent households (71.6 percent).

Overall, 52.8 percent of children in the age group 1-14 years experienced psychological aggression in the month preceding the survey. River Nile state has the highest proportion (69.6 percent), while Central Darfur state (12.6 percent) has the lowest proportion of children in the same group who

---

[47] Straus, MA and Paschall MJ. 2009. *Corporal Punishment by Mothers and Development of Children's Cognitive Ability: A Longitudinal Study of Two Nationally Representative Age Cohorts*. Journal of Aggression, Maltreatment & Trauma 18(5): 459-83.

Erickson, MF and Egeland, B. 1987. *A Developmental View of the Psychological Consequences of Maltreatment*. School Psychology Review 16: 156-68.

Schneider, MW et al. 2005. *Do Allegations of Emotional Maltreatment Predict Developmental Outcomes Beyond that of Other Forms of Maltreatment?*. Child Abuse & Neglect 29(5): 513–32.

experienced psychological aggression. Children between 10 - 14 years were slightly more likely to experience non-violent discipline than the other age groups (23.8 percent).

Figure CP.2a: Children age 1-14 years experiencing any violent disciplinary methods by sex, state and urban/rural disaggregation, Sudan MICS, 2014

Table CP.5: Child Discipline

Percentage of children age 1-14 years by child disciplinary methods experienced during the last one month
Sudan MICS, 2014

Background Characteristics	Percentage of children age 1-14 years who experienced:					Number of children age 1-14 years
	Only non-violent discipline	Psychological aggression	Physical punishment		Any violent discipline method [1]	
			Any	Severe		
Sudan	21.6	52.8	47.7	13.6	63.9	40,814
Sex						
Male	20.5	53.7	47.9	13.7	64.5	20,494
Female	22.8	52.0	47.4	13.4	63.4	20,318
Missing	*	*	*	*	*	2
State						
Northern	22.2	61.0	61.2	8.8	73.5	699
River Nile	21.3	69.6	43.9	4.5	74.6	1,215
Red Sea	19.9	52.1	39.9	7.5	58.2	840
Kassala	27.2	46.1	42.9	14.7	56.7	1,653
Gadarif	21.7	58.3	51.6	13.6	69.4	2,114
Khartoum	19.9	61.8	46.3	11.8	69.3	4,927
Gezira	19.4	66.3	52.4	13.3	74.0	6,472
White Nile	13.0	65.5	51.9	18.9	72.7	2,027
Sinnar	17.8	67.8	66.4	21.2	78.3	1,498
Blue Nile	24.8	56.9	57.0	13.0	68.0	1,831
North Kordofan	7.6	34.1	38.6	12.0	46.9	2,649
South Kordofan	20.6	37.4	50.7	17.2	57.7	1,408
West Kordofan	33.1	39.1	38.6	17.4	52.4	2,555
North Darfur	37.7	28.5	36.5	7.3	44.8	3,535
West Darfur	39.1	36.1	47.6	19.0	54.8	1,449
South Darfur	15.3	61.7	52.7	12.4	75.1	3,617
Central Darfur	13.6	12.6	14.9	4.3	18.2	799
East Darfur	14.4	55.2	56.8	28.2	69.3	1,523
Area						
Urban	20.3	57.2	50.6	14.7	68.2	11,487
Rural	22.1	51.1	46.5	13.1	62.3	29,327
Age						
1-2 years	19.6	42.8	40.8	8.6	54.1	5,611
3-4 years	20.9	54.4	56.1	16.4	68.5	6,452
5-9 years	20.8	54.8	52.5	15.2	67.2	15,522
10-14 years	23.8	54.0	40.8	12.3	62.1	13,229
Education of household head						
None	22.2	50.0	45.6	14.1	60.6	18,764
Primary	19.8	55.1	50.7	14.3	67.5	12,061
Secondary	22.6	56.6	48.5	12.9	67.1	7,625
Higher	22.7	53.4	47.6	5.9	64.3	2,035
Missing/DK	23.7	44.1	36.6	14.9	51.6	330

Table CP.5:	Child Discipline					
Percentage of children age 1-14 years by child disciplinary methods experienced during the last one month Sudan MICS, 2014						
Background Characteristics	Percentage of children age 1-14 years who experienced:					Number of children age 1-14 years
	Only non-violent discipline	Psychological aggression	Physical punishment		Any violent discipline method [1]	
			Any	Severe		
Wealth index quintile						
Poorest	23.7	41.0	41.5	12.9	54.1	9,383
Second	23.5	47.0	45.1	14.8	58.9	8,797
Middle	19.0	56.8	52.3	14.6	68.8	8,438
Fourth	21.9	60.3	52.9	13.9	70.0	7,773
Richest	19.2	63.7	47.7	11.0	71.6	6,423

[1] MICS indicator 8.3 - Violent discipline
[*] Based on less than 25 unweighted cases and has been suppressed.

Figure CP.2: Child disciplinary methods, children ages 1-14 years, Sudan MICS, 2014
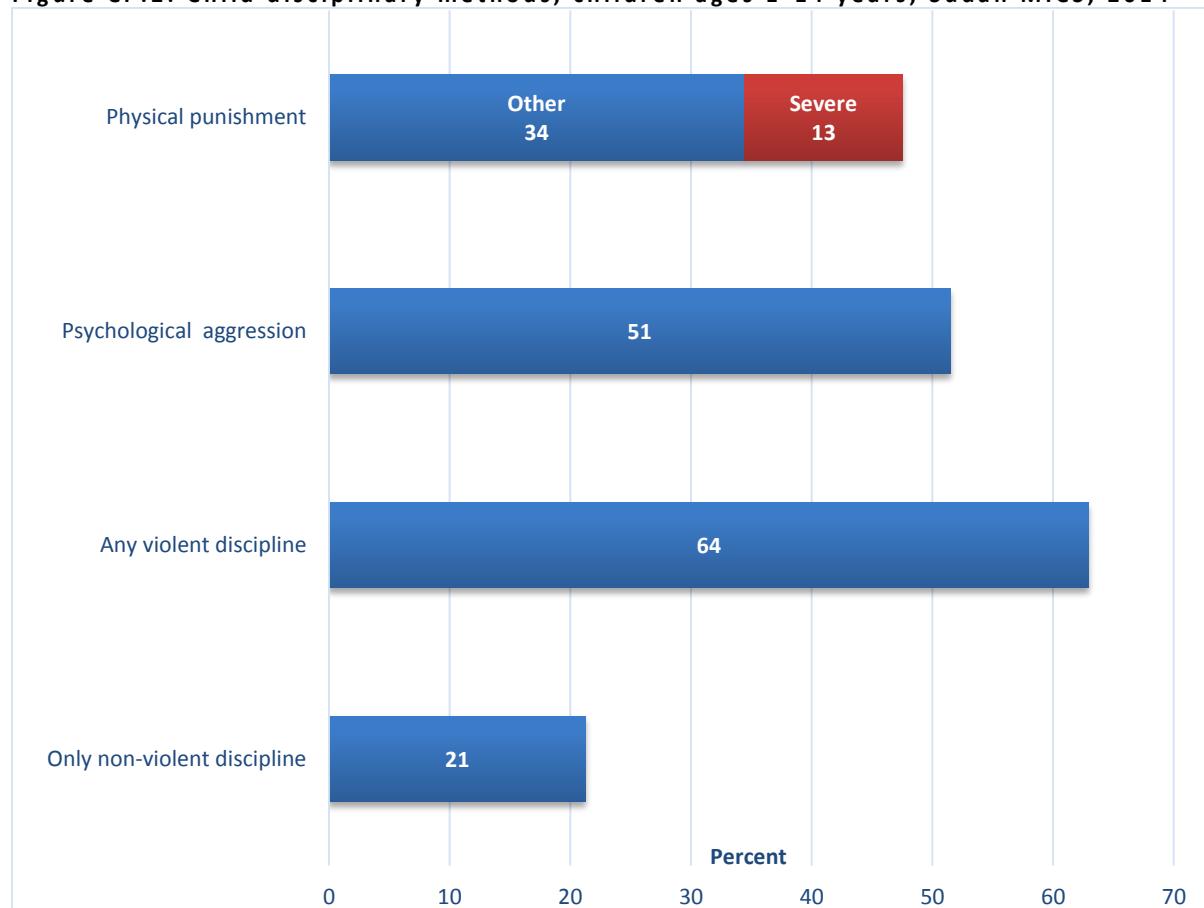
While violent methods are extremely common forms of discipline, Table CP.6 reveals that only 29.7 percent of respondents believe that physical punishment is a necessary part of child-rearing. There are large differentials across background variables of respondents, with the percentage in rural areas higher (31.8 percent) than those in urban areas (24.6 percent).

210

Overall, respondents with secondary education attainment are more likely to find physical punishment as necessary in disciplining children (45.5 percent). The respondent's relationship to the child also matters: 29.5 percent of mothers believe in the necessity of physical punishment compared to 33.2 percent of fathers, and 27.4 percent among other adult household members.

Table CP.6: Attitudes Toward Physical Punishment		
Percentage of respondents to the child discipline module who believe that physical punishment is needed to raise, or educate a child properly Sudan MICS, 2014		
Background Characteristics	**Respondent believes that a child needs to be physically punished**	**Number of respondents to the child discipline module**
Sudan	29.7	11,848
Sex		
Male	33.1	2,232
Female	28.9	9,616
State		
Northern	30.9	246
River Nile	22.3	406
Red Sea	8.9	299
Kassala	23.0	497
Gadarif	37.9	622
Khartoum	21.7	1,552
Gezira	26.8	1,804
White Nile	16.7	596
Sinnar	45.1	452
Blue Nile	20.6	485
North Kordofan	24.8	763
South Kordofan	40.3	364
West Kordofan	34.0	733
North Darfur	46.1	948
West Darfur	33.3	418
South Darfur	36.9	1,023
Central Darfur	21.2	226
East Darfur	40.7	414
Area		
Urban	24.6	3,415
Rural	31.8	8,434
Age		
<25	30.0	1,726
25-39	30.1	6,162
40-59	28.6	3,288
60+	31.3	672
Missing\DK	*	2
Respondent's relationship to selected child		
Mother	29.5	8,088
Father	33.2	1,849
Other	27.4	1,911

Table CP.6:	Attitudes Toward Physical Punishment	
Percentage of respondents to the child discipline module who believe that physical punishment is needed to raise, or educate a child properly Sudan MICS, 2014		
Background Characteristics	Respondent believes that a child needs to be physically punished	Number of respondents to the child discipline module
Respondent's education		
None	31.0	9,002
Primary	*	18
Secondary	45.5	115
Higher	29.2	1,108
Missing/DK	22.0	1,606
Wealth index quintile		
Poorest	38.5	2,558
Second	32.6	2,587
Middle	27.9	2,400
Fourth	25.7	2,236
Richest	21.8	2,068

[*] Based on less than 25 unweighted cases and has been suppressed.

11.4 Early Marriage and Polygamy

Marriage[48] before the age of 18 years is a reality for many young girls. In many parts of the world parents encourage the marriage of their daughters while they are still children in hopes that the marriage will benefit them both financially and socially, while also relieving financial burdens on the family. In actual fact, child marriage is a violation of human rights, compromising the development of girls and often resulting in early pregnancy and social isolation, with little education and poor vocational training reinforcing the gendered nature of poverty.[49]

The right to 'free and full' consent to a marriage is recognized in the Universal Declaration of Human Rights - with the recognition that consent cannot be 'free and full' when one of the parties involved is not sufficiently mature to make an informed decision about a life partner.

Closely related to the issue of child marriage is the age at which girls become sexually active. Women who are married before the age of 18 tend to have more children than those who marry later in life. Pregnancy-related deaths are known to be a leading cause of mortality for both married and unmarried girls between the ages of 15 and 19, particularly among the youngest of this cohort.
There is evidence to suggest that girls who marry at younger ages are more likely to marry older men, which puts them at increased risk of HIV infection. The demand for a younger wife to reproduce and the power imbalance that results from the age differential lead to very low condom use among such couples.[50]

---

[48] All references to marriage in this chapter include marital union as well.
[49]Bajracharya, A ND Amin, S. 2010.*Poverty, marriage timing, and transitions to adulthood in Nepal: A longitudinal analysis using the Nepal living standards survey.* Poverty, Gender, and Youth Working Paper No. 19. Population Council.
Godha, D et al. 2011. *The influence of child marriage on fertility, fertility-control, and maternal health care utilization.* MEASURE/Evaluation PRH Project Working paper 11-124.
[50]Clark, S et al. 2006. *Protecting young women from HIV/AIDS: the case againstchild and adolescentmarriage. International Family Planning Perspectives* 32(2): 79-88.

The percentage of women married before the ages of 15 and 18 years is provided in Table CP.7. Among women ages 15-49 years, 11.9 percent were married before age 15, while 38.0 percent of women ages 20-49 years were married before age 18.

Young married women in the age group 15-19 years comprise about 12.2 percent. This proportion is significantly different between young women in urban areas (11.2 percent) and those in rural areas (26.0 percent). Wide variations between states are also observed; for example, in Khartoum state it is 12.0 percent, while 33 percent in Gadarif state. There is a strong relation to the level of education. For example, 27.5 percent for women with primary education compared to only 2.4 percent for those with higher education.

The percentage of women in a polygynous union is also provided in Table CP.7. Among all women age 15-49 years who are in union, 21.7 percent are in polygynous unions. Such unions are more common among rural women, 23.6 percent compared to 16.9 percent for urban women. Polygynous relationships are also more prevalent among older women ages 45-49 years (30.8 percent) when compared to only 7.7 percent among younger women ages 15-19 years.

The wealth index quintiles in the table show that women in the richest and the fourth quintiles have consistently lower levels of early marriage and polygamy than the first, second and middle wealth quintiles.

Figure CP.3a: Women ages 20-49 years who first married or entered a marital union before their 18th birthday, Sudan MICS, 2014
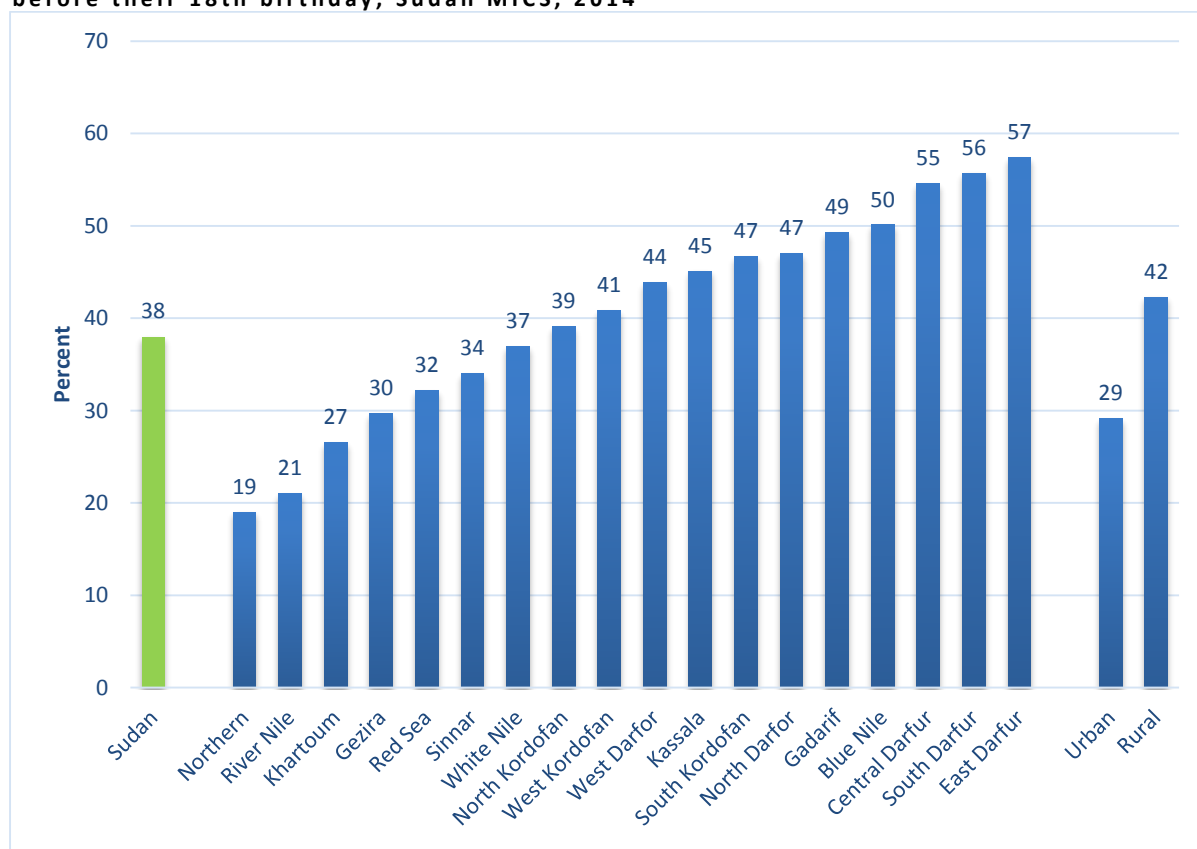
Raj, A et al. 2009. *Prevalence of child marriage and its effect on fertility and fertility-control outcomes of young women in India: a cross-sectional, observational study*. The Lancet 373 (9678): 1883–9.

Table CP.7:	Early marriage and polygyny among Women							

❖ Percentage of women ages 15-49 years who first married or entered a marital union before their 15th birthday
❖ Percentages of women ages 20-49 years who first married or entered a marital union before their 15th and 18th birthdays
❖ Percentage of women ages 15-19 years currently married
❖ Percentage of women who are in a polygynous marriage or union
Sudan MICS, 2014

Background Characteristics	Women ages 15-49 years		Women ages 20-49 years			Women ages 15-19 years		Women ages 15-49 years	
	Percent married before ages 15 [1]	Number of women ages 15-49 years	Percent married before ages 15	Percent married before ages 18 [2]	Number of women ages 20-49 years	Percent currently married [3]	Women ages 15-19 years	Percent in polygynous marriage/ union [4]	Number of women ages 15-49 years currently married
Sudan	11.9	18,302	13.4	38.0	14,593	21.2	3,709	21.7	11,867
State									
Northern	5.1	457	6.0	19.0	376	13.6	81	6.4	280
River Nile	6.2	701	6.6	21.0	579	22.3	123	6.0	409
Red Sea	10.0	493	9.8	32.2	420	23.0	74	6.1	323
Kassala	18.6	747	20.0	45.1	600	29.8	147	10.7	506
Gadarif	14.9	879	16.2	49.3	715	33.1	164	19.1	630
Khartoum	6.9	2,821	7.8	26.5	2,239	12.0	583	13.9	1,623
Gezira	8.7	3,176	9.6	29.7	2,495	21.1	681	13.3	1,961
White Nile	9.1	889	10.3	36.9	724	20.8	165	11.9	577
Sinnar	12.3	698	13.6	34.0	574	19.2	124	17.8	450
Blue Nile	16.5	729	19.7	50.1	562	29.9	167	28.3	525
North Kordofan	15.6	1,173	17.5	39.1	924	27.6	249	14.3	743
South Kordofan	18.0	525	20.7	46.7	414	20.1	112	25.5	355
West Kordofan	13.5	965	15.2	40.8	796	19.6	168	33.2	687
North Darfur	12.9	1,317	15.0	47.0	1,052	16.6	265	35.2	913
West Darfur	14.1	555	15.6	43.9	430	20.5	125	52.9	383
South Darfur	17.8	1,363	22.0	55.7	1,056	23.7	307	40.9	933
Central Darfur	16.4	272	19.8	54.6	209	22.5	63	45.3	188
East Darfur	15.3	542	18.0	57.4	428	26.3	114	35.2	378
Area									
Urban	8.0	6,029	9.2	29.1	4,810	11.2	1219	16.9	3,437
Rural	13.7	12,273	15.5	42.3	9,783	26.0	2491	23.6	8,430
Age									
15-19	5.7	3,709			0	21.2	3709	7.7	741
20-24	11.9	3,162	11.9	34.2	3,162		0	12.1	1,737
25-29	14.7	3,359	14.7	40.0	3,359		0	18.1	2,617
30-34	12.4	2,558	12.4	37.9	2,558		0	21.2	2,130
35-39	13.8	2,542	13.8	38.6	2,542		0	30.1	2,160
40-44	13.7	1,633	13.7	37.8	1,633		0	28.2	1,374
45-49	14.6	1,339	14.6	40.9	1,339		0	30.8	1,107
Education									
None	19.7	5,843	20.2	54.6	5,324	40.5	519	32.4	4,778
Primary	13.9	6,128	16.2	43.5	4,506	27.5	1622	16.4	3,961
Secondary	3.7	4,361	5.1	20.8	2,953	8.8	1409	12.7	2,228
Higher	.2	1,965	0.1	3.1	1,805	2.4	160	9.9	895
Missing/DK	*	5	0.0	49.8	5		0	40.8	5

Table CP.7:	Early marriage and polygyny among Women								

- Percentage of women ages 15-49 years who first married or entered a marital union before their 15th birthday
- Percentages of women ages 20-49 years who first married or entered a marital union before their 15th and 18th birthdays
- Percentage of women ages 15-19 years currently married
- Percentage of women who are in a polygynous marriage or union
  Sudan MICS, 2014

Background Characteristics	Women ages 15-49 years		Women ages 20-49 years			Women ages 15-19 years		Women ages 15-49 years	
	Percent married before ages 15 [1]	Number of women ages 15-49 years	Percent married before ages 15	Percent married before ages 18 [2]	Number of women ages 20-49 years	Percent currently married [3]	Women ages 15-19 years	Percent in polygynous marriage/ union [4]	Number of women ages 15-49 years currently married
Wealth index quintile									
Poorest	17.8	3,246	20.6	53.8	2,616	24.5	629	35.5	2,341
Second	17.1	3,380	19.2	50.9	2,660	30.1	720	27.2	2,412
Middle	12.7	3,646	14.1	39.6	2,870	25.5	777	21.1	2,417
Fourth	9.0	3,759	10.3	32.6	3,006	16.9	753	13.3	2,333
Richest	5.0	4,271	5.6	19.2	3,441	10.7	831	11.2	2,364

[1] MICS indicator 8.4 - Marriage before age 15
[2] MICS indicator 8.5 - Marriage before age 18
[3] MICS indicator 8.6 - Young women age 15-19 years currently married or in union
[4] MICS indicator 8.7 - Polygyny

Table CP.8 presents the proportion of women who were first married before ages 15 and 18 by area and age groups. Examining the percentages of those married before ages 15 and 18 by different age groups allow for trends to be observed in early marriage over time.

At the national level, data show that 40.9 percent of women age 45-49 years were first married by age 18 compared to 34.2 percent of women age 20-24 years. While it is 14.6 percent and 11.9 percent for women ages 45-49 and 20-24, respectively, who married before the age of 15. In the rural areas, the percentages are 44.0 and 40.4 for women age 45-49 and 20-24, respectively, who married before the age of 18. In urban areas comparable figures are 35.1 and 21.6 percent, respectively.

	Urban				Rural				All			
Background Characteristics	Percent of women married before age 15	Number of women age 15-49 years	Percent of women married before age 18	Number of women age 20-49 years	Percent of women married before age 15	Number of women age 15-49 years	Percent of women married before age 18	Number of women age 20-49 years	Percent of women married before age 15	Number of women age 15-49 years	Percent of women married before age 18	Number of women age 20-49 years
Sudan	8.0	6,029	29.1	4,810	13.7	12,273	42.3	9,783	11.9	18,302	38.0	14,593
Age groups												
15-19	3.3	1,219	*	0	6.9	2,491	*	0	5.7	3,709	*	0
20-24	5.5	1,044	21.6	1,044	15.0	2,118	40.4	2,118	11.9	3,162	34.2	3,162
25-29	8.0	1,030	26.8	1,030	17.7	2,329	45.8	2,329	14.7	3,359	40.0	3,359
30-34	9.6	859	31.3	859	13.9	1,698	41.2	1,698	12.4	2,558	37.9	2,558
35-39	11.1	834	33.7	834	15.1	1,707	41.0	1,707	13.8	2,542	38.6	2,542
40-44	11.9	578	31.8	578	14.7	1,055	41.1	1,055	13.7	1,633	37.8	1,633
45-49	12.3	464	35.1	464	15.8	875	44.0	875	14.6	1,339	40.9	1,339

Table CP.8:   Trends in Early Marriage among Women

Percentage of women who were first married or entered into a marital union before age 15 and 18, by area and age groups
Sudan MICS, 2014

[*] Based on less than 25 unweighted cases and have been suppressed

Figure CP.3: Early marriage before ages 15 and 18 by age group of women 15-49 years, Sudan MICS, 2014

Percentage married before age 15   Percentage married before age 18   **na: not applicable**

216
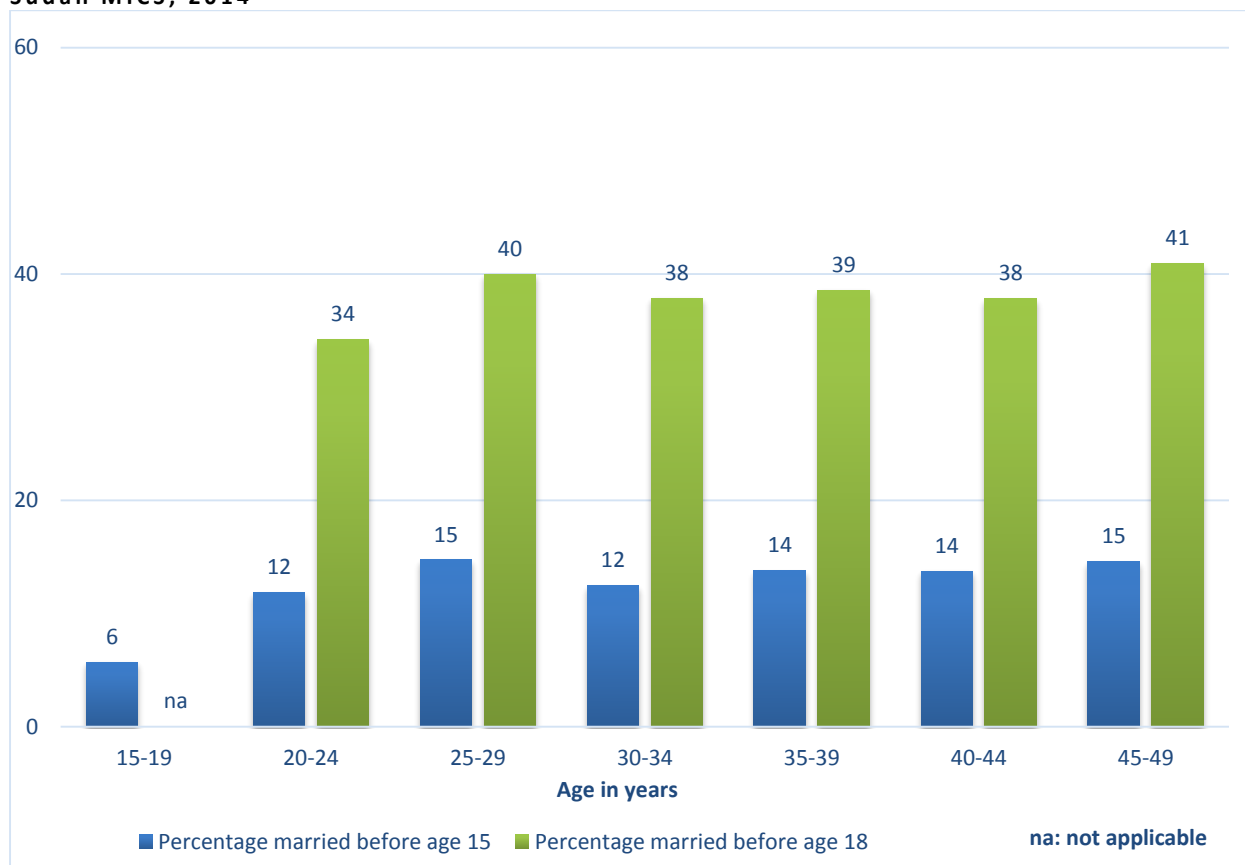
Another component is the spousal age difference with the indicator being the percentage of married women 10 or more years younger than their current spouse.

Table CP.9 presents percentage distribution of women currently married age 15-19 and 20-24 years according to the age difference in relation to their husband or partner. The results show that there are some important spousal age differences in Sudan MICS, 2014. Among currently married women age 20-24 years, about (41.8 percent) are married to a man who is older by ten years or more. For currently married women ages 15-19 years, the corresponding figure is 39.5 percent.

The differences between states for women aged 15-19 varied between 20.2 percent for Central Darfur and 50.6 percent for Khartoum state. The corresponding figures for urban and rural areas are 48.7 percent and 37.7 percent, respectively.

The percentage of women who are married to men older by over 10 years is inversely proportional to the level of education. For example, the percentage of women with higher education are lower than women with less or no education in both age groups 15-19 and 20-24 years. There are no discernible spousal age differences among the women according to the wealth index backgrounds.

Table CP.9:   Spousal Age Difference

Percent distribution of women currently married age 15-19 and 20-24 years according to the age difference with their husband or partner
Sudan MICS, 2014

Background Characteristics	Percentage of currently married women age 15-19 years whose husband or partner is:					Number of women age 15-19 years currently married/ in union	Percentage of currently married women age 20-24 years whose husband or partner is:					Number of women age 20-24 years currently married/ in union
	Younger	0-4 years older	5-9 years older	10+ years older [1]	Husband/ partner's age unknown		Younger	0-4 years older	5-9 years older	10+ years older [2]	Husband / partner's age unknown	
Sudan	0.1	3.3	8.0	7.9	80.7	3,709	0.6	10.5	19.1	23.0	46.8	3,162
State												
Northern	0.0	2.0	4.7	5.9	87.4	81	0.0	5.6	14.5	20.0	59.9	65
River Nile	0.0	1.5	8.6	10.2	79.7	123	0.0	8.1	11.7	20.5	59.6	131
Red Sea	0.0	6.2	8.8	5.8	79.2	74	0.6	9.0	12.8	19.5	58.2	76
Kassala	0.5	4.0	15.0	8.0	72.4	147	0.5	17.2	15.5	18.0	48.8	125
Gadarif	0.4	4.0	13.0	12.1	70.5	164	0.0	8.4	23.1	32.6	35.9	163
Khartoum	0.0	.4	5.5	6.1	88.0	583	0.0	6.1	13.9	18.2	61.8	470
Gezira	0.0	2.4	8.8	8.8	80.1	681	1.1	6.7	18.2	26.0	48.0	550
White Nile	0.0	3.5	7.6	7.9	80.9	165	1.0	7.3	24.7	23.3	43.6	147
Sinnar	0.0	1.9	7.6	7.1	83.4	124	0.0	10.5	20.7	23.5	45.3	133
Blue Nile	0.0	9.5	11.1	6.9	72.5	167	0.6	14.5	25.8	28.6	30.6	130
North Kordofan	0.3	2.8	8.2	12.7	76.1	249	0.4	12.2	17.4	17.5	52.5	222
South Kordofan	0.0	2.2	5.2	8.8	83.8	112	0.7	13.2	26.8	16.3	42.9	86
West Kordofan	0.0	5.8	6.3	5.9	81.9	168	1.2	18.4	21.1	16.6	42.7	172
North Darfur	0.0	4.0	7.7	3.8	84.4	265	0.5	18.0	26.2	19.6	35.8	214
West Darfur	0.0	1.9	8.1	9.5	80.5	125	0.7	13.3	21.6	31.2	33.1	89
South Darfur	0.0	5.9	6.7	8.5	78.9	307	0.7	13.0	19.4	31.2	35.8	260
Central Darfur	0.5	3.0	10.4	4.1	82.0	63	2.5	11.9	11.8	30.4	43.4	41
East Darfur	1.2	5.7	5.9	7.9	79.3	114	1.1	10.1	24.8	22.2	41.8	88
Area												
Urban	0.0	1.4	3.4	4.9	90.4	1,219	0.3	5.9	12.5	19.3	62.0	1,044
Rural	0.2	4.2	10.3	9.4	76.0	2,491	0.7	12.8	22.4	24.8	39.3	2,118

Table CP.9: Spousal Age Difference

Percent distribution of women currently married age 15-19 and 20-24 years according to the age difference with their husband or partner
Sudan MICS, 2014

Background Characteristics	Percentage of currently married women age 15-19 years whose husband or partner is:					Number of women age 15-19 years currently married/ in union	Percentage of currently married women age 20-24 years whose husband or partner is:					Number of women age 20-24 years currently married/ in union
	Younger	0-4 years older	5-9 years older	10+ years older [1]	Husband/ partner's age unknown		Younger	0-4 years older	5-9 years older	10+ years older [2]	Husband / partner's age unknown	
Age												
15-19	0.1	3.3	8.0	7.9	80.7	3709	*	*	*	*	*	0
20-24	0.0	0.0	0.0	0.0	0.0	0	0.6	10.5	19.1	23.0	46.8	3162
Education												
None	0.2	6.7	15.9	15.0	62.2	519	0.6	18.6	23.5	29.8	27.5	802
Primary	0.2	4.6	10.8	9.3	75.1	1622	0.8	12.2	22.3	25.1	39.5	1040
Secondary	0.0	.8	2.8	4.4	92.0	1409	0.6	5.9	18.2	22.6	52.8	771
Higher	0.0	0.0	0.0	1.7	98.3	160	0.1	2.1	8.0	9.5	80.4	548
Wealth Index quintile												
Poorest	0.2	5.6	8.8	6.9	78.5	629	1.3	17.8	22.1	22.3	36.5	536
Second	0.1	4.2	12.9	10.8	71.9	720	0.0	14.9	25.4	25.0	34.7	617
Middle	0.2	3.8	7.8	10.8	77.4	777	0.5	10.4	19.7	22.8	46.6	608
Fourth	0.0	2.3	8.3	5.6	83.9	753	1.0	8.1	18.3	26.6	46.0	731
Richest	0.0	1.2	3.2	5.5	90.2	831	0.2	3.5	11.3	17.7	67.2	669

( ) Figures that are based on 25-49 unweighted cases   [*] Based on less than 25 unweighted cases and has been suppressed

11.5 Female Genital Mutilation/Cutting

Female genital mutilation/cutting (FGM/C) is the partial or total removal of the female external genitalia or other injury to the female genital organs. FGM/C is always traumatic with immediate complications including excruciating pain, shock, urine retention, ulceration of the genitals and injury to adjacent tissue. Other complications include septicaemia, infertility, obstructed labour, and even death.

The procedure is generally carried out on girls between the ages of 4 and 14; it is also done to infants, women who are about to be married and, sometimes, to women who are pregnant with their first child or who have just given birth. It is often performed by traditional practitioners, including midwives and barbers, without anaesthesia, using scissors, razor blades, or broken glass.

"Every girl is born Saleema, let her grow up Saleema"

FGM/C is a fundamental violation of human rights. It subjects girls and women to health risks and has life-threatening consequences. Although no international human rights instruments specifically addressed the practice, Article 25 of the Universal Declaration of Human Rights states that "everyone has the right to a standard of living adequate for health and well-being" and has been used to argue that FGM/C violates the right to health and bodily integrity. Furthermore, it could be argued that girls, i.e. children, cannot be said to give informed consent to such a potentially damaging practice as FGM/C.

Table CP.10 presents the prevalence of FGM/C among women age 15-49 years and the type of procedure. The table shows that 86.6 percent of women had some form of female genital mutilation. The percentages rise from 76.8 percent for women without formal education to 91.8 percent for women with higher education. The practice appears more common in rural areas, where the highest percentage is 97.7 for North Kordofan state and the lowest being 45.4 for Central Darfur. Surprisingly the practice is highly prevalent among women in wealthy households with population in the richest and fourth richest quintiles recording 91.6 percent and 90.0 percent, respectively.

Table CP.10: Female Genital Mutilation/Cutting (FGM/C) among Women

Percentage of women age 15-49 years by FGM/C status and percent distribution of women who had FGM/C by type of FGM/C
Sudan MICS, 2014

Background Characteristics	Percentage who had any form of FGM/C [1]	Number of women age 15-49 years	Percent distribution of women age 15-49 years who had FGM/C:					Number of women age 15-49 years who had FGM/C
			Had flesh removed	Were nicked	Were sewn closed	Form of FGM/C not determined	Sudan	
Sudan	86.6	18,302	16.3	2.2	77.0	4.5	100.0	15,853
State								
Northern	97.5	457	2.9	0.4	94.6	2.1	100.0	446
River Nile	96.4	701	11.1	2.2	74.5	12.2	100.0	676
Red Sea	89.0	493	8.8	2.4	86.6	2.2	100.0	439
Kassala	78.7	747	3.7	1.4	86.4	8.4	100.0	587
Gadarif	78.5	879	22.1	0.6	71.3	5.9	100.0	690
Khartoum	87.5	2,821	9.7	9.5	74.6	6.2	100.0	2,469
Gezira	86.9	3,176	5.0	0.7	90.0	4.3	100.0	2,759
White Nile	93.7	889	20.3	0.7	77.2	1.8	100.0	833
Sinnar	84.0	698	4.2	1.6	91.7	2.6	100.0	586
Blue Nile	68.0	729	14.3	0.7	84.1	1.0	100.0	495
North Kordofan	97.7	1,173	24.8	0.2	71.9	3.0	100.0	1,146
South Kordofan	88.8	525	20.8	1.8	68.8	8.7	100.0	467
West Kordofan	81.0	965	5.1	0.3	91.6	3.1	100.0	781
North Darfur	97.6	1,317	39.8	0.4	58.5	1.2	100.0	1,286
West Darfur	61.2	555	24.7	0.9	60.3	14.2	100.0	339
South Darfur	88.2	1,363	27.7	0.9	68.7	2.7	100.0	1,203
Central Darfur	45.4	272	47.0	0.9	36.7	15.4	100.0	124
East Darfur	97.3	542	44.3	0.0	55.4	0.3	100.0	528
Area								
Urban	85.5	6,029	12.4	4.7	77.9	5.0	100.0	5,153
Rural	87.2	12,273	18.2	0.9	76.6	4.3	100.0	10,700
Age								
15-19	81.7	3,709	18.2	3.9	70.8	7.1	100.0	3,029
20-24	85.7	3,162	16.2	2.7	75.8	5.3	100.0	2,,709
25-29	87.6	3,359	16.4	2.2	77.5	3.9	100.0	2,943
30-34	88.0	2,558	14.4	1.7	80.1	3.7	100.0	2,250
35-39	86.6	2,542	16.5	1.2	79.3	2.9	100.0	2,201
40-44	91.4	1,633	13.6	1.0	81.7	3.7	100.0	1,493
45-49	91.8	1,339	17.9	0.8	78.2	3.0	100.0	1,229
Woman's education								
None	76.8	5,843	25.3	1.0	70.1	3.7	100.0	4,487
Primary	90.4	6,128	13.9	1.3	81.2	3.7	100.0	5,541
Secondary	92.1	4,361	11.2	3.9	79.0	5.9	100.0	4,018
Higher	91.8	1,965	12.6	4.2	77.0	6.1	100.0	1,804
Missing/DK	*	5	*	*	*	*	100.0	4
Wealth index quintile								
Poorest	88.0	3,246	34.1	0.5	62.1	3.3	100.0	2,855
Second	81.7	3,380	20.7	1.2	74.8	3.3	100.0	2,761
Middle	80.7	3,646	12.6	1.6	82.1	3.6	100.0	2,944

Table CP.10: Female Genital Mutilation/Cutting (FGM/C) among Women

Percentage of women age 15-49 years by FGM/C status and percent distribution of women who had FGM/C by type of FGM/C Sudan MICS, 2014

Background Characteristics	Percentage who had any form of FGM/C [1]	Number of women age 15-49 years	Percent distribution of women age 15-49 years who had FGM/C:					Number of women age 15-49 years who had FGM/C
			Had flesh removed	Were nicked	Were sewn closed	Form of FGM/C not determined	Sudan	
Fourth	90.0	3,759	7.7	2.8	84.0	5.5	100.0	3,381
Richest	91.6	4,271	10.4	4.0	79.6	6.0	100.0	3,912

[1] MICS indicator 8.10 - Prevalence of FGM/C among women
[*] Based on less than 25 unweighted cases and has been suppressed

Table CP.11 presents the prevalence and extent of FGM/C performed on all respondents' daughters, ages 0-14 years. It is important to remember that prevalence data for girls ages 0-14 years reflect their current – not final – FGM/C status, since many of them may not have reached the customary age for cutting at the time of the survey. They are reported as being uncut but are still at risk of undergoing the procedure.

Overall, 31.5 percent of girls have undergone FGM/C. Daughters whose mothers have no education (33.6 percent) are more likely to be exposed to the practice of FGM/C when compared to daughters whose mothers have a primary education (32.7 percent), secondary education (28.6 percent) and higher education (15.2 percent).

The practice of FGM on young girls is most prevalent in the Red Sea state with 55.6 percent compared to the West Darfur state where only 12.1 percent of the young girls have undergone the practice. The practice is slightly more common in rural areas (33.0 percent) than in urban areas (27.8 percent).

The table shows that the prevalence of FGM is 69.0 percent for girls in the age group 10-14 compared with 31.5 percent for the 5-9 age group and only 4.3 percent among the 0-4 age group. The figures show that 34.6 percent of daughters of women who had experienced FGM have also undergone cutting, compared with only 2.3 percent among the daughters of women who had not experienced FGM. The wealth index has no effect on the practice of FGM.

Table CP.11: Female Genital Mutilation/Cutting (FGM/C) among Girls

Percentage of daughters aged 0-14 years by FGM/C status and percent distribution of daughters who had FGM/C by type of FGM/C Sudan MICS, 2014

Background characteristics	Percentage of daughters who had any form of FGM/C [1]	Number of daughters age 0-14 years	Number of daughters age 0-14 years who had FGM/C
Sudan	31.5	17,661	5,570
State			
Northern	43.1	323	139
River Nile	50.0	508	254
Red Sea	55.6	326	181
Kassala	46.6	674	314
Gadarif	28.9	937	271
Khartoum	29.9	2,205	658
Gezira	31.9	2,790	890
White Nile	43.8	876	384
Sinnar	27.4	652	179
Blue Nile	30.0	762	229
North Kordofan	49.1	1,196	587
South Kordofan	27.3	601	164
West Kordofan	25.6	996	255
North Darfur	27.0	1,645	443
West Darfur	12.1	633	76
South Darfur	21.2	1,609	340
Central Darfur	13.9	230	32
East Darfur	24.8	697	173
Area			
Urban	27.8	4,844	1,345
Rural	33.0	12,818	4,225
Age			
0-4	4.3	6,481	279
5-9	31.5	6,460	2,033
10-14	69.0	4,720	3,258
Mother's education			
None	33.6	7,943	2,668
Primary	32.7	6,028	1,970
Secondary	28.6	2,763	789
Higher	15.2	919	140
Missing/DK	*	8	3
Mother's FGM/C experience			
No FGM/C	2.3	1,680	39
Had FGM/C	34.6	15,982	5,531
Wealth index quintile			
Poorest	30.2	4,029	1,216
Second	30.3	3,617	1,094
Middle	31.5	3,684	1,161
Fourth	35.6	3,418	1,217
Richest	30.3	2,913	882

[1] MICS indicator 8.11 - Prevalence of FGM/C among girls
[*] Based on less than 25 unweighted cases and has been suppressed

Figure CP.3b : Women ages 15-49 years and girls 0-14 years who have undergone FGM/C by education of the woman or mother of the child, Sudan MICS, 2014
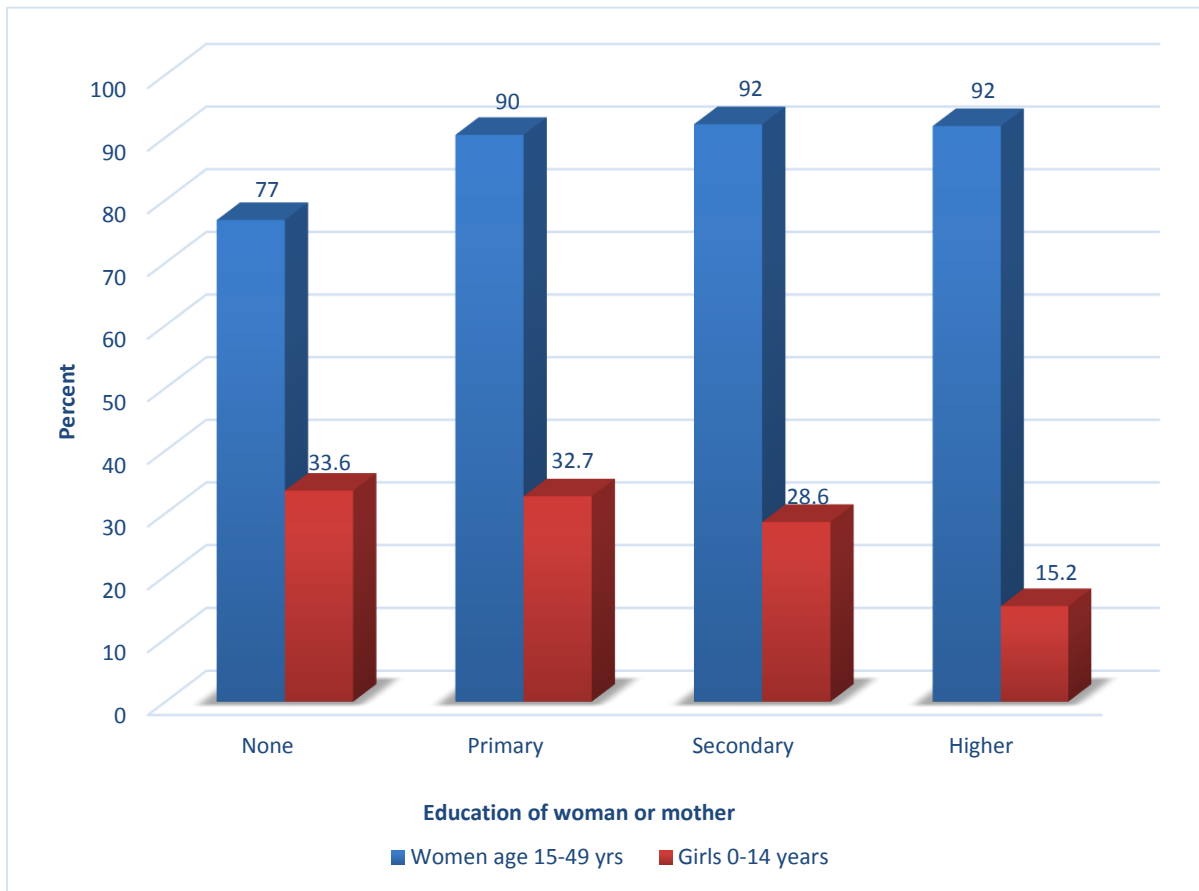
Table CP.12 presents the women's attitudes towards FGM/C. With respect to whether the practice should be continued or discontinued, 40.9 percent of the women thought it should be continued while 52.8 percent of them believed it should be discontinued.

Women in East Darfur state (64.4 percent) are most likely to support the continuation of the practice of FGM/C than women in other states with women in Khartoum state (24.0 percent) supporting discontinuation of the practice. The level of education of the woman has significant effect on her attitude towards the practice of FGM; 16.9 percent of the women with higher education approved the continuation of the practice of FGM compared to 55.0 percent of the women with no education.

Table CP.12 also shows that women in the poorest households are more likely to support the continuation of the practice with 61.9 percent compared to their counterparts in the richest households (23.3 percent). The continuation of the FGM is supported by 28.0 percent of the urban women compared with 47.4 percent of rural women.

Background characteristics	Percentage of women who have heard of FGM/C	Number of women aged 15-49 years	Percent distribution of women who believe the practice of FGM/C should be:				Number of women age 15-49 years who have heard of FGM/C
			Continued [1]	Discontinued	Depends	Don't know/ Missing	
Sudan	96.3	18,302	40.9	52.8	2.3	4.0	17,620
State							
Northern	99.3	457	33.0	64.5	0.4	2.2	454
River Nile	99.1	701	40.8	55.0	1.5	2.8	694
Red Sea	90.6	493	51.8	46.6	0.3	1.3	447
Kassala	96.6	747	53.1	42.0	1.4	3.4	721
Gadarif	93.1	879	39.1	55.6	1.2	4.2	818
Khartoum	98.5	2,821	24.0	71.0	2.7	2.3	2,779
Gezira	97.2	3,176	31.8	55.8	5.7	6.8	3,086
White Nile	98.5	889	43.1	53.4	1.0	2.5	875
Sinnar	96.6	698	33.5	59.2	5.6	1.7	675
Blue Nile	93.7	729	36.3	59.8	0.9	3.0	683
North Kordofan	99.3	1,173	53.1	38.7	1.9	6.2	1,165
South Kordofan	96.3	525	37.6	54.0	2.3	6.1	506
West Kordofan	85.6	965	58.1	35.8	1.8	4.3	826
North Darfur	99.1	1,317	55.7	39.9	0.1	4.3	1,305
West Darfur	96.4	555	37.8	59.4	0.3	2.5	535
South Darfur	97.2	1,363	52.8	43.3	0.9	3.0	1,326
Central Darfur	71.5	272	45.7	48.0	1.1	5.2	194
East Darfur	98.0	542	64.4	30.6	0.4	4.6	531
Area							
Urban	97.1	6,029	28.0	67.3	2.1	2.6	5,856
Rural	95.8	12,273	47.4	45.5	2.4	4.7	11,764
Age							
15-19	96.3	3,709	38.9	53.3	1.7	6.1	3,572
20-24	96.5	3,162	40.9	53.7	2.3	3.1	3,050
25-29	96.2	3,359	43.2	50.4	2.4	3.9	3,232
30-34	96.2	2,558	42.8	50.6	2.8	3.7	2,461
35-39	95.4	2,542	40.5	54.1	1.9	3.5	2,424
40-44	96.7	1,633	37.4	56.2	3.3	3.1	1,579
45-49	97.1	1,339	42.5	52.4	2.1	3.0	1,300
Woman's education							
None	92.3	5,843	55.0	37.3	1.6	6.1	5,394
Primary	96.9	6,128	47.3	46.3	2.3	4.1	5,939
Secondary	99.2	4,361	25.7	69.0	2.8	2.5	4,328
Higher	99.5	1,965	16.9	79.1	3.1	0.9	1,954
Missing/DK	*	5	*	*	*	*	5
FGM/C experience							
No FGM/C	72.1	2,449	8.0	83.0	1.3	7.8	1,767
Had FGM/C	100.0	15,853	44.6	49.4	2.4	3.6	15,853

Table CP.12: Approval of Female Genital Mutilation/Cutting (FGM/C)							
❖ Percentage of women age 15-49 years who have heard of FGM/C, and ❖ Percent distribution of women according to attitudes towards whether the practice of FGM/C should be continued Sudan MICS, 2014							
Background characteristics	Percentage of women who have heard of FGM/C	Number of women aged 15-49 years	Percent distribution of women who believe the practice of FGM/C should be:				Number of women age 15-49 years who have heard of FGM/C
			Continued [1]	Discontinued	Depends	Don't know/ Missing	
Wealth index quintile							
Poorest	95.9	3,246	61.9	32.3	0.7	5.2	3,112
Second	92.6	3,380	54.9	38.8	1.7	4.6	3,130
Middle	95.2	3,646	40.6	52.8	2.1	4.5	3,473
Fourth	97.9	3,759	32.0	60.3	3.6	4.1	3,678
Richest	99.0	4,271	23.3	71.6	2.9	2.1	4,226

( ) Figures that are based on 25-49 unweighted cases
(*) Figures that are based on fewer than 25 unweighted cases

11.6 Attitudes toward Domestic Violence

MICS assessed the attitudes of women age 15-49 years towards wife beating by asking the respondents whether they think that husbands are justified to hit or beat their wives in a variety of situations. The purpose of these questions was to capture the social justification of violence (in contexts where women have a lower status in society) as a disciplinary action when a woman does not comply with certain expected gender roles. The responses to these questions are presented in Table CP.13. Overall, 34.0 percent of women in the survey feel that a husband is justified in hitting or beating his wife in at least one of the five situations:

> ❖ She goes out without telling him
> ❖ She neglects the children
> ❖ She argues with him
> ❖ She refuses sex with him, and
> ❖ She burns the food

Women who justify a husband's violence, in most cases agree and justify violence in instances when a wife neglects the children (24.2 percent), or if she demonstrates her autonomyby, for example, going out without telling her husband (21.8 percent) or arguing with him (19.5 percent).

Nearly one-fifth (18.2 percent) of women believe that wife-beating is justified if the wife refuses to have sex with the husband. Justification in any of the five situations is more common among those living in poorest households, less educated, and also currently married women. Among the states, East Darfur reported the highest with 77.4 percent of women who can justify wife beating, while River Nile with 9.6 percent reported the lowest. The percentages for the urban and the rural areas are 25.0 percent and 38.4 percent, respectively.

Table CP.13: Attitudes Toward Domestic Violence among Women

Percentage of women ages 15-49 years who believe a husband is justified in beating his wife in various circumstances
Sudan MICS, 2014

Background characteristics	Percentage of women age 15-49 years who believe a husband is justified in beating his wife						Number of women age 15-49 years
	If she goes out without telling him	If she neglects the children	If she argues with him	If she refuses sex with him	If she burns the food	For any of these five reasons [1]	
Sudan	21.8	24.2	19.5	18.2	15.2	34.0	18,302
State							
Northern	11.7	16.9	11.8	8.7	6.7	25.7	457
River Nile	5.9	6.7	5.5	6.0	5.2	9.6	701
Red Sea	3.2	6.7	4.2	3.3	1.5	10.4	493
Kassala	6.1	8.4	7.8	7.0	3.3	14.1	747
Gadarif	14.7	15.5	14.3	13.3	10.4	22.0	879
Khartoum	9.5	10.8	6.9	4.9	3.2	18.8	2,821
Gezira	9.3	10.9	6.0	5.9	5.0	17.0	3,176
White Nile	18.5	21.3	16.8	15.5	14.6	35.2	889
Sinnar	25.2	23.7	17.7	18.6	14.0	40.0	698
Blue Nile	23.9	24.7	18.7	14.8	14.8	38.8	729
North Kordofan	18.4	21.9	18.8	17.0	15.0	28.9	1,173
South Kordofan	39.0	40.1	36.4	29.6	27.5	58.1	525
West Kordofan	33.6	37.5	31.2	28.5	27.2	50.5	965
North Darfur	46.4	50.6	38.5	41.5	35.6	62.2	1,317
West Darfur	39.9	41.9	37.8	34.7	29.5	57.1	555
South Darfur	47.1	50.9	46.7	43.4	32.7	65.2	1,363
Central Darfur	44.9	44.8	39.6	40.2	33.2	63.4	272
East Darfur	51.3	62.4	55.4	54.7	45.5	77.4	542
Area							
Urban	13.3	15.4	11.8	11.0	7.2	25.0	6,029
Rural	25.9	28.5	23.3	21.8	19.1	38.4	12,273
Age							
15-19	23.0	25.5	20.5	17.1	15.4	35.5	3,709
20-24	21.0	24.9	19.3	18.2	14.8	34.9	3,162
25-29	23.2	25.3	20.6	19.1	15.7	35.5	3,359
30-34	20.9	23.4	17.7	18.5	14.7	32.6	2,558
35-39	20.8	22.7	20.0	19.4	15.6	33.0	2,542
40-44	20.5	22.7	17.7	17.6	15.7	31.5	1,633
45-49	21.5	22.0	19.0	17.0	13.4	32.1	1,339
Marital status							
Currently married	23.7	25.8	21.3	20.6	16.6	36.2	11,867
Formerly married	22.2	26.0	21.3	20.0	16.6	35.8	887
Never married	17.6	20.5	15.2	12.9	11.9	29.2	5,547
Woman's education							
None	32.1	33.9	29.8	28.2	24.0	45.6	5,843
Primary	24.2	26.8	20.4	19.0	16.1	36.7	6,128
Secondary	12.0	15.1	11.1	9.7	7.6	23.7	4,361
Higher	5.2	7.2	4.3	4.9	3.0	14.4	1,965
Missing/DK	*	*	*	*	*	*	5

Table CP.13: Attitudes Toward Domestic Violence among Women							
Percentage of women ages 15-49 years who believe a husband is justified in beating his wife in various circumstances Sudan MICS, 2014							
Background characteristics	Percentage of women age 15-49 years who believe a husband is justified in beating his wife						Number of women age 15-49 years
	If she goes out without telling him	If she neglects the children	If she argues with him	If she refuses sex with him	If she burns the food	For any of these five reasons [1]	
Wealth index quintile							
Poorest	43.3	47.3	41.0	40.3	35.2	58.3	3,246
Second	32.4	34.5	30.1	26.8	24.0	46.7	3,380
Middle	19.4	21.5	16.7	15.4	12.1	32.9	3,646
Fourth	13.2	14.9	9.6	8.5	6.5	22.7	3,759
Richest	6.5	8.9	5.8	5.6	3.1	16.4	4,271

[1] MICS indicator 8.12 - Attitudes towards domestic violence. [*] Based on less than 25 unweighted cases and has been suppressed
(*) Figures that are based on fewer than 25 unweighted cases

11.7 Children's Living Arrangements

The CRC recognizes that "the child, for the full and harmonious development of his or her personality, should grow up in a family environment, in an atmosphere of happiness, love and understanding.

Millions of children around the world grow up with or without the care of their parents for several reasons, including the premature death of the parents or their migration for work. In most cases these children are cared for by members of their extended families while in others, children may be living in households other than their own in the capacity of live-in domestic workers.

Understanding children's living arrangements, including the composition of the households where they live and the relationships with their primary caregivers, is key to design of targeted interventions aimed at promoting the child's care and well-being.

Table CP.14 presents information on the living arrangements and orphanhood status of children under age 18. As shown on the table, 81.8 percent of children aged 0-17 years in Sudan MICS, 2014 live with both their parents, 12.8 percent live with only their mothers, and 1.7 percent live with only their fathers. About two (2.4) percent of the children live with neither of their biological parents while both of them are alive. One in ten (9.4 percent) of the children live with their mothers only while the biological fathers are alive, which is a considerably significant difference (0.8 percent) of the children living with their fathers when their biological mothers are alive.

About 5.3 percent of the children have lost one or both parents, with a very small percentage (0.3 percent) who have lost both parents.

As expected, older children are less likely than younger children to live with both parents and slightly more likely than younger children to have lost one or both parents.

Table CP.14 also shows the percentage of children living with both parents in the richest wealth quintile (80.6 percent) and in the poorest quintile (82.9 percent). About seven (6.9 percent) of children in the poorest households live with only their mothers while their fathers are alive. The corresponding proportion of such children in the richest quintile is 11.6 percent.

Table CP.14: Children's Living Arrangements and Orphanhood

- ❖ Percent distribution of children ages 0-17 years according to living arrangements
- ❖ Percentage of children ages 0-17 years not living with a biological parent, and
- ❖ Percentage of children who have one or both parents dead

Sudan MICS, 2014

Background characteristics	Living with both parents	Living with neither biological parent				Living with mother only		Living with father only		Missing information on father/ mother	Sudan	Living with neither biological parent [1]	One or both parents dead [2]	Number of children age 0-17 years
		Only father alive	Only mother alive	Both alive	Both dead	Father alive	Father dead	Mother alive	Mother dead					
Sudan	81.8	0.5	0.3	2.4	0.3	9.4	3.4	0.8	0.9	0.4	100.0	3.4	5.3	50,054
Sex														
Male	82.6	0.4	0.3	1.9	0.2	9.1	3.4	0.9	0.9	0.3	100.0	2.8	5.3	25,074
Female	81.1	0.5	0.3	3.0	0.3	9.6	3.4	0.7	0.8	0.4	100.0	4.0	5.3	24,979
State														
Northern	89.5	0.4	0.1	1.2	0.1	4.7	2.0	0.2	1.5	0.3	100.0	1.8	4.1	898
River Nile	88.7	0.3	0.0	1.8	0.1	5.5	2.8	0.4	0.4	0.1	100.0	2.1	3.5	1,495
Red Sea	91.8	0.4	0.5	1.8	0.1	2.1	1.6	0.3	1.1	0.4	100.0	2.8	3.7	1,024
Kassala	87.3	0.8	0.1	1.2	0.4	5.8	2.7	0.1	1.3	0.4	100.0	2.5	5.2	2,060
Gadarif	87.7	0.3	0.2	2.1	0.5	5.2	2.5	0.7	0.4	0.2	100.0	3.2	4.0	2,608
Khartoum	83.3	0.2	0.3	2.0	0.3	8.7	3.7	0.6	0.8	0.2	100.0	2.8	5.4	6,169
Gezira	71.4	0.4	0.2	2.1	0.1	21.0	2.7	0.7	1.3	0.2	100.0	2.7	4.6	7,966
White Nile	81.9	0.6	0.2	1.4	0.1	9.9	3.1	2.0	0.6	0.2	100.0	2.3	4.6	2,479
Sinnar	85.7	0.3	0.2	2.1	0.3	7.0	2.7	0.7	0.8	0.1	100.0	2.9	4.2	1,819
Blue Nile	83.1	0.5	0.3	2.2	0.4	9.0	1.9	1.5	0.6	0.5	100.0	3.4	3.6	2,248
North Kordofan	90.0	0.3	0.2	1.1	0.2	4.8	1.8	0.4	0.4	0.7	100.0	1.8	2.9	3,226
South Kordofan	85.4	0.9	0.4	2.7	0.4	4.8	2.9	1.1	0.6	0.9	100.0	4.3	5.1	1,687
West Kordofan	88.4	0.2	0.1	1.8	0.2	4.4	3.2	0.4	0.5	0.8	100.0	2.3	4.2	3,168
North Darfur	81.1	0.2	0.4	4.4	0.2	5.7	6.1	0.5	1.1	0.3	100.0	5.2	8.1	4,325
West Darfur	66.1	0.7	0.4	3.9	0.7	18.2	5.9	2.4	1.2	0.6	100.0	5.7	9.0	1,770
South Darfur	81.0	1.0	0.7	3.5	0.2	7.4	4.1	0.8	1.2	0.2	100.0	5.4	7.2	4,345
Central Darfur	70.0	1.0	0.7	3.6	0.4	16.9	4.8	1.2	1.0	0.3	100.0	5.8	8.0	969
East Darfur	83.0	0.6	0.6	3.9	0.5	4.7	4.4	1.4	0.5	0.5	100.0	5.6	6.6	1,798

Table CP.14: Children's Living Arrangements and Orphanhood

❖ Percent distribution of children ages 0-17 years according to living arrangements
❖ Percentage of children ages 0-17 years not living with a biological parent, and
❖ Percentage of children who have one or both parents dead
   Sudan MICS, 2014

Background characteristics	Living with both parents	Living with neither biological parent				Living with mother only		Living with father only		Missing information on father/ mother	Sudan	Living with neither biological parent [1]	One or both parents dead [2]	Number of children age 0-17 years
		Only father alive	Only mother alive	Both alive	Both dead	Father alive	Father dead	Mother alive	Mother dead					
Area														
Urban	81.1	0.4	0.5	2.6	0.3	9.0	3.9	1.0	0.8	0.4	100.0	3.8	5.9	14,169
Rural	82.1	0.5	0.2	2.3	0.2	9.5	3.2	0.7	0.9	0.3	100.0	3.3	5.0	35,885
Age														
0-4	85.7	0.2	0.1	1.1	0.1	10.8	1.4	0.4	0.2	0.1	100.0	1.4	1.9	15,050
5-9	82.9	0.4	0.3	2.3	0.1	9.6	2.5	0.8	0.9	0.3	100.0	3.1	4.2	16,071
10-14	79.6	0.7	0.5	3.0	0.3	8.2	5.0	1.0	1.3	0.3	100.0	4.5	7.8	13,447
15-17	73.4	1.0	0.8	4.9	0.9	7.7	7.2	1.2	1.6	1.3	100.0	7.6	11.5	5,486
Wealth index quintile														
Poorest	82.9	0.7	0.4	3.1	0.3	6.9	4.0	0.6	0.9	0.3	100.0	4.5	6.2	11,305
Second	83.5	0.5	0.3	2.4	0.3	7.2	3.8	0.8	0.8	0.4	100.0	3.6	5.8	10,653
Middle	82.1	0.4	0.3	2.3	0.3	9.9	2.8	0.9	0.8	0.4	100.0	3.2	4.5	10,344
Fourth	79.5	0.4	0.3	2.1	0.2	12.4	3.1	0.9	1.0	0.3	100.0	2.9	4.9	9,584
Richest	80.6	0.2	0.3	2.0	0.2	11.6	3.0	0.9	1.0	0.3	100.0	2.6	4.7	8,168

[1] MICS indicator 8.13 - Children's living arrangements

[2] MICS indicator 8.14 - Prevalence of children with one or both parents dead

The Sudan MICS, 2014 included a simple measure of one particular aspect of migration related to what is termed *children left behind,* i.e. for whom one or both parents have moved abroad. While the amount of literature is growing, the long-term effects of the benefits of remittances versus the potential adverse psycho-social effects are not yet conclusive, as there is somewhat conflicting evidence available detailing the effects on children.

Besides presenting simple prevalence rates, the results presented in Table CP.15 of this survey is supposed to help fill the data gap on the topic of migration. As expected, only 1.8 percent of children aged 0-17 years have one or both parents living abroad. There are notable differences between groups of children by state with Gezira state (6.4 percent) having the highest percentage of children who have at least one parent living abroad compared to South Darfur, where no children have their parents living abroad; and among children in the richest households (4.3 percent) as compared with the poorest households (0.1 percent). Generally, the data on parents living abroad is very small to allow for detailed analysis such as shown in table CP15.

Table CP.15: Children with Parents Living Abroad							
Percent distribution of children age 0-17 years by residence of parents in another country Sudan MICS, 2014							
Background characteristics	Percent distribution of children age 0-17 years					Percentage of children age 0-17 years with at least one parent living abroad [1]	Number of children age 0-17 years
	With at least one parent living abroad: Only mother abroad	With at least one parent living abroad: Only father abroad	With at least one parent living abroad: Both mother and father abroad	With neither parent living abroad	Sudan		
Sudan	0.0	1.7	0.0	98.2	100.0	1.8	50,054
Sex							
Male	0.0	1.7	0.0	98.3	100.0	1.7	25,074
Female	0.0	1.8	0.0	98.2	100.0	1.8	24,979
Missing	*	*	*	*	100.0	*	1
State							
Northern	0.0	2.9	0.0	97.1	100.0	2.9	898
River Nile	0.0	1.7	0.0	98.3	100.0	1.7	1,495
Red Sea	0.0	0.1	0.0	99.9	100.0	0.1	1,024
Kassala	0.0	1.7	0.0	98.2	100.0	1.8	2,060
Gadarif	0.1	0.6	0.0	99.3	100.0	0.7	2,608
Khartoum	0.0	1.9	0.0	98.1	100.0	1.9	6,169
Gezira	0.0	6.4	0.0	93.6	100.0	6.4	7,966
White Nile	0.1	1.7	0.0	98.2	100.0	1.8	2,479
Sinnar	0.1	1.4	0.0	98.5	100.0	1.5	1,819
Blue Nile	0.0	0.5	0.0	99.5	100.0	0.5	2,248
North Kordofan	0.0	0.4	0.0	99.6	100.0	0.4	3,226
South Kordofan	0.0	0.1	0.0	99.9	100.0	0.1	1,687
West Kordofan	0.0	0.2	0.0	99.8	100.0	0.2	3,168
North Darfur	0.0	0.1	0.0	99.9	100.0	0.1	4,325
West Darfur	0.0	1.3	0.0	98.5	100.0	1.5	1,770
South Darfur	0.0	0.0	0.0	100.0	100.0	0.0	4,345
Central Darfur	0.1	0.5	0.0	99.3	100.0	0.7	969
East Darfur	0.1	0.3	0.1	99.5	100.0	0.5	1,798
Area							
Urban	0.1	1.2	0.0	98.7	100.0	1.3	14,169

Table CP.15: Children with Parents Living Abroad

Percent distribution of children age 0-17 years by residence of parents in another country
Sudan MICS, 2014

Background characteristics	Percent distribution of children age 0-17 years					Percentage of children age 0-17 years with at least one parent living abroad [1]	Number of children age 0-17 years
	With at least one parent living abroad: Only mother abroad	With at least one parent living abroad: Only father abroad	With at least one parent living abroad: Both mother and father abroad	With neither parent living abroad	Sudan		
Rural	0.0	2.0	0.0	98.0	100.0	2.0	35,885
Age							
0-4	0.0	2.5	0.0	97.4	100.0	2.6	15,050
5-9	0.0	2.0	0.0	98.0	100.0	2.0	16,071
10-14	0.0	1.2	0.0	98.7	100.0	1.3	13,447
15-17	0.1	0.0	0.0	99.9	100.0	0.1	5,486
Wealth index quintile							
Poorest	0.0	0.1	0.0	99.9	100.0	0.1	11,305
Second	0.0	0.3	0.0	99.6	100.0	0.4	10,653
Middle	0.0	1.7	0.0	98.3	100.0	1.7	10,344
Fourth	0.0	3.3	0.0	96.7	100.0	3.3	9,584
Richest	0.1	4.2	0.0	95.7	100.0	4.3	8,168

[1] MICS indicator 8.15 - Children with at least one parent living abroad
[*] Based on less than 25 unweighted cases and has been suppressed

12. HIV/AIDS and Sexual Behaviour

12.1 Knowledge about HIV Transmission and Misconceptions about HIV

One of the most important prerequisites for reducing the rate of HIV infection is accurate knowledge of how HIV is transmitted and strategies for preventing transmission. Correct information is the first step towards raising awareness and giving adolescents and young people the tools to protect themselves from infection.

Misconceptions about HIV are common and can confuse adolescents and young people and hinder prevention efforts. The UN General Assembly Special Session on HIV/AIDS (UNGASS) called on governments to improve the knowledge and skills of young people to protect themselves from HIV.

The indicators to measure this goal as well as the MDG of reducing HIV infections by half include improving the level of knowledge of HIV and its prevention, and changing behaviours to prevent further spread of the disease. HIV module(s) were administered to women and men 15-49 years of age. Please note that the questions in this module often refer to "the AIDS virus". This terminology is used strictly as a method of data collection to aid respondents, which is preferred over the correct terminology of "HIV" that is used here in reporting the results, where appropriate.

One indicator, which is both an MDG and the Global AIDS Response Progress Reporting (GARPR; formerly UNGASS), is the percentage of young people who have comprehensive and correct knowledge of HIV prevention and transmission. This is defined as:

1. Knowing that consistent use of a condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting HIV
2. Knowing that a healthy-looking person can have HIV, and
3. Rejecting the two most common local misconceptions about transmission/prevention of HIV

Table HA.1: Knowledge about HIV Transmission, Misconceptions about HIV, and Comprehensive Knowledge about HIV Transmission Among Women

- Percentage of women age 15-49 years who know the main ways of preventing HIV transmission
- Percentage who know that a healthy looking person can be HIV-positive
- Percentage who reject common misconceptions, and
- Percentage who have comprehensive knowledge about HIV transmission

Sudan MICS, 2014

Background characteristics	Percentage who have heard of AIDS	Percentage who know transmission can be prevented by:			Percent-age who know that a healthy looking person can be HIV-positive	Percentage who know that HIV cannot be transmitted by:			Percent-age who reject the two most common misconceptions and know that a healthy looking person can be HIV-positive	Percentage with comprehensive knowledge [1]	Number of women age 15-49
		Having only one faithful uninfected sex partner	Using a condom every time	Percentage of women who know both ways		Mosquito bites	Super-natural means	Sharing food with someone with HIV			
Sudan	74.8	59.7	26.7	24.7	34.6	46.9	56.4	49.5	19.2	8.9	18,302
State											
Northern	88.9	75.5	42.6	39.6	52.7	60.9	69.3	65.9	32.2	17.0	457
River Nile	85.3	72.8	40.9	38.3	55.8	64.9	72.8	57.3	33.1	17.9	701
Red Sea	69.8	51.9	20.9	18.2	34.6	47.6	48.3	40.6	16.9	6.1	493
Kassala	56.7	36.0	16.7	15.0	19.8	32.8	36.6	36.5	14.1	6.5	747
Gadarif	73.0	59.2	20.0	18.7	32.0	37.8	50.6	43.6	14.9	5.8	879
Khartoum	94.8	84.2	32.5	30.7	67.4	75.3	79.8	67.2	40.3	15.3	2,821
Gezira	71.5	54.4	27.5	26.1	33.4	50.6	55.0	51.4	21.0	11.9	3,176
White Nile	80.1	64.3	25.8	23.9	28.2	41.5	59.2	59.0	12.7	4.6	889
Sinnar	68.3	62.7	32.4	31.3	34.1	40.8	53.9	48.9	18.6	8.5	698
Blue Nile	66.9	54.9	23.0	21.7	22.3	39.7	50.2	41.6	13.0	8.5	729
North Kordofan	69.8	44.8	17.4	15.3	19.2	32.6	50.6	41.9	7.4	2.9	1,173
South Kordofan	73.1	55.0	28.1	25.1	31.3	38.3	48.6	52.2	16.1	9.5	525
West Kordofan	67.3	46.4	31.4	28.1	16.8	33.9	40.7	36.7	6.7	3.6	965
North Darfur	63.1	50.5	18.3	17.4	16.8	29.3	41.9	31.7	6.3	2.8	1,317
West Darfur	78.4	60.5	37.6	33.0	37.0	44.6	58.1	49.3	19.8	14.0	555
South Darfur	75.1	63.5	26.1	22.8	27.6	44.1	59.4	52.7	14.3	5.7	1,363
Central Darfur	48.9	29.8	12.2	10.8	15.6	16.4	27.2	22.7	6.5	2.1	272
East Darfur	71.5	54.9	17.7	15.5	17.0	32.0	49.5	39.9	4.9	2.5	542
Area											

Urban	90.5	76.9	34.6	32.3	52.0	64.9	73.7	65.9	30.4	13.1	6,029
Rural	67.1	51.2	22.8	21.0	26.1	38.1	47.9	41.5	13.6	6.9	12,273
Age											
15-24 [1]	74.2	58.2	25.0	23.0	34.1	49.0	57.6	50.4	19.9	8.5	6,871
15-19	72.1	55.3	22.8	20.8	33.9	49.1	56.8	48.9	19.5	7.7	3,709
20-24	76.6	61.6	27.5	25.5	34.4	48.9	58.6	52.2	20.3	9.5	3,162
25-29	76.4	62.2	29.3	27.2	34.8	45.3	56.0	49.6	18.6	9.4	3,359
30-39	75.0	59.9	26.9	24.6	33.5	44.3	54.9	49.1	17.4	8.3	5,099
40-49	74.4	59.9	27.4	25.9	37.3	48.2	56.6	48.2	21.2	10.5	2,972
Marital status											
Ever married	73.3	58.1	25.6	23.7	32.0	42.8	53.0	46.6	16.7	8.1	12,754
Never married	78.5	63.3	29.2	27.0	40.7	56.4	64.3	56.2	24.9	10.8	5,547
Missing	*	*	*	*	*	*	*	*	*	*	1
Education											
None	52.2	35.8	12.6	11.0	15.0	22.7	30.5	26.5	5.3	2.1	5,843
Primary	74.8	57.8	24.6	22.5	29.0	41.1	53.9	46.8	13.0	5.5	6,128
Secondary	94.7	80.8	38.3	36.0	52.0	72.1	80.1	71.7	33.3	15.1	4,361
Higher	98.4	89.7	49.5	47.2	72.0	81.0	88.3	77.5	48.3	26.4	1,965
Missing/DK	*	*	*	*	*	*	*	*	*	*	5
Wealth index quintile											
Poorest	56.3	39.9	15.4	13.1	15.0	23.8	34.8	28.0	4.8	2.0	3,246
Second	62.3	44.5	17.9	16.1	17.9	29.6	40.7	34.3	7.3	3.0	3,380
Middle	69.4	54.5	21.1	19.5	27.3	39.2	49.8	44.4	12.6	4.8	3,646
Fourth	83.4	67.3	30.5	28.6	40.7	54.7	65.0	60.2	23.5	11.2	3,759
Richest	96.0	84.4	43.7	41.3	63.6	77.8	83.2	72.9	41.2	20.4	4,271

In the Sudan MICS 2014, all women who have heard of AIDS were asked questions on all three components and the results are detailed in Tables HA.1 above.

In Sudan, about three-quarters (74.8 percent) of the women age 15-49 years have heard of HIV and AIDS. However, the percentage of those who know of both main ways of preventing HIV transmission – having only one faithful uninfected partner and using a condom every time – is only about one in ten (24.7percent). About sixty (59.7 percent) of the women know of having one faithful uninfected sex partner and 26.7 percent know of using a condom every time is one of the main ways to prevent HIV transmission.

Table HA.1 also presents the percentage of women who can correctly identify misconceptions concerning HIV. The indicator is based on the two most common and relevant misconceptions in the survey, that HIV can be transmitted by sharing food with someone with HIV (49.5 percent) and by mosquito bites (46.9 percent). The table also provides information on whether women know that HIV cannot be transmitted by supernatural means (56.4 percent). Overall, 19.2 percent of the respondents reject the two most common misconceptions and know that a healthy-looking person can be HIV-positive.

People who have comprehensive knowledge about HIV prevention include those who know of the two main ways of HIV prevention (having only one faithful uninfected partner and using a condom every time). They also know that a healthy looking person can be HIV-positive, and reject the two most common misconceptions. Comprehensive knowledge of HIV prevention methods and transmission is fairly low, although there are differences by area; 6.9 percent and 13.1 percent in rural and urban areas, respectively.

Comprehensive knowledge about HIV transmission also greatly varies with women's education (26.4 percent), in women with a higher level of education compared to women with no education (2.1 percent) and with the wealth index level of the household; (20.4 percent) in the richest quintile compared with (2.0 percent) in the poorest quintile of the households.

Figure HA.1: Women aged 15-49 years who have comprehensive knowledge of HIV transmission, Sudan MICS, 2014

237
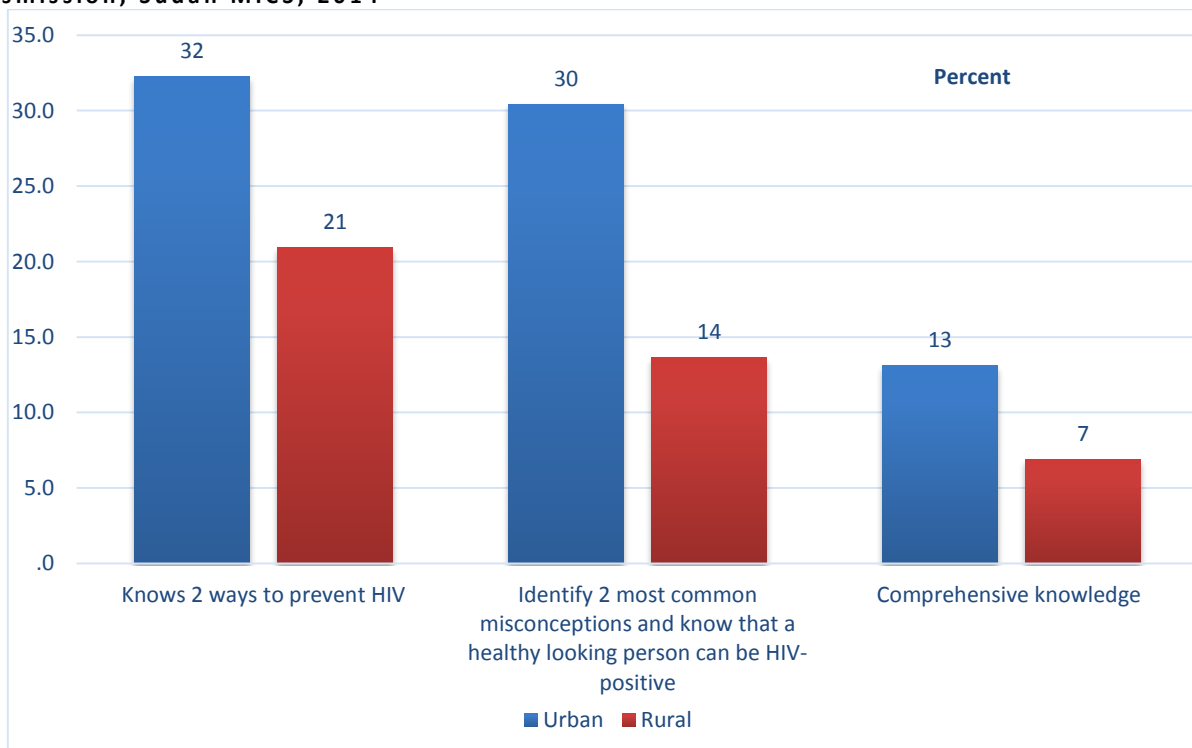
Knowledge of mother-to-child transmission of HIV is also an important first step for women to seek HIV testing when they are pregnant in order to avoid infection in the baby. Women should know that HIV can be transmitted during pregnancy, during delivery, and through breastfeeding. The level of knowledge among women ages 15-49 years concerning mother-to-child transmission is presented in Table HA.2.

Overall, 57.0 percent of women know that HIV can be transmitted from mother to child. The percentage of women who know all three ways of mother-to-child transmission is 28.4 percent, while 17.8 percent of women did not know of any specific way.

The percentage of women who know all three ways that mother-to-child transmission can take place ranges from 17.8 percent in the Kassala state to 38.7 percent in River Nile state. Increasing levels of this indicator are associated with urban residence, never-married status and higher levels of women's education (secondary and above) and household wealth.

Table HA.2: Knowledge of Mother-to-Child HIV Transmission Among Women

Percentage of women age 15-49 years who correctly identify means of HIV transmission from mother to child,
Sudan MICS, 2014

Background characteristic	Percentage of women age 15-49 who have heard of AIDS and:					Do not know any of the specific means of HIV transmission from mother to child	Number of women age 15-49
	Know HIV can be transmitted from mother to child:						
	During pregnancy	During delivery	By breast-feeding	By at least one of the three means	By all three means [1]		
Sudan	46.7	47.0	36.9	57.0	28.4	17.8	18,302
State							
Northern	63.7	51.1	52.3	73.6	33.8	15.2	457
River Nile	55.9	58.7	46.0	67.3	38.7	18.0	701
Red Sea	41.4	43.5	27.7	51.9	22.2	17.9	493
Kassala	29.0	25.8	23.8	36.3	17.8	20.3	747
Gadarif	41.9	43.2	35.7	49.6	30.2	23.4	879
Khartoum	69.8	70.3	42.6	82.3	35.3	12.5	2,821
Gezira	46.0	46.6	28.4	55.2	23.2	16.3	3,176
White Nile	54.4	49.4	47.2	65.4	34.0	14.7	889
Sinnar	41.1	40.6	33.7	53.9	22.5	14.4	698
Blue Nile	38.5	41.9	32.7	50.7	22.6	16.2	729
North Kordofan	46.0	45.6	42.1	51.5	35.7	18.3	1,173
South Kordofan	48.0	47.2	48.1	56.5	37.8	16.5	525
West Kordofan	31.6	38.1	35.8	46.0	25.2	21.4	965
North Darfur	33.4	31.4	32.6	41.3	22.4	21.8	1,317
West Darfur	40.5	44.3	40.9	56.6	29.0	21.9	555
South Darfur	38.9	41.9	37.9	50.9	26.7	24.2	1,363
Central Darfur	30.1	29.1	27.6	33.4	23.6	15.5	272
East Darfur	40.2	38.6	42.3	51.1	28.9	20.4	542
Area							
Urban	62.8	62.1	45.2	75.5	35.7	15.1	6,029
Rural	38.8	39.5	32.8	48.0	24.8	19.2	12,273
Age							
15-24 [1]	45.7	45.7	38.2	56.9	28.0	17.2	6,871
15-19	45.3	44.3	38.5	56.5	27.5	15.6	3,709
20-24	46.3	47.4	37.7	57.4	28.6	19.1	3,162
25-29	46.0	46.6	36.5	56.3	27.8	20.1	3,359
30-39	46.5	47.4	35.8	56.9	28.2	18.1	5,099
40-49	49.9	49.4	36.5	58.2	30.2	16.1	2,972
Marital status							
Ever married	44.7	45.0	35.4	54.3	27.6	19.0	12,754
Never married	51.3	51.5	40.4	63.3	30.2	15.2	5,547
Missing	*	*	*	*	*	*	1
Education							
None	25.1	25.6	23.7	31.4	18.0	20.8	5,843
Primary	45.9	46.0	40.0	56.2	30.9	18.5	6,128
Secondary	65.1	64.2	47.3	78.5	36.5	16.2	4,361
Higher	72.5	75.0	43.3	88.2	33.5	10.2	1,965
Missing/DK	*	*	*	*	*	*	5

Table HA.2:	Knowledge of Mother-to-Child HIV Transmission Among Women						
Percentage of women age 15-49 years who correctly identify means of HIV transmission from mother to child, Sudan MICS, 2014							
Background characteristic	Percentage of women age 15-49 who have heard of AIDS and:					Do not know any of the specific means of HIV transmission from mother to child	Number of women age 15-49
	Know HIV can be transmitted from mother to child:						
	During pregnancy	During delivery	By breast-feeding	By at least one of the three means	By all three means [1]		
Wealth index quintile							
Poorest	26.2	28.0	28.6	34.8	20.0	21.5	3,246
Second	33.1	33.4	31.9	41.5	24.0	20.9	3,380
Middle	42.1	42.7	36.9	50.9	29.3	18.5	3,646
Fourth	55.1	53.9	41.0	65.8	32.5	17.6	3,759
Richest	69.5	69.6	43.6	83.8	33.7	12.2	4,271

[1] MICS indicator 9.2 - Knowledge of mother-to-child transmission of HIV

 [*] Based on less than 25 unweighted cases and has been suppressed

12.2 Accepting Attitudes toward People Living with HIV

The indicators on attitudes toward people living with HIV measure stigma and discrimination in the community. Stigma and discrimination are considered low if respondents report an accepting attitude on the following four questions:

1. Would care for a family member with AIDS in own home
2. Would buy fresh vegetables from a vendor who is HIV-positive
3. Thinks that a female teacher who is HIV-positive should be allowed to teach in school,
4. Would not want to keep it a secret if a family member is HIV-positive.

Table HA.3:	Accepting Attitudes Toward People Living with HIV Among Women						
Percentage of women age 15-49 years who have heard of AIDS who express an accepting attitude towards people living with HIV Sudan MICS, 2014							
Basic Characteristics	Percent of women who:						Number of women who have heard of AIDS
	Are willing to care for a family member with AIDS in own home	Would buy fresh vegetables from a shopkeeper or vendor who is HIV-positive	Believe that a female teacher who is HIV-positive and is not sick should be allowed to continue teaching	Would not want to keep secret that a family member is HIV-positive	Agree with at least one accepting attitude	Express accepting attitudes on all four indicators [1]	
Sudan	85.9	29.2	44.1	40.2	93.9	7.9	13,698
State							
Northern	95.7	24.3	46.7	43.9	97.9	9.4	406
River Nile	94.2	36.2	53.0	37.3	97.3	13.8	598
Red Sea	83.6	38.4	46.9	47.6	87.9	16.9	344
Kassala	74.6	30.4	40.7	26.5	77.1	8.3	423
Gadarif	79.1	27.1	42.1	41.1	96.0	6.4	642
Khartoum	88.9	33.3	53.0	31.3	95.5	7.1	2,674
Gezira	94.3	31.0	48.8	37.6	97.0	7.7	2,271
White Nile	96.7	30.4	43.6	45.7	99.2	7.7	712
Sinnar	96.0	33.3	45.3	32.8	99.2	8.9	477

Table HA.3: Accepting Attitudes Toward People Living with HIV Among Women

Percentage of women age 15-49 years who have heard of AIDS who express an accepting attitude towards people living with HIV
Sudan MICS, 2014

Basic Characteristics	Percent of women who:						Number of women who have heard of AIDS
	Are willing to care for a family member with AIDS in own home	Would buy fresh vegetables from a shopkeeper or vendor who is HIV-positive	Believe that a female teacher who is HIV-positive and is not sick should be allowed to continue teaching	Would not want to keep secret that a family member is HIV-positive	Agree with at least one accepting attitude	Express accepting attitudes on all four indicators [1]	
Blue Nile	89.2	23.9	40.0	39.1	96.1	5.3	488
North Kordofan	70.4	20.9	33.2	47.3	87.2	5.6	819
South Kordofan	82.2	25.1	39.1	50.4	93.1	8.1	384
West Kordofan	62.4	21.0	25.6	59.2	87.4	5.4	649
North Darfur	78.9	20.6	34.8	36.0	86.0	6.0	831
West Darfur	80.7	40.2	51.0	23.4	92.5	2.5	435
South Darfur	85.0	26.1	39.3	57.7	95.9	11.9	1,024
Central Darfur	68.6	13.4	20.9	52.8	89.5	2.3	133
East Darfur	88.2	31.9	40.1	46.9	97.1	10.1	388
Area							
Urban	89.5	34.7	51.9	38.2	95.9	9.4	5,457
Rural	83.6	25.5	39.0	41.6	92.6	6.9	8,240
Age							
15-24 [1]	86.6	30.2	47.0	40.4	94.2	8.7	5,095
15-19	86.6	29.8	46.4	40.8	94.4	8.9	2,674
20-24	86.7	30.7	47.6	40.1	94.0	8.5	2,421
25-29	83.4	29.5	42.6	41.9	93.5	8.9	2,567
30-39	85.6	27.5	41.7	40.3	93.6	6.6	3,825
40-49	87.8	29.0	43.5	37.6	94.2	6.9	2,211
Marital status							
Ever married	84.5	27.6	40.7	40.8	93.1	7.3	9,344
Never married	89.0	32.5	51.4	38.9	95.6	9.0	4,354
Education							
None	74.9	18.3	26.6	40.7	87.6	4.1	3,050
Primary	84.0	25.3	38.0	41.4	92.7	6.7	4,582
Secondary	91.8	35.0	54.9	41.1	97.5	10.5	4,128
Higher	95.3	42.8	63.4	34.9	99.1	11.1	1,933
Missing/DK	*	*	*	*	*	*	4
Wealth index quintile							
Poorest	72.6	17.6	26.8	45.7	86.9	5.1	1,828
Second	76.0	22.1	30.8	43.1	88.6	5.1	2,107
Middle	84.5	26.8	39.1	43.8	94.4	7.6	2,529
Fourth	90.5	31.7	49.4	38.9	95.9	8.9	3,136
Richest	94.3	37.5	57.8	35.2	97.9	9.9	4,099

[1] MICS indicator 9.3 - Accepting attitudes towards people living with HIV
[*] Based on less than 25 unweighted cases and has been suppressed

Table HA.3 presents the attitudes of women towards people living with HIV.

Interestingly, 93.9 percent of women who have heard of AIDS agree with at least one accepting statement in Sudan. The most common accepting attitude is willing to care for a family member with AIDS in their own home (85.9 percent). However, only 29.2 percent of the women would buy fresh vegetables from a shopkeeper or vendor who is HIV-positive. Higher educated individuals (99.1 percent) and those from richest households (97.9 percent) have more accepting attitudes (i.e., agree with at least one accepting attitude) than the ones with no education (87.6 percent) and poorest households (86.9 percent).

Figure HA.2: Accepting attitudes toward people living with HIV/AIDS in Sudan - MICS, 2014
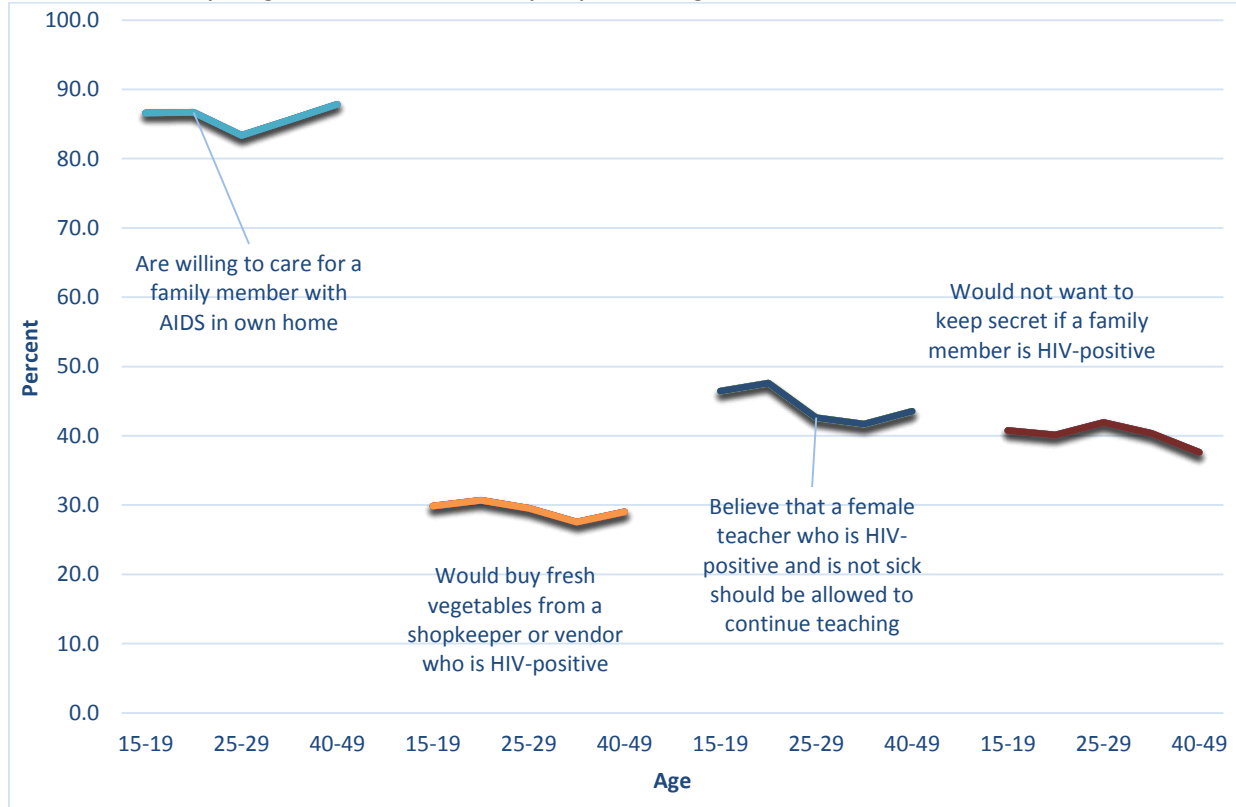
12.3 Knowledge of a Place for HIV Testing, Counselling and Testing during Antenatal Care

Another important indicator is the knowledge of where to be tested for HIV and use of such services.

In order to protect themselves and to prevent infecting others, it is important for individuals to know their HIV status. Knowledge of one's own status is also a critical factor in the decision to seek treatment. Questions related to knowledge of a facility for HIV testing and whether a person has ever been tested are presented in Tables HA.4.

Table HA.4: Knowledge of a Place for HIV Testing Among Women

- Percentage of women age 15-49 years who know where to get an HIV test
- Percentage who have ever been tested
- Percentage who have ever been tested and know the result of the most recent test
- Percentage who have been tested in the last 12 months, and
- Percentage who have been tested in the last 12 months and know the result
  Sudan MICS, 2014

Background characteristics	Percent of women who:					Number of women age 15-49
	Know a place to get tested [1]	Have ever been tested	Have ever been tested and know the result of the most recent test	Have been tested in the last 12 months	Have been tested in the last 12 months and know the result [2, 3]	
Sudan	17.0	5.2	4.3	1.9	1.6	18,302
State						
Northern	19.2	4.1	3.2	1.8	1.3	457
River Nile	18.1	6.7	6.0	2.7	2.3	701
Red Sea	24.9	6.7	5.4	2.5	2.3	493
Kassala	9.0	3.6	2.6	1.4	1.2	747
Gadarif	14.2	3.7	3.0	1.1	0.8	879
Khartoum	35.3	10.5	9.2	2.6	2.3	2,821
Gezira	7.1	1.2	1.0	0.7	0.5	3,176
White Nile	12.6	4.7	4.0	1.7	1.5	889
Sinnar	21.8	6.2	5.0	2.0	1.9	698
Blue Nile	26.0	5.8	4.1	2.3	1.6	729
North Kordofan	14.9	5.3	4.4	1.9	1.8	1,173
South Kordofan	21.1	6.8	4.6	3.2	2.2	525
West Kordofan	9.3	2.8	1.8	0.7	0.4	965
North Darfur	9.6	3.3	2.5	1.7	1.3	1,317
West Darfur	25.7	14.2	11.9	8.2	7.2	555
South Darfur	13.3	4.6	3.6	1.6	1.3	1,363
Central Darfur	13.5	5.1	4.0	2.6	2.4	272
East Darfur	9.9	2.4	2.2	0.7	0.7	542
Area						
Urban	31.2	10.4	8.8	3.6	3.2	6,029
Rural	10.1	2.7	2.1	1.1	0.8	12,273
Age						
15-24 [1]	15.2	3.3	2.7	1.4	1.2	6,871
15-19	13.0	2.1	1.5	0.9	0.6	3,709
20-24	17.8	4.8	4.1	2.0	1.8	3,162
25-29	17.4	7.3	5.9	3.1	2.6	3,359
30-39	18.9	6.7	5.6	2.2	1.9	5,099
40-49	17.7	4.8	3.8	1.1	0.9	2,972
Marital status						
Ever married	16.4	6.1	5.1	2.1	1.8	12,754
Never married	18.5	3.3	2.5	1.4	1.2	5,547
Missing	*	*	*	*	*	1
Education						
None	6.0	2.1	1.6	1.0	0.8	5,843
Primary	13.8	4.6	3.8	1.8	1.6	6,128
Secondary	25.3	7.7	6.5	2.5	2.1	4,361

Table HA.4:	Knowledge of a Place for HIV Testing Among Women					
❖ Percentage of women age 15-49 years who know where to get an HIV test
❖ Percentage who have ever been tested
❖ Percentage who have ever been tested and know the result of the most recent test
❖ Percentage who have been tested in the last 12 months, and
❖ Percentage who have been tested in the last 12 months and know the result
Sudan MICS, 2014						
Background characteristics	**Percent of women who:**					**Number of women age 15-49**
	Know a place to get tested [1]	**Have ever been tested**	**Have ever been tested and know the result of the most recent test**	**Have been tested in the last 12 months**	**Have been tested in the last 12 months and know the result [2, 3]**	
Higher	41.6	11.1	9.0	3.5	2.9	1,965
Missing/DK	*	*	*	*	*	5
Wealth index quintile						
Poorest	5.4	1.4	.9	0.6	0.3	3,246
Second	9.2	2.9	2.4	1.4	1.3	3,380
Middle	14.5	5.4	4.4	2.3	1.9	3,646
Fourth	20.6	6.5	5.5	2.6	2.2	3,759
Richest	31.2	8.7	7.2	2.4	2.1	4,271

[1] MICS indicator 9.4 - Women who know where to be tested for HIV
[2] MICS indicator 9.5 - Women who have been tested for HIV and know the results
[3] MICS indicator 9.6 - Sexually active young women who have been tested for HIV and know the results [*] Based on less than 25 unweighted cases and has been suppressed

Seventeen percent of women know a place where to be tested, while 5.2 percent have actually been tested. Fewer still, 4.3 percent of the women know the result of their most recent test. A very small proportion has been tested within the last 12 months prior to the survey (1.9 percent), while a somewhat smaller proportion has been tested within the last 12 months and know the result (1.6 percent).

Knowledge of a place to be tested is higher among women from wealthier households, fourth quintile (20.6 percent) and richest quintile (31.2 percent). Women with a secondary education are at 25.3 percent levels, while those with a higher education come in at 41.6 percent. Among women residing in urban areas, 31.2 percent have knowledge of places to be tested whereas 10.1 percent of those living in rural areas have the same knowledge.

The figures at the state level are as follows:

- ❖ Khartoum - 35.3 %
- ❖ Blue Nile - 26.0 %
- ❖ West Darfur - 25.7 %
- ❖ Red Sea 24.9 %
- ❖ Sinnar 21.8 %, and
- ❖ South Kordofan 21.1 %

Table HA.5 presents the percentage distribution of women who had given birth within the two years preceding the survey and who received counselling and HIV testing during antenatal care.

About sixty (59.9 percent) received antenatal care from a health professional but only 4.2 percent received HIV counselling during antenatal care, while 3.6 percent were offered an HIV test and were tested for HIV during antenatal care and received the results.

The percentage of women who were offered an HIV test and were tested for HIV during antenatal care and received the results is much higher in the West Darfur state (12.8 percent) than in the next highest state (7.6 percent in Khartoum). Higher levels of this indicator are associated with urban residence (9.2 percent) and higher levels of women's education (9.0 percent).

Table HA.5:	HIV Counselling and Testing During Antenatal Care					
❖ Percentage of women ages 15-49 with a live birth in the last 2 years who received antenatal care from a health professional during the last pregnancy ❖ Percentage who received HIV counselling ❖ Percentage who were offered and tested for HIV ❖ Percentage who were offered, tested and received the results of the HIV test, and ❖ Percentage who received counselling and were offered, accepted and received the results of the HIV test Sudan MICS, 2014						
Background Characteristics	Percentage of women who:					Number of women age 15-49 with a live birth in the last 2 years
	Received antenatal care from a health care professional for last pregnancy	Received HIV counselling during antenatal care [1]	Were offered an HIV test and were tested for HIV during antenatal care	Were offered an HIV test and were tested for HIV during antenatal care, and received the results [2]	Received HIV counselling, were offered an HIV test, accepted and received the results	
Sudan	59.9	4.2	4.1	3.6	2.6	5,622
State						
Northern	94.7	0.4	0.7	0.7	0.4	92
River Nile	90.0	5.2	3.5	3.5	3.2	151
Red Sea	67.3	7.5	6.6	5.9	4.3	92
Kassala	65.6	4.2	4.0	4.0	3.6	199
Gadarif	63.9	2.6	2.5	2.5	1.9	307
Khartoum	90.8	8.4	9.5	7.6	4.7	684
Gezira	78.3	0.3	0.9	0.9	0.3	852
White Nile	71.3	2.1	2.8	2.8	1.6	273
Sinnar	64.4	1.5	1.0	0.8	0.6	226
Blue Nile	48.4	3.6	4.1	3.3	2.8	287
North Kordofan	68.8	7.1	7.4	6.9	5.2	352
South Kordofan	47.4	9.8	7.1	5.5	3.6	194
West Kordofan	44.0	2.1	0.7	0.7	0.7	341
North Darfur	43.5	3.1	3.2	2.5	2.2	525
West Darfur	18.8	13.7	13.8	12.8	10.8	179
South Darfur	29.9	5.1	2.9	2.7	2.0	556
Central Darfur	17.9	4.0	4.9	4.1	2.8	99
East Darfur	26.1	0.8	0.7	0.7	0.5	211
Area						
Urban	75.7	10.4	10.5	9.2	6.5	1,488
Rural	54.2	2.0	1.8	1.5	1.1	4,134
Age						
15-24 [1]	61.7	2.8	3.4	3.2	2.1	1,515
15-19	62.0	1.3	1.9	1.7	0.7	385
20-24	61.6	3.3	3.9	3.8	2.6	1,130
25-29	61.2	4.6	4.7	3.9	2.8	1,608
30-39	59.0	4.9	4.1	3.7	2.9	2,108
40-49	51.9	4.7	3.7	2.7	1.8	390

Table HA.5: HIV Counselling and Testing During Antenatal Care						
❖ Percentage of women ages 15-49 with a live birth in the last 2 years who received antenatal care from a health professional during the last pregnancy ❖ Percentage who received HIV counselling ❖ Percentage who were offered and tested for HIV ❖ Percentage who were offered, tested and received the results of the HIV test, and ❖ Percentage who received counselling and were offered, accepted and received the results of the HIV test Sudan MICS, 2014						
Background Characteristics	Percentage of women who:					**Number of women age 15-49 with a live birth in the last 2 years**
	Received antenatal care from a health care professional for last pregnancy	**Received HIV counselling during antenatal care [1]**	**Were offered an HIV test and were tested for HIV during antenatal care**	**Were offered an HIV test and were tested for HIV during antenatal care, and received the results [2]**	**Received HIV counselling, were offered an HIV test, accepted and received the results**	
Marital status						
Ever married/union	59.9	4.2	4.1	3.6	2.6	5,620
Missing	100.0	0.0	0.0	0.0	0.0	1
Education						
None	39.9	1.8	1.7	1.4	1.1	2,247
Primary	64.5	3.9	3.3	3.0	2.5	2,022
Secondary	82.6	8.7	8.5	7.6	5.5	942
Higher	94.4	8.9	10.5	9.0	4.3	410
Wealth index quintile						
Poorest	31.0	1.3	0.9	0.6	0.6	1,251
Second	46.1	2.7	2.0	1.7	1.1	1,232
Middle	60.1	4.7	5.3	4.7	3.6	1,192
Fourth	82.7	6.3	6.2	5.4	4.4	1,096
Richest	92.6	7.3	7.3	6.6	3.8	851

[1] MICS indicator 9.7 - HIV counselling during antenatal care
[2] MICS indicator 9.8 - HIV testing during antenatal care
 [*] Based on less than 25 unweighted cases and has been suppressed

12.4 HIV Indicators for Young Women

In many countries, over half of new adult HIV infections are among young people age 15-24 years; thus, a change in behaviour among members of this age group is especially important to reduce new infections. The next tables present specific information on this age group.

Table HA.7 summarizes information on key HIV indicators for young women. Results with respect to young women and comprehensive knowledge (8.5 percent), knowledge of mother to child transmission (28.0 percent), and knowledge of a place to get tested (15.2 percent) are generally worse in this age group than the population in the age group 15-49 years, as a whole.

Accepting attitudes towards people living with HIV with respect to the same four indicators that were previously discussed are fairly similar in this age group (8.7 percent of young women compared to 7.9 percent in the general population of women 15-49 years). Overall, 2.7 percent of young women in this age group, who are sexually active, have been tested for HIV in the last 12 months and know the result.

Higher levels on this indicator are found among young women who are from the top two wealth quintile households (3.4 and 3.9 percent, respectively); secondary and higher levels of education (4.1 percent and 4.9

percent, respectively); women ever married (3.6 percent); and in West Darfur (10.9 percent), River Nile (6.7 percent), Sinnar (5.4 percent), Northern (5.0 percent), and South Kordofan (4.0 percent).

Table HA.7:	Key HIV and AIDS Indicators Among Young Women							
Percentage of women age 15-24 years by key HIV and AIDS indicators Sudan MICS, 2014								
Background Characteristics	Percentage of women age 15-24 years who:					Number of women age 15-24 years	Percentage who express accepting attitudes towards people living with HIV on all four indicators [a]	Number of women age 15-24 years who have heard of AIDS
	Have comprehensive knowledge [1]	Know all three means of HIV transmission from mother to child	Know a place to get tested for HIV	Have been tested for HIV in the last 12 months and know the result	Have been tested in the last 12 months and know the result			
Sudan	8.5	28.0	15.2	2.7	1.2	6,871	8.7	5,095
State								
Northern	14.7	32.1	18.3	5.0	3.5	146	10.1	129
River Nile	16.7	44.8	17.7	6.7	2.9	253	14.3	219
Red Sea	5.3	20.2	25.3	2.1	1.5	150	21.6	113
Kassala	6.9	17.8	3.8	1.1	0.6	272	10.6	157
Gadarif	5.7	31.0	12.3	1.9	0.8	327	6.2	243
Khartoum	15.6	31.2	27.7	3.0	0.4	1,053	7.5	986
Gezira	9.4	21.0	7.0	0.9	0.4	1,231	7.0	837
White Nile	3.6	33.4	10.8	1.6	1.3	312	10.3	247
Sinnar	9.6	21.9	24.4	5.4	2.4	257	11.2	180
Blue Nile	9.0	24.2	25.4	1.9	0.6	297	7.3	201
North Kordofan	2.2	36.8	14.5	3.2	2.1	471	6.1	314
South Kordofan	9.9	35.8	22.6	4.0	1.9	197	7.3	143
West Kordofan	4.4	25.7	6.7	0.6	0.0	341	5.3	219
North Darfur	3.5	26.2	8.7	2.4	1.2	479	8.7	314
West Darfur	15.9	30.0	26.9	10.9	6.3	214	3.6	179
South Darfur	5.5	27.3	11.6	2.4	0.5	567	14.0	416
Central Darfur	2.5	26.3	16.4	2.7	2.6	104	2.0	53
East Darfur	1.4	29.4	10.0	2.3	0.5	201	11.2	145
Area								
Urban	12.3	35.3	26.1	4.6	2.0	2,262	10.3	2,041
Rural	6.6	24.4	9.9	1.7	0.8	4,609	7.7	3,054
Age								
15-19	7.7	27.5	13.0	1.5	0.6	3,709	8.9	2,674
15-17	6.7	26.9	12.1	1.4	0.6	2,152	9.3	1,524
18-19	9.1	28.3	14.3	1.5	0.6	1,558	8.5	1,150
20-24	9.5	28.6	17.8	4.1	1.8	3,162	8.5	2,421
20-22	8.2	29.3	16.5	3.4	1.5	2,175	8.5	1,641
23-24	12.3	26.9	20.8	5.7	2.5	987	8.4	780
Marital status								
Ever married	7.1	25.0	12.7	3.6	1.6	2,636	7.4	1,829
Never married	9.4	29.8	16.8	2.1	0.9	4,236	9.5	3,266
Education								
None	1.6	13.0	4.0	0.9	0.3	1,321	5.8	559
Primary	4.7	26.5	11.0	1.8	0.8	2,662	5.6	1,799

Table HA.7:   Key HIV and AIDS Indicators Among Young Women

Percentage of women age 15-24 years by key HIV and AIDS indicators
Sudan MICS, 2014

Background Characteristics	Percentage of women age 15-24 years who:					Number of women age 15-24 years	Percentage who express accepting attitudes towards people living with HIV on all four indicators [a]	Number of women age 15-24 years who have heard of AIDS
	Have comprehensive knowledge [1]	Know all three means of HIV transmission from mother to child	Know a place to get tested for HIV	Have been tested for HIV in the last 12 months and know the result	Have been tested in the last 12 months and know the result			
Secondary	11.9	36.9	20.0	4.1	1.6	2,180	11.4	2,044
Higher	25.3	34.2	37.4	4.9	2.6	708	10.9	693
Wealth index quintile								
Poorest	2.2	19.6	5.5	0.9	0.3	1,165	7.6	625
Second	3.3	23.8	8.8	1.8	1.0	1,338	6.0	839
Middle	4.9	29.2	13.3	2.9	1.7	1,385	8.7	972
Fourth	10.9	31.1	21.5	3.4	1.4	1,483	9.4	1,224
Richest	19.1	34.0	24.0	3.9	1.4	1,500	10.1	1,434

[1] MICS indicator 9.1; MDG indicator 6.3 - Knowledge about HIV prevention among young women
[a] Refer to Table HA.3 for the four indicators

Table HA.9 presents information on the orphanhood status of children ages 10-14 years, and their school attendance. Less than one (0.3 percent) of children ages 10-14 years in Sudan are orphans. Of these, 66.1 percent are attending school as compared with an 80.2 percent attendance amongst non-orphan children of the same age group who are living with at least one parent.

This results in an orphans to non-orphans school attendance ratio of 0.82, which suggests that orphans are not disadvantaged in relation to non-orphans. The ratio is 0.71 for girls and 1.0 for boys. The ratio is 0.92 for children in urban areas compared to 0.78 for children in rural areas.

Table HA.9:   School Attendance of Orphans and Non-Orphans

School attendance of children age 10-14 years by orphanhood, Sudan MICS, 2014

Background Characteristics	Percentage of children whose mother and father have died (orphans)	Percentage of children whose parents are still alive and who are living with at least one parent (non-orphans)	Number of children age 10-14 years	Percentage of children whose mother and father have died (orphans) and are attending school	Sudan number of orphan children age 10-14 years	Percentage of children whose parents are still alive, who are living with at least one parent (non-orphans), and who are attending school	Sudan number of non-orphan children age 10-14 years	Orphans to non-orphans school attendance ratio [1]
Sudan	0.3	88.9	13,447	66.1	46	80.2	1 1,949	.82
Sex								
Male	0.3	89.6	6,540	82.9	18	82.5	5,862	1.00
Female	0.4	88.1	6,905	55.7	28	78.0	6,086	.71
Missing	*	*	1			*	1	
Area								
Urban	0.3	87.4	3,947	86.4	13	93.5	3,450	.92
Rural	0.3	89.5	9,499	58.1	33	74.8	8,499	.78

[1] MICS indicator 9.16; MDG indicator 6.4 - Ratio of school attendance of orphans to school attendance of non-orphans
See Table CP.14 for further overall results related to children's living arrangements and orphanhood [*] Based on less than 25 unweighted cases and has been suppressed

13. Household Food Security

Sudan continues to struggle with the macro-economic after-effects of the 2011 separation of South Sudan. Sudan's Gross Domestic Product (GDP) contracted significantly as a result of the loss of 75 percent of oil output and 60 percent of fiscal revenue[51], but returned to growth in 2013 and 2014 with a real growth rate of 2.1 and 3.6 percent, respectively. Concerns remain around declining oil production, spill-over effects of state crises, inflation, subsidiary reform and high external debt.[52]

Inflation slowed in recent months, from an annualized rate of approximately 40 percent in the first three quarters of 2014, to between 20 to 25 percent in the first few months of 2015. The expectation of a good agricultural season helped bring the rate of inflation down, helped by the stabilization of macro-economic conditions. The Sudanese Pound was devalued considerably during 2014 and 2015, but the informal market's exchange rate of 9 SDG continues to be far above the official exchange rate 6 SDG (to 1 USD).

Household food security in Sudan is strongly linked with the performance of the agricultural sector of the economy. Directly, the agricultural sector provides household-level food production for domestic consumption and wage labour opportunities on farms. According to Sudan Central Bureau of Statistics, the agricultural sector accounts for 27 percent of the active labour force. Indirectly, the level of agricultural production influences the price of food, which helps determine household economic access, as most households are net consumers of food, relying on markets as their main food source.

In the 2014/2015 agricultural season, the quantity and distribution of rainfall was generally good, resulting in a high level of national production of sorghum and other cash and food crops such as millet, groundnut and sesame. According to the 2014/2015 Annual Crop and Food Supply Assessment Mission (A-CFSAM) of the Food Security Technical Secretariat (FSTS), the national cereal production in 2014/15 was estimated at a record level of 7.84 million tons.

A total of 6.3 million tons of sorghum, 1.1 million tons of millet and 0.5 million tons of wheat was expected to be harvested. Production was about 176 percent above the previous season's poor harvest and 86 percent above the 5-years average (2008/09 to 2012/13)

Cash crop production in the 2014 summer season improved as a result of high food prices at the beginning of 2014, stimulating supply creation. Sesame recovered from last year's low production levels, mainly due to a significant increase in the extent of areas planted. The production was estimated to increase by 231 percent compared to the previous year. Groundnut production followed a similar pattern. As a result of the sharp increase in groundnut prices during early 2014, the area planted with groundnut had doubled compared to the previous year and the 5 years average.

Measuring food security
The 2014 MICS 2014 survey included a module on two important proxy measures of household food security, the household food consumption score (FCS) and the coping strategies that households use when they don't have enough food or money to buy food.

---

[51] Ibid.

[52] IMF 2014, April. *World Economic Outlook 2014*.

Household food consumption score (FCS)

The Household Food Consumption Score (FCS) is a food consumption indicator that is used as a proxy for household food security. Food consumption indicators are designed to reflect the quantity and quality of people's diet.

The FCS is a measure of dietary diversity, food frequency and the relative nutritional importance of the food consumed. A high food consumption score increases the possibility that a household achieves nutrient adequacy. Data are collected at a household level on the number of days in the past week the household members have consumed any of 8 food or food groups. The score is calculated by multiplying the number of days by the weight assigned to the food/food group, based upon its relative nutritional importance.

The food consumption score is used to classify households into three groups: poor, borderline or acceptable food consumption. The food consumption groups put together households (HH) that have similar dietary patterns and access to food.

The food consumption groups can be described as follows:

- **Poor food consumption:** Households that are consuming only cereals and vegetables every day and never or very seldom are consuming protein rich food such as meat and dairy.

- **Borderline food consumption:** Households that are consuming cereals and vegetables every day, accompanied by oil and pulses a few times a week.

- **Acceptable food consumption:** Households that are consuming cereals and vegetables every day, frequently accompanied by oil and pulses and occasionally meat and dairy.

The table below outlines the weights and their justification for each food/food group used to calculate the food consumption score.

Weights and justification for food consumption score

Food group	Weight	Justification
Main staples	2	Energy dense, lower protein content and poorer quality than legumes, micronutrients including sorghum, millet, wheat, bread and maize.
Pulses	3	Energy dense, high amounts of protein but of lower quality than meats, micronutrients, low fat including groundnuts, pulses, beans and lentils.
Vegetables	1	Low energy, low protein, no fat, or micronutrients. Dried vegetables constitute an important part of the diet in Sudan, especially okra, tomatoes and *kawal* (fermented leaves), but fresh vegetables are also consumed (tomatoes, cucumber, onions, chili, okra, salad leaves).
Fruit	1	Low energy, low protein, no fat, micronutrients.
Meat and fish	4	Highest quality protein, easily absorbable micronutrients, energy dense, fat. Even when consumed in small quantities, improvements to the quality of diet are large. Commonly eaten meats in Sudan include beef, chicken, fish, bush meat and dried meat (*sharmout*). Eggs are also included in this category.
Milk	4	Highest quality protein, micronutrients, vitamin A, energy. Dairy products eaten in Sudan include milk powder, fresh milk, yoghurt and cheese.
Sugar	0.5	Empty calories. Usually consumed in small quantities.
Oil	0.5	Energy dense but usually no other micronutrients.

This section will include the percentage of households in each consumption category by state, plus the median number of days per week each food is consumed, by state.

Coping strategies

The module on coping strategies was added to measure behavior of households when they have difficulties covering their food needs. Households were first asked if they had experienced difficulties accessing enough food or money to buy food in the previous week. Then they were asked which coping strategies they used to manage the shortage and the number of days in the past week and each coping strategy that was used.

Below are the six strategies included in the survey:
- How often does your household rely on less preferred and less expensive foods?
- How often does your household eat borrowed food or borrow money to purchase food?
- How often does your household rely on help from friends or relatives?
- How often does your household limit portion size at mealtimes?
- How often does your household restrict consumption for adults in order for small children to eat?
- How often does your household reduce number of meals eaten in a day?

In the analysis and reporting for MICS 2014, the findings are presented according to the percentage of households that reported using each of the strategies by state.

13.1 Household Food Consumption

Table HFS.1 shows the result of the analysis of the household food consumption data from MICS5.

Overall, over eighty percent (81.5 percent) of households have acceptable food consumption levels. In Sudan, 18.5% of households are in food consumption insecurity. The table shows that households in Central Darfur are the least to have acceptable consumption (50.4 percent), followed by North Darfur (59.4 percent), West Darfur (62.7 percent) in terms of dietary diversity and food frequency. Very good levels of acceptable food consumption are found in River Nile (97.6 percent), Northern (97.1 percent) and Red sea (91.5 percent).

Poor levels of food consumption are especially found in Central Darfur (15.8 percent), North Darfur (12.6 percent), and West Kordofan (12.6 percent) states.

Table HFS.1: Houshold Food Consumption Score				
Percentage of households with poor, borderline and acceptable food consumption, Sudan MICS, 2014				
Background Characteristics	Household food consumption score			
	Poor	Borderline	Acceptable	Total
Sudan	5.4%	13.1%	81.5%	100%
State				
Northern	0.5%	2.4%	97.1%	100%
River Nile	0.4%	1.9%	97.6%	100%
Red Sea	2.9%	5.5%	91.5%	100%
Kassala	5.4%	9.7%	84.9%	100%
Gadarif	3.1%	8.2%	88.7%	100%
Khartoum	1.1%	6.6%	92.2%	100%
Gezira	3.2%	9.4%	87.4%	100%
White Nile	3.3%	12.0%	84.7%	100%
Sinnar	4.0%	13.3%	82.7%	100%
Blue Nile	0.3%	6.9%	92.8%	100%
North Kordofan	5.5%	16.0%	78.5%	100%

Table HFS.1: Houshold Food Consumption Score

Percentage of households with poor, borderline and acceptable food consumption, Sudan MICS, 2014

Background Characteristics	Household food consumption score			
	Poor	Borderline	Acceptable	Total
South Kordofan	5.7%	19.9%	74.5%	100%
West Kordofan	12.6%	21.6%	65.8%	100%
North Darfur	15.4%	25.0%	59.6%	100%
West Darfur	9.2%	28.1%	62.7%	100%
South Darfur	8.8%	18.1%	73.2%	100%
Central Darfur	15.8%	33.8%	50.4%	100%
East Darfur	7.5%	15.0%	77.5%	100%
Area				
Urban	2.4%	8.5%	89.1%	100%
Rural	6.7%	15.0%	78.3%	100%
Education of household head				
None	7.9%	16.6%	75.5%	100%
Primary	4.5%	12.0%	83.5%	100%
Secondary	2.2%	8.7%	89.1%	100%
Higher	0.4%	4.0%	95.7%	100%
Missing/DK	6.3%	18.2%	75.5%	100%
Wealth index quintile				
Poorest	11.9%	21.3%	66.8%	100%
Second	8.6%	19.2%	72.3%	100%
Middle	3.7%	13.3%	83.0%	100%
Fourth	2.1%	8.3%	89.6%	100%
Richest	0.2%	2.4%	97.4%	100%

Figure HFS.1: Household food consumption score, by states, Sudan MICS, 2014
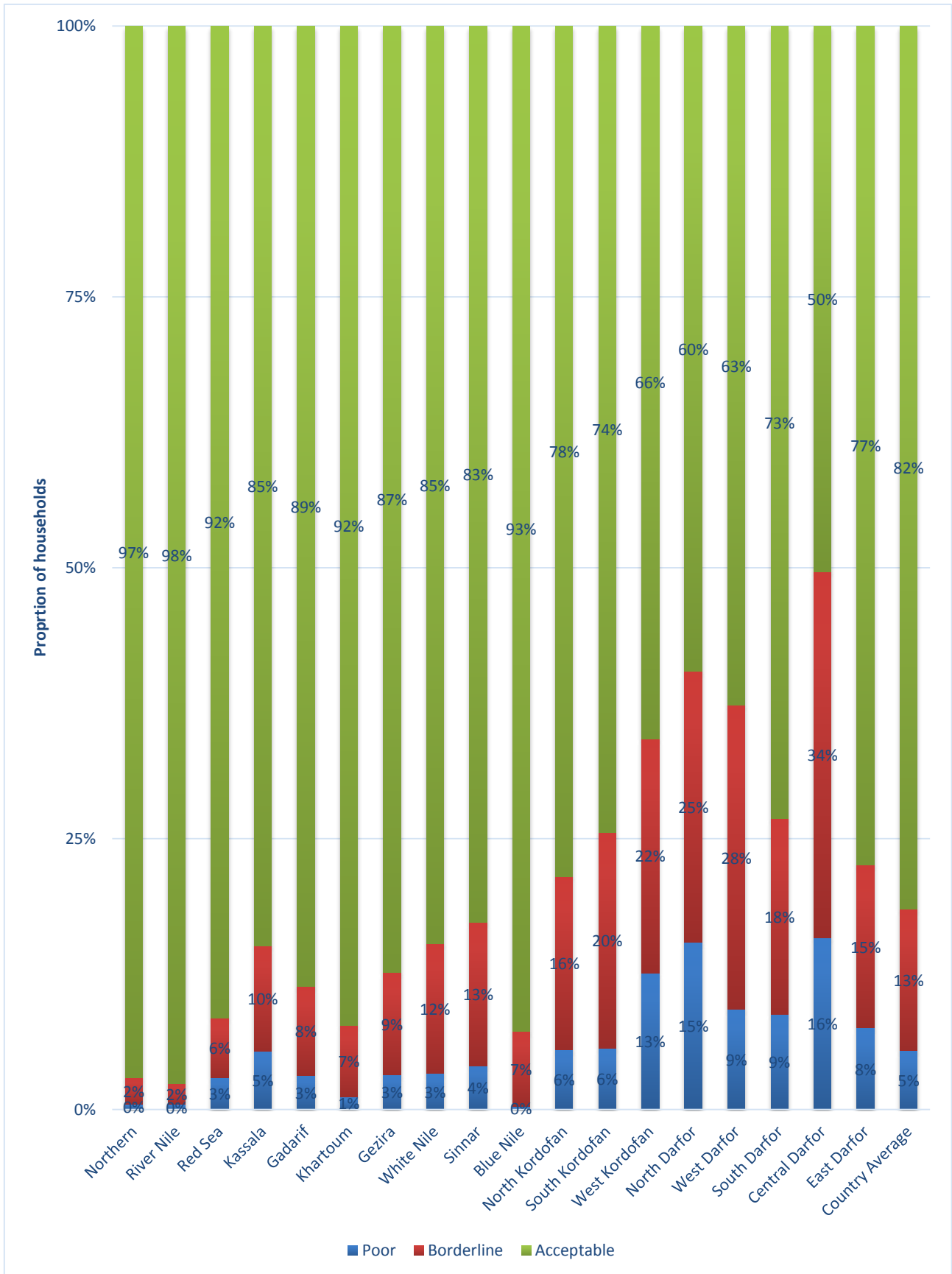
Household food consumption – urban and rural differences

The data were also analysed to compare the food consumption of households in urban areas to those in rural areas. There was a lot of variation between states but, in general, the states with better food consumption tend to have less of a difference between rural and urban households. The findings are presented in the following two graphs.

Figure HFS. 2a shows that for households in Northern, River Nile, Garadif, and Gezira states, there was little or no difference in consumption between urban and rural households. Urban households in Red Sea and Kassala states have slightly better consumption than those in rural areas, while those in Khartoum and Kassala have slightly worse consumption compared to rural households. However, in both White Nile and Sinnar states, the consumption of urban households is considerably better than rural households.

Figure HFS.2a: Household food consumption, by urban and rural (part one), Sudan MICS, 2014

Figure HFS.2a: Household food consumption, by urban and rural (part one), Sudan MICS, 2014
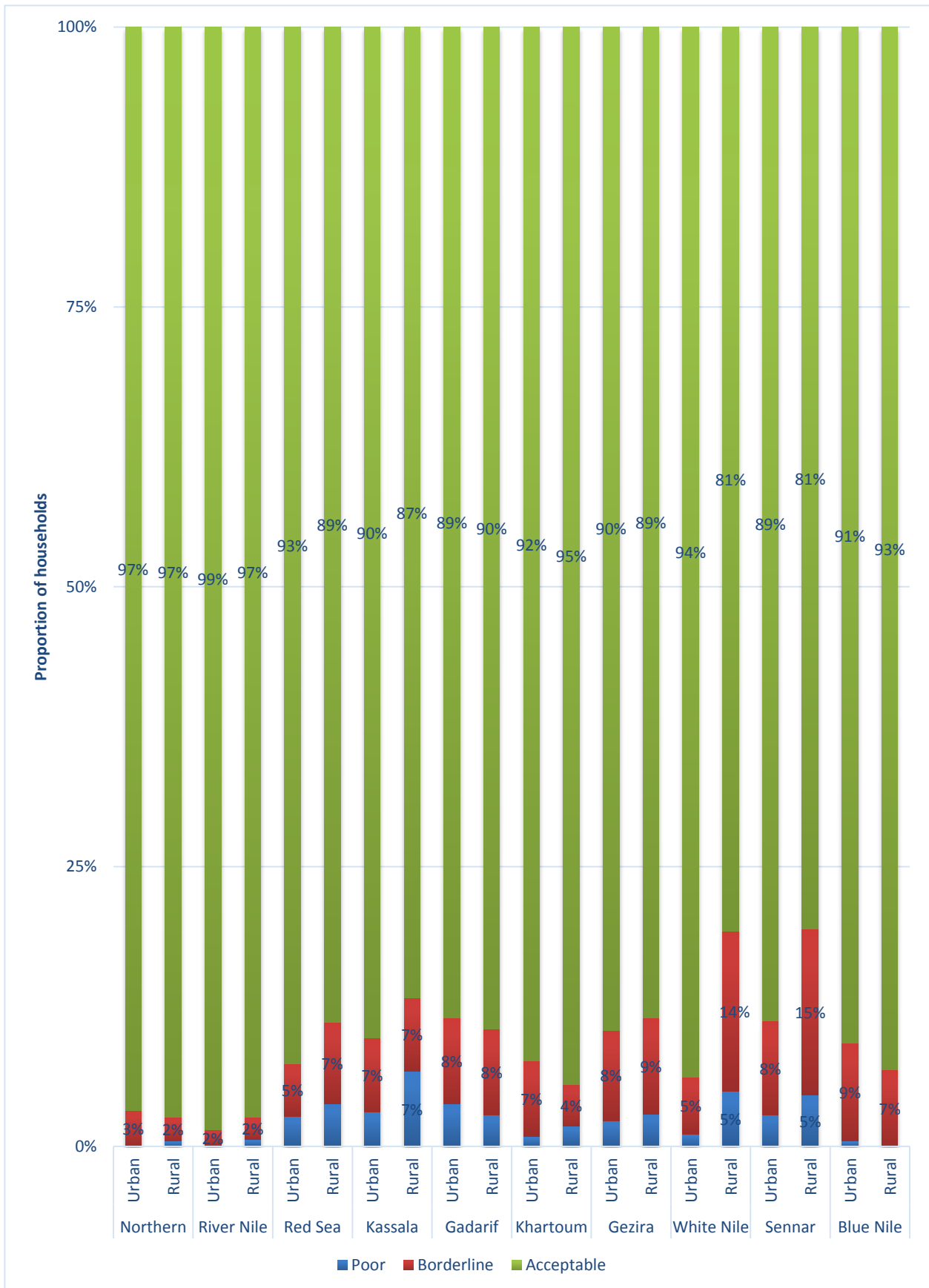
The urban/rural comparisons for households in Central and Western Sudan are quite different as shown in the below graph. For the Kordofan and Darfur regions, rural households are less likely to have acceptable consumption than households in urban areas. The difference is greatest in Central Darfur where only 48 percent of the rural households have acceptable consumption, compared to 75 percent of urban households. In South Kordofan, 69 percent of rural households have acceptable consumption compared to 83 percent of those in urban areas.

Figure HFS.2b: Household food consumption, by urban and rural (part two), Sudan MICS, 2014
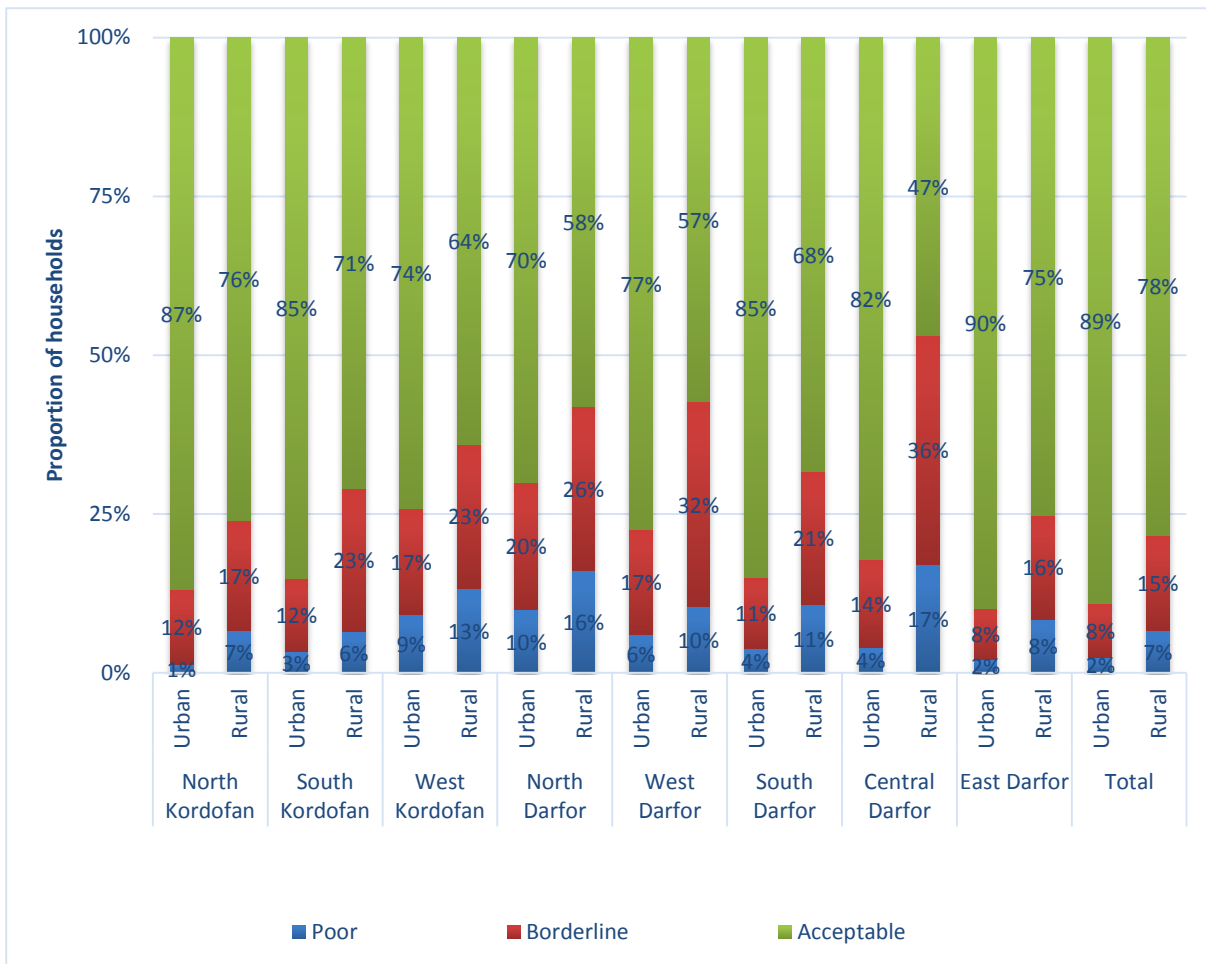
As evident from table HFS.1, households' food consumption is positively correlated both with the level of education of the household head and with household wealth. Twenty-four percent of households whose head has no education has either poor or borderline food consumption, compared to only 11 percent for those whose head had completed secondary education. The corresponding percentages for households in the bottom wealth quintile is 33 percent, compared to 3 percent in the top wealth quintile.

Comparison of household consumption habits

The 7-day recall data were used to determine the 'typical' weekly household consumption for each state and the following graphs are used to show the differences and similarities across the country.

Households in Northern state typically consume wheat/bread, legumes, meat, oil/fat, dairy, sugar and dried vegetables on a daily basis with consumption of eggs, fresh vegetables, fruit, sorghum and millet occasionally.

Households in River Nile state consume sorghum, wheat/bread, oil/fat, dairy, sugar and dried vegetables on a daily basis with regular consumption of legumes, meat and fresh vegetables and occasional consumption of millet, fruits and eggs.

In Red Sea state, household consumption is characterized by daily consumption of sorghum, wheat/bread, oil/fat, dairy, and sugar with regular consumption of dried vegetables and occasional consumption of millet, legumes, meat, fruit, eggs and fresh vegetables.

Consumption in Khartoum state is characterized by daily consumption of wheat/bread, oil, dairy and sugar with regular consumption of meat, fresh vegetables and dried vegetables and occasional consumption of sorghum, millet, legumes, fruits and eggs.

Figure HFS.3a: Number of days foods are consumed (part one), Sudan MICS, 2014
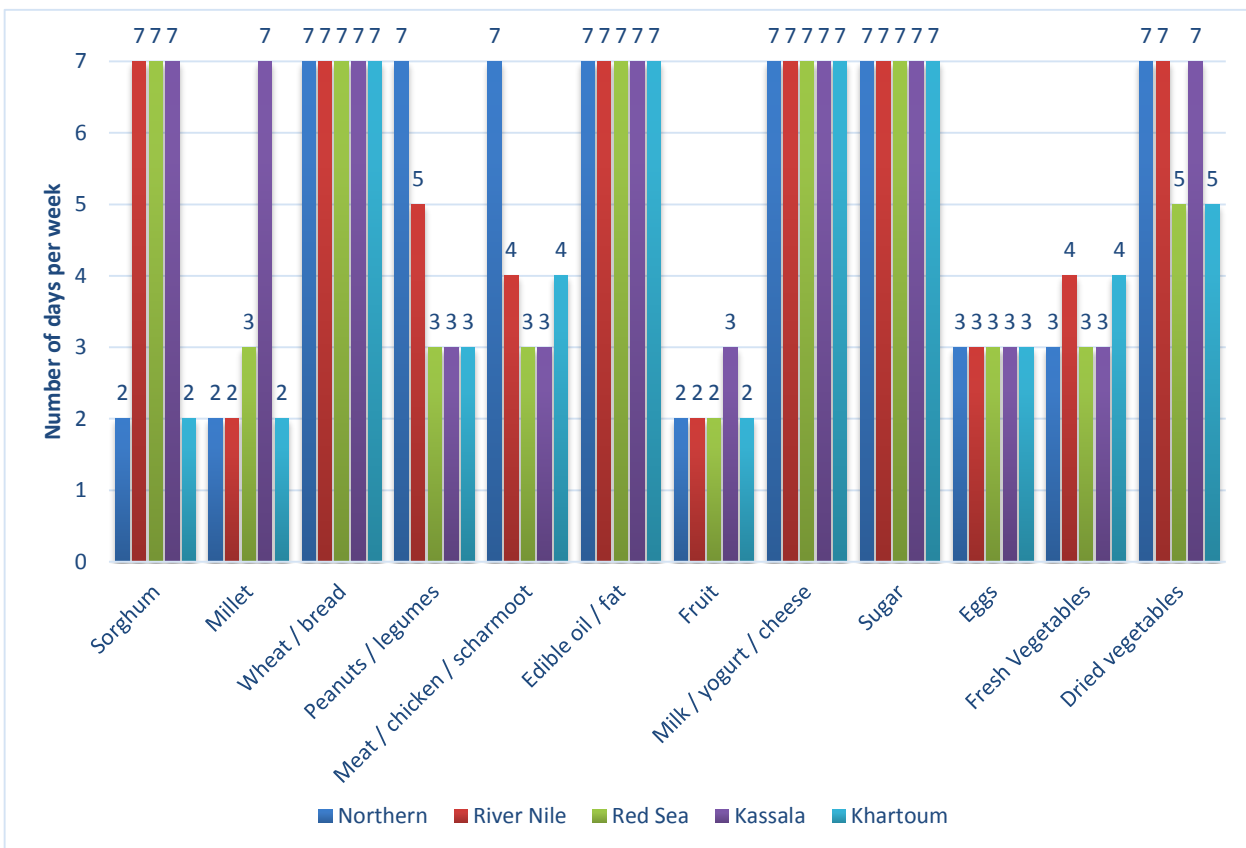
Consumption for households in Gadarif state is characterized by daily consumption of sorghum, oil/fat, dairy, sugar and dried vegetables with regular consumption of wheat/bread and meat and occasional consumption of millet, legumes, fruits, eggs and fresh vegetables.

In Gezira state, households consume sorghum, wheat/bread, oil/fat, dairy, sugar and dried vegetables on a daily basis with regular consumption of fresh vegetables and only occasional consumption of millet, legumes, fruits and eggs.

Households in White Nile consume sorghum, oil/fat, dairy, sugar and dried vegetables on a daily basis accompanied with wheat/bread and meat on a regular basis and occasional consumption of millet, legumes, fruits, eggs and fresh vegetables.

In Sinnar state, household food consumption is characterized by daily consumption of sorghum, wheat/bread, oil/fat, dairy, sugar and dried vegetables, as well as regular consumption of meat and occasional consumption of millet, legumes, fruit, eggs and fresh vegetables.

Blue Nile households have daily consumption of sorghum, wheat/bread, meat, oil/fat, dairy, sugar and dried vegetables and regular consumption of fresh vegetables and occasionally consume millet, legumes, fruits and eggs.

Figure HFS.3b: Number of days foods are consumed (part two), Sudan MICS, 2014
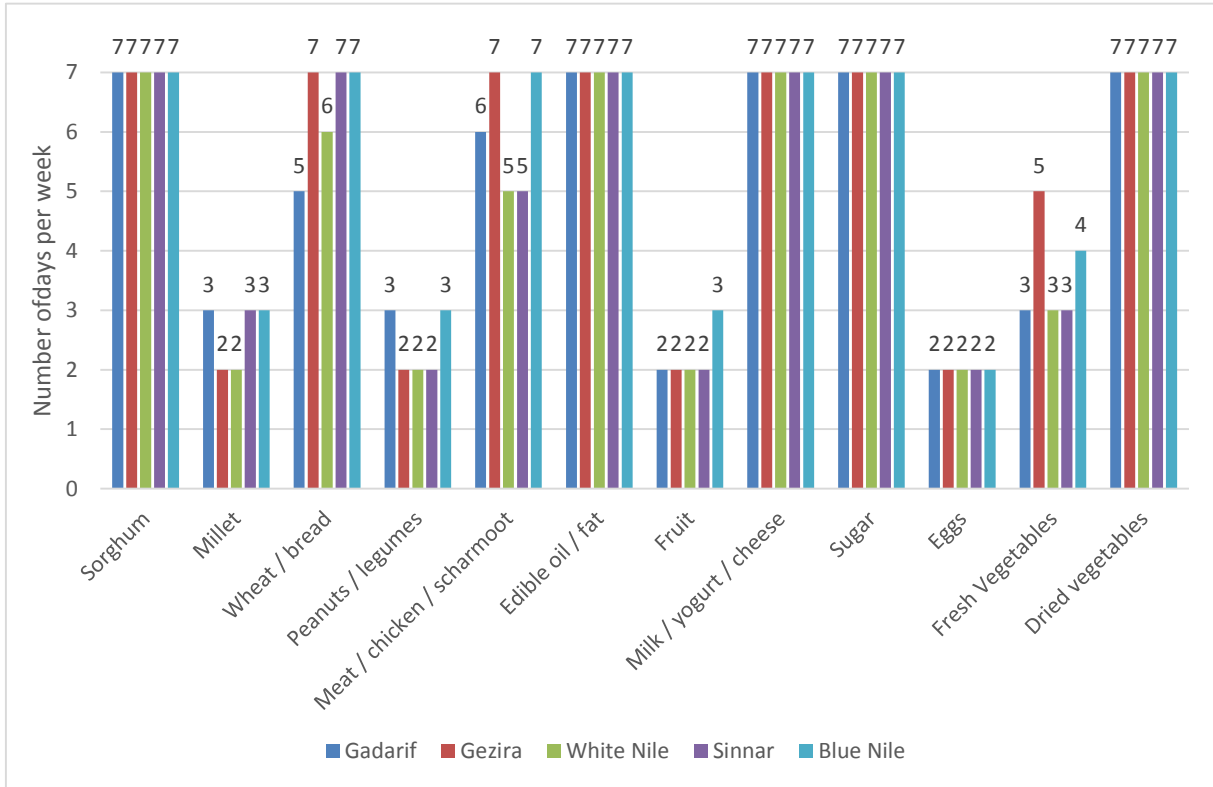
Household food consumption across the Kordofan states is similar and is characterized by daily consumption of sorghum, millet (except South Kordofan), oil/fat, dairy, sugar and dried vegetables, and occasional consumption of wheat, legumes, meat, fruits, eggs and fresh vegetables.

Figure HFS.3c: Number of days foods are consumed (part three), Sudan MICS, 2014
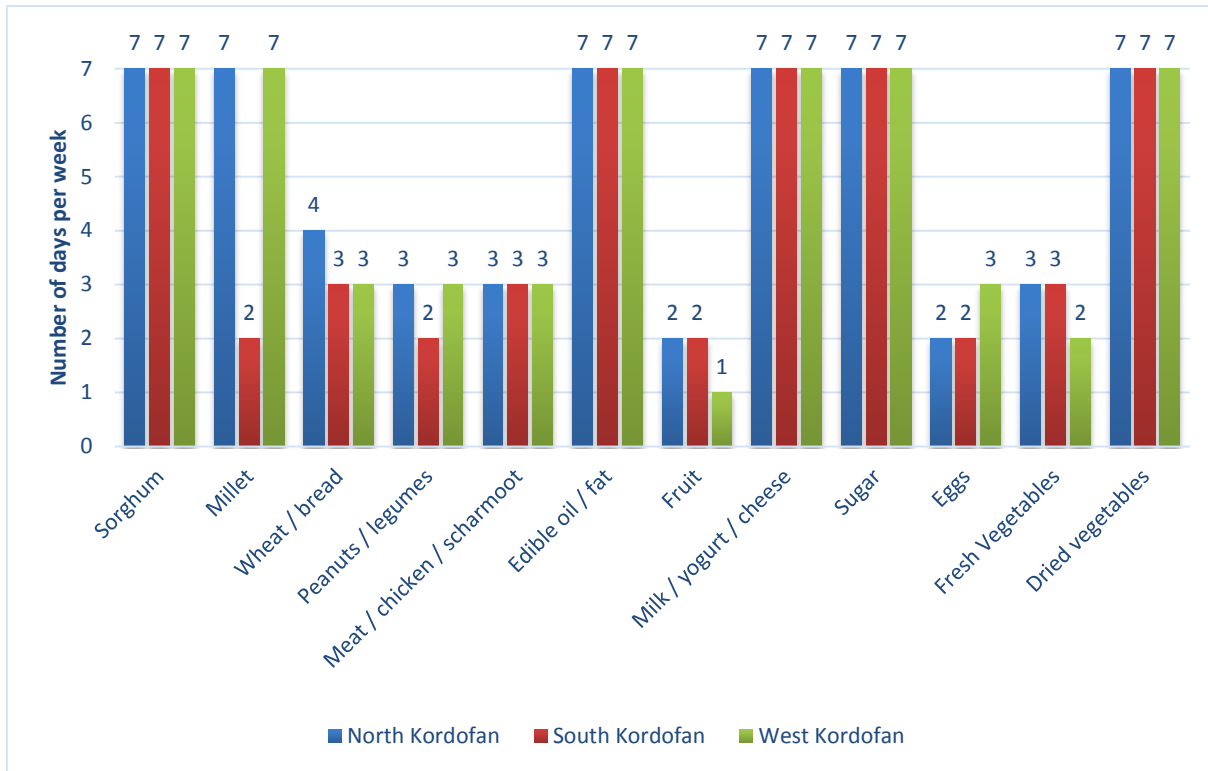
Consumption for households in the Darfur region is characterized by daily consumption of sorghum and millet (except South and Central Darfur), oils/fats, dairy, sugar and dried vegetables, with occasional consumption of wheat/bread, legumes, meat, fruits, eggs and fresh vegetables.

Figure HFS.3d: Number of days foods are consumed (part four), Sudan MICS, 2014
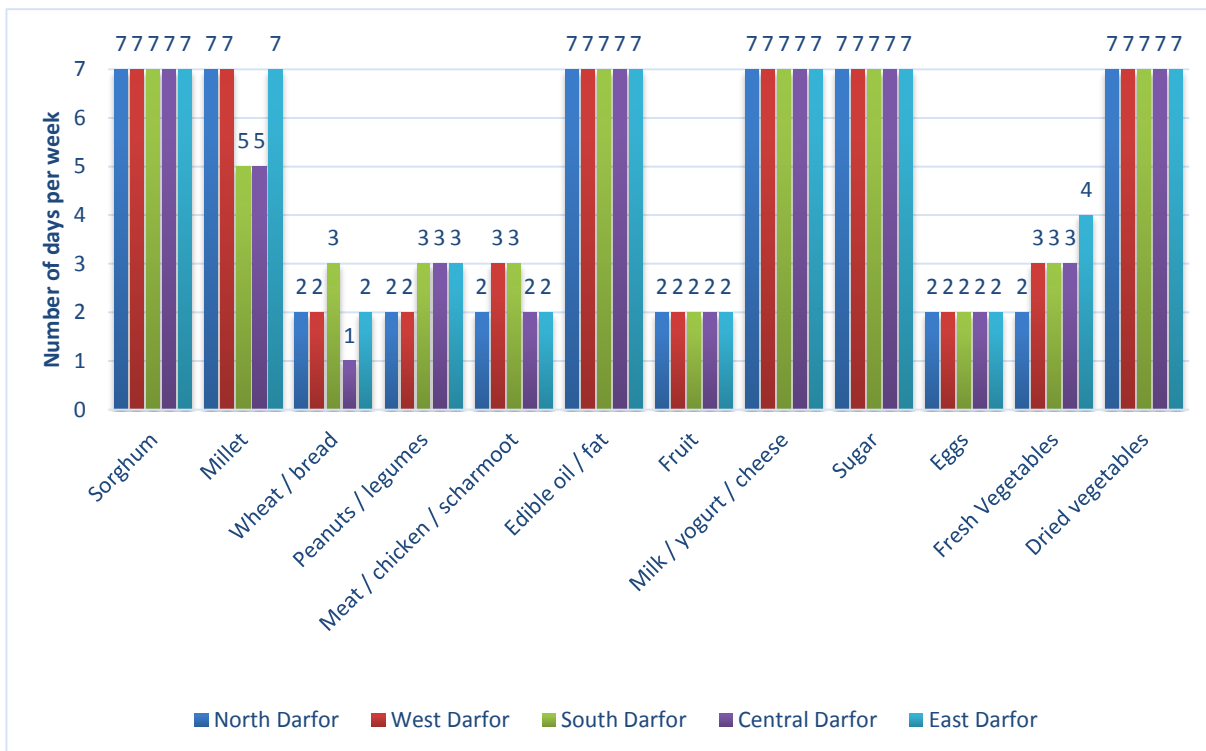
13.2 Food Coping Strategies

The following section presents, by state, the percentage of households using different coping strategies when they don't have enough food or money to buy food for their families.

Households in Northern state, rarely need to use food coping strategies but when they do, they will borrow food or money to buy food or rely on less preferred or less expensive foods.

When faced with food shortages, households in River Nile state will rely on less preferred or less expensive foods or borrowing money or food. This is the same for households in Red Sea and Kassala states.

Households in Khartoum state were much more likely to report difficulties in accessing enough food or money to buy food compared to the other states. To cope, they mostly rely on less preferred or less expensive foods or on borrowing money or food. They will also rely on friends and relatives or reduce the number of meals.

Table HFS.2: Food Coping Strategies						
Background Characteristics	Rely on less preferred and less expensive food	Eat borrowed food or borrowed money to purchase food	Rely on help from friends or relatives	Limit portion size at mealtimes	Restrict consumption for adults in order for small children to eat	Reduce number of meals eaten in a day
Sudan	15.1%	16.1%	6.4%	3.4%	1.3%	4.8%
State						
Northern	3.9%	6.5%	1.1%	1.3%	0.7%	2.1%
River Nile	11.8%	5.2%	2.6%	1.5%	0.7%	2.7%
Red Sea	9.5%	8.3%	2.0%	2.3%	0.0%	2.8%
Kassala	6.4%	4.2%	3.2%	2.4%	1.4%	2.6%
Gadarif	28.4%	23.3%	8.5%	3.4%	0.7%	9.1%
Khartoum	7.2%	8.6%	3.1%	1.0%	0.4%	2.3%
Gezira	14.0%	19.6%	8.0%	4.3%	1.2%	5.1%
White Nile	19.3%	21.6%	4.5%	3.9%	1.3%	3.4%
Sinnar	23.2%	19.9%	4.3%	2.7%	0.6%	2.4%
Blue Nile	20.1%	19.2%	4.8%	3.9%	0.5%	4.9%
North Kordofan	11.8%	22.7%	5.1%	4.4%	1.6%	4.6%
South Kordofan	12.8%	14.2%	4.6%	1.9%	1.7%	4.6%
West Kordofan	6.3%	12.4%	7.5%	2.9%	2.6%	5.2%
North Darfur	12.8%	11.7%	9.3%	2.1%	1.8%	3.6%
West Darfur	6.4%	7.8%	6.0%	3.5%	1.8%	3.6%
South Darfur	16.7%	13.4%	6.8%	5.3%	1.4%	5.0%
Central Darfur	22.0%	17.8%	11.7%	7.8%	3.4%	7.4%
East Darfur	16.3%	26.2%	10.9%	4.4%	1.8%	5.4%
Area						
Urban	20.2%	17.8%	6.2%	3.6%	1.0%	6.2%
Rural	13.0%	15.4%	6.4%	3.3%	1.4%	4.2%
Education of household head						
None	15.5%	15.9%	7.4%	4.0%	1.3%	4.8%
Primary	15.2%	16.3%	5.9%	3.4%	1.5%	5.6%
Secondary	15.6%	17.1%	5.1%	2.4%	1.0%	4.4%
Higher	11.2%	12.6%	4.3%	1.6%	0.5%	2.7%
Missing/DK	11.3%	18.6%	5.8%	1.3%	1.3%	3.1%

Table HFS.2: Food Coping Strategies						
Background Characteristics	Rely on less preferred and less expensive food	Eat borrowed food or borrowed money to purchase food	Rely on help from friends or relatives	Limit portion size at mealtimes	Restrict consumption for adults in order for small children to eat	Reduce number of meals eaten in a day
Wealth index quintile						
Poorest	12.6%	14.7%	7.6%	3.4%	1.6%	4.1%
Second	13.9%	16.5%	6.4%	3.7%	1.5%	5.1%
Middle	17.2%	18.0%	6.5%	3.7%	1.2%	4.8%
Fourth	16.9%	17.8%	6.6%	3.8%	1.4%	5.3%
Richest	15.3%	13.5%	4.6%	2.3%	0.5%	4.7%

Figure HFS.4a: Food coping strategies (Part one), Sudan MICS, 2014
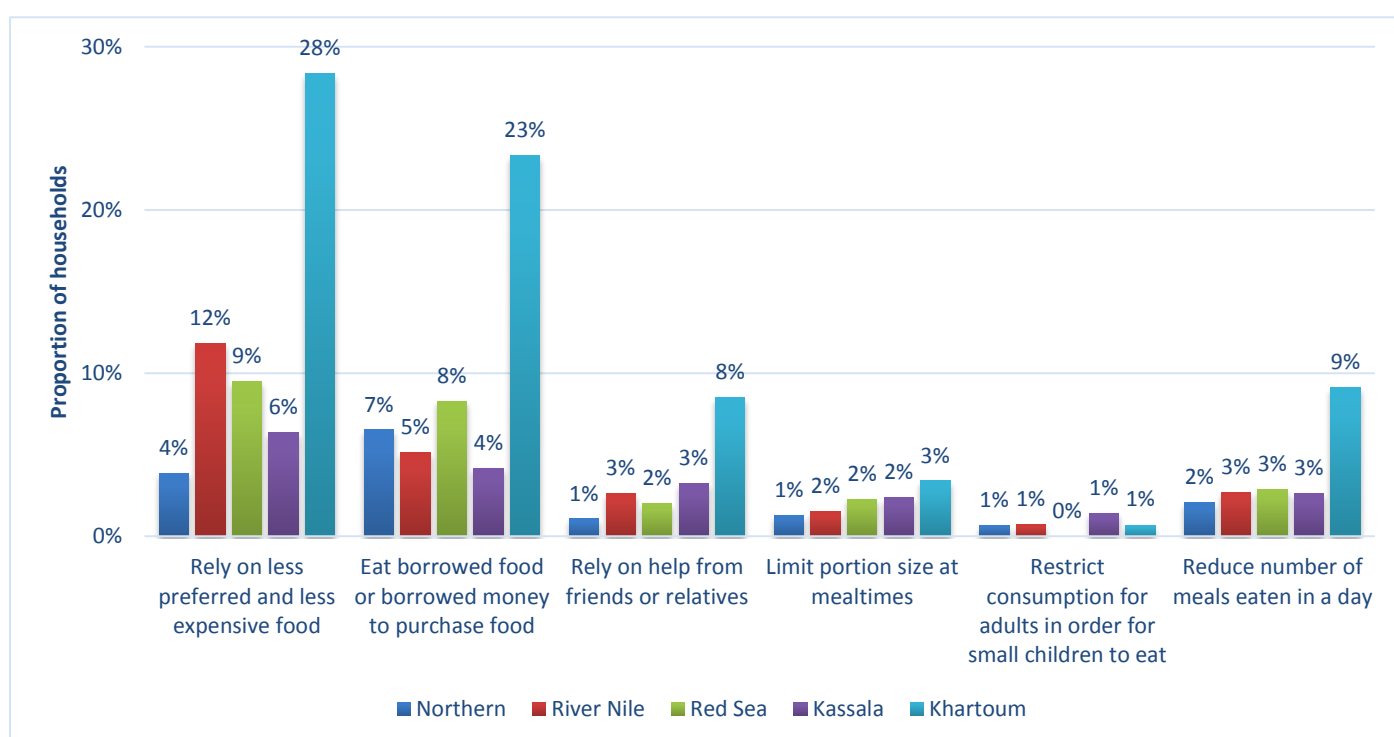
Households in Gadarif were also not likely to face difficulties in accessing enough food for their families but, if necessary, will borrow money or food or rely on less preferred or expensive foods.

The situation was similar for households in Gezira, White Nile, Sinnar and Blue Nile states where 20-25 percent reported facing difficulties in accessing enough food for their needs and then relying on borrowing or consuming less preferred or less expensive foods.

Figure HFS.4b: Food coping strategies (Part two), Sudan MICS, 2014
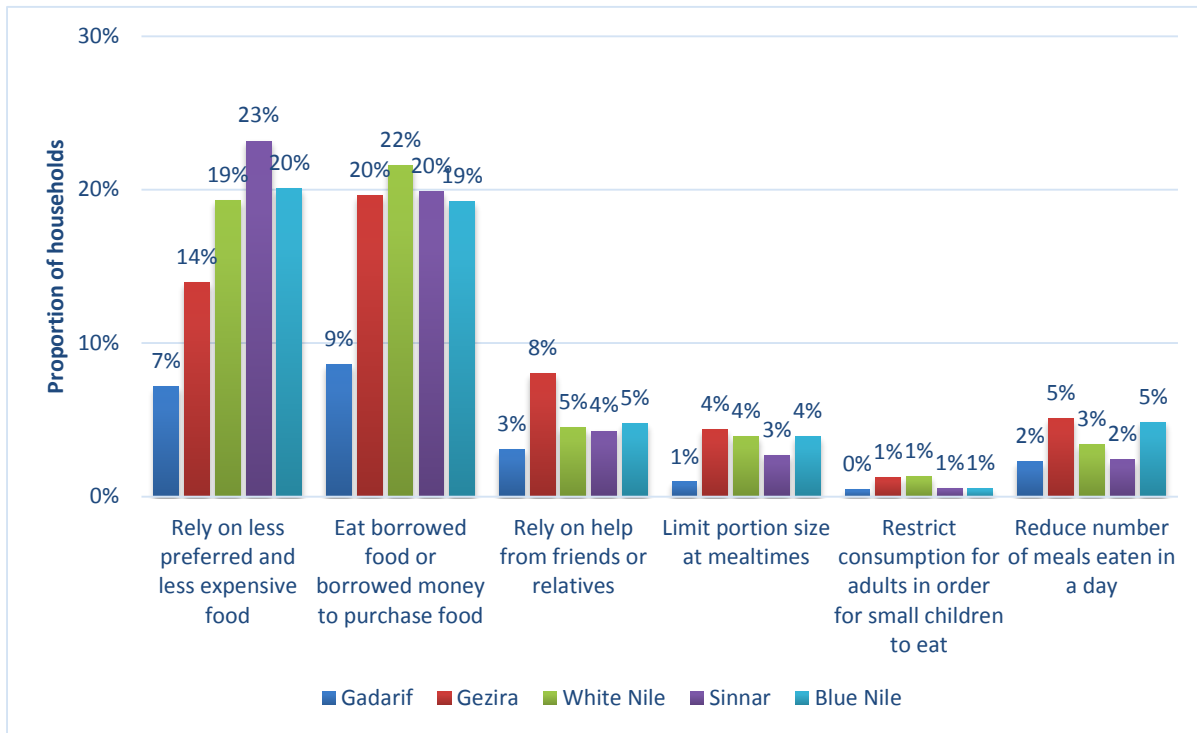
Households in the Kordofan region have similar levels of difficulties accessing enough food or money to buy food, with those in North Kordofan most likely to face these difficulties. The primary responses are similar with borrowing or changing consumption to less preferred or less expensive foods, with those in West Kordofan slightly more likely to rely on help from friends or relatives.

Figure HFS.4c: Food coping strategies (Part three), Sudan MICS, 2014
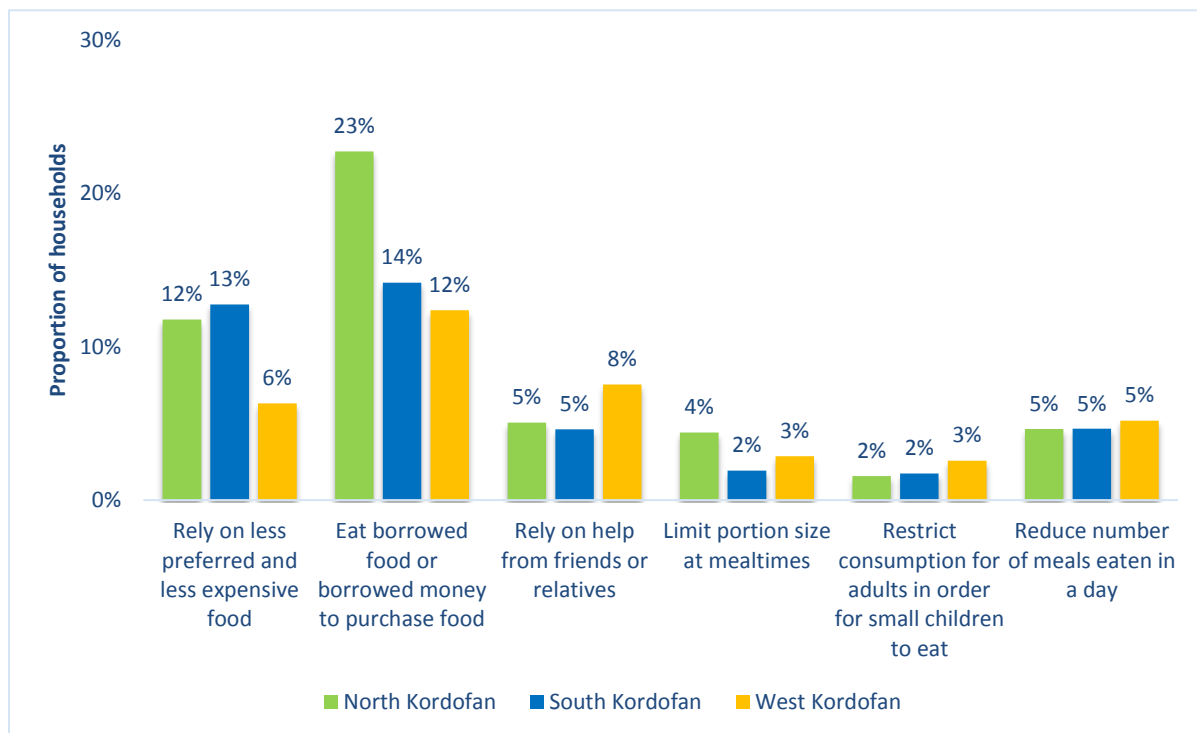
Households in the Darfur region face similar challenges in accessing enough food or money to buy food, with those in East and Central Darfur the most likely to borrow money or food or to rely on less preferred or expensive foods. The Darfur households are more likely to rely on help from friends or relatives than households in the other states and slightly more likely in South and Central Darfur to limit portion size at mealtimes.

Figure HFS.4d: Food coping strategies (Part four), Sudan MICS, 2014
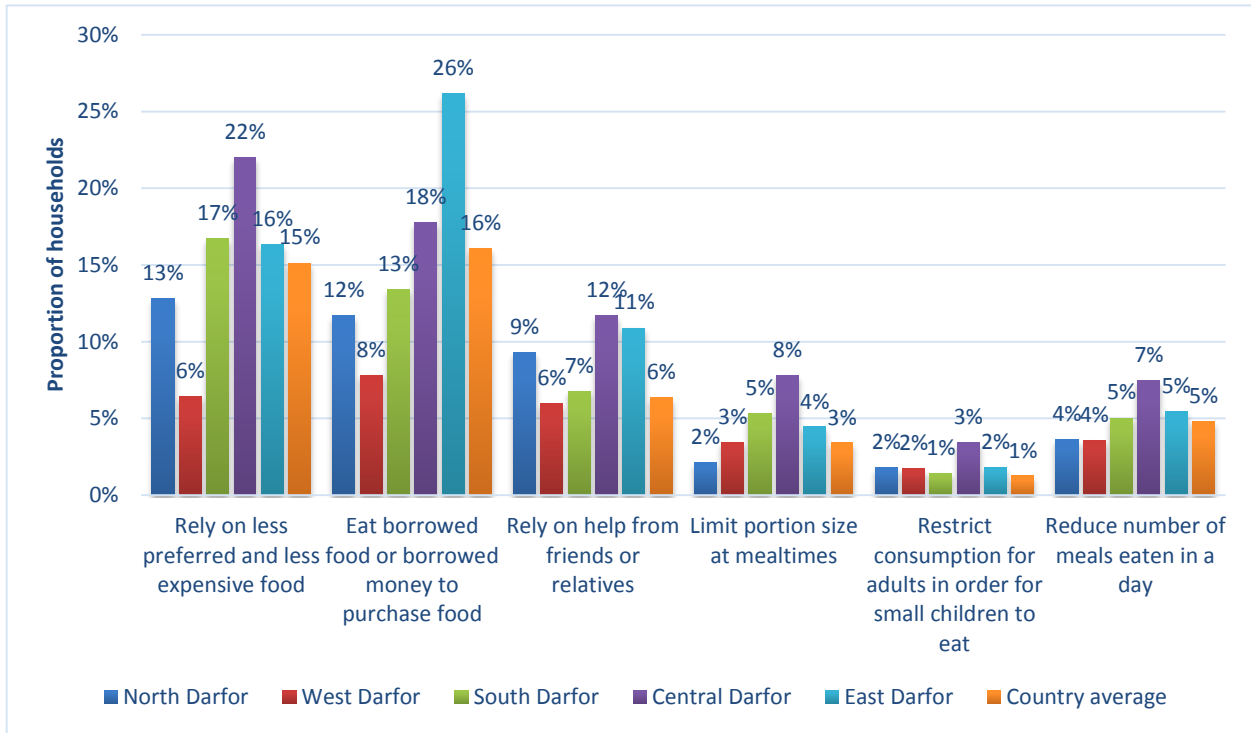
Several of the food coping strategies do not correlate significantly with the level of education of the head of household, nor with the household wealth status, arguably illustrating the relative nature of the perception of coping with food access problems. Households whose head is better educated was found to be less likely to rely on help from friends and relatives, and to limit portion size at mealtimes.

Appendix A: Sample Design

The major features of the sample design are described in this appendix. Sample design features include target sample size, sample allocation, sampling frame and listing, choice of domains, sampling stages, stratification, and the calculation of sample weights.

The primary objective of the sample design for the Sudan MICS 2014 was to produce statistically reliable estimates for a large number of indicators, at the national level, for urban and rural areas, and for the eighteen states of the country: Northern, River Nile, Red Sea, Kassala, Gadaraf, Khartoum, Gezira, Sinnar, Blue Nile, White Nile, North Kordofan, South Kordofan, North Darfur, West Darfur, South Darfur, and the recently established West Kordofan, Eastern Darfur and Central Darfur. In order to produce State-level estimates of moderate precision, a minimum of 30 enumeration areas (EAs) were selected in each state, resulting in a sample that was not self-weighting.

Urban and rural areas in each of the eighteen states were defined as the sampling strata and a multi-two-stage, stratified cluster sampling approach was used for the selection of the survey sample. In the first stage, within each stratum, a specified number of EAs were selected systematically with probability proportional to size. In the second stage, after a household listing was carried out within the selected enumeration areas, a systematic sample of 25 households was drawn in each selected EA.

Sample Size and Sample Allocation

The sample size for the Sudan MICS 2014 was calculated as 18,000 households. For the calculation of the sample size, the key indicator used was breast feeding. The following formula was used to estimate the required sample size for this indicator:

$$n = \frac{z^2 * r * (1-r) * deff}{(RME * r)^2 * pb * AveSize * RR}$$

where:
    n = the required sample size, (number of HHs)
    z = the value in the normal distribution that gives level of confidence 95%   (z = 2)
    r = predicted value of indicator (in target/base population), (r=0.41)
    deff = the design effect, (deff = 1.7)
    RME = relative margin of error at 95% confidence (RME=0.11).
    p_b = proportion of target/base population in total population, (p_b = 0.16).
    AveSize = Average household size (AveSize=6).
    RR = response rate (RR =0.9)

By substitution:
    n = $\frac{2^2*(0.41)(1-0.41)*1.7}{(0.11*0.41)^2*(0.16)*6*0.9}$
    n = 936 = 1000 HHs from each state.

Total sample for all Sudan = 1000*18=18000 HHs.

For the calculation, *r* (underweight prevalence) was assumed to be 25 percent. The value of *deff* (design effect) was taken as 1.5 based on estimates from previous surveys, *pb* (percentage of children age 0-4 years in the total population) was taken as 13 percent, *AveSize* (average household size) was taken as 6.2 households, and the response rate was assumed to be 90 percent, based on experience from previous surveys.

The resulting number of households from this exercise was 1,000 households which is the sample size needed in each state – thus yielding 18,000 in total.

The number of households selected per cluster for the Sudan MICS 2014 was determined as 25 households, based on a number of considerations including the design effect, budget available, and the time that would be needed per team to complete one cluster. Dividing the total number of households by the number of sample households per cluster, it was calculated that 86 sample clusters would need to be selected in each state.

Equal allocation of the total sample size to the eighteen states was used. Therefore, 40 clusters were allocated to each state, with the final sample size calculated as 18,000 households (40 clusters * 18 states * 25 sample households per cluster).

In each state, the clusters (primary sampling units) were distributed to the urban and rural domains proportionally to the size of urban and rural populations in that state. The table below shows the allocation of clusters to the sampling strata.

Table SD.1: Allocation of Sample households and Clusters (Primary Sampling Units) to Sampling Strata						
		Number Households			Number of Clusters		
		Total	Urban	Rural	Total	Urban	Rural
	Sudan	**18,000**	**5,125**	**12,875**	**720**	**205**	**515**
No.	**State**						
1	Northern	1,000	200	800	40	8	32
2	River Nile	1,000	300	700	40	12	28
3	Red Sea	1,000	500	500	40	20	20
4	Kassala	1,000	325	675	40	13	27
5	Gadarif	1,000	250	750	40	10	30
6	Khartoum	1,000	800	200	40	32	8
7	Gezira	1,000	175	825	40	7	33
8	White Nile	1,000	300	700	40	12	28
9	Sinnar	1,000	225	775	40	9	31
10	Blue Nile	1,000	225	775	40	9	31
11	North Kordofan	1,000	200	800	40	8	32
12	South Kordofan	1,000	250	750	40	10	30
13	West Kordofan	1,000	250	750	40	10	30
14	North Darfur	1,000	175	825	40	7	33
15	West Darfur	1,000	100	900	40	4	36
16	South Darfur	1,000	375	625	40	15	25
17	Central Darfur	1,000	175	825	40	7	33
18	East Darfur	1,000	300	700	40	12	28

Sampling Frame and Selection of Clusters

The 2008 census frame was used for the selection of clusters. Census enumeration areas were defined as primary sampling units (PSUs), and were selected from each of the sampling strata by using systematic probability proportional to size (ppu) sampling procedures, based on the number of households in each enumeration area from the 2008 Population and Housing Census frame. The first stage of sampling was thus completed by selecting the required number of enumeration areas from each of the eighteen states, separately for the urban and rural strata.

Listing Activities

Since the sampling frame (the 2008 census) was not up-to-date, a new listing of households was conducted in all the sample enumeration areas prior to the selection of households. For this purpose, listing teams were formed who visited all of the selected enumeration areas and listed all households in the enumeration areas. A separate manual was provided that described the listing organization, dates, teams, procedures of the listing exercise that was to be carried out. This manual was written in Arabic.

Selection of Households

Lists of households were prepared by the listing teams in the field for each enumeration area. The households were then sequentially numbered from 1 to n (the total number of households in each enumeration area) at the Central Bureau of Statistics Office, where the selection of 25 households in each enumeration area was carried out using random systematic selection procedures.

Calculation of Sample Weights

The Sudan MICS 2014 sample is not self-weighting. Essentially, by allocating equal numbers of households to each of the states, different sampling fractions were used in each state since the sizes of the states varied. For this reason, sample weights were calculated and these were used in the subsequent analyses of the survey data.

The major component of the weight is the reciprocal of the sampling fraction employed in selecting the number of sample households in that particular sampling stratum (h) and PSU (i):

$$W_{hi} = \frac{1}{f_{hi}}$$

The term f_{hi}, the overall probability for selecting the sample households in the i-th sample PSU in the h-th stratum, is the product of probabilities of selection at every stage in each sampling stratum:

$$f_{hi} = p_{1hi} \times p_{2hi} \times p_{3hi}$$

Where p_{shi} is the probability of selection of the sampling unit at stage s for the i-th sample PSU in the h-th sampling stratum. Based on the sample design, these probabilities were calculated as follows:

$$p_{1hi} = \frac{n_h \times M_{hi}}{M_h},$$

266

n_h = number of sample PSUs selected in stratum h

M_{hi} = number of households in the 2008 Census frame for the i-th sample PSU in stratum h

M_h = total number of households in the 2008 Census frame for stratum h

p_{2hi} = proportion of the PSU listed for the i-th sample PSU in stratum h (in the case of PSUs that were segmented); for non-segmented PSUs, $p_{2hi} = 1$

$$p_{3hi} = \frac{25}{M'_{hi}}$$

M'_{hi} = number of households listed in the i-th sample PSU in stratum h

Since the number of households in each enumeration area (PSU) from the 2008 Census frame used for the first stage selection and the updated number of households in the enumeration area from the listing are generally different, individual overall probabilities of selection for households in each sample enumeration area (cluster) were calculated.

A final component in the calculation of sample weights takes into account the level of non-response for the household and individual interviews. The adjustment for household non-response in each stratum is equal to:

$$\frac{1}{RR_h}$$

where RR_h is the response rate for the sample households in stratum h, defined as the proportion of the number of interviewed households in stratum h out of the number of selected households found to be occupied during the fieldwork in stratum h.

Similarly, adjustment for non-response at the individual level (women, men, and under-5 children) for each stratum is equal to:

$$\frac{1}{RR_h}$$

where RR_h is the response rate for the individual questionnaires in stratum h, defined as the proportion of eligible individuals (women, men, and under-5 children) in the sample households in stratum h who were successfully interviewed.

After the completion of the fieldwork, response rates were calculated for each sampling stratum. These were used to adjust the sample weights calculated for each cluster. Response rates in the Sudan MICS 2014 are shown in Table HH.1 in this report.

The non-response adjustment factors for the individual women, men, and under-5 questionnaires were applied to the adjusted household weights. Numbers of eligible women, men, and under-5 children were obtained from the roster of household members in the Household Questionnaire for households where interviews were completed.

The design weights for the households were calculated by multiplying the inverse of the probabilities of selection by the non-response adjustment factor for each enumeration area. These weights were then standardized (or normalized), one purpose of which is to make the weighted sum of the interviewed sample units equal to the unweighted number of observations the national level.

Normalization is achieved by dividing the full sample weights (adjusted for nonresponse) by the average of these weights across all households at the national level. This is performed by multiplying the sample weights by a constant factor equal to the unweighted number of households at the national level divided by the weighted total number of households (using the full sample weights adjusted for nonresponse). A similar standardization procedure was followed in obtaining standardized weights for the individual women, men, and under-5 questionnaires. Adjusted (normalized) weights varied between lowest weight and highest weight in the 720 sample enumeration areas (clusters).

Sample weights were appended to all data sets and analyses were performed by weighting households, women, men, or under-5s with these sample weights.

Appendix B: List of Personnel Involved in the Survey

A. Steering committee members:

Director General Central Bureau of Statistics	Chairperson
Survey Technical Coordinator	Reporter
Under Secretary, Federal Ministry of Health	Member
Under Secretary Ministry of Education	Member
Under Secretary Ministry of Welfare and S. Security	Member
Under Secretary, Ministry of Environment and Public Development	Member
UNICEF Representative	Member
UNFPA Representative	Member
WHO Representative	Member
WFP Representative	Member
Secretary General of National Population Council	Member

B. Technical Committee Members

Director General Central Bureau of Statistics - Chairman
Representatives from:
- Federal Ministry of Health
- Ministry of Welfare and Social Security
- Ministry Education
- National Population Council
- National Council for Child Welfare
- Ministry of Environment and Urban Development
- Ministry of Human Resources Development and Labour
- Public Water Corporation
- UNFPA
- UNICEF
- WHO
- WFP

Survey Administrative Coordinator
Survey National Consultants (4)
Experts and Technical persons from CBS

C. National Survey Team Members

Dr. Yassin El-haj Abdin	National survey coordinator
Kamal Ahmed Ismael	National survey technical coordinator
El-Tag Awad Aburas	Administrative Coordinator
Somia Khalid El-Khier	Field Work coordinator
Amin Ahmed Doud	Data processing coordinator
Intsar El-hadi	Administrative assistant
Maha Elhaj	Administrative assistant
Amani Abdelwahab	Accountant
Amira Gaber	Administrative assistant

Isam Idriss Elkhas	Assistant National Administrator
Hassan Morkaz	Computer programmer
Amin Ahmed Doud	Data processing coordinator
Magda Mohamed	Secretary
Habab Abdallah	Secretary

D. MICS5 National Consultants

Prof Siddig Mohamed A. Shahein	Sample design expert
Ibrahim Abbas	Household consultant
Siddig Mohamed Osman	Data processing expert
Abdel Bari Hassan Nasr	MICS5 consultant/UNICEF

E. UNICEF Staff Supporting the Survey

Robert Ndamobissi	Chief of Section Planning, Monitoring & Evaluation
Walaa Kordofani	Ex- Monitoring and Evaluation officer
Alaa Mahmoud	Monitoring and Evaluation Officer
Siddig Musa Abaker	Program Assistant

F. Report Writing Team

Kamal M. Ismail: Chapters 1 & 2
Robert Ndamobissi: Chapters 4 & 5
Ibrahim Abbas Seif Elnasr: Chapter 3
Abdel Bari Hassan Nasr: Chapters 7 & 9
Siddig M. Osman: Chapter 10
Dr. Faisal: Chapters 6 & 9
Anders Petersson: Chapter 13
Alaa Mahmoud: Review/Editing
Dina Ali: Review & Editing
Paul A. Sengeh (UNICEF Consultant): Chapter 12 & Executive Summary
Mai El Shoush (UNICEF Consultant) Quality Editor

G. Field Personnel

State	State Manager	National Supervisor	Field Supervisor	Filed Editors	Interviewers	Measurers
Northern	Houda Mohamed Gomaa	Magda Khalaf Allah Mohamed	Awad Mohame Awad Adel Ali Noraldein Ashraf Ahmed Almogamer	Nagla Abdelnoor Abdelraheem Somia Taha Abdallah Hanya Mahmoud Shamat	Hajer Osman Yasin Amjad Ahmed El-Haj Hanan Hashim Mohamed Rawya MusaMohamed Mashaaer Abdelteif Mohamed Afraa Awad Ahmed Dawla Ibrahim El-Hassan Mymona Ali Ahmed Sara Mahjoub Abdelraheem	Noor Alhuda Goma El-Sadig Mohamed Goma Kawser Mohamed El-Khier
River Nile	Mohamed Yousif	Fardos Mohamed Salih	Siefeldeen Osman Idrees Ashraf Tajelsir Bakry Nada Alnoor Ahmed	Rehab Ahmed Elkhalifa Omniah Alfaky Siham Gareeballah	Sumaiah Gareeballah Thigah Surajaldeen Adwa Nasr Eldeen Marwa Alnoor Ayah Abdallah Magzoob Marwa Yahia Amal Ahmed Osman Ghadah Babiker Altieb Hanaa Mahmoud	Amnah Ahmed Hussain Hind Sallah Abdallah Najwa Alawad
Red Sea	Fatima Said Alamin	Amna Omer	Fatima Said Alamin Tahani Osman Ibrahim Faki Omer Ahmed	Rasha Abdalla Ibrahim Khadiga Gaffer Almotaleb Ibrahim Mahmud Mohamed	Amina Mahjoob Ahmed Fatima Mahmud Mohamed Amena Idrees Mohamed Seham Awad Ibrahim Badria Salah Mohamed Nada Hassan Ramadan Bosaina Ahmed Mohamed Nadreen Awad Fadul Almoula Wedad Said Alamin	Safya Mohamed Ahmed Amal Mohamed Ali Fatima Mohamed Abeed Tahani Osman Ibrahim

Kassala	Yousif Husein Abdelmageid	Mustafa Hassan Ali Basha	Rihab Mohamed Ali Eman Abasher El-Shiekh Abdellah El-Bokhary Osman	Nor Moahmed Osman Huda Saad Ahmed Amel Adam Mohamed	Sara Hassan Almahel Magda Mahjob Ibrahim Hanan Abdellah Saad Fatima Ahmed Byerag Tayseer Tahier Nayer Arfat Hasaballah Ahmed Nawal Elsir Idries Nagla Abdelfatah Mohamed Salih Aasma Ibrahim Idriss	Eman Musa El-Shikh Thorya Osman Hassan Amiera Abdein Hassan
Gadarif	Umsalma Gubara Ibrahim	Ali suliman ali	Abd Razig Rahama Mustafa Alzaki Altaher Ali Faiz Mohammed Abd alrahman	Amgad Abdalwahab Ebrahem Majda Mohammed saleh Saadia Mohammed Alhassan	Manahel Mahadi Musa Bedour Mohammed Alhassan Ebetahj Mohammed Alnour Hager Ahmed Abd eldin Khadega Saleh Hamed Rehab Musa Aljak Maisoun Abdalwahab Ebrahem Marem Mutasim Mohammed Thouwiba Ezz Eldin Osman	Elham Alamin Ebrahim Khadega Adem Abd allh Fataheia Mohammed Abdallh
Khartoum	Abdelgader Mohamed Ahmed	Husien Hassan Husien	Tarieg Mohamed El-Hassan Noon Mohamed Osman Suaad Dafallah	Sana Mohamed Sati Faiza Mohamed Ahmed Amel Eabyedi	Nadia Hassan Ezdehar Mohamed Osman Rasha Musa Asrar Eshag Amal Ezeldien Alwya Ali Esia Hanan Abdallah Manal Fadul Hanan Mohamed Osman	Amer Khider Bielges Suliman Mai Samri

Gezira	Awad Elsyed Abdalla Adam	Mustafa Eljack Mustafa	Rajya Musa Elawad Elrayah Mohamed Zaroug Elzain Abdalla Mohamed	Sawsan Abdalla Ahmed Rehab Hassan Abdelgadir Ihlam Mohamed Ali	Nashwa Abdelrahim Adam Hoayda Sharafeldeen Eltahir Hafiza Ibrahim Ahmed Hadeel Hashim Mohamed Limya Bashir Abdelrazig Wisal Abdalla Hamid Abir Shamsaldine Musa Alzina Dafallah Ahmed Safa Sala Khodly	Salma Mahajoub Awad Raja Hassan Abdalla Wigdan Omer Abdelgafar
White Nile	Khalifa Ahmed Mohamed	Fadwa Sied Ahmed	Mubarak Haj Musa Musa Wageallah Alnaw Ibrahim Abaas Mohamed	Huda Tagelsier Mohamed Amel Mustafa Mohamed Sania Hamed Omer	Eman Rahmtallah Gomaa Buthaina Abdallah Aaker Nmareg Mahjoub Mohamed Wala Adam Abdallah Ardnos Ibrahim Ali Tagwa Ahmed Adam Rashida Younis Husien Wegdan Wageallah Alnaw Hayat Ismael Suliman	Habiba Bashier El-Haj Afrah El-Hadi Adam Sediga Abaker Kharief
Sinnar	Mohamed Ahmed Asaker	Mahaseen Abdelgani	Mohamed Yagoup Khalifa Ibrahim Ahmed Hassan Ibtsam Omer Osman	Hanim Slman Yousif Hanan Ibrahim Heba El-Tayeb Abdelrazaag	Hajer Mustafa Sulafa Hassan El-Safi Zeinb Attallah Almnaan Nazik Salih Samah Mohyeldaien Suhaier Adam Ahmed Shahed Abubaker Mohamed Afraa osman Intsar Omer Mohamed	Abeer musa Mohamed Rasha Hassan mahmoud Hawa Abdelrahman Idrees

Blue Nile	Idres Omer Idres	Hanan Ali El-Shikh	Khalid Osman Ahmed Mustafa Khalid Mustafa Khalied Yousif El-Awad	Mariam Mohamed Abaker Amani Ibrahim Hekmat Hamaad	Malka Mohamed Adam Nada Hassan Koko Hala Mohamed Mustafa Awadia Abu Elhassan Elham Abdelgader Suliman Hajwa Abdelaziz Mubark Manahel El-haj Muser Ayat Omer Mariam Mohamed Abakar	Rogaya Osman Hassan Heba Mohyeldain Ahmed Huda Hamed Mohamed
North Kordofan	Ali Turo Mosa	Hanan Abass Sediq	Izaldeen Altigani Hamad Manal Mohammed Abdalla Mehasin Alsmani Altaib	Shaza Tarig Alshazaly Fatima Gamar Alasha Emam Albagir Kamal Albagir	Fatuma Osman Dgash Ilham Farah Abdalrhman Rihab Aljaily zian Alabdeen Rihab Omer Idriss Marim Babekr Abusara Eatizaz Ali Gesm Alla Mwahib Alsmani Rahma Reem Altaj Mohammed Rania Ibrahim Bakhit	Amna Abdalla Ahmed Adil Zehra Gibril Mohammed Halima Ibrahim Alddy
South Kordofan	Abaas Mohamdeen Hamouda Abugamah	Omer Osman Mohamed Ayoub	Faisal Mohamed Elamin Faisal Mohamed Adam Basher konona abdellah	Gaidum arees omer Romya mohammdny ebrahim Nemaat Musa Bringi	Hua Ibrahim Hamed Myada Abdelaziz Omer Zamzam El-haj Mohamed Egbal rodwan Mohamed Fathia abdelmotaleb Malak haggar Mohamed Mariam Abdallah trtoor Siham Fathi Mohamed Latifa Hamed Ibrahim	Hajer Ismael Fadellah Bedoor Hasien El-balabi Aaisha Gomaa Obied
West Kordofan	Eltayeb Gomma Mohamed	Kheirallah Mohammed Khamei	Kheirallah Mohammed Khamei Ahmed Ankosh Ahmed Ali Ahmed Eisa	Islam Jaber Almaki Mariam Sobahi Elian Somia Ibrahim Omer	Hanan Abdalrahman Seliman Nagwa Mergani Ahmed Mona Ahmed Hamdan	Monira Ahmed Ibrahim Awdia Ahmed Mohammed Sahar Adam Seliman

					Wafa Ali Hamed Ehlam Saeed Adam Altouma Ibrahim Homidan Shaza Ahmed Aldaw Yasmin Mohammed Homidan Salma Yosef Mahadi	
North Darfur	Somia Abdallah Ibrahim	Abdelrahman El-Khalifa	Khalda Abdallah Imam Husien Mahmoud Badawi Mohamed Musa Ibraim	Mahasin Ibrahim El-Haj Nagat Abdallah Ibraim Ayda Ali Adam	Suha Gaber Atem Aasha Abelmaged Mohamed Nada Gebril Goma Madina Adam ibrahim Israa Adam El-Haj Mstora Musa ali Mahaa Ahmed Syada Abdallah Ahmed Najwa Salih Ahmed	Najla Hamed Mohamed Hawa Adam Diego Safa Aibraim Adam
West Darfur	Wafa Hassan Mansour	Salah Abdelrahman Maged	Hasim Husien Togol Mubark Mohamed Abdallah Mohamed Ahmed Bader	El-Tayeb Musa Hasab Allah Gada Musa Abdallah Rania Adam Abdallah	Rawda Mohamed Adam Shama Suliman Abdelkarem Zeinab Hashim Ibrahim Egbal Hassan Ramdan Manal Mohamed Bader Mahasin Musa Abdallah Tagreed Adam Haroun Amani Fadul Hassan Nagat Hassan Mansour	Mariam Yahya Ismael Asma Abdelrahman Hamed Sadeya Adam Yagoub
South Darfur	El-Magboul Abdallah aAbaker	Eisaa Ali Abaker	Tarieg Hesabo Adam Ahmed Abdallah Abugoula Mustafa Abdelrahman Yagoub	Muna Moahmed Ahmed Nemaat Moahmed Ahmed Amani Eisaa ali	Dalia Salaheldien Muna Mohamed Adam Haja Gameel Allah Ahmed Tasabieh Mohamed Adam Eman Mohamed Abugola	Abubaker Hassan Ibrahim El-Hafez Musa Suliman Ahmed Adam Mohamed

					Sara Mubarak Mohamed	
					Muzdalefa Omer Abaker	
					Munera Yahya Abdelrahman	
					Intsar Adam Senien	
Central Darfur	El-Hafez Ibrahim Ahmed	Ismael Abaker Banda	Mohamed Mustafa Ogal Hayder Ides Yahya Zien El-Abdein Osman	Zubida Adam Hamed Siham Idres Arbab Amani Abelmutalib Salih	Hanan Musa Badallh Manahel Abdallah Ishag Zuhal Salih Madani Muna Logman Abaker Ibtehal Salih Mohamed Mahasin Salih Osman Kawser Idres Mohamed Salma Mohamed Osman	Nagat Abuker Mohamed Tsabih Mohamed Aldoma Magboula Abdelshafea
East Darfur	Mohamed Ahmed	Asim Markhni Mohamed Osman	Aseel Abdalwahab Adam Basher Easa Ali Omar Abdelmajied Ahmed Samsedin Osman	Rihab El-Sadig Mohammed Om Salama Ahmed Fadlla Yusuf Zahra Hammad Dogoush Ali	Namarig Abdallah Mohammed Masin Abdalrahman Mohammed Taiseer Ahmed Beniamen Hawa Ibrahim Ahmed Mazaher Mohammed Khalefa Howida Daw El-bietn Mahmoud Taiseer Adam Haroun Korsi Insaf Guam Khamis Awatif Omda Bakhet Wade	Haja Mohammed Hassan Harm Husian Ahmed Anas Adam Ahmed Abdalla Ibrahim Mohammed

276

Appendix C: Estimates of Sampling Errors

C1. Replacement of Clusters in Conflict affected areas

MICS 2014 has been realized in a rather challenging context of ongoing longterm armed conflicts, and chief among them are the many displacements of populations prevalent in the Darfur and Kordofan states. High risk mining areas have also presented their own set of unique challenges.

A very large sample design has been defined for MICS 2014 in Sudan which comprises 720 Clusters (40 per state), 18,000 Households (1,000 per state) in order to ensure adequate representativeness of statistical estimation by each state.

During the implementation of the field data collection, the Central Bureau of Statistics (CBS) has been constrained to replace 22 clusters (enumeration areas) of the 720 sampled for the survey, which represent 3%. The maximum number of clusters that have been replaced within state is four (4) clusters in Red Sea, West Kordofan, East and Central Darfur. This in addition to two clusters in Kassala and one cluster in each of South Darfur; West Darfur Khartoum and Gedaref.

The main reason of replacement of clusters are as follows:

1. Insecurity in the Darfur states
2. Mining areas in Kassala state
3. Displacements of population in the Red Sea state, and
4. Rainy season in Gadaref state.

The Central Bureau of Statistics benefiting of solid expertise of Consultant in Sampling, has developed adequate technical measures by providing to the field work team leader (technical expert), clear instructions that have enabled them to perform the replacement in close compliance to the statistical practice of replacement of enumeration area by choosing the nearest accessible area using list of frame in respect of urban and rural areas.

Taking into account the provisional measure of sample design which has included 10% of "non-respondents rate" and the expansion of initial calculated required sample from 930 clusters to 1,000, any anticipated error which may merge from the replacements has been fully absorbed. Indicators measured for MICS 2014 in Sudan is not affected by the replacement of 22 clusters (from 1 to maximum 4 into some states).

The table below indicates the geographic distribution of replaced 22 samples of cluster implemented during the survey.

State	Area	Locality Name	AU	Cluster No.	PAU_Name	HHS
Red Sea	Rural	Ganib	El Aoleeb	201	Giadet	83
	Rural	Ganib	El Aoleeb	202	Ashtake	100
	Rural	Sawakin	Rifi Sawakin	202	Merkeb	١٥٠
	Rural	Haya	Rifi Haya	201	Rahedet	٣٦٧

State	Area	Locality Name	AU	Cluster No.	PAU_Name	HHS
Kassala	Rural	Hamashkoraib	Hamashkoraib	202	Teshaier I	٩٩
	Rural	Talkook	Talkook	201	Tm Kafar	٢٣٩
Gadaref	Rural	Rahad	Wad El Shaair	201	Barbar	١٣١
Khartoum	Urban	Jebel Aulia	Nasr	١٠١	Al Mansora Moraba wahed	٢٢٣
West Kordofan	Rural	Lagawa	Rifi Sinoot	201	Algasabo	١٢٤
	Rural	Essalam	Rifi Kigaira	201	Bagara	١٤٩
	Rural	Abiae	Rifi Muglad	203	Om Al bashar	١٢٣
	Rural	Abiae	Rifi Mairam	202	Abo betek	١٣٧
Central Darfur	Rural	Azoom	Um Shalaya	201	Muaskr Lagen	150
	Rural	Wadi Salih	Rifi Um Khair	201	Helat Al goz	163
	Rural	Wadi Salih	Rifi Bendisi	203	Gander	45
	Rural	Wadi Salih	Rifi Bendisi	204	Batat Rasol	113
South Darfur	Rural	Rihaid Burdi	Um Dagoog	201	Al mased	114
East Darfur	Rural	Shiairiya	Rifi Yassin	201	Kelal Mogo	186
	Rural	Adila	Abu Karinka	201	Baket Hai al wehda	138
	Rural	Adila	Rifi Sharif	201	Om Nalala	297
	Rural	Adila	Rifi Sharif	201	Al Gora	256
West Darfur	Urban	Ginaina	Ginaina Town	123	Hai Al Kobre	146

Benefiting of the international expertise of the Global MICS Consultant of Sampling, the probability of selection of the 22 replaced clusters have been recalculated taking into account the initial population size from 2008 population census and the enumerated population in 2014. This has been integrated into the calculation of weight factor of measurement of indicators. The test has been performed to compare indicators generated without or including the revised probability, which resulted in a positive conclusion of no difference of estimations: **the replacement of 22 clusters due to the conflicts did not affect the accuracy of indicators**.

C2. Sampling Errors

The sample of respondents selected in the Sudan Multiple Indicator Cluster Survey (MICS5) is only one of the samples that could have been selected from the same population, using the same design and size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between the estimates from all possible samples. The extent of variability is not known exactly, but can be estimated statistically from the survey data.

The following sampling error measures are presented in this appendix for each of the selected indicators:

- *Standard error* (*se*): Standard error is the square root of the variance of the estimate. For survey indicators that are means, proportions or ratios, the Taylor series linearization method is used for the estimation of standard errors. For more complex statistics, such as fertility and mortality rates, the Jack-knife repeated replication method is used for standard error estimation.
- *Coefficient of variation* (*se/r*) is the ratio of the standard error to the value (*r*) of the indicator, and is a measure of the relative sampling error.
- *Design effect* (*deff*) is the ratio of the actual variance of an indicator, under the sampling method used in the survey, to the variance calculated under the assumption of simple random sampling based on the same sample size. The *square root of the design effect* (*deft*) is used to show the efficiency of the sample design in relation to the precision. A *deft* value of 1.0 indicates that the sample design of the survey is as efficient as a simple random sample for a particular indicator, while a *deft* value above 1.0 indicates an increase in the standard error due to the use of a more complex sample design.
- *Confidence limits* are calculated to show the interval within which the true value for the population can be reasonably assumed to fall, with a specified level of confidence. For any given statistic calculated from the survey, the value of that statistic will fall within a range of plus or minus two times the standard error (*r* + 2.*se* or *r* − 2.*se*) of the statistic in 95 percent of all possible samples of identical size and design.

For the calculation of sampling errors from MICS data, programs developed in CSPro Version 5.0, SPSS Version 21 Complex Samples module and CMRJack[53] have been used.

The results are shown in the tables that follow. In addition to the sampling error measures described above, the tables also include weighted and unweighted counts of denominators for each indicator.

Given the use of normalized weights, by comparing the weighted and unweighted counts, it is possible to determine whether a particular domain has been under-sampled or over-sampled compared to the average sampling rate. If the weighted count is smaller than the unweighted count, this means that the particular domain has been over-sampled. As explained later in the footnote of Table SE.1, there is an exception in the case of indicators 4.1 and 4.3, for which the unweighted count represents the number of sample households, and the weighted counts reflect the total population.

Sampling errors are calculated for indicators of primary interest, for the national level. Three of the selected indicators are based on households members, 7 are based on women, and 2 are based on children under 5. Table SE.1 shows the list of indicators for which sampling errors are calculated, including the base population (denominator) for each indicator.

---

[53] CMRJack is a software developed by FAFO, an independent and multidisciplinary research foundation. CMRJack produces mortality estimates and standard errors for surveys with complete birth histories or summary birth histories. See http://www.fafo.no/ais/child_mortality/index.html

Table SE.2:	**Sampling Errors: Total Sample - Sudan**									
Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014										

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2se	*r + 2se*
Household Members										
Use of improved drinking water sources	WS.1	.6804	.01432	.021	15.846	3.981	98,883	16,801	0.652	0.709
Use of improved sanitation	WS.5	.3286	.01206	.037	11.070	3.327	98,883	16,801	0.304	0.353
Primary school net attendance ratio (adjusted)	ED.4	.7642	.00796	.010	8.065	2.840	22,977	22,924	0.748	0.780
Women										
Contraceptive prevalence rate	RH.5	.1223	.00562	.046	3.533	1.880	11,867	12,023	0.111	0.134
Unmet need	RH.6	.2658	.00579	.022	2.068	1.438	11,867	12,023	0.254	0.277
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7909	.01034	.013	3.673	1.917	5,622	5,684	0.770	0.812

Table SE.2:	Sampling Errors: Total Sample - Sudan									
Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014										
Antenatal care coverage (4+ times, any provider)	**RH.8**	.5073	.01132	.022	2.912	1.706	5,622	5,684	0.485	0.530
Skilled attendant at delivery	RH.10	.7773	.01278	.016	5.363	2.316	5,622	5,684	0.752	0.803
Literacy rate (young women)	ED.1	.5978	.01344	.022	5.111	2.261	6,871	6,805	0.571	0.625
Knowledge about HIV prevention (young women)	HA.1	.0851	.00752	.088	4.949	2.225	6,871	6,805	0.070	0.100
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3305	.00870	.026	3.885	1.971	11,713	11,367	0.313	0.348
Underweight prevalence (severe)	NU.2	.1202	.00561	.047	3.388	1.841	11,713	11,367	0.109	0.131

Table SE.3: Sampling Errors: Urban

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	Confidence limits r + 2se
Household Members										
Use of improved drinking water sources	WS.1	.7830	.01843	.024	9.647	3.106	30,476	4825	0.746	0.820
Use of improved sanitation	WS.5	.5704	.01595	.028	5.011	2.239	30,476	4825	0.538	0.602
Primary school net attendance ratio (adjusted)	ED.4	.9141	.00623	.007	3.132	1.770	6,446	6,340	0.902	0.927
Women										
Contraceptive prevalence rate	RH.5	.2005	.00960	.048	1.967	1.403	3,437	3420	0.181	0.220
Unmet need	RH.6	.2443	.01075	.044	2.141	1.463	3,437	3420	0.223	0.266
Antenatal care coverage (1+ times, skilled provider)	RH.7	.9077	.00993	.011	1.768	1.330	1,488	1503	0.888	0.928
Antenatal care coverage (4+ times, any provider)	**RH.8**	.7178	.01547	.022	1.774	1.332	1,488	1503	0.687	0.749
Skilled attendant at delivery	RH.10	.9322	.01242	.013	3.667	1.915	1,488	1503	0.907	0.957
Literacy rate (young women)	ED.1	.7975	.01818	.023	4.607	1.589	2,262	2,253	0.761	0.834
Knowledge about HIV prevention (young women)	HA.1	.1231	.01381	.112	3.978	1.995	2,262	2253	0.095	0.151
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2324	.01116	.048	2.249	1.500	3,405	3224	0.210	0.255
Underweight prevalence (severe)	NU.2	.0756	.00626	.083	1.807	1.344	3,405	3224	0.063	0.088

Table SE.4: Sampling Errors: Rural

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators
Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	Confidence limits r + 2se
Household members										
Use of improved drinking water sources	WS.1	.6347	.01935	.030	19.340	4.398	68,407	11,976	0.596	0.673
Use of improved sanitation	WS.5	.2209	.01596	.072	17.720	4.209	68,407	11,976	0.189	0.253
Primary school net attendance ratio (adjusted)	ED.4	.7058	.01052	.015	8.844	2.974	16,531	16,584	0.685	0.727
Women										
Contraceptive prevalence rate	RH.5	.0905	.00679	.075	4.817	2.195	8,430	8,603	0.077	0.104
Unmet need	RH.6	.2745	.00683	.025	2.013	1.419	8,430	8,603	0.261	0.288
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7489	.01357	.018	4.094	2.023	4,134	4,181	0.722	0.776
Antenatal care coverage (4+ times, any provider)	**RH.8**	.4315	.01358	.031	3.144	1.773	4,134	4,181	0.404	0.459
Skilled attendant at delivery	RH.10	.7216	.01700	.024	6.014	2.452	4,134	4,181	0.688	0.756
Literacy rate (young women)	ED.1	.4997	.01769	.035	5.695	2.386	4,609	4,552	0.464	0.535
Knowledge about HIV prevention (young women)	HA.1	.0664	.00890	.134	5.811	2.411	4,609	4,552	0.049	0.084
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3706	.01064	.029	3.954	1.988	8,308	8,143	0.349	0.392
Underweight prevalence (severe)	NU.2	.1385	.00725	.052	3.586	1.894	8,308	8,143	0.124	0.153

Table SE.5: Sampling Errors: Northern State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	r + 2se
Household Members										
Use of improved drinking water sources	WS.1	.9381	.03308	.035	18.022	4.245	2,181	957	0.872	1.000
Use of improved sanitation	WS.5	.7938	.04120	.052	9.915	3.149	2,181	957	0.711	0.876
Primary school net attendance ratio (adjusted)	ED.4	.9549	.01090	.011	2.482	1.576	404	900	0.933	0.977
Women										
Contraceptive prevalence rate	RH.5	.2289	.02817	.123	2.953	1.718	280	658	0.173	0.285
Unmet need	RH.6	.2993	.02244	.075	1.577	1.256	280	658	0.254	0.344
Antenatal care coverage (1+ times, skilled provider)	RH.7	.9465	.01569	.017	1.046	1.023	92	216	0.915	0.978
Antenatal care coverage (4+ times, any provider)	**RH.8**	.6646	.03704	.056	1.323	1.150	92	216	0.590	0.739
Skilled attendant at delivery	RH.10	.9903	.00568	.006	.720	.849	92	216	0.979	1.000
Literacy rate (young women)	ED.1	.9149	.02162	.024	2.052	1.432	1.432	343	0.872	0.958
Knowledge about HIV prevention (young women)	HA.1	.1469	.01503	.102	.616	.785	146	343	0.117	0.177
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2194	.02467	.112	1.720	1.311	214	485	0.170	0.269
Underweight prevalence (severe)	NU.2	.0453	.01471	.325	2.424	1.557	214	485	0.016	0.075

284

Table SE.6: Sampling Errors: River Nile State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators
Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	Confidence limits r + 2se
Household members										
Use of improved drinking water sources	WS.1	.8829	.03686	.042	12.181	3.490	3,715	928	0.809	0.957
Use of improved sanitation	WS.5	.4981	.03861	.078	5.529	2.351	3,715	928	0.421	0.575
Primary school net attendance ratio (adjusted)	ED.4	.9108	.02986	.033	10.600	3.256	665	967	0.851	0.971
Women										
Contraceptive prevalence rate	RH.5	.2133	.02120	.099	1.638	1.280	409	613	0.171	0.256
Unmet need	RH.6	.2476	.02182	.088	1.564	1.251	409	613	0.204	0.291
Antenatal care coverage (1+ times, skilled provider)	RH.7	.9516	.01566	.016	1.231	1.109	151	232	0.920	0.983
Antenatal care coverage (4+ times, any provider)	**RH.8**	.5292	.04388	.083	1.785	1.336	151	232	0.441	0.617
Skilled attendant at delivery	RH.10	.9710	.01907	.020	2.985	1.728	151	232	0.933	1.000
Literacy rate (young women)	ED.1	.7984	.03635	.046	3.013	1.736	253	368	0.726	0.871
Knowledge about HIV prevention (young women)	HA.1	.1666	.02541	.152	1.706	1.306	253	368	0.116	0.217
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3217	.03003	.093	2.028	1.424	338	492	0.262	0.382
Underweight prevalence (severe)	NU.2	.1102	.01304	.118	.851	.923	338	492	0.084	0.136

Table SE.7: Sampling Errors: Red Sea State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators
Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	Confidence limits r + 2se
Household members										
Use of improved drinking water sources	WS.1	.3319	.05621	.169	13.208	3.634	2,489	928	0.219	0.444
Use of improved sanitation	WS.5	.5243	.03454	.066	4.435	2.106	2,489	928	0.455	0.593
Primary school net attendance ratio (adjusted)	ED.4	.8443	.02707	.032	5.000	2.236	512	898	0.790	0.898
Women										
Contraceptive prevalence rate	RH.5	.0960	.01300	.135	1.097	1.047	323	564	0.070	0.122
Unmet need	RH.6	.1913	.02213	.116	1.783	1.335	323	564	0.147	0.236
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7237	.03614	.050	.967	.983	92	149	0.651	0.796
Antenatal care coverage (4+ times, any provider)	**RH.8**	.5342	.03805	.071	.861	.928	92	149	0.458	0.610
Skilled attendant at delivery	RH.10	.7778	.03773	.049	1.219	1.104	92	149	0.702	0.853
Literacy rate (young women)	ED.1	.7190	.04422	.062	2.420	1.555	150	251	0.631	0.807
Knowledge about HIV prevention (young women)	HA.1	.0534	.01620	.304	1.299	1.140	150	251	0.021	0.086
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3363	.02908	.086	1.122	1.059	182	297	0.278	0.395
Underweight prevalence (severe)	NU.2	.1586	.02327	.147	1.201	1.096	182	297	0.112	0.205

Table SE.8: Sampling errors: Kassala State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2se	*r + 2se*
Household members										
Use of improved drinking water sources	WS.1	.5721	.07354	.129	19.840	4.454	4,117	899	0.425	0.719
Use of improved sanitation	WS.5	.2934	.06413	.219	17.816	4.221	4,117	899	0.165	0.422
Primary school net attendance ratio (adjusted)	ED.4	.6833	.06772	.099	26.509	5.149	1,016	1,252	0.548	0.819
Women										
Contraceptive prevalence rate	RH.5	.0791	.02388	.302	5.263	2.294	506	673	0.031	0.127
Unmet need	RH.6	.1666	.01408	.085	.959	.979	506	673	0.138	0.195
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8305	.02294	.028	1.010	1.005	199	271	0.785	0.876
Antenatal care coverage (4+ times, any provider)	**RH.8**	.5395	.05229	.097	2.972	1.724	199	271	0.435	0.644
Skilled attendant at delivery	RH.10	.7704	.03911	.051	2.335	1.528	199	271	0.692	0.849
Literacy rate (young women)	ED.1	.4842	.05434	.112	3.902	1.975	272	331	0.376	0.593
Knowledge about HIV prevention (young women)	HA.1	.0695	.01968	.283	1.978	1.407	272	331	0.030	0.109
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.4195	.03545	.085	2.772	1.665	409	538	0.349	0.490
Underweight prevalence (severe)	NU.2	.1554	.02106	.135	1.814	1.347	409	538	0.113	0.198

Table SE.9: Sampling Errors: Gadarif State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits *r - 2se*	Confidence limits *r + 2se*
Household members										
Use of improved drinking water sources	WS.1	.2771	.04833	.174	11.030	3.321	5,005	947	0.180	0.374
Use of improved sanitation	WS.5	.0979	.02025	.207	4.393	2.096	5,005	947	0.057	0.138
Primary school net attendance ratio (adjusted)	ED.4	.7232	.03414	.047	7.848	2.801	1,220	1,349	0.655	0.792
Women										
Contraceptive prevalence rate	RH.5	.0949	.01654	.174	2.283	1.511	630	718	0.062	0.128
Unmet need	RH.6	.2400	.02466	.103	2.390	1.546	630	718	0.191	0.289
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8054	.04011	.050	3.552	1.885	307	347	0.725	0.886
Antenatal care coverage (4+ times, any provider)	**RH.8**	.4479	.03753	.084	1.970	1.404	307	347	0.373	0.523
Skilled attendant at delivery	RH.10	.8267	.04960	.060	5.943	2.438	307	347	0.728	0.926
Literacy rate (young women)	ED.1	.4276	.05778	.135	5.170	2.274	327	380	0.312	0.543
Knowledge about HIV prevention (young women)	HA.1	.0574	.01425	.248	1.422	1.193	327	380	0.029	0.086
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3766	.03366	.089	3.567	1.889	666	740	0.309	0.444
Underweight prevalence (severe)	NU.2	.1555	.01967	.127	2.178	1.476	666	740	0.116	0.195

Table SE.10: Sampling Errors: Khartoum State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	Confidence limits r + 2se
Household members										
Use of improved drinking water sources	WS.1	.8691	.03497	.040	9.894	3.145	13,830	921	0.799	0.939
Use of improved sanitation	WS.5	.6641	.02698	.041	3.003	1.733	13,830	921	0.610	0.718
Primary school net attendance ratio (adjusted)	ED.4	.9527	.00981	.010	2.312	1.520	2,788	1,083	0.933	0.972
Women										
Contraceptive prevalence rate	RH.5	.2651	.01809	.068	1.117	1.057	1,623	666	0.229	0.301
Unmet need	RH.6	.2125	.01665	.078	1.102	1.050	1,623	666	0.179	0.246
Antenatal care coverage (1+ times, skilled provider)	RH.7	.9715	.01177	.012	1.364	1.168	684	274	0.948	0.995
Antenatal care coverage (4+ times, any provider)	**RH.8**	.8187	.03116	.038	1.786	1.336	684	274	0.756	0.881
Skilled attendant at delivery	RH.10	.9956	.00441	.004	1.213	1.101	684	274	0.987	1.000
Literacy rate (young women)	ED.1	.8257	.03025	.037	2.747	1.657	1,053	433	0.765	0.886
Knowledge about HIV prevention (young women)	HA.1	.1563	.03122	.200	3.192	1.787	1,053	433	0.094	0.219
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2319	.02027	.087	1.487	1.220	1,603	646	0.191	0.272
Underweight prevalence (severe)	NU.2	.0645	.01026	.159	1.126	1.061	1,603	646	0.044	0.085

Table SE.11: Sampling Errors: Gezira State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	Confidence limits r + 2se
Household members										
Use of improved drinking water sources	WS.1	.8890	.04486	.050	20.121	4.486	16,270	988	0.799	0.979
Use of improved sanitation	WS.5	.3828	.05045	.132	10.633	3.261	16,270	988	0.282	0.484
Primary school net attendance ratio (adjusted)	ED.4	.7935	.02476	.031	4.437	2.106	1,148	1,187	0.744	0.843
Women										
Contraceptive prevalence rate	RH.5	.1222	.02204	.180	3.627	1.904	1,961	802	0.078	0.166
Unmet need	RH.6	.2872	.01982	.069	1.537	1.240	1,961	802	0.248	0.327
Antenatal care coverage (1+ times, skilled rovider)	RH.7	.8325	.02779	.033	1.844	1.358	852	334	0.777	0.888
Antenatal care coverage (4+ times, any provider)	**RH.8**	.5049	.03393	.067	1.533	1.238	852	334	0.437	0.573
Skilled attendant at delivery	RH.10	.9251	.02595	.028	3.234	1.798	852	334	0.873	0.977
Literacy rate (young women)	ED.1	.6639	.04508	.068	4.744	2.178	1,231	522	0.574	0.754
Knowledge about HIV prevention (young women)	HA.1	.0942	.02607	.277	4.152	2.038	1,231	522	0.042	0.146
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3236	.03568	.110	4.491	2.119	2,084	773	0.252	0.395
Underweight prevalence (severe)	NU.2	.1232	.02454	.199	4.302	2.074	2,084	773	0.074	0.172

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits	
									r - 2se	r + 2se
Household members										
Use of improved drinking water sources	WS.1	.3274	.04966	.152	10.203	3.194	5,016	912	0.228	0.427
Use of improved sanitation	WS.5	.2979	.03504	.118	5.348	2.313	5,016	912	0.228	0.368
Primary school net attendance ratio (adjusted)	ED.4	.7935	.02476	.031	4.437	2.106	1,148	1,187	0.744	0.843
Women										
Contraceptive prevalence rate	RH.5	.1561	.01671	.107	1.406	1.186	577	664	0.123	0.190
Unmet need	RH.6	.2885	.01906	.066	1.174	1.083	577	664	0.250	0.327
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7880	.02719	.035	1.372	1.171	273	311	0.734	0.842
Antenatal care coverage (4+ times, any provider)	**RH.8**	.4549	.03547	.078	1.573	1.254	273	311	0.384	0.526
Skilled attendant at delivery	RH.10	.9233	.01677	.018	1.231	1.110	273	311	0.890	0.957
Literacy rate (young women)	ED.1	.6754	.03812	.056	2.399	1.549	312	363	0.599	0.752
Knowledge about HIV prevention (young women)	HA.1	.0361	.01093	.303	1.243	1.115	312	363	0.014	0.058
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2979	.02380	.080	1.666	1.291	572	616	0.250	0.346
Underweight prevalence (severe)	NU.2	.1111	.01432	.129	1.276	1.130	572	616	0.083	0.140

Table SE.13: Sampling Errors: Sinnar State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	r + 2se
Household members										
Use of improved drinking water sources	WS.1	.8868	.02618	.030	6.512	2.552	3,763	955	0.834	0.939
Use of improved sanitation	WS.5	.1858	.02464	.133	3.827	1.956	3,763	955	0.137	0.235
Primary school net attendance ratio (adjusted)	ED.4	.8159	.03312	.041	8.675	2.945	816	1,189	0.750	0.882
Women										
Contraceptive prevalence rate	RH.5	.1354	.01993	.147	2.303	1.517	450	680	0.096	0.175
Unmet need	RH.6	.2615	.01874	.072	1.235	1.111	450	680	0.224	0.299
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7531	.03499	.046	2.219	1.490	226	338	0.683	0.823
Antenatal care coverage (4+ times, any provider)	**RH.8**	.4350	.02942	.068	1.187	1.089	226	338	0.376	0.494
Skilled attendant at delivery	RH.10	.8915	.04175	.047	6.071	2.464	226	338	0.808	0.975
Literacy rate (young women)	ED.1	.5404	.03961	.073	2.394	1.547	257	380	0.461	0.620
Knowledge about HIV prevention (young women)	HA.1	.0963	.01930	.200	1.622	1.274	257	380	0.058	0.135
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3639	.03956	.109	4.719	2.172	471	699	0.285	0.443
Underweight prevalence (severe)	NU.2	.1463	.01982	.135	2.196	1.482	471	699	0.107	0.186

Table SE.14: Sampling Errors: Blue Nile State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2se	r + 2se
Household members										
Use of improved drinking water sources	WS.1	.7129	.04713	.066	10.342	3.216	4,094	954	0.619	0.807
Use of improved sanitation	WS.5	.3967	.07000	.176	19.512	4.417	4,094	954	0.257	0.537
Primary school net attendance ratio (adjusted)	ED.4	.7797	.02373	.030	4.489	2.119	979	1,370	0.732	0.827
Women										
Contraceptive prevalence rate	RH.5	.0710	.01313	.185	1.997	1.413	525	765	0.045	0.097
Unmet need	RH.6	.2584	.02514	.097	2.519	1.587	525	765	0.208	0.309
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7181	.05337	.074	5.938	2.437	287	423	0.611	0.825
Antenatal care coverage (4+ times, any provider)	**RH.8**	.4268	.03984	.093	2.737	1.655	287	423	0.347	0.506
Skilled attendant at delivery	RH.10	.6099	.07716	.127	10.560	3.250	287	423	0.456	0.764
Literacy rate (young women)	ED.1	.3607	.03833	.106	2.810	1.676	297	442	0.284	0.437
Knowledge about HIV prevention (young women)	HA.1	.0897	.02489	.277	3.346	1.829	297	442	0.040	0.139
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3526	.02004	.057	1.707	1.306	668	971	0.313	0.393
Underweight prevalence (severe)	NU.2	.1070	.01120	.105	1.273	1.128	668	971	0.085	0.129

Table SE.15:   Sampling Errors: North Kordofan State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

| | Table | Value (*r*) | Standard error (*se*) | Coefficient of variation (*se/r*) | Design effect (*deff*) | Square root of design effect (*deft*) | Weighted count | Unweighted count | Confidence limits | |
									r - 2se	*r + 2se*
Household members										
Use of improved drinking water sources	WS.1	.6978	.05574	.080	13.658	3.696	6,359	928	0.586	0.809
Use of improved sanitation	WS.5	.2503	.03373	.135	5.620	2.371	6,359	928	0.183	0.318
Primary school net attendance ratio (adjusted)	ED.4	.7385	.03716	.050	8.651	2.941	1,506	1,211	0.664	0.813
Women										
Contraceptive prevalence rate	RH.5	.1467	.02179	.149	2.276	1.509	743	601	0.103	0.190
Unmet need	RH.6	.3241	.02052	.063	1.153	1.074	743	601	0.283	0.365
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8559	.02484	.029	1.466	1.211	352	294	0.806	0.906
Antenatal care coverage (4+ times, any provider)	**RH.8**	.5771	.03680	.064	1.626	1.275	352	294	0.503	0.651
Skilled attendant at delivery	RH.10	.8846	.03664	.041	3.852	1.963	352	294	0.811	0.958
Literacy rate (young women)	ED.1	.5879	.05185	.088	4.328	2.080	471	391	0.484	0.692
Knowledge about HIV prevention (young women)	HA.1	.0223	.00693	.311	.859	.927	471	391	0.008	0.036
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3241	.02068	.064	1.212	1.101	752	622	0.283	0.365
Underweight prevalence (severe)	NU.2	.1150	.01358	.118	1.125	1.061	752	622	0.088	0.142

Table SE.16: Sampling Errors: South Kordofan State										

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2se	*r + 2se*
Household members										
Use of improved drinking water sources	WS.1	.6008	.06134	.102	15.058	3.880	2,983	961	0.478	0.723
Use of improved sanitation	WS.5	.1432	.02996	.209	7.020	2.649	2,983	961	0.083	0.203
Primary school net attendance ratio (adjusted)	ED.4	.6945	.05417	.078	21.698	4.658	779	1,570	0.586	0.803
Women										
Contraceptive prevalence rate	RH.5	.0899	.01489	.166	2.094	1.447	355	774	0.060	0.120
Unmet need	RH.6	.3379	.03182	.094	3.498	1.870	355	774	0.274	0.402
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8506	.02691	.032	2.559	1.600	194	450	0.797	0.904
Antenatal care coverage (4+ times, any provider)	**RH.8**	.5926	.03231	.055	1.941	1.393	194	450	0.528	0.657
Skilled attendant at delivery	RH.10	.8020	.05731	.071	9.287	3.047	194	450	0.687	0.917
Literacy rate (young women)	ED.1	.4917	.04650	.095	4.006	2.002	197	464	0.399	0.585
Knowledge about HIV prevention (young women)	HA.1	.0948	.02539	.268	3.479	1.865	197	464	0.044	0.146
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3483	.02906	.083	3.299	1.816	431	888	0.290	0.406
Underweight prevalence (severe)	NU.2	.1446	.01504	.104	1.622	1.274	431	888	0.115	0.175

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2se	r + 2se
Household members										
Use of improved drinking water sources	WS.1	.8603	.03154	.037	7.208	2.685	5,745	872	0.797	0.923
Use of improved sanitation	WS.5	.1038	.02301	.222	4.958	2.227	5,745	872	0.058	0.150
Primary school net attendance ratio (adjusted)	ED.4	.5413	.03653	.067	6.940	2.634	1,483	1,292	0.468	0.614
Women										
Contraceptive prevalence rate	RH.5	.0606	.01180	.195	1.473	1.214	687	603	0.037	0.084
Unmet need	RH.6	.2394	.01839	.077	1.118	1.058	687	603	0.203	0.276
Antenatal care coverage (1+ times, skilled provider)	RH.7	.6528	.04488	.069	2.497	1.580	341	282	0.563	0.743
Antenatal care coverage (4+ times, any provider)	**RH.8**	.2814	.03469	.123	1.673	1.293	341	282	0.212	0.351
Skilled attendant at delivery	RH.10	.6734	.05485	.081	3.843	1.960	341	282	0.564	0.783
Literacy rate (young women)	ED.1	.3287	.04861	.148	3.288	1.813	341	308	0.231	0.426
Knowledge about HIV prevention (young women)	HA.1	.0436	.01619	.371	1.928	1.389	341	308	0.011	0.076
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3870	.03407	.088	1.708	1.307	388	350	0.319	0.455
Underweight prevalence (severe)	NU.2	.1475	.01668	.113	.772	.879	388	350	0.114	0.181

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits	
									r - 2se	r + 2se
Household members										
Use of improved drinking water sources	WS.1	.5064	.03806	.075	5.292	2.300	7,776	914	0.430	0.583
Use of improved sanitation	WS.5	.1227	.02094	.171	3.719	1.928	7,776	914	0.081	0.165
Primary school net attendance ratio (adjusted)	ED.4	.7669	.01693	.022	2.332	1.527	1,949	1,455	0.733	0.801
Women										
Contraceptive prevalence rate	RH.5	.0369	.00742	.201	.964	.982	913	623	0.022	0.052
Unmet need	RH.6	.2967	.01880	.063	1.054	1.027	913	623	0.259	0.334
Antenatal care coverage (1+ times, skilled provider)	RH.7	.6866	.03150	.046	1.627	1.276	525	354	0.624	0.750
Antenatal care coverage (4+ times, any provider)	**RH.8**	.3688	.02850	.077	1.232	1.110	525	354	0.312	0.426
Skilled attendant at delivery	RH.10	.6071	.05101	.084	3.850	1.962	525	354	0.505	0.709
Literacy rate (young women)	ED.1	.5602	.05055	.090	3.444	1.856	479	333	0.459	0.661
Knowledge about HIV prevention (young women)	HA.1	.0351	.01243	.355	1.516	1.231	479	333	0.010	0.060
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.4486	.01842	.041	.867	.931	861	633	0.412	0.485
Underweight prevalence (severe)	NU.2	.1691	.01586	.094	1.132	1.064	861	633	0.137	0.201

Table SE.18: Sampling Errors: North Darfur State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

Table SE.19: Sampling Errors: West Darfur State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	r + 2se
Household members										
Use of improved drinking water sources	WS.1	.6753	.04993	.074	10.269	3.205	3,023	904	0.575	0.775
Use of improved sanitation	WS.5	.1598	.04546	.284	13.899	3.728	3,023	904	0.069	0.251
Primary school net attendance ratio (adjusted)	ED.4	.6027	.03358	.056	6.490	2.548	841	1,379	0.536	0.670
Women										
Contraceptive prevalence rate	RH.5	.0411	.01053	.256	1.780	1.334	383	634	0.020	0.062
Unmet need	RH.6	.2116	.01755	.083	1.168	1.081	383	634	0.176	0.247
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7523	.04653	.062	3.450	1.857	179	298	0.659	0.845
Antenatal care coverage (4+ times, any provider)	**RH.8**	.5611	.05271	.094	3.350	1.830	179	298	0.456	0.666
Skilled attendant at delivery	RH.10	.5775	.05597	.097	3.813	1.953	179	298	0.466	0.689
Literacy rate (young women)	ED.1	.5006	.05521	.110	4.304	2.075	214	354	0.390	0.611
Knowledge about HIV prevention (young women)	HA.1	.1593	.03605	.226	3.425	1.851	214	354	0.087	0.231
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2937	.02680	.091	1.264	1.124	223	366	0.240	0.347
Underweight prevalence (severe)	NU.2	.0988	.01884	.191	1.455	1.206	223	366	0.061	0.136

Table SE.20: Sampling Errors: South Darfur State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits r - 2se	Confidence limits r + 2se
Household members										
Use of improved drinking water sources	WS.1	.4664	.04692	.101	8.359	2.891	7,712	946	0.373	0.560
Use of improved sanitation	WS.5	.2472	.03434	.139	5.990	2.448	7,712	946	0.178	0.316
Primary school net attendance ratio (adjusted)	ED.4	.6620	.03067	.046	6.087	2.467	1,975	1,449	0.601	0.723
Women										
Contraceptive prevalence rate	RH.5	.0543	.01614	.297	3.605	1.899	933	712	0.022	0.087
Unmet need	RH.6	.3181	.01978	.062	1.283	1.133	933	712	0.278	0.358
Antenatal care coverage (1+ times, skilled provider)	RH.7	.6179	.05115	.083	4.555	2.134	556	412	0.516	0.720
Antenatal care coverage (4+ times, any provider)	**RH.8**	.4087	.03777	.092	2.426	1.557	556	412	0.333	0.484
Skilled attendant at delivery	RH.10	.4869	.04648	.095	3.555	1.885	556	412	0.394	0.580
Literacy rate (young women)	ED.1	.4929	.04974	.101	4.375	2.092	567	443	0.393	0.592
Knowledge about HIV prevention (young women)	HA.1	.0547	.01276	.233	1.391	1.179	567	443	0.029	0.080
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2936	.02398	.082	2.499	1.581	1,231	902	0.246	0.342
Underweight prevalence (severe)	NU.2	.0986	.01350	.137	1.848	1.359	1,231	902	0.072	0.126

Table SE.21: Sampling Errors: Central Darfur State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators Sudan, 2014

	Table	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	r - 2se	r + 2se
Household members										
Use of improved drinking water sources	WS.1	.5059	.07838	.155	23.444	4.842	1,646	955	0.349	0.663
Use of improved sanitation	WS.5	.1580	.02303	.146	3.803	1.950	1,646	955	0.112	0.204
Primary school net attendance ratio (adjusted)	ED.4	.5415	.05304	.098	16.361	4.045	449	1,445	0.435	0.648
Women										
Contraceptive prevalence rate	RH.5	.0290	.00843	.291	1.532	1.238	188	608	0.012	0.046
Unmet need	RH.6	.2785	.02653	.095	2.126	1.458	188	608	0.225	0.332
Antenatal care coverage (1+ times, skilled provider)	RH.7	.6790	.03503	.052	1.841	1.357	99	328	0.609	0.749
Antenatal care coverage (4+ times, any provider)	**RH.8**	.4714	.04635	.098	2.819	1.679	99	328	0.379	0.564
Skilled attendant at delivery	RH.10	.3748	.05416	.145	4.094	2.023	99	328	0.266	0.483
Literacy rate (young women)	ED.1	.2742	.04225	.154	2.897	1.702	104	324	0.190	0.359
Knowledge about HIV prevention (young women)	HA.1	.0249	.01168	.470	1.816	1.348	104	324	0.002	0.048
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.4102	.04413	.108	4.412	2.100	163	549	0.322	0.499
Underweight prevalence (severe)	NU.2	.1848	.03031	.164	3.343	1.828	163	549	0.124	0.245

Table SE.22: Sampling Errors: East Darfur State

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators
Sudan, 2014

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2se	*r + 2se*
Household members										
Use of improved drinking water sources	WS.1	.4507	.03377	.075	4.290	2.071	3,158	932	0.383	0.518
Use of improved sanitation	WS.5	.1444	.03515	.243	9.307	3.051	3,158	932	0.074	0.215
Primary school net attendance ratio (adjusted)	ED.4	.6205	.03775	.061	9.579	3.095	859	1,584	0.545	0.696
Women										
Contraceptive prevalence rate	RH.5	.0616	.01289	.209	1.909	1.382	378	665	0.036	0.087
Unmet need	RH.6	.3092	.01968	.064	1.204	1.097	378	665	0.270	0.349
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8293	.03000	.036	2.353	1.534	211	371	0.769	0.889
Antenatal care coverage (4+ times, any provider)	**RH.8**	.4680	.04603	.098	3.149	1.774	211	371	0.376	0.560
Skilled attendant at delivery	RH.10	.6055	.04941	.082	3.781	1.945	211	371	0.507	0.704
Literacy rate (young women)	ED.1	.3998	.03829	.096	2.285	1.512	201	375	0.323	0.476
Knowledge about HIV prevention (young women)	HA.1	.0138	.00802	.579	1.761	1.327	201	375	0.000	0.030
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.4024	.02869	.071	2.734	1.654	457	800	0.345	0.460
Underweight prevalence (severe)	NU.2	.1658	.01973	.119	2.249	1.500	457	800	0.126	0.205

Appendix D: Data Quality Tables

Table DQ.1: Age Distribution of Household Population

Single-year age distribution of household population by sex
Sudan MICS, 2014

Age (Years)	Males		Females		Missing	
	Number	Percent	Number	Percent	Number	Percent
0	1,632	3.3	1568	3.2	0	0.0
1	1,406	2.9	1427	2.9	0	0.0
2	1,436	2.9	1390	2.8	0	0.0
3	1,742	3.5	1757	3.5	0	0.0
4	1,395	2.8	1297	2.6	0	0.0
5	1,847	3.7	1837	3.7	0	0.0
6	1,581	3.2	1622	3.3	0	0.0
7	1,626	3.3	1758	3.5	0	0.0
8	1,647	3.3	1548	3.1	0	0.0
9	1,334	2.7	1270	2.6	0	0.0
10	1,657	3.4	1522	3.1	0	0.0
11	1,128	2.3	1141	2.3	0	0.0
12	1,578	3.2	1524	3.1	1	5.4
13	1,081	2.2	1156	2.3	0	0.0
14	1,097	2.2	1562	3.2	0	0.0
15	1,059	2.1	848	1.7	0	0.0
16	964	2.0	860	1.7	0	0.0
17	864	1.8	891	1.8	0	0.0
18	1,184	2.4	1159	2.3	0	0.0
19	639	1.3	693	1.4	0	0.0
20	1,094	2.2	1202	2.4	1	4.2
21	491	1.0	567	1.1	0	0.0
22	764	1.5	760	1.5	0	2.4
23	566	1.1	540	1.1	0	0.0
24	548	1.1	601	1.2	0	0.0
25	985	2.0	1221	2.5	0	0.0
26	483	1.0	625	1.3	0	0.0
27	502	1.0	708	1.4	0	0.0
28	593	1.2	662	1.3	0	0.0
29	362	0.7	549	1.1	0	0.0
30	1,162	2.4	1266	2.6	0	0.0
31	313	0.6	343	0.7	0	0.0
32	519	1.1	551	1.1	0	0.0
33	313	0.6	318	0.6	0	0.0
34	358	0.7	375	0.8	0	0.0
35	1,172	2.4	1160	2.3	0	0.0
36	312	0.6	319	0.6	0	0.0
37	403	0.8	532	1.1	0	0.0
38	375	0.8	443	0.9	0	0.0
39	336	0.7	366	0.7	0	0.0

40	1,142	2.3	843	1.7	0	0.0
41	222	0.5	229	0.5	0	0.0
42	328	0.7	309	0.6	0	0.0
43	154	0.3	204	0.4	0	0.0
44	219	0.4	228	0.5	0	0.0
45	946	1.9	725	1.5	0	0.0
46	222	0.4	188	0.4	0	0.0
47	192	0.4	228	0.5	0	0.0
48	222	0.5	192	0.4	0	0.0
49	208	0.4	193	0.4	0	0.0
50	852	1.7	1379	2.8	0	2.1
51	164	0.3	298	0.6	0	0.0
52	266	0.5	405	0.8	0	0.0
53	145	0.3	147	0.3	0	0.0
54	213	0.4	242	0.5	0	0.0
55	583	1.2	646	1.3	0	0.0
56	214	0.4	133	0.3	0	0.0
57	164	0.3	97	0.2	0	0.0
58	224	0.5	116	0.2	0	0.0
59	171	0.3	115	0.2	0	0.0
60	845	1.7	663	1.3	0	0.0
61	75	0.2	42	0.1	0	0.0
62	140	0.3	83	0.2	0	0.0
63	87	0.2	31	0.1	0	0.0
64	126	0.3	74	0.1	0	0.0
65	479	1.0	388	0.8	0	1.6
66	73	0.1	46	0.1	0	0.0
67	78	0.2	29	0.1	0	0.0
68	83	0.2	37	0.1	0	0.0
69	94	0.2	42	0.1	0	0.0
70	643	1.3	457	0.9	0	0.0
71	51	0.1	19	0.0	0	0.0
72	56	0.1	47	0.1	0	0.0
73	33	0.1	31	0.1	0	0.0
74	68	0.1	49	0.1	0	0.0
75	292	0.6	199	0.4	0	0.0
76	40	0.1	9	0.0	0	0.0
77	27	0.1	21	0.0	0	0.0
78	25	0.1	11	0.0	0	0.0
79	19	0.0	17	0.0	0	0.0
80	225	0.5	182	0.4	0	0.0
81	19	0.0	3	0.0	0	0.0
82	17	0.0	12	0.0	0	0.0
83	12	0.0	12	0.0	0	0.0
84	26	0.1	14	0.0	0	0.0
85+	229	0.5	192	0.4	0	0.0
DK/missing	24	0.0	12	0.0	17	84.3
Sudan	49,286	100.0	49577	100.0	21	100.0

Figure DQ.1: Household population by single ages, Sudan MICS, 2014

Note: The figure excludes 36 household members with unknown age and/or sex
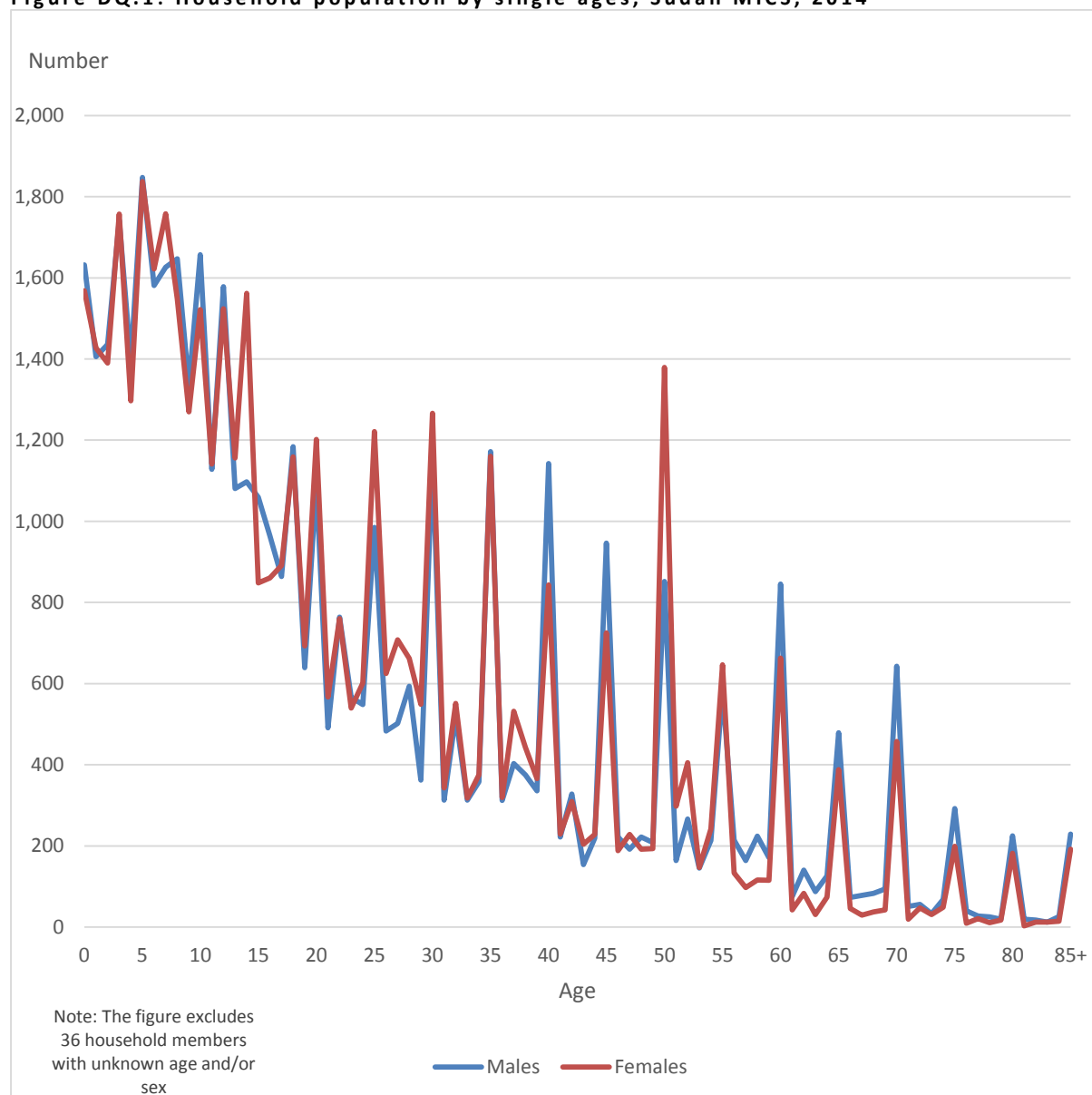
Table DQ.2:   Age Distribution of Eligible and Interviewed Women

Household population of women age 10-54 years, interviewed women age 15-49 years, and percentage of eligible women who were interviewed, by five-year age groups
Sudan MICS, 2014

Age group (yrs)	Household population of women age 10-54 years		Interviewed women age 15-49 years	Percentage of eligible women interviewed (Completion rate)
	Number	Number	Percent	
10-14	6,905	.	.	.
15-19	4,451	3,842	20.3	86.3
20-24	3,670	3,274	17.3	89.2
25-29	3,765	3,467	18.3	92.1
30-34	2,854	2,645	14.0	92.7
35-39	2,820	2,631	13.9	93.3
40-44	1,812	1,694	8.9	93.4
45-49	1,526	1,389	7.3	91.0
50-54	2,471	.	.	.
Total (15-49)	20,898	18,941	100.0	90.6

Table DQ.40:   Age Distribution of Children in Household and Under-5 Questionnaires

Household population of children age 0-7 years, children age 0-4 years whose mothers/caretakers were interviewed, and percentage of under-5 children whose mothers/caretakers were interviewed, by single years of age
Sudan MICS, 2014

Single years age	Household population of children 0-7 years	Under-5s with completed interviews		Percentage of eligible under-5s interviewed (Completion rate)
	Number	Number	Percent	
0	3,200	3,046	21.2	95.2
1	2,833	2,724	18.9	96.1
2	2,826	2,673	18.6	94.6
3	3,499	3,362	23.4	96.1
4	2,692	2,584	18.0	96.0
5	3,684	.	.	.
6	3,203	.	.	.
7	3,384	.	.	.
Total (0-4)	15,050	14,388	100.0	95.6

Ratio of 5 to 4	1.37

305

Percent distribution of household population by completeness of date of birth information Sudan MICS, 2014

Background characteristics	Completeness of reporting of month and year of birth				Total	Number of household members
	Year and month of birth	Year of birth only	Month of birth only	Both missing		
Sudan	53.3	30.6	0.1	16.0	100.0	97,049
Age						
0-4	84.9	12.9	0.1	2.2	100.0	14,752
5-14	65.4	25.7	0.1	8.8	100.0	29,332
15-24	54.4	31.7	0.1	13.9	100.0	15,853
25-49	36.5	40.5	0.1	22.9	100.0	24,480
50-64	22.1	43.5	0.2	34.1	100.0	8,496
65-84	15.3	40.7	0.2	43.8	100.0	3,708
85+	8.4	40.0	0.0	51.6	100.0	370
DK/missing	0.0	24.1	0.0	75.9	100.0	58
State						
Northern	76.1	15.0	0.0	8.9	100.0	4,914
River Nile	73.0	26.3	0.0	0.7	100.0	5,202
Red Sea	57.0	25.6	0.1	17.3	100.0	4,351
Kassala	66.5	32.9	0.0	0.6	100.0	5,026
Gadarif	36.5	19.4	0.1	44.0	100.0	5,522
Khartoum	75.5	17.4	0.1	7.0	100.0	5,452
Gezira	75.6	11.7	0.1	12.6	100.0	6,096
White Nile	42.9	19.1	0.2	37.8	100.0	5,233
Sinnar	50.2	17.1	0.2	32.6	100.0	5,479
Blue Nile	79.0	19.0	0.0	2.0	100.0	5,837
North Kordofan	47.8	51.3	0.0	0.8	100.0	5,220
South Kordofan	61.8	29.8	0.2	8.2	100.0	6,144
West Kordofan	23.4	30.7	0.5	45.5	100.0	5,017
North Darfur	28.9	48.5	0.0	22.6	100.0	5,793
West Darfur	20.6	61.7	0.1	17.7	100.0	4,942
South Darfur	62.4	30.8	0.0	6.8	100.0	5,732
Central Darfur	18.1	81.2	0.0	0.7	100.0	5,244
East Darfur	57.4	19.8	0.1	22.8	100.0	5,845
Area						
Urban	60.7	25.7	0.1	13.5	100.0	29,481
Rural	50.1	32.8	0.1	17.0	100.0	67,568

Table DQ.6:	Birth Date and Age Reporting: Women						
Percent distribution of women age 15-49 years by completeness of date of birth/age information Sudan MICS, 2014							
	Completeness of reporting of date of birth and age						
Background characteristics	Year and month of birth	Year of birth and age	Year of birth only	Age only	Other/DK/ Missing	Total	Number of women age 15-49 years
Sudan	45.0	36.4	0.0	18.3	0.3	100.0	18,302
State							
Northern	80.7	15.9	0.0	3.4	0.0	100.0	1,083
River Nile	76.0	23.8	0.0	.1	0.1	100.0	1,027
Red Sea	56.7	31.0	0.0	12.1	0.2	100.0	826
Kassala	49.9	48.5	0.0	1.2	0.4	100.0	946
Gadarif	20.0	28.7	0.0	51.2	0.2	100.0	1,012
Khartoum	82.2	15.1	0.0	2.6	0.1	100.0	1,171
Gezira	75.9	14.4	0.0	9.4	0.2	100.0	1,347
White Nile	29.8	25.9	0.0	43.6	0.7	100.0	1,027
Sinnar	30.7	20.6	0.0	47.5	1.2	100.0	1,057
Blue Nile	65.8	32.5	0.0	1.6	0.1	100.0	1,079
North Kordofan	35.8	63.2	0.0	.3	0.6	100.0	949
South Kordofan	47.7	44.6	0.0	7.2	0.5	100.0	1,171
West Kordofan	13.1	25.4	0.0	61.0	0.6	100.0	863
North Darfur	15.5	56.2	0.0	28.2	0.1	100.0	901
West Darfur	13.9	62.9	0.0	23.0	0.2	100.0	918
South Darfur	49.1	41.9	0.0	9.0	0.0	100.0	1,065
Central Darfur	4.9	93.5	0.0	1.3	0.3	100.0	878
East Darfur	27.0	34.2	0.0	38.7	0.1	100.0	982
Area							
Urban	59.1	28.7	0.0	11.9	0.3	100.0	5,979
Rural	38.1	40.1	0.0	21.5	0.3	100.0	12,323

Table DQ.8: Birth Date and Age Reporting: Under-5s

Percent distribution children under 5 by completeness of date of birth/age information
Sudan MICS, 2014

Background Characteristics	Completeness of reporting of date of birth and age					Total	Number of under-5 Children
	Year and month of birth	Year of birth and age	Year of birth only	Age only	Other/DK/ Missing		
Sudan	88.2	11.8	0.0	0.0	.0	100.0	14,081
State							
Northern	99.6	0.4	0.0	0.0	0.0	100.0	532
River Nile	95.6	4.4	0.0	0.0	0.0	100.0	565
Red Sea	94.6	5.2	0.0	0.2	0.0	100.0	404
Kassala	97.9	2.1	0.0	0.0	0.0	100.0	655
Gadarif	92.9	7.1	0.0	0.0	0.0	100.0	858
Khartoum	97.0	3.0	0.0	0.0	0.0	100.0	699
Gezira	98.8	1.3	0.0	0.0	0.0	100.0	800
White Nile	90.8	9.2	0.0	0.0	0.0	100.0	754
Sinnar	96.6	3.3	0.0	0.1	0.0	100.0	814
Blue Nile	99.3	.7	0.0	0.0	0.0	100.0	1,006
North Kordofan	95.5	4.5	0.0	0.0	0.0	100.0	750
South Kordofan	94.0	6.0	0.0	0.0	0.0	100.0	1,092
West Kordofan	49.4	50.6	0.0	0.0	0.0	100.0	741
North Darfur	80.1	19.9	0.0	0.0	0.0	100.0	885
West Darfur	45.4	54.4	0.0	0.1	0.0	100.0	843
South Darfur	96.7	3.3	0.0	0.0	0.0	100.0	975
Central Darfur	71.3	28.7	0.0	0.0	0.0	100.0	837
East Darfur	97.2	2.8	0.0	0.0	0.0	100.0	871
Area							
Urban	92.4	7.6	0.0	0.0	0.0	100.0	3,811
Rural	86.6	13.4	0.0	0.0	0.0	100.0	10,270

Table DQ.9: Birth Date Reporting: Children, Adolescents and Young People

Percent distribution of children, adolescents and young people age 5-24 years by completeness of date of birth information, Sudan MICS, 2014

Background Characteristics	Completeness of reporting of month and year of birth				Total	Number of children, adolescents and young people age 5-24 years
	Year and month of birth	Year of birth only	Month of birth only	Both missing		
Sudan	61.5	27.8	0.1	10.6	100.0	45,185
State						
Northern	92.5	6.0	0.0	1.5	100.0	2,013
River Nile	85.2	14.8	0.0	0.0	100.0	2,169
Red Sea	74.7	17.4	0.0	7.9	100.0	1,795
Kassala	80.1	19.9	0.0	0.0	100.0	2,387
Gadarif	38.6	21.1	0.2	40.2	100.0	2,622
Khartoum	88.0	10.0	0.0	2.0	100.0	2,363
Gezira	85.6	7.5	0.0	6.8	100.0	2,797
White Nile	55.3	22.1	0.2	22.4	100.0	2,338
Sinnar	62.6	21.8	0.2	15.5	100.0	2,406
Blue Nile	92.6	7.0	0.0	0.4	100.0	2,773
North Kordofan	56.3	43.7	0.0	0.0	100.0	2,420
South Kordofan	71.1	24.7	0.1	4.0	100.0	2,917
West Kordofan	27.0	31.7	0.6	40.7	100.0	2,434
North Darfur	30.2	50.9	0.0	18.9	100.0	2,857
West Darfur	21.4	62.8	0.0	15.7	100.0	2,495
South Darfur	70.2	26.8	0.0	3.0	100.0	2,815
Central Darfur	13.7	86.2	0.0	0.2	100.0	2,645
East Darfur	73.4	16.8	0.0	9.8	100.0	2,939
Area						
Urban	70.9	20.8	0.1	8.2	100.0	13,434
Rural	57.5	30.8	0.1	11.6	100.0	31,751

Table DQ.10: Birth Date Reporting: First and Last Births

Percent distribution of first and last births to women age 15-49 years by completeness of date of birth
Sudan MICS, 2014

Background Characteristics	Completeness of reporting of date of birth										
	Date of first birth						Date of last birth				
	Year and month of birth	Year of birth only	Completed years since first birth only	Other/ DK/ Missing	Total	Number of first births	Both month and year	Year only	Other/ DK/ Missing	Total	Number of last births
Sudan	76.1	19.1	4.7	0.0	100.0	11,701	84.5	13.0	2.5	100.0	10,075
State											
Northern	99.3	.7	0.0	0.0	100.0	607	99.0	1.0	0.0	100.0	501
River Nile	91.8	8.	0.0	0.0	100.0	558	94.1	5.9	0.0	100.0	459
Red Sea	83.7	13.7	2.6	0.0	100.0	502	89.8	8.1	2.1	100.0	422
Kassala	92.5	7.5	0.0	0.0	100.0	636	95.7	4.3	0.0	100.0	540
Gadarif	56.5	16.7	26.8	0.0	100.0	701	81.1	9.2	9.7	100.0	597
Khartoum	94.0	5.8	0.2	0.0	100.0	651	95.8	4.0	0.2	100.0	552
Gezira	98.2	1.6	0.1	0.0	100.0	733	99.0	1.0	0.0	100.0	605
White Nile	77.8	17.1	5.1	0.0	100.0	643	87.0	10.0	3.0	100.0	532
Sinnar	73.0	17.7	8.9	0.5	100.0	666	90.1	8.1	1.8	100.0	565
Blue Nile	98.5	1.5	0.0	0.0	100.0	733	99.7	0.3	0.0	100.0	631
North Kordofan	73.4	26.2	0.2	0.2	100.0	602	88.5	11.5	0.0	100.0	521
South Kordofan	94.7	5.1	0.3	0.0	100.0	789	96.3	3.3	0.4	100.0	697
West Kordofan	42.1	29.7	28.2	0.0	100.0	582	49.4	35.4	15.1	100.0	522
North Darfur	54.7	43.5	1.8	0.0	100.0	623	73.4	25.0	1.6	100.0	563
West Darfur	27.1	62.3	10.5	0.2	100.0	657	38.6	51.5	10.0	100.0	581
South Darfur	82.8	17.1	0.1	0.0	100.0	721	93.4	6.1	0.5	100.0	622
Central Darfur	23.4	76.0	0.6	0.0	100.0	624	50.4	49.0	0.5	100.0	569
East Darfur	96.6	2.4	1.0	0.0	100.0	673	97.5	1.5	1.0	100.0	596
Area											
Urban	83.6	12.5	3.9	0.1	100.0	3,398	88.9	8.3	2.8	100.0	2,926
Rural	73.0	21.8	5.1	0.0	100.0	8,303	82.7	14.9	2.4	100.0	7,149

Table DQ.11: Completeness of Reporting

Percentage of observations that are missing information for selected questions and indicators
Sudan MICS, 2014

Household Missing Information	Percent with missing/incomplete information*	Number of cases
Salt test result	0.6	16,801
Starting time of interview	2.0	16,801
Ending time of interview	1.7	16,801
Date of first marriage/union: Only month	30.4	12,755
Date of first marriage/union: Both month and year	25.1	12,755
Age at first marriage/union	0.0	12,755
Starting time of interview	0.0	18,302
Ending time of interview	0.0	18,302

Table DQ.12: Completeness of Information for Anthropometric Indicators: Underweight

Percent distribution of children under 5 by completeness of information on date of birth and weight
Sudan MICS, 2014

Background Characteristics	Valid weight and date of birth	Reason for exclusion from analysis				Total	Percent of children excluded from analysis	Number of children under 5
		Weight not measured	Incomplete date of birth	Weight not measured, incomplete date of birth	Flagged cases (outliers)			
Sudan	80.7	7.0	10.6	1.2	0.4	100.0	19.3	14,081
Weight by age								
<6 months	83.3	8.6	5.8	0.3	1.9	100.0	16.7	1,543
6-11 months	88.9	6.7	3.9	0.2	0.3	100.0	11.1	1,423
12-23 months	85.1	5.9	7.5	0.8	0.7	100.0	14.9	2,641
24-35 months	81.6	6.9	10.5	0.8	0.1	100.0	18.4	2,647
36-47 months	75.6	7.4	14.7	2.3	0.0	100.0	24.4	3,217
48-59 months	75.6	7.0	15.3	1.8	0.2	100.0	24.4	2,610

Table DQ.13: Completeness of Information for Anthropometric Indicators: Stunting

Percent distribution of children under 5 by completeness of information on date of birth and length or height
Sudan MICS, 2014

| Background Characteristics | Valid length/height and date of birth | Reason for exclusion from analysis | | | | Total | Percent of children excluded from analysis | Number of children under 5 |
		Length/ Height not measured	Incomplete date of birth	Length/Height not measured, incomplete date of birth	Flagged cases (outliers)			
Sudan	78.2	8.4	10.5	1.3	1.6	100.0	21.8	14,081
Age								
<6 months	73.8	17.0	5.8	0.4	3.0	100.0	26.2	1,543
6-11 months	86.6	7.2	3.9	0.3	2.0	100.0	13.4	1,423
12-23 months	83.6	6.4	7.5	0.8	1.7	100.0	16.4	2,641
24-35 months	79.7	7.7	10.4	0.9	1.2	100.0	20.3	2,647
36-47 months	74.0	7.7	14.6	2.4	1.2	100.0	26.0	3,217
48-59 months	74.3	7.3	15.1	2.0	1.3	100.0	25.7	2,610

Table DQ.14: Completeness of Information for Anthropometric Indicators: Wasting

Percent distribution of children under 5 by completeness of information on weight and length or height, Sudan MICS, 2014

| Background Characteristics | Valid weight and length/ height | Reason for exclusion from analysis | | | | Total | Percent of children excluded from analysis | Number of children under 5 |
		Weight not measured	Length/ Height not measured	Weight and length/ height not measured	Flagged cases (outliers)			
Sudan	88.1	0.2	1.7	8.0	2.0	100.0	11.9	14,081
Age								
<6 months	77.7	0.3	8.9	8.6	4.5	100.0	22.3	1,543
6-11 months	90.0	0.4	1.1	6.5	2.1	100.0	10.0	1,423
12-23 months	90.3	0.1	0.6	6.6	2.4	100.0	9.7	2,641
24-35 months	89.8	0.3	1.2	7.5	1.2	100.0	10.2	2,647
36-47 months	88.5	0.2	0.7	9.4	1.2	100.0	11.5	3,217
48-59 months	88.7	0.2	0.7	8.6	1.8	100.0	11.3	2,610

Table DQ.15: Heaping in Anthropometric Measurements

Distribution of weight and height/length measurements by digits reported for the decimal points, Sudan MICS, 2014

Digits	Weight		Height	
	Number	Percent	Number	Percent
Sudan	12,924	100.0	12,959	100.0
0	1,431	11.1	3,657	28.2
1	1,247	9.6	970	7.5
2	1,357	10.5	1,511	11.7
3	1,261	9.8	1,348	10.4
4	1,265	9.8	1,063	8.2
5	1,366	10.6	1,195	9.2
6	1,296	10.0	852	6.6
7	1,291	10.0	899	6.9
8	1,214	9.4	692	5.3
9	1,196	9.3	772	6.0
0 or 5	14,290	110.6	14,154	109.2

Figure DQ.2: Weight and height/length measurements by digits reported for the decimal points, Sudan MICS, 2014

313
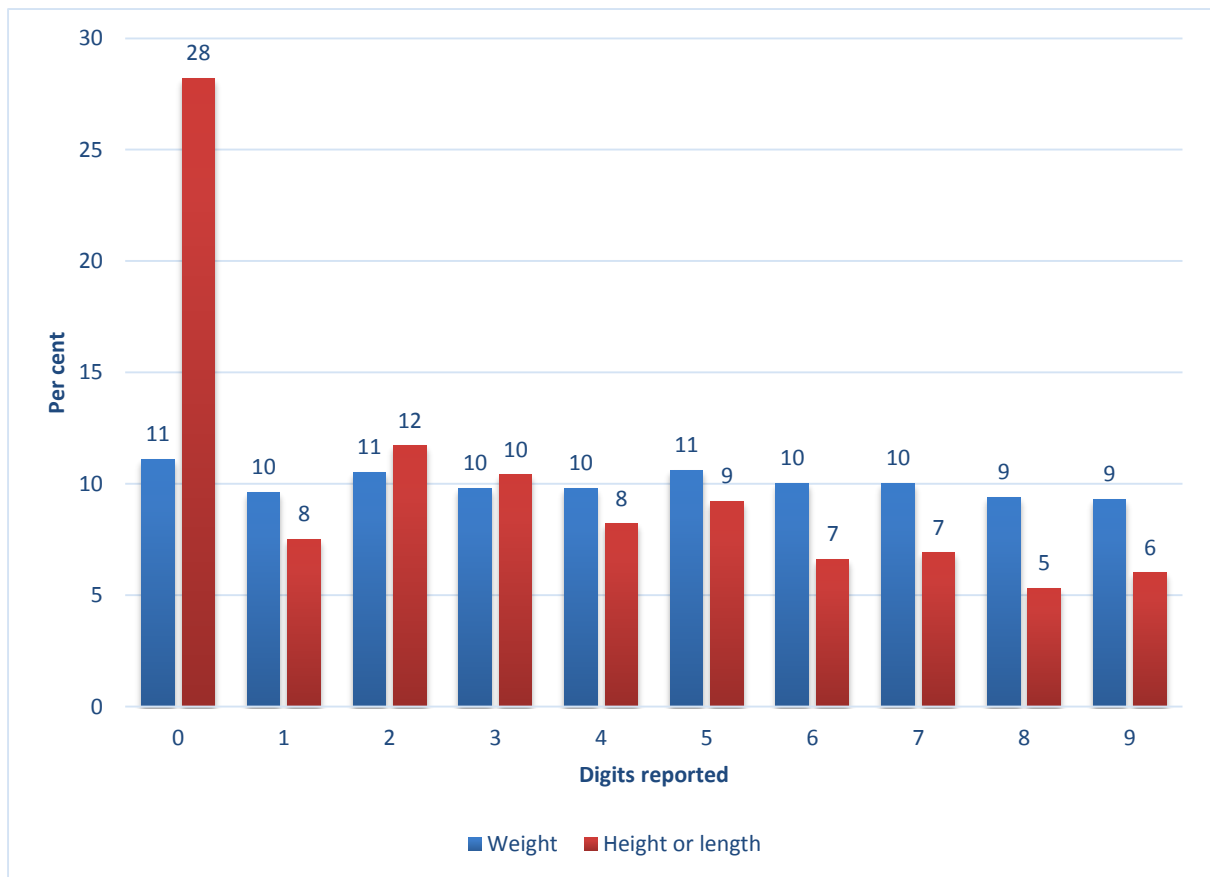
Table DQ.16: Observation of Birth Certificates

Percent distribution of children under 5 by presence of birth certificates, and percentage of birth certificates seen, Sudan MICS, 2014

Background Characteristics	Child has birth certificate		Child does not have birth certificate	Missing/ DK	Total	Percentage of birth certificates seen by the interviewer (1)/(1+2)*100	Number of children under age 5
	Seen by the interviewer (1)	Not seen by the interviewer (2)					
Sudan	21.6	25.9	52.1	0.5	100.0	45.5	14,081
State							
Northern	43.8	41.5	14.7	0.0	100.0	51.3	532
River Nile	26.5	50.4	23.0	0.0	100.0	34.5	565
Red Sea	32.9	33.2	33.7	0.2	100.0	49.8	404
Kassala	23.2	22.7	53.1	0.9	100.0	50.5	655
Gadarif	20.3	32.4	46.9	0.5	100.0	38.5	858
Khartoum	40.3	42.2	17.5	0.0	100.0	48.9	699
Gezira	40.9	24.1	34.6	0.4	100.0	62.9	800
White Nile	21.8	28.8	48.8	0.7	100.0	43.0	754
Sinnar	30.8	28.7	40.4	0.0	100.0	51.8	814
Blue Nile	30.6	14.4	54.6	0.4	100.0	68.0	1,006
North Kordofan	23.9	24.9	51.1	0.1	100.0	48.9	750
South Kordofan	17.6	20.9	61.0	0.5	100.0	45.7	1,092
West Kordofan	5.0	27.9	66.0	1.1	100.0	15.2	741
North Darfur	9.8	27.2	62.4	0.6	100.0	26.5	885
West Darfur	10.9	27.6	61.2	0.2	100.0	28.3	843
South Darfur	12.1	22.1	65.3	0.5	100.0	35.4	975
Central Darfur	7.5	12.2	79.5	0.8	100.0	38.2	837
East Darfur	10.9	9.0	79.1	1.0	100.0	54.9	871
Area							
Urban	37.6	35.8	26.2	0.3	100.0	51.2	3,811
Rural	15.6	22.2	61.7	0.5	100.0	41.3	10,270
Child's age							
0-5 months	10.8	15.6	73.2	0.5	100.0	41.0	1,543
6-11 months	21.8	22.6	55.4	0.2	100.0	49.1	1,423
12-23 months	19.5	25.3	54.7	0.5	100.0	43.6	2,641
24-35 months	24.9	27.2	47.3	0.6	100.0	47.9	2,647
36-47 months	23.3	29.3	46.8	0.6	100.0	44.4	3,217
48-59 months	24.3	28.9	46.5	0.3	100.0	45.7	2,610

Table DQ.17: Observation of vaccination cards

Percent distribution of children age 0-35 months by presence of a vaccination card, and the percentage of vaccination cards seen by the interviewers
Sudan MICS, 2014

Background Characteristics	Child does not have vaccination card		Child has vaccination card		Missing /DK	Total	Percent of vaccination cards seen by the interviewer (1)/(1+2)*100	Number of children age 0-35 months
	Had vaccination card previously	Never had vaccination card	Seen by the interviewer (1)	Not seen by the interviewer (2)				
Sudan	2.7	20.0	36.7	39.4	1.2	100.0	48.2	8,254
State								
Northern	1.3	7.2	53.1	38.4	0.0	100.0	58.0	320
River Nile	2.5	11.1	29.7	56.7	0.0	100.0	34.4	323
Red Sea	1.7	30.5	17.6	48.1	2.1	100.0	26.8	233
Kassala	3.1	28.4	33.2	34.8	0.5	100.0	48.9	391
Gadarif	5.7	14.8	36.1	43.0	0.4	100.0	45.7	526
Khartoum	0.7	5.1	47.4	46.2	0.5	100.0	50.7	409
Gezira	2.6	20.6	42.8	34.0	0.0	100.0	55.7	470
White Nile	1.7	16.6	29.1	50.9	1.7	100.0	36.4	464
Sinnar	2.7	12.8	44.1	39.8	.6	100.0	52.6	483
Blue Nile	1.8	7.6	65.4	25.0	.2	100.0	72.4	616
North Kordofan	3.6	19.2	32.9	42.0	2.6	100.0	43.9	417
South Kordofan	4.0	15.7	37.5	40.6	2.2	100.0	48.1	626
West Kordofan	1.9	36.0	14.6	46.2	1.4	100.0	24.0	431
North Darfur	3.6	19.0	39.0	35.4	3.0	100.0	52.4	505
West Darfur	2.5	23.7	19.7	51.9	2.3	100.0	27.5	472
South Darfur	2.9	32.6	27.5	36.1	1.0	100.0	43.3	596
Central Darfur	1.5	33.7	39.9	23.2	2.1	100.0	63.3	466
East Darfur	2.4	27.5	36.2	33.4	0.8	100.0	52.0	506
Area								
Urban	1.8	11.1	44.2	41.4	1.5	100.0	51.6	2,252
Rural	3.0	23.4	33.9	38.7	1.1	100.0	46.7	6,002
Child's age								
0-5 months	0.9	47.3	33.8	17.3	0.8	100.0	66.2	1,543
6-11 months	1.5	14.9	48.6	34.6	0.4	100.0	58.4	1,423
12-23 months	2.2	14.1	42.5	40.7	0.6	100.0	51.1	2,641
24-35 months	4.7	12.8	26.3	53.7	2.5	100.0	32.8	2,647

Table DQ.18: Observation of Women's Health Cards

Percent distribution of women with a live birth in the last 2 years by presence of a health card, and the percentage of health cards seen by the interviewers, Sudan MICS, 2014

Background Characteristics	Woman does not have health card	Woman has health card		Missing/ DK	Total	Percent of health cards seen by the interviewer (1)/(1+2)*100	Number of women with a live birth in the last two years
		Seen by the interviewer (1)	Not seen by the interviewer (2)				
Sudan	53.3	9.2	35.6	1.9	100.0	20.6	5,684
State							
Northern	44.9	8.3	46.3	0.5	100.0	15.3	216
River Nile	30.2	6.9	61.2	1.7	100.0	10.1	232
Red Sea	54.4	11.4	30.9	3.4	100.0	27.0	149
Kassala	62.0	9.2	27.3	1.5	100.0	25.3	271
Gadarif	63.7	4.6	30.8	0.9	100.0	13.0	347
Khartoum	45.6	5.1	47.8	1.5	100.0	9.7	274
Gezira	56.3	13.5	29.6	0.6	100.0	31.3	334
White Nile	59.5	5.5	34.1	1.0	100.0	13.8	311
Sinnar	53.3	6.5	39.3	0.9	100.0	14.2	338
Blue Nile	60.5	13.0	25.1	1.4	100.0	34.2	423
North Kordofan	58.5	5.8	32.3	3.4	100.0	15.2	294
South Kordofan	53.1	9.8	35.8	1.3	100.0	21.5	450
West Kordofan	68.8	6.0	21.3	3.9	100.0	22.1	282
North Darfur	46.6	8.2	43.2	2.0	100.0	15.9	354
West Darfur	47.0	8.4	41.3	3.4	100.0	16.9	298
South Darfur	47.8	9.5	40.0	2.7	100.0	19.1	412
Central Darfur	39.0	22.0	36.9	2.1	100.0	37.3	328
East Darfur	60.6	9.7	27.2	2.4	100.0	26.3	371
Area							
Urban	40.2	12.7	45.1	2.0	100.0	22.0	1,503
Rural	58.0	8.0	32.2	1.8	100.0	19.8	4,181

316

Table DQ.20: Respondent to the under-5 questionnaire

Distribution of children under five by whether the mother lives in the same household, and the person who was interviewed for the under-5 questionnaire
Sudan MICS, 2014

Age of children	Mother in the household	Mother not in the household and primary caretaker identified:			Total	Number of children under 5
		Father	Other adult female	Other adult male		
Sudan	98.0	0.1	1.9	0.0	100.0	15,050
Age (yrs)						
0	99.5	0.0	0.5	0.0	100.0	3,200
1	98.6	0.0	1.4	0.0	100.0	2,833
2	97.6	0.2	2.2	0.0	100.0	2,826
3	97.2	0.0	2.7	0.1	100.0	3,499
4	97.2	0.1	2.6	0.0	100.0	2,692

Table DQ.21: Selection of Children Age 1-17 Years for the Child Labour and Child Discipline Modules

Percent distribution of households by the number of children age 1-17 years, and the percentage of households with at least two children age 1-17 years where correct selection of one child for the child labour and child discipline modules was performed
Sudan MICS, 2014

Background Characteristics	Number of children age 1-17 years				Number of households	Percent of households where correct selection was performed	Number of households with 2 or more children age 1-17 years
	None	One	Two or more	Total			
Sudan	18.8	15.1	66.1	100.0	16,801	94.5	11,100
State							
Northern	30.6	17.6	51.8	100.0	957	98.6	496
River Nile	27.2	17.3	55.5	100.0	928	95.9	515
Red Sea	32.5	18.2	49.2	100.0	928	95.6	457
Kassala	19.4	17.0	63.6	100.0	899	95.8	572
Gadarif	17.8	14.7	67.5	100.0	947	94.7	639
Khartoum	21.4	15.9	62.8	100.0	921	96.7	578
Gezira	19.5	12.9	67.6	100.0	988	97.2	668
White Nile	20.6	17.8	61.6	100.0	912	94.7	562
Sinnar	22.5	15.3	62.2	100.0	955	95.1	594
Blue Nile	15.5	13.8	70.6	100.0	954	96.9	674
North Kordofan	21.6	13.6	64.9	100.0	928	90.7	602
South Kordofan	12.9	13.4	73.7	100.0	961	92.9	708
West Kordofan	17.8	15.1	67.1	100.0	872	90.8	585
North Darfur	11.3	12.0	76.7	100.0	914	95.3	701

Table DQ.21: Selection of Children Age 1-17 Years for the Child Labour and Child Discipline Modules

Percent distribution of households by the number of children age 1-17 years, and the percentage of households with at least two children age 1-17 years where correct selection of one child for the child labour and child discipline modules was performed
Sudan MICS, 2014

Background Characteristics	Number of children age 1-17 years				Number of households	Percent of households where correct selection was performed	Number of households with 2 or more children age 1-17 years
	None	One	Two or more	Total			
West Darfur	13.6	15.7	70.7	100.0	904	93.3	639
South Darfur	10.8	15.9	73.4	100.0	946	95.4	694
Central Darfur	13.8	13.5	72.7	100.0	955	89.5	694
East Darfur	10.2	12.3	77.5	100.0	932	94.3	722
Area							
Urban	19.9	14.8	65.3	100.0	4,825	94.4	3,151
Rural	18.4	15.2	66.4	100.0	11,976	94.6	7,949
Wealth index quintile							
Poorest	14.1	13.7	72.2	100.0	3,543	94.2	2,557
Second	18.2	15.8	66.0	100.0	4,304	93.3	2,841
Middle	18.8	14.4	66.8	100.0	3,502	94.5	2,340
Fourth	21.0	14.8	64.3	100.0	2,750	95.6	1,767
Richest	24.0	17.0	59.0	100.0	2,702	96.1	1,595

318

Distribution of household population age 5-24 years by educational level and and grade attended in the current (or most recent) school year, Sudan MICS, 2014

Single age (yrs)	Not attending school	Khalwa	Assas	vocational training	University	Above University	Not able to determine	DK/ Missing	Missing	Total	Number of household members
Age at beginning of school year											
5	65.0	9.2	25.2	0.0	-	0.0	-	0.4	0.3	100.0	3,561
6	32.2	7.4	60.0	0.0	-	0.0	-	0.3	0.0	100.0	3,142
7	19.8	5.4	74.6	0.0	-	0.0	-	0.0	0.1	100.0	3,311
8	15.2	5.5	79.1	0.0	-	.0	-	0.0	0.2	100.0	3,204
9	10.6	5.3	83.9	0.0	-	0.0	-	0.0	0.1	100.0	2,640
10	11.8	4.4	83.8	0.0	-	0.0	-	0.1	0.0	100.0	3,063
11	9.5	4.0	86.3	0.0	0	0.0	-	0.1	0.1	100.0	2,289
12	12.9	4.4	81.6	0.0	0	0.0	-	1.0	0.0	100.0	3,051
13	16.1	3.6	73.1	0.0	-	.0	-	7.2	0.0	100.0	2,277
14	20.8	3.4	53.9	0.1	0	0.0	-	21.6	0.0	100.0	2,593
15	28.1	2.4	37.0	0.2	1	0.0	-	31.6	0.0	100.0	1,873
16	34.4	2.1	23.7	0.3	1	0.0	-	37.8	0.1	100.0	1,835
17	41.3	1.8	14.9	0.8	4	0.0	-	36.9	0.0	100.0	1,790
18	51.4	2.1	9.6	0.3	8	0.0	-	28.3	0.1	100.0	2,230
19	54.4	1.5	5.0	0.1	16	0.0	-	22.8	0.0	100.0	1,415
20	70.0	1.0	3.9	0.1	14	0.0	-	10.9	0.3	100.0	2,201
21	65.5	.8	1.7	0.2	21	0.2	-	10.7	0.1	100.0	1,094
22	77.3	.7	2.2	0.0	12	0.3	-	7.9	0.0	100.0	1,491
23	78.8	.8	1.8	0.1	14	0.0	-	4.9	0.0	100.0	1,106
24	76.3	1.0	1.6	0.2	6	0.1	9.3	5.4	0.0	100.0	1,165

Table DQ.23: Sex Ratio at Birth Among Children Ever Born and Living

Sex ratio (number of males per 100 females) among children ever born (at birth), children living, and deceased children, by age of women, Sudan MICS, 2014

Age group	Children Ever Born			Children Living			Children Deceased			Number of women
	Sons	Daughters	Sex ratio at birth	Sons	Daughters	Sex ratio	Sons	Daughters	Sex ratio	
Sudan	27,074	25,171	1.08	24,425	23,134	1.06	2,649	2037	1.30	18,302
Age										
15-19	317	307	1.03	296	294	1.01	21	13	1.62	3,655
20-24	1,773	1,596	1.11	1,652	1,505	1.10	121	91	1.33	3,150
25-29	4,487	4,201	1.07	4,133	3,925	1.05	354	276	1.28	3,415
30-34	5,166	4,931	1.05	4,740	4,572	1.04	426	359	1.19	2,593
35-39	6,575	6,107	1.08	5,921	5,621	1.05	654	486	1.35	2,527
40-44	4,651	4,227	1.10	4,133	3,830	1.08	518	397	1.30	1,639
45-49	4,105	3,802	1.08	3,550	3,387	1.05	555	415	1.34	1,323

Table DQ.24: Births by Periods Preceding the Survey

Number of births, percentage with complete birth date, sex ratio at birth, and calendar year ratio by calendar year, according to living, deceased, and total children (weighted, imputed), as reported in the birth histories
Sudan MICS, 2014

Background characteristics	Number of births			Percent with complete birth date [a]			Sex ratio at birth [b]			Period ratio [c]		
	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total
Sudan	46,821	4,245	51,066	78.3	64.4	77.2	104.4	131.2	106.3	na	na	na
Years												
0	2,935	147	3,082	93.3	79.2	92.6	105.3	157.2	107.3	na	na	na
1	2,601	161	2,762	91.7	77.9	90.9	101.5	113.1	102.2	95.2	102.7	95.6
2	2,528	167	2,695	89.0	64.4	87.5	105.7	139.3	107.5	88.4	90.9	88.6
3	3,116	206	3,323	83.3	69.0	82.4	98.7	117.7	99.8	124.2	118.4	123.8
4	2,490	182	2,671	83.4	68.1	82.3	105.5	204.5	110.1	78.8	89.6	79.4
5	3,205	199	3,404	78.6	68.8	78.1	98.9	138.6	100.8	121.6	102.8	120.3
6	2,781	205	2,986	80.1	70.1	79.4	98.4	139.5	100.8	92.1	102.0	92.7
7	2,836	203	3,039	75.3	66.3	74.7	94.4	178.5	98.4	104.9	100.1	104.5
8	2,628	201	2,829	73.5	65.8	72.9	108.0	96.1	107.1	105.5	96.1	104.7
9	2,147	215	2,362	77.2	65.8	76.2	103.4	99.2	103.0	19.4	16.8	19.1
10+	19,555	2,358	21,913	72.4	60.5	71.1	108.2	129.7	110.3	na	na	na
Five year periods												
0-4	13,670	864	14,533	88.1	71.3	87.1	103.1	141.8	105.1	na	na	na
5-9	13,596	1,023	14,619	77.0	67.4	76.4	100.2	126.2	101.8	na	na	na
10-14	9,829	932	10,761	73.9	61.4	72.8	98.3	118.7	99.9	na	na	na
15-19	5,386	658	6,044	72.4	60.9	71.2	115.3	142.7	118.0	na	na	na
20+	4,341	767	5,108	68.9	59.1	67.4	124.4	133.2	125.7	na	na	na

na: not applicable

[a] Both month and year of birth given. The inverse of the percent reported is the percent with incomplete and therefore imputed date of birth

[b] (Bm/Bf) x 100, where Bm and Bf are the numbers of male and female births, respectively

[c] (2 x Bt/(Bt-1 + Bt+1)) x 100, where Bt is the number of births in year preceding the survey

321

Table DQ.25: Reporting of Age at Death in Days

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, by 5-year periods preceding the survey (weighted, imputed)
Sudan MICS, 2014

Age at death (days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
0	49	32	20	11	112
1	170	147	99	73	488
2	39	46	28	17	130
3	46	43	44	23	155
4	28	28	18	15	89
5	14	12	6	8	40
6	21	3	6	5	36
7	35	44	40	36	154
8	8	10	5	4	27
9	11	7	2	3	23
10	4	6	7	2	19
11	2	2	1	4	10
12	7	5	8	4	24
13	3	2	2	0	7
14	6	4	3	4	17
15	16	7	3	4	30
16	0	0	2	0	2
17	0	0	1	1	3
18	0	0	0	2	2
19	0	0	1	0	1
20	5	1	3	4	13
21	2	1	2	0	6
22	0	4	1	3	8
23	1	0	0	0	1
24	3	2	0	1	6
25	1	1	0	3	5
26	0	2	0	0	2
27	1	2	0	0	2
29	1	0	0	0	1
30	0	0	0	0	1
Total 0-30	476	410	301	228	1,415
Percent early neonatal*	77.2	75.5	73.5	67.0	74.3

* Deaths during the first 7 days (0-6), divided by deaths during the first month (0-30 days)

Table DQ.26: Reporting of Age at Death in Months

Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at age under one month, by 5-year periods preceding the survey (weighted, imputed
Sudan MICS, 2014

Age at death (months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
0	476	410	301	228	1,415
1	62	35	37	25	159
2	28	29	27	16	101
3	28	32	27	19	107
4	22	19	24	6	71
5	29	35	17	11	92
6	23	32	24	9	87
7	20	42	25	23	110
8	21	18	30	11	81
9	15	25	52	8	100
10	4	6	9	7	26
11	4	7	3	2	17
12	68	124	118	80	390
13	3	1	2	0	6
14	2	3	2	0	8
15	0	0	3	3	6
16	2	2	1	2	6
17	0	3	0	2	5
18	2	6	7	8	24
19	3	0	0	0	4
20	3	0	3	0	5
21	0	2	1	0	2
23	1	1	-	0	2
Reported as 1 year	0	0	1	0	1
Total 0-11	684	660	552	340	2,236
Percent neonatal [b]	65.0	59.4	52.0	62.3	60.0

[a] Includes deaths under one month reported in days
[b] Deaths under one month, divided by deaths under one year

Appendix E: Sudan MICS 2014 Indicators: Numerators and Denominators

MICS INDICATOR		Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
MORTALITY					
1.1	Neonatal mortality rate	BH	Probability of dying within the first month of life		
1.2	Infant mortality rate	BH	Probability of dying between birth and the first birthday		MDG 4.2
1.3	Post-neonatal mortality rate	BH	Difference between infant and neonatal mortality rates		
1.4	Child mortality rate	BH	Probability of dying between the first and the fifth birthdays		
1.5	Under-five mortality rate	BH	Probability of dying between birth and the fifth birthday		MDG 4.1

NUTRITION					
2.1a 2.1b	Underweight prevalence	AN	Number of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for age of the WHO standard	Total number of children under age 5	MDG 1.8
2.2a 2.2b	Stunting prevalence	AN	Number of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) below minus three standard deviations (severe) of the median height for age of the WHO standard	Total number of children under age 5	

---

[54]Some indicators are constructed by using questions in several modules in the MICS questionnaires. In such cases, only the module(s) which contains most of the necessary information is indicated.
[55]Millennium Development Goals (MDG) indicators, effective 15 January 2008 - http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm, accessed 10 June 2013.

MICS INDICATOR		Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
2.3a 2.3b	Wasting prevalence	AN	Number of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for height of the WHO standard	Total number of children under age 5	
2.4	Overweight prevalence	AN	Number of children under age 5 who are above two standard deviations of the median weight for height of the WHO standard	Total number of children under age 5	
2.5	Children ever breastfed	MN	Number of women with a live birth in the last 2 years who breastfed their last live-born child at any time	Total number of women with a live birth in the last 2 years	
2.6	Early initiation of breastfeeding	MN	Number of women with a live birth in the last 2 years who put their last new born to the breast within one hour of birth	Total number of women with a live birth in the last 2 years	
2.7	Exclusive breastfeeding under 6 months	BD	Number of infants under 6 months of age who are exclusively breastfed[56]	Total number of infants under 6 months of age	
2.8	Predominant breastfeeding under 6 months	BD	Number of infants under 6 months of age who received breast milk as the predominant source of nourishment[57] during the previous day	Total number of infants under 6 months of age	
2.9	Continued breastfeeding at 1 year	BD	Number of children age 12-15 months who received breast milk during the previous day	Total number of children age 12-15 months	
2.10	Continued breastfeeding at 2 years	BD	Number of children age 20-23 months who received breast milk during the previous day	Total number of children age 20-23 months	
2.11	Duration of breastfeeding	BD	The age in months when 50 percent of children age 0-35 months did not receive breast milk during the previous day		
2.12	Age-appropriate breastfeeding	BD	Number of children age 0-23 months appropriately fed[58] during the previous day	Total number of children age 0-23 months	
2.13	Introduction of solid, semi-solid or soft foods	BD	Number of infants age 6-8 months who received solid, semi-solid or soft foods during the previous day	Total number of infants age 6-8 months	
2.14	Milk feeding frequency for non-breastfed children	BD	Number of non-breastfed children age 6-23 months who received at least 2 milk feedings during the previous day	Total number of non-breastfed children age 6-23 months	

[56]Infants receiving breast milk, and not receiving any other fluids or foods, with the exception of oral rehydration solution, vitamins, mineral supplements and medicines

[57]Infants who receive breast milk and certain fluids (water and water-based drinks, fruit juice, ritual fluids, oral rehydration solution, drops, vitamins, minerals, and medicines), but do not receive anything else (in particular, non-human milk and food-based fluids)

[58]Infants age 0-5 months who are exclusively breastfed, and children age 6-23 months who are breastfed and ate solid, semi-solid or soft foods

	MICS INDICATOR	Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
2.15	Minimum meal frequency	BD	Number of children age 6-23 months who received solid, semi-solid and soft foods (plus milk feeds for non-breastfed children) the minimum number of times[59] or more during the previous day	Total number of children age 6-23 months	

---

[59]Breastfeeding children: Solid, semi-solid, or soft foods, two times for infants age 6-8 months, and three times for children 9-23 months; Non-breastfeeding children: Solid, semi-solid, or soft foods, or milk feeds, four times for children age 6-23 months

	MICS INDICATOR	Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
2.16	Minimum dietary diversity	BD	Number of children age 6–23 months who received foods from 4 or more food groups[60] during the previous day	Total number of children age 6–23 months	
2.17a 2.17b	Minimum acceptable diet	BD	(a) Number of breastfed children age 6–23 months who had at least the minimum dietary diversity and the minimum meal frequency during the previous day (b) Number of non-breastfed children age 6–23 months who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day	(a) Number of breastfed children age 6–23 months (b) Number of non-breastfed children age 6–23 months	
2.18	Bottle feeding	BD	Number of children age 0-23 months who were fed with a bottle during the previous day	Total number of children age 0-23 months	
2.19	Iodized salt consumption	SI	Number of households with salt testing 15 parts per million or more of iodide/iodate	Total number of households in which salt was tested or where there was no salt	
2.20	Low-birthweight infants	MN	Number of most recent live births in the last 2 years weighing below 2,500 grams at birth	Total number of most recent live births in the last 2 years	
2.21	Infants weighed at birth	MN	Number of most recent live births in the last 2 years who were weighed at birth	Total number of most recent live births in the last 2 years	

CHILD HEALTH					
3.1	Tuberculosis immunization coverage	IM	Number of children age 12-23 months who received BCG vaccine by their first birthday	Total number of children age 12-23 months	
3.2	Polio immunization coverage	IM	Number of children age 12-23 months who received the third dose of OPV vaccine (OPV3) by their first birthday	Total number of children age 12-23 months	
3.3 3.5 3.6	Pentavalent (DPT+HepB+Hib) immunization coverage	IM	Number of children age 12-23 months who received the third dose of Pentavalent (DPT+HepB+Hib) vaccine by their first birthday	Total number of children age 12-23 months	
3.4	Measles immunization coverage[61]	IM	Number of children age 12-23 months who received measles vaccine by their first birthday	Total number of children age 12-23 months	MDG 4.3

---

[60]The indicator is based on consumption of any amount of food from at least 4 out of the 7 following food groups: 1) grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables

[61]In countries where measles vaccination is administered at or after 12 months of age according to the vaccination schedule, the indicator is calculated as the proportion of children age 24-35 months who received the measles vaccine by 24 months of age

MICS INDICATOR		Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
3.8	Full immunization coverage	IM	Number of children age 12-23 months who received all vaccinations recommended in the national immunization schedule by their first birthday	Total number of children age 12-23 months	
3.9	Neonatal tetanus protection	MN	Number of women age 15-49 years with a live birth in the last 2 years who were given at least two doses of tetanus toxoid vaccine within the appropriate interval[62] prior to the most recent birth	Total number of women age 15-49 years with a live birth in the last2 years	
3.10	Care-seeking for diarrhoea	CA	Number of children under age 5 with diarrhoea in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	Total number of children under age 5 with diarrhoea in the last 2 weeks	
3.11	Diarrhoea treatment with oral rehydration salts (ORS) and zinc	CA	Number of children under age 5 with diarrhoea in the last 2 weeks who received ORS and zinc	Total number of children under age 5 with diarrhoea in the last 2 weeks	
3.12	Diarrhoea treatment with oral rehydration therapy (ORT) and continued feeding	CA	Number of children under age 5 with diarrhoea in the last 2 weeks who received ORT (ORS packet, pre-packaged ORS fluid, recommended homemade fluid or increased fluids) and continued feeding during the episode of diarrhoea	Total number of children under age 5 with diarrhoea in the last 2 weeks	
3.13	Care-seeking for children with acute respiratory infection (ARI) symptoms	CA	Number of children under age 5 with ARI symptoms in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	Total number of children under age 5 with ARI symptoms in the last 2 weeks	
3.14	Antibiotic treatment for children with ARI symptoms	CA	Number of children under age 5 with ARI symptoms in the last 2 weeks who received antibiotics	Total number of children under age 5 with ARI symptoms in the last 2 weeks	
3.15	Use of solid fuels for cooking	HC	Number of household members in households that use solid fuels as the primary source of domestic energy to cook	Total number of household members	

WATER AND SANITATION					
4.1	Use of improved drinking water sources	WS	Number of household members using improved sources of drinking water	Total number of household members	MDG 7.8
4.2	Water treatment	WS	Number of household members in households using unimproved drinking water who use an appropriate treatment method	Total number of household members in households using unimproved drinking water sources	

---

[62]See the MICS tabulation plan for a detailed description

MICS INDICATOR		Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
4.3	Use of improved sanitation	WS	Number of household members using improved sanitation facilities which are not shared	Total number of household members	MDG 7.9
4.4	Safe disposal of child's faeces	CA	Number of children age 0-2 years whose last stools were disposed of safely	Total number of children age 0-2 years	
4.5	Place for handwashing	HW	Number of households with a specific place for hand washing where water and soap or other cleansing agent are present	Total number of households	
4.6	Availability of soap or other cleansing agent	HW	Number of households with soap or other cleansing agent	Total number of households	

REPRODUCTIVE HEALTH					
5.1	Adolescent birth rate[63]	BH	Age-specific fertility rate for women age 15-19 years		MDG 5.4
5.2	Early childbearing	BH	Number of women age 20-24 years who had at least one live birth before age 18	Total number of women age 20-24 years	
5.3	Contraceptive prevalence rate	CP	Number of women age 15-49 years currently married or in union who are using (or whose partner is using) a (modern or traditional) contraceptive method	Total number of women age 15-49 years who are currently married or in union	MDG 5.3
5.4	Unmet need[64]	UN	Number of women age 15-49 years who are currently married or in union who are fecund and want to space their births or limit the number of children they have and who are not currently using contraception	Total number of women age 15-49 years who are currently married or in union	MDG 5.6
5.5a 5.5b	Antenatal care coverage	MN	Number of women age 15-49 years with a live birth in the last 2 years who were attended during their last pregnancy that led to a live birth (a) at least once by skilled health personnel (b) at least four times by any provider	Total number of women age 15-49 years with a live birth in the last 2 years	MDG 5.5
5.6	Content of antenatal care	MN	Number of women age 15-49 years with a live birth in the last 2 years who had their blood pressure measured and gave urine and blood samples during the last pregnancy that led to a live birth	Total number of women age 15-49 years with a live birth in the last 2 years	

---

[63]The indicator is calculated for the last 3-year period.
[64]See the MICS tabulation plan for a detailed description http://mics.unicef.org/tools#analysis

	MICS INDICATOR	Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
5.7	Skilled attendant at delivery	MN	Number of women age 15-49 years with a live birth in the last 2 years who were attended by skilled health personnel during their most recent live birth	Total number of women age 15-49 years with a live birth in the last 2 years	MDG 5.2
5.8	Institutional deliveries	MN	Number of women age 15-49 years with a live birth in the last 2 years whose most recent live birth was delivered in a health facility	Total number of women age 15-49 years with a live birth in the last 2 years	
5.9	Caesarean section	MN	Number of women age 15-49 years whose most recent live birth in the last 2 years was delivered by caesarean section	Total number of women age 15-49 years with a live birth in the last 2 years	
5.10	Post-partum stay in health facility	PN	Number of women age 15-49 years who stayed in the health facility for 12 hours or more after the delivery of their most recent live birth in the last 2 years	Total number of women age 15-49 years with a live birth in the last 2 years	
5.11	Post-natal health check for the newborn	PN	Number of last live births in the last 2 years who received a health check while in facility or at home following delivery, or a post-natal care visit within 2 days after delivery	Total number of last live births in the last 2 years	
5.12	Post-natal health check for the mother	PN	Number of women age 15-49 years who received a health check while in facility or at home following delivery, or a post-natal care visit within 2 days after delivery of their most recent live birth in the last 2 years	Total number of women age 15-49 years with a live birth in the last 2 years	

CHILD DEVELOPMENT					
6.1	Attendance to early childhood education	EC	Number of children age 36-59 months who are attending an early childhood education programme	Total number of children age 36-59 months	
6.5	Availability of children's books	EC	Number of children under age 5 who have three or more children's books	Total number of children under age 5	

MICS INDICATOR		Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
6.6	Availability of playthings	EC	Number of children under age 5 with two or more types of playthings	Total number of children under age 5	

LITERACY AND EDUCATION					
7.1	Literacy rate among young women [M]	WB	Number of women age 15-24 years who are able to read a short simple statement about everyday life or who attended secondary or higher education	Total number of women age 15-24 years	MDG 2.3
7.2	School readiness	ED	Number of children in first grade of primary school who attended pre-school during the previous school year	Total number of children attending the first grade of primary school	
7.3	Net intake rate in primary education	ED	Number of children of school-entry age who enter the first grade of primary school	Total number of children of school-entry age	
7.4	Primary school net attendance ratio (adjusted)	ED	Number of children of primary school age currently attending primary or secondary school	Total number of children of primary school age	MDG 2.1
7.5	Secondary school net attendance ratio (adjusted)	ED	Number of children of secondary school age currently attending secondary school or higher	Total number of children of secondary school age	
7.6	Children reaching last grade of primary	ED	Proportion of children entering the first grade of primary school who eventually reach last grade		MDG 2.2
7.7	Primary completion rate	ED	Number of children attending the last grade of primary school (excluding repeaters)	Total number of children of primary school completion age (age appropriate to final grade of primary school)	
7.8	Transition rate to secondary school	ED	Number of children attending the last grade of primary school during the previous school year who are in the first grade of secondary school during the current school year	Total number of children attending the last grade of primary school during the previous school year	
7.9	Gender parity index (primary school)	ED	Primary school net attendance ratio (adjusted) for girls	Primary school net attendance ratio (adjusted) for boys	MDG 3.1
7.10	Gender parity index (secondary school)	ED	Secondary school net attendance ratio (adjusted) for girls	Secondary school net attendance ratio (adjusted) for boys	MDG 3.1

MICS INDICATOR		Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
CHILD PROTECTION					
8.1	Birth registration	BR	Number of children under age 5 whose births are reported registered	Total number of children under age 5	
8.2	Child labour	CL	Number of children age 5-17 years who are involved in child labour[65]	Total number of children age 5-17 years	
8.3	Violent discipline	CD	Number of children age 1-14 years who experienced psychological aggression or physical punishment during the last one month	Total number of children age 1-14 years	
8.4	Marriage before age 15[M]	MA	Number of women age 15-49 years who were first married before age 15	Total number of women age 15-49 years	
8.5	Marriage before age 18[M]	MA	Number of women age 20-49 years who were first married before age 18	Total number of women age 20-49 years	
8.6	Young women age 15-19 years currently married	MA	Number of women age 15-19 years who are married	Total number of women age 15-19 years	
8.7	Polygyny[M]	MA	Number of women age 15-49 years who are in a polygynous	Total number of women age 15-49 years who are married or in union	
8.8a 8.8b	Spousal age difference	MA	Number of women who are married and whose spouse is 10 or more years older, (a) among women age 15-19 years, (b) among women age 20-24 years	Total number of women who are married or in union (a) age 15-19 years, (b) age 20-24 years	
8.9	Approval for female genital mutilation/cutting (FGM/C)	FG	Number of women age 15-49 years who state that FGM/C should be continued	Total number of women age 15-49 years who have heard of FGM/C	
8.10	Prevalence of FGM/C among women	FG	Number of women age 15-49 years who report to have undergone any form of FGM/C	Total number of women age 15-49 years	
8.11	Prevalence of FGM/C among girls	FG	Number of daughters age 0-14 years who have undergone any form of FGM/C, as reported by mothers age 15-49 years	Total number of daughters age 0-14 years of mothers age 15-49 years	

---

[65]Children involved in child labour are defined as children involved in economic activities above the age-specific thresholds, children involved in household chores above the age-specific thresholds, and children involved in hazardous work. See the MICS tabulation plan for more detailed information on thresholds and classifications

MICS INDICATOR		Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
8.12	Attitudes towards domestic violence[M]	DV	Number of women who state that a husband is justified in hitting or beating his wife in at least one of the following circumstances: (1) she goes out without telling him, (2) she neglects the children, (3) she argues with him, (4) she refuses sex with him, (5) she burns the food	Total number of women age 15-49 years	
8.13	Children's living arrangements	HL	Number of children age 0-17 years living with neither biological parent	Total number of children age 0-17 years	
8.14	Prevalence of children with one or both parents dead	HL	Number of children age 0-17 years with one or both biological parents dead	Total number of children age 0-17 years	
8.15	Children with at least one parent living abroad	HL	Number of children 0-17 years with at least one biologicalparent living abroad	Total number of children 0-17 years	

HIV/AIDS					
9.1	Knowledge about HIV prevention among young women[M]	HA	Number of women age 15-24 years who correctly identify ways of preventing the sexual transmission of HIV[66], and who reject major misconceptions about HIV transmission	Total number of women age 15-24 years	MDG 6.3
9.2	Knowledge of mother-to-child transmission of HIV[M]	HA	Number of women age 15-49 years who correctly identify all three means[67] of mother-to-child transmission of HIV	Total number of women age 15-49 years	
9.3	Accepting attitudes towards people living with HIV[M]	HA	Number of women age 15-49 years expressing accepting attitudes on all four questions[68] toward people living with HIV	Total number of women age 15-49 years who have heard of HIV	
9.4	Women who know where to be tested for HIV[M]	HA	Number of women age 15-49 years who state knowledge of a place to be tested for HIV	Total number of women age 15-49 years	
9.5	Women who have been tested for HIV and know the results [M]	HA	Number of women age 15-49 years who have been tested for HIV in the last 12 months and who know their results	Total number of women age 15-49 years	
9.6	Sexually active young women who have been tested for HIV and know the results [M]	HA	Number of women age 15-24 years who have had sex in the last 12 months, who have been tested for HIV in the last 12 months and who know their results	Total number of women age 15-24 years who have had sex in the last 12 months	

---

[66]Using condoms and limiting sex to one faithful, uninfected partner

[67]Transmission during pregnancy, during delivery, and by breastfeeding

[68]Women (1) who think that a female teacher with the AIDS virus should be allowed to teach in school, (2) who would buy fresh vegetables from a shopkeeper or vendor who has the AIDS virus, (3) who would not want to keep it as a secret if a family member became infected with the AIDS virus, and (4) who would be willing to care for a family member who became sick with the AIDS virus

MICS INDICATOR		Module[54]	Numerator	Denominator	MDG Indicator Reference[55]
9.7	HIV counselling during antenatal care	HA	Number of women age 15-49 years who had a live birth in the last 2 years and received antenatal care during the pregnancy of their most recent birth, reporting that they received counselling on HIV during antenatal care	Total number of women age 15-49 years who had a live birth in the last 2 years	
9.8	HIV testing during antenatal care	HA	Number of women age 15-49 years who had a live birth in the last 2 years and received antenatal care during the pregnancy of their most recent birth, reporting that they were offered and accepted an HIV test during antenatal care and received their results	Total number of women age 15-49 years who had a live birth in the last 2 years	
9.16	Ratio of school attendance of orphans to school attendance of non-orphans	HL - ED	Proportion attending school among children age 10-14 years who have lost both parents	Proportion attending school among children age 10-14 years whose parents are alive and who are living with one or both parents	MDG 6.4

FOOD SECURITY					
CS.1	Food Consumption Score	FS	Number of households with poor/borderline/acceptable food consumption	Total number of households	
CS.2	Dietary Diversity Score	FS	Number of household with average dietary diversity score (calculated on the entire population and on sub-groups)	Total number of households	
CS.3	Coping strategy index	FS	Number of households using negative coping strategy	Total number of households	

Appendix F1: Household Questionnaire

MICS

HOUSEHOLD QUESTIONNAIRE
Sudan Multiple Indicator Survey 2014

HOUSEHOLD INFORMATION PANEL	HH
HH0.state code	
HH1. Cluster number: ___ ___	**HH2**. Household number: ___ ___
HH3. Interviewer's name and number: Name _____ ___ ___	**HH4**. Supervisor's name and number: Name_____ ___ ___
HH5. Day / Month / Year of interview: ___ ___ /___ ___ / 2 0 1 4	
HH6. Area: Urban.. 1 Rural 2	

WE ARE FROM THE ***Central Bureau of Statistics***. WE ARE CONDUCTING A SURVEY ABOUT THE SITUATION OF CHILDREN, FAMILIES AND HOUSEHOLDS. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW WILL TAKE ABOUT ٣٥ MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS. MAY I START NOW?

☐ *Yes, permission is given ⇨ Go to HH18 to record the time and then begin the interview.*
☐ *No, permission is not given ⇨ Circle 04 in HH9. Discuss this result with your supervisor.*

HH9. Result of household interview:

Completed 01
No household member or no competent respondent at home at time of visit 02
Entire household absent for extended period of time.. 03
Refused.. 04
Dwelling vacant / Address not a dwelling 05
Dwelling destroyed.. 06
Dwelling not found 07

Other (*specify*) _____ 96

After the household questionnaire has been completed, fill in the following information:	
HH10. Respondent to Household Questionnaire: Name _____ ___ ___	

HH11. Total number of household members: ___ ___	*After all questionnaires for the household have been completed, fill in the following information:*

HH12. Number of women
    age 15-49 years: ___ ___
	HH13. Number of women's
	      questionnaires completed: ___ ___

HH14. Number of children
    under age 5:   ___ ___
	HH15. Number of under-5
	      questionnaires completed: ___ ___

HH16. Field editor's name and number: Name_____ __ __	**HH17**. Main data entry clerk's name and number: Name_____ __ __
Respondent mobile __ ___ __ ___ __ __ __ __	**Researcher mobile** __ __ __ __ __ __ __ __ __ __

HH18. *Record the time.*
Morning...........................1
Afternoon 2
Hour ....__ __
Minutes ....__ __

LIST OF HOUSEHOLD MEMBERS

FIRST, PLEASE TELL ME THE NAME OF EACH PERSON WHO USUALLY LIVES HERE, STARTING WITH THE HEAD OF THE HOUSEHOLD.

List the head of the household in line 01. List all household members (HL2), their relationship to the household head (HL3), and their sex (HL4)

Then ask: ARE THERE ANY OTHERS WHO LIVE HERE, EVEN IF THEY ARE NOT AT HOME NOW?

If yes, complete listing for questions HL2-HL4. Then, ask questions starting with HL5 for each person at a time.

Use an additional questionnaire if all rows in the List of Household Members have been used.

							For women age 15-49	For children age 0-4	For children age 0-17 years						For Children age 0-14
HL1. *Line no.*	HL2. *Name*	HL3. WHAT IS THE RELATION-SHIP OF (*name*) TO THE HEAD OF HOUSE-HOLD?	HL4. Is (*name*) MALE OR FEMALE? 1 Male 2 Female	HL5. WHAT IS (*name*)'S DATE OF BIRTH? 98 DK / 9998 DK	HL6. HOW OLD IS (*name*)? *Record in completed years. If age is 95 or above, record '00'.*	HL7. *Circle line no. if woman age* **15-49**.	HL7B. *Circle line no. if age* **0-4**.	HL11. Is (*name*)'s NATURAL MOTHER ALIVE? 1 Yes 2 No↘HL13 8 DK↘HL13	HL12. DOES (*name*)'s NATURAL MOTHER LIVE IN THIS HOUSE-HOLD? *If "Yes", record line no. of mother and go to HL13. If "No", record 00.*	HL12A. WHERE DOES(*name*)'S NATURAL MOTHER LIVE? 1 In another household in this country 2 Institution in this country 3 Abroad 8 DK	HL13. Is (*name*)'s NATURAL FATHER ALIVE? 1 Yes 2 No↘ HL15 8 DK↘ HL15	HL14. DOES (*name*)'s NATURAL FATHER LIVE IN THIS HOUSE-HOLD? *If "Yes", record line no. of father and go to HL15. If "No", record 00.*	HL14A. WHERE DOES (*name*)'s NATURAL FATHER LIVE? 1 In another household in this country 2 Institution in this country 3 Abroad 8 DK	HL15. *Record line no. of mother from HL12 if indicated. If HL12 is blank or '00' ask:* WHO IS THE PRIMARY CARETAKER OF (*name*)?
Line	Name	Relation *	M	F	Month / Year	Age	15-49	0-4	Y N DK	Mother	Y N DK	Y N DK	Father		Mother
01		**0 1**	1 2	__ __ / __ __ __ __	__ __	01	01	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
02		__ __	1 2	__ __ / __ __ __ __	__ __	02	02	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
03		__ __	1 2	__ __ / __ __ __ __	__ __	03	03	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
04		__ __	1 2	__ __ / __ __ __ __	__ __	04	04	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
05		__ __	1 2	__ __ / __ __ __ __	__ __	05	05	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __

| | | | For women age **15-49** | For children age **0-4** | For children age **0-17** years | | | | | | For Children age **0-14** |

HL1. Line no.	HL2. Name	HL3. WHAT IS THE RELATIONSHIP OF (*name*) TO THE HEAD OF HOUSEHOLD?	HL4. Is (*name*) MALE OR FEMALE? 1 Male 2 Female	HL5. WHAT IS (*name*)'S DATE OF BIRTH? 98 DK · 9998 DK	HL6. HOW OLD IS (*name*)? Record in completed years. If age is 95 or above, record '00'.	HL7. Circle line no. if woman age **15-49**.	HL7B. Circle line no. if age **0-4**.	HL11. Is (*name*)'s NATURAL MOTHER ALIVE? 1 Yes 2 No⇨ HL13 8 DK⇨ HL13	HL12. DOES (*name*)'s NATURAL MOTHER LIVE IN THIS HOUSEHOLD? If "Yes", record line no. of mother and go to HL13. If "No", record 00.	HL12A. WHERE DOES(*name*)'S NATURAL MOTHER LIVE? 1 In another household in this country 2 Institution in this country 3 Abroad 8 DK	HL13. Is (*name*)'s NATURAL FATHER ALIVE? 1 Yes 2 No⇨ HL15 8 DK⇨ HL15	HL14. DOES (*name*)'s NATURAL FATHER LIVE IN THIS HOUSEHOLD? If "Yes", record line no. of father and go to HL15. If "No", record 00.	HL14A. WHERE DOES (*name*)'s NATURAL FATHER LIVE? 1 In another household in this country 2 Institution in this country 3 Abroad 8 DK	HL15. Record line no. of mother from HL12 if indicated. If HL12 is blank or '00' ask: WHO IS THE PRIMARY CARETAKER OF (*name*)?
Line	Name	Relation *	M · F	Month · Year	Age	15-49	0-4	Y N DK	Mother	Y N DK	Y N DK	Father		Mother
06		___ ___	1 · 2	__ __ · __ __ __ __	__ __	06	06	1 2 8	___ ___	1 2 3 8	1 2 8	___ ___	1 2 3 8	___ ___
07		___ ___	1 · 2	__ __ · __ __ __ __	__ __	07	07	1 2 8	___ ___	1 2 3 8	1 2 8	___ ___	1 2 3 8	___ ___
08		___ ___	1 · 2	__ __ · __ __ __ __	__ __	08	08	1 2 8	___ ___	1 2 3 8	1 2 8	___ ___	1 2 3 8	___ ___
09		___ ___	1 · 2	__ __ · __ __ __ __	__ __	09	09	1 2 8	___ ___	1 2 3 8	1 2 8	___ ___	1 2 3 8	___ ___
10		___ ___	1 · 2	__ __ · __ __ __ __	__ __	10	10	1 2 8	___ ___	1 2 3 8	1 2 8	___ ___	1 2 3 8	___ ___
11		___ ___	1 · 2	__ __ · __ __ __ __	__ __	11	11	1 2 8	___ ___	1 2 3 8	1 2 8	___ ___	1 2 3 8	___ ___
12		___ ___	1 · 2	__ __ · __ __ __ __	__ __	12	12	1 2 8	___ ___	1 2 3 8	1 2 8	___ ___	1 2 3 8	___ ___
13		___ ___	1 · 2	__ __ · __ __ __ __	__ __	13	13	1 2 8	___ ___	1 2 3 8	1 2 8	___ ___	1 2 3 8	___ ___

Tick here if additional questionnaire used ☐

Probe for additional household members.

Probe especially for any infants or small children not listed, and others who may not be members of the family (such as servants, friends) but who usually live in the household.

Insert names of additional members in the household list and complete form accordingly.

Now for each woman age 15-49 years, write her name and line number and other identifying information in the information panel of a separate Individual Women's Questionnaire.

For each child under age 5, write his/her name and line number AND the line number of his/her mother or caretaker in the information panel of a separate Under-5 Questionnaire.

You should now have a separate questionnaire for each eligible woman, each eligible man, and each child under five in the household.

| *Codes for **HL3**: Relationship to head of household:* | 01 Head
02 Spouse / Partner
03 Son / Daughter | 04 Son-In-Law / Daughter-In-Law
05 Grandchild
06 Parent | 07 Parent-In-Law
08 Brother / Sister
09 Brother-In-Law / Sister-In-Law | 10 Uncle / Aunt
11 Niece / Nephew
12 Other relative | 13 Adopted / Foster/ Stepchild
14 Other (Not related) | 98 DK |

				For household members age **4 and above**			For household members age **4-24** years				

ED1. *Line number*	**ED2**. *Name and age* Copy from HL2 and HL6.	**ED3**. HAS (*name*) EVER ATTENDED SCHOOL OR PRE-SCHOOL OR KHALWA? 1 Yes ↘ ED4A 2 NO : a. If the age 25 years or more ⇨ Next line. b. If age 4-24 years continue to ED3A.	**ED3.A** WHAT WAS THE MAIN REASON FOR NOT ATTENDING SCHOOL? 1 FINANCIAL BURDEN OF SCHOOL EXPENSES 2 UNAVAILABILITY OF EDUCATION SERVICES 3 DISABILITY/ ILLNESS 4 WORK TO SUPPORT FAMILY 5 SCHOOL TOO FAR AWAY 6 MIXED EDUCATION 7 OTHER 8 DK ↘ Next Line	**ED4A**. WHAT IS THE HIGHEST EDUCATIONAL LEVEL (*name*) HAS ATTENDED? LEVEL: 00 KHALWA 01 PRESCHOOL 02 PRELIMINARY 03 PRIMARY 04 BASIC 05 VOCATIONAL TRAINING 06 INTERMEDIATE 07 SECONDARY 08 HIGH SCHOOL (3 YEARS) 09 HIGH SCHOOL (4 YEARS) 10 INTERMEDIATE DIPLOMA 11 UNIVERSITY 12 POST GRADUATE 98 DON'T KNOW *If level=00,01 or 12, skip to ED5.*	**ED4B**. WHAT IS THE HIGHEST GRADE (*name*) COMPLETED AT THIS LEVEL? Grade: 98 DK *If the first grade at this level is not completed, enter "00".*	**ED5**. DURING THE CURRENT SCHOOL YEAR, THAT IS 2014-2015, DID (*name*) ATTEND SCHOOL OR PRESCHOOL OR KHALWA AT ANY TIME? 1 Yes:ED6 2 No ↘ ED5A	**ED5A** WHAT WAS THE MAIN REASON FOR NOT ATTENDING SCHOOL? 1 FINANCIAL BURDEN OF SCHOOL EXPENSES 2 UNAVAILABILITY OF EDUCATION SERVICES 3 DISABILITY/ ILLNESS 4 WORK TO SUPPORT FAMILY 5 SCHOOL TOO FAR AWAY 6 MIXED EDUCATION 7 UNAVAILABILITY OF DRINKING WATER AND TOILET. 8 EARLY MARRIAGE 96 OTHERS AFTER EACH ANSWER GO TO ED7	**ED6**. DURING THIS/THAT SCHOOL YEAR, WHICH LEVEL AND GRADE IS/WAS (*name*) ATTENDING? LEVEL: 00 KHALWA 01 PRESCHOOL 04 BASIC 05 VOCATIONAL TRAINING 08 HIGH SCHOOL . 11 UNIVERSITY 12 POST GRADUATE 98 DON'T KNOW *If level=00,01 or 12 go to ED7*	**ED7**. DURING THE PREVIOUS SCHOOL YEAR, THAT IS 2013-2014, DID (*name*) ATTEND SCHOOL OR PRESCHOOL OR KHALWA AT ANY TIME? 1 Yes 2 No ↘ Next Line 8 DK ↘ Next Line	**ED8**. DURING THAT PREVIOUS SCHOOL YEAR, WHICH LEVEL AND GRADE DID (*name*) ATTEND? LEVEL: 00 KHALWA 01 PRESCHOOL 04 BASIC 05 VOCATIONAL TRAINING 08 HIGH SCHOOL 11 UNIVERSITY 12 POST GRADUATE 98 DON'T KNOW *If level=00 or 01,12 go to next line.*	Grade: 98 DK
Line	Name / Age	Yes No		Level	Grade	Yes No		Level	Grade	Yes No DK	Level	Grade
01	— —	1 2		__ __	__ __	1 2		__ __	__ __	1 2 8	__ __	__ __

ED1. Line number	ED2. Name and age	ED3. Has (name) ever attended school or	ED3.A What was the main reason for not attending school?	ED4A. What is the highest educational level (name) has attended?	ED4B. What is the highest grade (name) completed?	ED5. During the current school year, that is 2014-2015, did	What was the main reason for not attending school?	ED6. During this/that school year, which level and grade is/was (name) attending?:	ED7. During the previous school year, that is 2012-2013, did (name) attend	ED8. During that previous school year, which level and grade did (name) attend?
		__ __								
02		__ __ 1 2			__ __	1 2		__ __ __	__ __ 1 2 8	__ __
03		__ __ 1 2			__ __	1 2		__ __ __	__ __ 1 2 8	__ __
04		__ __ 1 2			__ __	1 2		__ __ __	__ __ 1 2 8	__ __
05		__ __ 1 2			__ __	1 2		__ __ __	__ __ 1 2 8	__ __
06		__ __ 1 2			__ __	1 2		__ __ __	__ __ 1 2 8	__ __
07		__ __ 1 2			__ __	1 2		__ __ __	__ __ 1 2 8	__ __

*For household members age **4 and above*** | | | | *For household members age **4-24** years*

	Copy from HL2 and HL6.	PRE-SCHOOL OR KHALWA? 1 Yes ↳ ED4A 2 No : a. If the age 25 years or more ⇨ next line. 3. If age 4 -24 years continue	0 NOT OF SCHOOL AGE 1 FINANCIAL BURDEN OF SCHOOL EXPENSES 2 UNAVAILABILITY OF EDUCATION SERVICES 3 DISABILITY/ ILLNESS 4 WORK TO SUPPORT FAMILY 5 SCHOOL TOO FAR AWAY 6 MIXED EDUCATION 7 OTHER 9 DK ↳ Next Line	LEVEL: 00 KHALWA 01 PRESCHOOL 02 PRELIMINARY 03 PRIMARY 04 BASIC 05 VOCATIONAL TRAINING 06 INTERMEDIATE 07 SECONDARY 08 HIGH SCHOOL (3 YEARS) 09 HIGH SCHOOL (4 YEARS) 10 INTERMEDIATE DIPLOMA 11 UNIVERSITY 12 POST GRADUATE 98 DON'T KNOW If level=00,01 or 12, skip to ED5	AT THIS LEVEL? Grade: 98 DK If the first grade at this level is not completed, enter "00".	(name) ATTEND SCHOOL OR PRESCHOOL OR KHALWA AT ANY TIME? 1 Yes:ED6 2 No ↳ ED5A	1 FINANCIAL BURDEN OF SCHOOL EXPENSES 2 UNAVAILABILITY OF EDUCATION SERVICES 3 DISABILITY/ ILLNESS 4 WORK TO SUPPORT FAMILY 5 SCHOOL TOO FAR AWAY 6 MIXED EDUCATION 7 UNAVAILABILITY OF DRINKING WATER AND TOILET. 8 EARLY MARRIAGE 9 OTHERS	LEVEL: 00 KHALWA 01 PRESCHOOL 04 BASIC 05 VOCATIONAL TRAINING 08 HIGH SCHOOL 11 UNIVERSITY 12 POST GRADUATE 98 DON'T KNOW If level=00,01 or 12 go to ED7 If level=00 or 01, skip to ED7.	Grade: 98 DK	SCHOOL OR PRESCHOOL OR KHALWA AT ANY TIME? 1 Yes 2 No ↳ Next Line 8 DK ↳ Next Line	LEVEL: 00 KHALWA 01 PRESCHOOL 04 BASIC 05 VOCATIONAL TRAINING 08 HIGH SCHOOL. 11 UNIVERSITY 12 POST GRADUATE 98 DON'T KNOW If level=00,01 or 12 go to ED7	Grade: 98 DK
Line	Name	Ag	Yess No		Level	Grade	Yes No		Level	Grade	Yess No DK	Level	Grade
08		— − —	1 2			__ __	1 2			__ __	1 2 8		__ __
09		— − —	1 2			__ __	1 2			__ __	1 2 8		__ __
10		— − —	1 2			__ __	1 2			__ __	1 2 8		__ __

11		— ‒ — ‒	1 2		__ __	__ __	1	2		__ __	__ __	1 2 8	__ __	__ __
12		— ‒ — ‒	1 2		__ __	__ __	1	2		__ __	__ __	1 2 8	__ __	__ __
13		— ‒ — ‒ ‒	1 2		__ __	__ __	1	2		__ __	__ __	1 2 8	__ __	__ __

SELECTION OF ONE CHILD FOR CHILD LABOUR/CHILD DISCIPLINE   SL

SL1. *Check HL6 in the List of Household Members and write the total number of children age 1-17 years.*	Total number .... __

SL2. *Check the number of children age 1-17 years in SL1:*

    ☐ *Zero ⇨ Go to HOUSEHOLD CHARACTERISTICS module.*

    ☐ *One ⇨ Go to SL9 and record the rank number as '1', enter the line number, child's name and age.*

    ☐ *Two or more ⇨ Continue with SL2A.*

SL2A. *List each of the children age 1-17 years below in the order they appear in the List of Household Members. Do not include other household members outside of the age range 1-17 years. Record the line number, name, sex, and age for each child.*

SL3. *Rank number*	**SL4**. *Line number from HL1*	**SL5**. *Name from HL2*	**SL6**. *Sex from HL4*		**SL7**. *Age from HL6*
Rank	Line	Name	M	F	Age
1	__ __		1	2	___ ___
2	__ __		1	2	___ ___
3	__ __		1	2	___ ___
4	__ __		1	2	___ ___
5	__ __		1	2	___ ___
6	__ __		1	2	___ ___
7	__ __		1	2	___ ___

SL8. *Check the last digit of the household number (HH2) from the cover page. This is the number of the row you should go to in the table below.*

    Check the total number of children age 1-17 years in SL1 above. This is the number of the column you should go to in the table below.

    Find the box where the row and the column meet and circle the number that appears in the box. This is the rank number (SL3) of the selected child.

Last Digit of Household Number (from HH2)	**Total Number of Eligible Children in the Household (from SL1)**						
	2	*3*	*4*	*5*	*6*	*7*	*8+*
0	2	2	4	3	6	5	4
1	1	3	1	4	1	6	5
2	2	1	2	5	2	7	6
3	1	2	3	1	3	1	7
4	2	3	4	2	4	2	8
5	1	1	1	3	5	3	1
6	2	2	2	4	6	4	2
7	1	3	3	5	1	5	3
8	2	1	4	1	2	6	4
9	1	2	1	2	3	7	5

SL9. *Record the rank number (SL3), line number (SL4), name (SL5) and age (SL7) of the selected child.*	Rank number __ Line number __ __

	Name_____
	Age __ __

CHILD LABOUR			CL

CL1. *Check selected child's age from SL9:*

    ☐ *1-4 years ⇨ Go to Next Module (Child discipline)*

    ☐ *5-17 years ⇨ Continue with CL2.*

CL2. NOW I WOULD LIKE TO ASK ABOUT ANY WORK CHILDREN IN THIS HOUSEHOLD MAY DO.

SINCE LAST (*day of the week*), DID (*name*) DO ANY OF THE FOLLOWING ACTIVITIES, EVEN FOR ONLY ONE HOUR?

[A] DID (*name*) DO ANY WORK OR HELP ON HIS/HER OWN OR THE HOUSEHOLD'S PLOT/FARM/FOOD GARDEN OR LOOKED AFTER ANIMALS? FOR EXAMPLE, GROWING FARM PRODUCE, HARVESTING, OR FEEDING, GRAZING, MILKING ANIMALS?

[B] DID (*name*) HELP IN FAMILY BUSINESS OR RELATIVE'S BUSINESS WITH OR WITHOUT PAY, OR RUN HIS/HER OWN BUSINESS?

[C] DID (*name*) PRODUCE OR SELL ARTICLES, HANDICRAFTS, CLOTHES, FOOD OR AGRICULTURAL PRODUCTS?

[D] SINCE LAST (*day of the week*), DID (*name*) ENGAGE IN ANY OTHER ACTIVITY IN RETURN FOR INCOME IN CASH OR IN KIND, EVEN FOR ONLY ONE HOUR?
If "No", Probe:
PLEASE INCLUDE ANY ACTIVITY (*name*) PERFORMED AS A REGULAR OR CASUAL EMPLOYEE, SELF-EMPLOYED OR EMPLOYER; OR AS AN UNPAID FAMILY WORKER HELPING OUT IN HOUSEHOLD BUSINESS OR FARM.

	Yes	No
Worked on plot / farm / food garden / looked after animals	1	2
Helped in family / relative's business/ran own business.......................	1	2
Produce / sell articles / handicrafts / clothes / food or agricultural products	1	2
Any other activity	1	2

CL3. *Check CL2, A to D*

    ☐ *There is at least one 'Yes' ⇨ continue with CL4*

    ☐ *All answers are 'No' ⇨ Go to CL8*

CL4. SINCE LAST (*day of the week*) ABOUT HOW MANY HOURS DID (*name*) ENGAGE IN THIS ACTIVITY/THESE ACTIVITIES, IN TOTAL?

If less than one hour, record "00"

Number of hours .... __ __

CL5. DOES THE ACTIVITY/DO THESE ACTIVITIES REQUIRE CARRYING HEAVY LOADS?

Yes...1   1⇨ CL8
No 2

CL6. DOES THE ACTIVITY/DO THESE ACTIVITIES REQUIRE WORKING WITH DANGEROUS TOOLS (KNIVES ETC.) OR OPERATING HEAVY MACHINERY?	Yes...1 No 2	1⇨ CL8
CL7. HOW WOULD YOU DESCRIBE THE WORK ENVIRONMENT OF (*name*)? [A] IS (*name*) EXPOSED TO DUST, FUMES OR GAS? [B] IS (*name*) EXPOSED TO EXTREME COLD, HEAT OR HUMIDITY? [C] IS (*name*) EXPOSED TO LOUD NOISE OR VIBRATION? [D] IS (*name*) REQUIRED TO WORK AT HEIGHTS? [E] IS (*name*) REQUIRED TO WORK WITH CHEMICALS (PESTICIDES, GLUES, ETC.) OR EXPLOSIVES? [F] IS (*name*) EXPOSED TO OTHER THINGS, PROCESSES OR CONDITIONS BAD FOR (*name*)'S HEALTH OR SAFETY?	Yes...1 No ....2 Yes...1 No ....2 Yes...1 No ....2 Yes...1 No ....2 Yes...1 No ....2 Yes...1 No 2	
CL8. SINCE LAST (*day of the week*), DID (*name*) FETCH WATER OR COLLECT FIREWOOD FOR HOUSEHOLD USE?	Yes...1 No 2	2⇨ CL10
CL9. IN TOTAL, HOW MANY HOURS DID (*name*) SPEND ON FETCHING WATER OR COLLECTING FIREWOOD FOR HOUSEHOLD USE, SINCE LAST (*day of the week*)? *If less than one hour, record "00"*	Number of hours .... __ __	
CL10. SINCE LAST (*day of the week*), DID (*name*) DO ANY OF THE FOLLOWING FOR THIS HOUSEHOLD? [A] SHOPPING FOR HOUSEHOLD? [B] REPAIR ANY HOUSEHOLD EQUIPMENT? [C] COOKING OR CLEANING UTENSILS OR THE HOUSE? [D] WASHING CLOTHES? [E] CARING FOR CHILDREN? [F] CARING FOR THE OLD OR SICK? [G] OTHER HOUSEHOLD TASKS?	Yes No Shopping for household.............................1 2 Repair household equipment ....1 2 Cooking / cleaning utensils /house ....1 2 Washing clothes ....1 2 Caring for children ....1 2 Caring for old / sick ....1 2 Other household tasks 1 2	

CL11. *Check CL10, A to G* ☐ *There is at least one 'Yes'* ⇨ *Continue with CL12* ☐ *All answers are 'No'* ⇨ *Go to Next Module*	
CL12. SINCE LAST (*day of the week*), ABOUT HOW MANY HOURS DID (*name*) ENGAGE IN THIS ACTIVITY/THESE ACTIVITIES, IN TOTAL? *If less than one hour, record "00"*	Number of hours.. __ __

CHILD DISCIPLINE	CD

CD1. *Check selected child's age from SL9:*

☐ *1-14 years* ⇨ *Continue with CD2*

☐ *15-17 years* ⇨ *Go to Next Module*

CD2. *Write the line number and name of the child from SL9.*

Line number __ __

Name _____

CD3. ADULTS USE CERTAIN WAYS TO TEACH CHILDREN THE RIGHT BEHAVIOUR OR TO ADDRESS A BEHAVIOUR PROBLEM. I WILL READ VARIOUS METHODS THAT ARE USED. PLEASE TELL ME IF <u>YOU OR ANYONE ELSE IN YOUR HOUSEHOLD</u> HAS USED THIS METHOD WITH *(name)* <u>IN THE PAST MONTH</u>.

	Yes	No
[A] TOOK AWAY PRIVILEGES, FORBADE SOMETHING *(name)* LIKED OR DID NOT ALLOW HIM/HER TO LEAVE THE HOUSE. Took away privileges	1	2
[B] EXPLAINED WHY *(name)*'S BEHAVIOUR WAS WRONG. Explained wrong behaviour	1	2
[C] SHOOK HIM/HER. Shook him/her	1	2
[D] SHOUTED, YELLED AT OR SCREAMED AT HIM/HER. Shouted, yelled, screamed	1	2
[E] GAVE HIM/HER SOMETHING ELSE TO DO. Gave something else to do	1	2
[F] SPANKED, HIT OR SLAPPED HIM/HER ON THE BOTTOM WITH BARE HAND. Spanked, hit, slapped on bottom with bare hand	1	2
[G] HIT HIM/HER ON THE BOTTOM OR ELSEWHERE ON THE BODY WITH SOMETHING LIKE A BELT, HAIRBRUSH, STICK, SLIPPER OR OTHER HARD OBJECT. Hit with belt, hairbrush, stick, slipper or other hard object	1	2
[H] CALLED HIM/HER DUMB, LAZY, OR ANOTHER NAME LIKE THAT. Called dumb, lazy, or another name	1	2
[I] HIT OR SLAPPED HIM/HER ON THE FACE, HEAD OR EARS. Hit / slapped on the face, head or ears	1	2
[J] HIT OR SLAPPED HIM/HER ON THE HAND, ARM, OR LEG. Hit / slapped on hand, arm or leg	1	2
[K] BEAT HIM/HER UP, THAT IS HIT HIM/HER OVER AND OVER AS HARD AS ONE COULD. Beat up, hit over and over as hard as one could	1	2

CD4. DO YOU BELIEVE THAT IN ORDER TO BRING UP, RAISE, OR EDUCATE A CHILD PROPERLY, THE CHILD NEEDS TO BE PHYSICALLY PUNISHED?	Yes ....1 No ....2 DK/ No opinion……………………….……..8	

HOUSEHOLD CHARACTERISTICS		HC
HC2. HOW MANY ROOMS IN THIS HOUSEHOLD ARE USED FOR SLEEPING?	Number of rooms __ __	

HC3. *Main material of the dwelling floor.*
 	
Record observation.
	Natural floor
	     Earth / Sand 11
	     Dung 12
	Rudimentary floor
	     Wood planks 21
	     Ganaa (Palm / Bamboo) 22
	Finished floor
	     Parquet or polished wood 31
	     Vinyl or asphalt strips 32
	     Ceramic tiles 33
	     Cement/ Dafra (bricks+cement) 34
	     Carpet 35
	     Concrete 36
	    Marble…………………………………37
	
	Other (*specify*) _____ 96	

HC4. *Main material of the roof.*
 	
Record observation.
	Natural roofing
	     No Roof 11
	     Thatch / Palm leaf 12
	     Sod 13
	Rudimentary roofing
	     Rustic mat 21
	     Ganaa (Palm / Bamboo) 22
	     Wood planks 23
	     Cardboard 24
	     Traditional roof (mat+wood planks)
	           25
	Finished roofing
	     Metal / Tin (Zinc) 31
	     Wood 32
	     Ceramic tiles 34
	     Cement / concrete 35
	
	Other (*specify*) _____ 96	

HC5. *Main material of the exterior walls.*
 	
Record observation.
	Natural walls
	     No walls 11
	     Cane / Palm / Trunks 12
	     Dirt (jaloos) 13
	Rudimentary walls
	     Bamboo (Ganaa) with mud 21
	     Stone with mud 22
	     Uncovered adobe 23
	     Plywood 24	

	Cardboard 25
	Reused wood 26
	Finished walls
	    Stone with lime / cement 32
	    Bricks 33
	    Cement blocks 34
	    Covered adobe (Bayad) 35
	    Wood planks / shingles 36
	
	Other (*specify*) _____ 96	

HC6. WHAT TYPE OF FUEL DOES YOUR HOUSEHOLD <u>MAINLY</u> USE FOR COOKING?	Electricity 01 Liquefied Petroleum Gas (LPG) 02 Kerosene 05 Coal / Lignite 06 Charcoal 07 Wood 08 Straw / Shrubs / Grass 09 Animal dung 10 Agricultural crop residue 11 Solar energy………………………….. …………………………………,,,………12 Wood dust……………………………,,.………13 No food cooked in household…………..95 Other (*specify*) _____ 96	01⇨HC8 02⇨HC8 05⇨HC8 95⇨HC8

HC7. IS THE COOKING USUALLY DONE IN THE HOUSE, IN A SEPARATE BUILDING, OR OUTDOORS?
 	
If 'In the house', probe: IS IT DONE IN A SEPARATE ROOM USED AS A KITCHEN?
	In the house
	    In a separate room used as kitchen/tukul 1
	    Elsewhere in the house 2
	In a separate building 3
	Outdoors 4
	
	Other (*specify*) _____ 6	

HC8. DOES YOUR HOUSEHOLD HAVE:
 	
    [A] ELECTRICITY?
 	
    [B] A RADIO?
 	
    [C] A TELEVISION?
 	
    [D] A NON-MOBILE TELEPHONE?
 	
    [E] A REFRIGERATOR?
 	
    [F] A DIGITAL RECEIVER?
 	
    [G] A FLAT SCREEN TV
 	
    [H] AN INTERNET CONNECTION?
	Yes No
	
	Electricity............................1 2
	
	Radio.................................1 2
	
	Television..........................1 2
	
	Non-mobile telephone 1 2
	
	Refrigerator 1 2
	
	Digital receiver 1 2
	
	Flat screen TV 1 2	

[I] DESKTOP COMPUTER [J] Washing machine	Internet connection...........................1 2 Desktop computer...........................1 2 Washing machine 1 2	
HC9. DOES ANY MEMBER OF YOUR HOUSEHOLD OWN: [B] A MOBILE PHONE? [C] A BICYCLE? [D] A MOTORCYCLE OR SCOOTER? [E] AN ANIMAL-DRAWN CART (KARO)? [F] A CAR OR TRUCK? [G] A BOAT WITH A MOTOR? [H] A RAKSHA [I] A SMART PHONE [J] A LAPTOP COMPUTER/ TABLET [K] THORAYA PHONE	Yes No Mobile telephone.............................1 2 Bicycle...1 2 Motorcycle / Scooter ....1 2 Animal-drawn cart (Karo).................1 2 Car / Truck ....1 2 Boat with motor ....1 2 Raksha ....1 2 Smart phone......................................1 2 Laptop/ tablet...................................1 2 Thoraya phone...................................1 2	
HC10. DO YOU OR SOMEONE LIVING IN THIS HOUSEHOLD OWN THIS DWELLING? *If "No", then ask:* DO YOU RENT THIS DWELLING FROM SOMEONE NOT LIVING IN THIS HOUSEHOLD? *If "Rented from someone else", circle "2". For other responses, circle "6".*	Own 1 Rent 2 Other (*specify*)_____6	
HC11. DOES ANY MEMBER OF THIS HOUSEHOLD OWN ANY LAND THAT CAN BE USED FOR AGRICULTURE?	Yes 1 No 2	2⇨HC13
HC12. HOW MANY FEDDANS OF AGRICULTURAL LAND DO MEMBERS OF THIS HOUSEHOLD OWN? *If less than 1, record "00". If 95 or more, record "95". If unknown, record "98".*	Feddans ___ ___	
HC13. DOES THIS HOUSEHOLD OWN ANY LIVESTOCK, HERDS, OTHER FARM ANIMALS, OR POULTRY?	Yes 1 No 2	2⇨HC15
HC14. HOW MANY OF THE FOLLOWING ANIMALS DOES THIS HOUSEHOLD HAVE? [A] CATTLE, MILK COWS, OR BULLS?	Cattle, milk cows, or bulls ___ ___	

[B] HORSES, DONKEYS, OR MULES?	Horses, donkeys, or mules ___ ___	
[C] GOATS?	Goats ___ ___	
[D] SHEEP?	Sheep ___ ___	
[E] CHICKENS?	Chickens ___ ___	
[F] PIGS?	Pigs ___ ___	
[G] CAMELS?	Camels ___ ___	
If none, record "00". If 95 or more, record "95". If unknown, record "98".		
HC15. DOES ANY MEMBER OF THIS HOUSEHOLD HAVE A BANK ACCOUNT?	Yes 1 No 2	

WATER AND SANITATION		WS

WS1. WHAT IS THE <u>MAIN</u> SOURCE OF DRINKING WATER FOR MEMBERS OF YOUR HOUSEHOLD?	Piped water
	    Piped into dwelling 11
	    Piped into compound, yard or plot
	        12
	    Piped to neighbour 13
	    Public tap / standpipe 14
	    Elevated tank, handpump (Kharjaka)
	        15
	Dug well
	    Protected well 31
	    Unprotected well 32
	Water from spring
	    Protected spring 41
	    Unprotected spring 42
	Surface water (river, stream, dam, hafeer, lake, pond, canal, irrigation channel) filtered 52
	Surface water (river, stream, dam, hafeer, lake, pond, canal, irrigation channel) unfiltered 53
	
	Tanker-truck/ Cart with tank
	  Transported from sources (11, 12,13, 14, 15,31, 41,52) 61
	    Transported from sources (32, 42, 53) 62
	
	Unknown source 63
	
	Bottled water 91
	
	Other (*specify*) 96
		11⇨WS6
		12⇨WS6
		13⇨WS6
		14⇨WS3
		15⇨WS3
		
		31⇨WS3
		32⇨WS3
		
		41⇨WS3
		42⇨WS3
		
		52⇨WS3
		
		53⇨WS3
		
		61⇨WS3
		62⇨WS3
		
		63⇨WS3
		
		96⇨WS3

WS2. WHAT IS THE <u>MAIN</u> SOURCE OF WATER USED BY YOUR HOUSEHOLD FOR OTHER PURPOSES SUCH AS COOKING AND HANDWASHING?	Piped water
	    Piped into dwelling 11
	    Piped into compound, yard or plot
	        12
	    Piped to neighbour 13
	    Public tap / standpipe 14
	    Elevated tank, handpump (Kharjaka)
	        15
	Dug well
	    Protected well 31
	    Unprotected well 32
	Water from spring
	    Protected spring 41
	    Unprotected spring 42
		11⇨WS6
		12⇨WS6
		13⇨WS6
		
		61⇨WS6
		62⇨WS
		63⇨WS6

	Surface water (river, stream, dam, hafeer, lake, pond, canal, irrigation channel) filtered 52 Surface water (river, stream, dam, hafeer, lake, pond, canal, irrigation channel) unfiltered 53 Tanker-truck/ Cart with tank Transported from sources (11, 12,13, 14, 15,31, 41,52)…………………………………61 Transported from sources (32, 42, 53) 62 Unknown source……………………… 63 Other (*specify*)_____96	
WS3. WHERE IS THAT WATER SOURCE LOCATED?	In own dwelling 1 In own yard / plot 2 Elsewhere 3	1⇨WS6 2⇨WS6
WS4. HOW LONG DOES IT TAKE TO GO THERE, GET WATER, AND COME BACK?	Number of minutes __ __ __ DK 998	
WS5. WHO USUALLY GOES TO THIS SOURCE TO COLLECT THE WATER FOR YOUR HOUSEHOLD? *Probe:* IS THIS PERSON UNDER AGE 15? WHAT SEX?	Adult woman (age 15+ years) 1 Adult man (age 15+ years) 2 Female child (under 15) 3 Male child (under 15) 4 DK 8	
WS6. DO YOU DO ANYTHING TO THE WATER TO MAKE IT SAFER TO DRINK?	Yes 1 No 2 DK 8	2⇨WS8 8⇨WS8
WS7. WHAT DO YOU USUALLY DO TO MAKE THE WATER SAFER TO DRINK? *Probe:* ANYTHING ELSE? *Record all items mentioned.*	Boil A Add bleach / chlorine B Strain it through a cloth C Use water filter (ceramic, sand, composite, etc.) D Solar disinfection E Let it stand and settle (e.g. zeer) F Other (*specify*)_____X DK Z	

WS8. WHAT KIND OF TOILET FACILITY DO MEMBERS OF YOUR HOUSEHOLD USUALLY USE?
 	
 If "flush" or "pour flush", probe:
	Flush / Pour flush
	     Flush to piped sewer system 11
	     Flush to septic tank 12	

WHERE DOES IT FLUSH TO?
 	
If not possible to determine, ask permission to observe the facility.
	Flush to pit (latrine) 13
	Flush to somewhere else 14
	Flush to unknown place / Not sure /
	     DK where 15
	Pit latrine
	     Ventilated Improved Pit latrine (VIP)
	                     21
	     Pit latrine with slab 22
	     Pit latrine without slab / Open pit
	                     23
	
	Composting toilet 31
	Bucket 41
	
	No facility, Bush, Field 95
	
	Other (*specify*)_____ 96
		95⇨WS11A

WS9. DO YOU SHARE THIS FACILITY WITH OTHERS WHO ARE NOT MEMBERS OF YOUR HOUSEHOLD?	Yes 1 No 2	2⇨WS11A
WS10. DO YOU SHARE THIS FACILITY ONLY WITH MEMBERS OF OTHER HOUSEHOLDS THAT YOU KNOW, OR IS THE FACILITY OPEN TO THE USE OF THE GENERAL PUBLIC?	Other households only (not public) 1 Public facility 2	2⇨WS11A
WS11. HOW MANY HOUSEHOLDS IN TOTAL USE THIS TOILET FACILITY, INCLUDING YOUR OWN HOUSEHOLD?	Number of households (if less than 10) 0 __ Ten or more households 10 DK 98	
WS11A. WHAT IS THE MAIN METHOD USED FOR DISPOSING GARBAGE?	Removed by garbage vehicles 1 Thrown away from living areas 2 Thrown out of the house 3 Burned 4 Buried 5 Others (*specify*)_____6	

HANDWASHING		HW

HW1. WE WOULD LIKE TO LEARN ABOUT THE PLACES THAT HOUSEHOLDS USE TO WASH THEIR HANDS.
 	
CAN YOU PLEASE SHOW ME WHERE MEMBERS OF YOUR HOUSEHOLD <u>MOST OFTEN</u> WASH THEIR HANDS?
	Observed 1
	
	Not observed
	     Not in dwelling / plot / yard 2
	     No permission to see 3
	     /Other reason
	     (*specify*)_____ 6
		2 ⇨HW4
		3 ⇨HW4
		
		6 ⇨HW4

HW2. *Observe presence of water at the place for handwashing.* *Verify by checking the tap/pump, or basin, bucket, water container or similar objects for presence of water.*	Water is available 1 Water is not available 2	
HW3A. *Is soap, detergent or mud/sand present at the place for handwashing?*	Yes, present...1 No, not present 2	2⇨HW4
HW3B. *Record your observation.* *Circle all that apply.*	Bar soap A Detergent (Powder / Liquid / Paste) B Liquid soap C Mud / Sand D	A⇨ next module B⇨ next module C⇨ next module D⇨ next module
HW4. DO YOU HAVE ANY SOAP OR DETERGENT OR MUD/SAND IN YOUR HOUSE FOR WASHING HANDS?	Yes.. 1 No... 2	2⇨ next module
HW5A. CAN YOU PLEASE SHOW IT TO ME?	Yes, shown .... 1 No, not shown……………………………… ….2	2⇨NEXT MODULE
HW5B. *Record your observation.* *Circle all that apply.*	Bar soap A Detergent (Powder / Liquid / Paste) B Liquid soap C Ash / Mud / Sand D	

FOOD CONSUMPTION & SOURCES   FC

FC1: NOW I WOULD LIKE TO TALK ABOUT YOUR FOOD ITEMS & CONSUMPTION; DID YOUR FAMILY CONSUME (FOOD ITEM) **IN THE LAST 7 DAYS?**		
[A] SORGHUM?	Yes………………………1 No……………………….2	2⇨FC1[B]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source………….___	
[B] MILLET?	Yes………………………1 No……………………….2	2⇨ FC1[C]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	
[C] WHEAT/ BREAD?	Yes………………………1 No……………………….2	2⇨ FC1[D]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	
[D] GROUNDNUTS, PULSES (BEANS, LENTILS)?	Yes………………………1 No……………………….2	2⇨ FC1[E]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	
[E] MEAT/CHICKEN, BUSH MEAT, ETC.	Yes………………………1 No……………………….2	2⇨ FC1[F]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	
[F] COOKING OIL/FATS	Yes………………………1 No……………………….2	2⇨ FC1[G]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	

[G] FRUITS?	Yes………………………1 No…………………………2	2⇨ FC1[H]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source………….___	
[H] MILK, YOGHURT, CHEESE, ETC ?	Yes………………………1 No…………………………2	2⇨ FC1[I]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	
[I] SUGAR?	Yes………………………1 No…………………………2	2⇨ FC1[J]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	
[J] EGG?	Yes………………………1 No…………………………2	2⇨ FC1[K]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	
[K] FRESH VEGETABLES?	Yes………………………1 No…………………………2	2⇨ FC1[L]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	
[L] DRY VEGETABLES (OKRA, TOMATOES, ONION , ETC?	Yes………………………1 No…………………………2	2⇨next module
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM? WHAT WAS THE MAIN SOURCE? *Use codes below for the food sources - If there are several sources for a same food, indicate the **main s**ource*	Number of days……..___ Main source…………___	

COPING STRATEGIES		CS
..CS1: IN THE PAST 7 DAYS, WERE THERE TIMES WHEN YOU DID NOT HAVE ENOUGH FOOD OR MONEY TO BUY FOOD FOR YOUR FAMILY?	Yes……………………………………………….. 1 No…………………………………………………. 2	2⇨HH19
CS2: WHAT WAS THE COPING STRATEGY THAT YOU ADOPTED DURING THAT TIMES? *Probe (Don't read answers)*		
	Rely on less preferred and less expensive food…….. [A] *If the respondent mentioned this option ask:* OW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days…… ___
	Eat borrowed food or borrow money to purchase food ……………………………………………………………… [B] *If the respondent mentioned this option ask;* HOW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days…….___
	Rely on help from friends or relatives (musaada) ……………………………………………… ……………….[C] *If the respondent mentioned this option ask;* HOW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days……….___
	Limit portion size at mealtimes …………………………[D] *If the respondent mentioned this option ask;* HOW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days……..___
	Restrict consumption for adults in order for small children to eat………………………………………………[E] *If the respondent mentioned this option ask;* HOW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days………..___
	Reduce number of meals eaten in a day ………………[F] *If the respondent mentioned this option ask:* HOW MANY DAY DID YOU ADOPT THAT STRATEGY?	Number of days…….___

	Morning 1	
HH19. *Record the time.*	Afternoon 2	
	Hour and minutes........................... __ __ : __ __	

SALT IODIZATION   SI

| **SI1**. THERE ARE TYPES OF SALT THAT CONTAIN IODINE WHICH IS AN IMPORTANT NUTRIENT.

WE WOULD LIKE TO CHECK WHETHER THE SALT USED IN YOUR HOUSEHOLD IS IODIZED. MAY I HAVE A SAMPLE OF THE SALT USED <u>TO COOK MEALS</u> IN YOUR HOUSEHOLD?

If salt not tested, please mention the reasons. | Not iodized - 0 PPM   1
More than 0 PPM & less than 15 PPM   2
15 PPM or more   3

No salt in the house   4

Salt not tested
(*specify reason*)_____5 | |

HH20. *Thank the respondent for his/her cooperation and check the List of Household Members:*

☐ *A separate QUESTIONNAIRE FOR INDIVIDUAL WOMEN has been issued for each woman age 15-49 years in the List of Household Members (HL7).*

☐ *A separate QUESTIONNAIRE FOR CHILDREN UNDER FIVE has been issued for each child under age 5 years in the List of Household Members (HL7B).*

Return to the cover page and make sure that the result of the household interview (HH9), the name and line number of the respondent to the household questionnaire (HH10), and the number of eligible women (HH12), and under-5s (HH14) are entered.

Make arrangements for the administration of the remaining questionnaire(s) in this household.

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations

Appendix F2: Questionnaire for Individual Women

◼◼■◼ **MICS**

QUESTIONNAIRE FOR INDIVIDUAL WOMEN
Sudan Multiple Indicator Survey 2014

WOMAN'S INFORMATION PANEL	WM
This questionnaire is to be administered to all women age 15 through 49 (see List of Household Members, column HL7). A separate questionnaire should be used for each eligible woman.	

WM0 State code ___ ___	
WM1. Cluster number: ___ ___	**WM2**. Household number: ___ ___
WM3. Woman's name: Name_____	**WM4**. Woman's line number: ___ ___
WM5. Interviewer's name and number: Name_____ ___ ___	**WM6**. Day / Month / Year of interview: ___ ___ / ___ ___ / 2 0 1 4

Repeat greeting if not already read to this woman: WE ARE FROM THE CENTRAL BUREAU OF STATISTICS. WE ARE CONDUCTING A SURVEY ABOUT THE SITUATION OF CHILDREN, FAMILIES AND HOUSEHOLDS. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW WILL TAKE ABOUT *45* MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.	*If greeting at the beginning of the household questionnaire has already been read to this woman, then read the following:* NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT YOUR HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT *45* MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.

MAY I START NOW?

☐ *Yes, permission is given* ⇨ *Go to WM10 to record the time and then begin the interview.*

☐ *No, permission is not given* ⇨ *Circle "03" in WM7. Discuss this result with your supervisor.*

WM7. Result of woman's interview	Completed .... 01 Not at home .... 02 Refused .... 03 Partly completed .... 04 Incapacitated .... 05 Other (*specify*) _____ 96

WM8. Field editor's name and number: Name_____ __ __	**WM9**. Main data entry clerk's name and number: Name_____ __ __

WM10. *Record the time.*	Morning .... 1 Afternoon .... 2 Hour and minutes .... __ __ : __ __	

WOMAN'S BACKGROUND		WB

WB1. IN WHAT MONTH AND YEAR WERE YOU BORN?	Date of birth
	  Month .... __ __
	  DK month 98
	
	  Year .... __ __ __ __
	  DK year.. 9998	

WB2. HOW OLD ARE YOU? *Probe:* HOW OLD WERE YOU AT YOUR LAST BIRTHDAY? *Compare and correct WB1 and/or WB2 if inconsistent.*	Age (in completed years) .... __ __	
WB3. HAVE YOU EVER ATTENDED SCHOOL OR KHALWA OR PRESCHOOL?	Yes ....1 No..2	2⇨WB7
WB4. WHAT IS THE HIGHEST LEVEL OF EDUCATION YOU ATTAINED?	KHALWA...00 PRESCHOOL......................................01 PRELIMINARY....................................02 PRIMARY.................................... 03 BASIC...04 VOCATIONAL TRAINING.........................05 INTERMEDIATE..06 SECONDARY....................................07 HIGH SCHOOL (3 YEARS) ....08 HIGH SCHOOL...(4 YEARS)................................09 INTERMEDIATE DIPLOMA ....10 UNIVERSITY......................................11 POST GRADUATE................................12	00⇨WB7 01⇨WB7 12⇨NEXT MODULE
WB5. WHAT IS THE HIGHEST GRADE YOU COMPLETED AT THAT LEVEL? *If the first grade at this level is not completed, enter "00".*	Grade... __ __	

WB6. *Check WB4:*
 	
   ☐ *Vocational training or higher (WB4=05, 06, 07, 08,09,10,11) ⇨ Go to Next Module.*
 	
   ☐ *Primary (WB4=02, 03 or 04) ⇨ Continue with WB7.*		

| WB7. NOW I WOULD LIKE YOU TO READ THIS SENTENCE TO ME. *Show sentence on the card to the respondent. If respondent cannot read whole sentence, probe:* CAN YOU READ PART OF THE SENTENCE TO ME? | Cannot read at all 1
 Able to read only parts of sentence 2
 Able to read whole sentence 3

 No sentence in <br> required language _____ 4
 (specify language)

 Blind / visually impaired .... 5 | |

MARRIAGE		MA
MA1. ARE YOU CURRENTLY MARRIED?	Yes, currently married .... 1 Not currently married 2	2⇨MA5
MA2. HOW OLD IS YOUR HUSBAND? *Probe*: HOW OLD WAS YOUR HUSBAND ON HIS LAST BIRTHDAY?	Age in years ....__ __ DK 98	
MA3. BESIDES YOURSELF, DOES YOUR HUSBAND HAVE ANY OTHER WIVES?	Yes .... 1 No... 2	2⇨MA7
MA4. HOW MANY OTHER WIVES DOES HE HAVE CURRENTLY?	Number ....__ __ DK 98	⇨MA7 98⇨MA7
MA5. HAVE YOU EVER BEEN MARRIED?	Yes, formerly married.. 1 No... 2	2⇨FGM module
MA6. WHAT IS YOUR MARITAL STATUS NOW: ARE YOU WIDOWED, DIVORCED OR SEPARATED?	Widowed .... 1 Divorced .... 2 Separated 3	
MA7. HAVE YOU BEEN MARRIED ONLY ONCE OR MORE THAN ONCE?	Only once .... 1 More than once... 2	1⇨MA8A 2⇨MA8B

MA8A. IN WHAT MONTH AND YEAR DID YOU MARRY?
 	
MA8B. IN WHAT MONTH AND YEAR DID YOU <u>FIRST</u> MARRY?
	Date of (first) marriage
	   Month ....__ __
	   DK month 98
	
	   Year .... __ __ __ __
	
	   DK year.. 9998
		⇨Next Module

MA9. HOW OLD WERE YOU WHEN YOU FIRST STARTED LIVING WITH YOUR (<u>FIRST</u>) HUSBAND?	Age in years ....__ __	

FERTILITY/BIRTH HISTORY		CM
CM1. NOW I WOULD LIKE TO ASK ABOUT ALL THE BIRTHS YOU HAVE HAD DURING YOUR LIFE. HAVE YOU EVER GIVEN BIRTH?	Yes .... 1 No 2	2⇨CM8
CM4. DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE NOW LIVING WITH YOU?	Yes .... 1 No 2	2⇨CM6
CM5. HOW MANY SONS LIVE WITH YOU? HOW MANY DAUGHTERS LIVE WITH YOU? *If none, record "00".*	Sons at home ....__ __ Daughters at home ....__ __	
CM6. DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE ALIVE BUT DO NOT LIVE WITH YOU?	Yes .... 1 No 2	2⇨CM8
CM7. HOW MANY SONS ARE ALIVE BUT DO NOT LIVE WITH YOU? HOW MANY DAUGHTERS ARE ALIVE BUT DO NOT LIVE WITH YOU? *If none, record "00".*	Sons elsewhere ....__ __ Daughters elsewhere ....__ __	
CM8. HAVE YOU EVER GIVEN BIRTH TO A BOY OR GIRL WHO WAS BORN ALIVE BUT LATER DIED? *If "No" probe by asking:* I MEAN, TO A CHILD WHO EVER BREATHED OR CRIED OR SHOWED OTHER SIGNS OF LIFE – EVEN IF HE OR SHE LIVED ONLY A FEW MINUTES OR HOURS?	Yes .... 1 No 2	2⇨CM10
CM9. HOW MANY BOYS HAVE DIED? HOW MANY GIRLS HAVE DIED? *If none, record "00".*	Boys dead ....__ __ Girls dead...__ __	
CM10. *Sum answers to CM5, CM7, and CM9.*	Sum...__ __	

CM11. JUST TO MAKE SURE THAT I HAVE THIS RIGHT, YOU HAVE HAD IN TOTAL (*total number in CM10*) LIVE BIRTHS DURING YOUR LIFE. IS THIS CORRECT?

    ☐ *Yes. Check below:*

        ☐ *No live births ⇨ Go to ILLNESS SYMPTOMS Module.*

        ☐ *One or more live births ⇨ Continue with the BIRTH HISTORY module.*

    ☐ *No. ⇨ Check responses to CM1-CM10 and make corrections as necessary before proceeding to the BIRTH HISTORY Module or ILLNESS SYMPTOMS Module.*

BIRTH HISTORY · BH

NOW I WOULD LIKE TO RECORD THE NAMES OF ALL OF YOUR BIRTHS, WHETHER STILL ALIVE OR NOT, STARTING WITH THE FIRST ONE YOU HAD.

Record names of all of the births in BH1. Record twins and triplets on separate lines. If there are more than 14 births, use an additional questionnaire.

BH Line No.	BH1. WHAT NAME WAS GIVEN TO YOUR (first/next) BABY?	BH2. WERE ANY OF THESE BIRTHS TWINS? 1 Single 2 Multiple	BH3. IS (name) A BOY OR A GIRL? 1 Boy 2 Girl	BH4. IN WHAT MONTH AND YEAR WAS (name) BORN? Probe: WHAT IS HIS/HER BIRTHDAY?		BH5. IS (name) STILL ALIVE? 1 Yes 2 No	BH6. HOW OLD WAS (name) AT HIS/HER LAST BIRTHDAY? Record age in completed years.	BH7. IS (name) LIVING WITH YOU? 1 Yes 2 No	BH8. Record household line number of child (from HL1) Record "00" if child is not listed.	BH9. If dead: HOW OLD WAS (name) WHEN HE/SHE DIED? Record days if less than 1 month; record months if less than 2 years; or years		BH10. WERE THERE ANY OTHER LIVE BIRTHS BETWEEN (name of previous birth) AND (name), INCLUDING ANY CHILDREN WHO DIED AFTER BIRTH? 1 Yes 2 No
		S M	B G	Month	Year	Y N	Age	Y N	Line No	Unit	Number	Y N
01		1 2	1 2	__ __	__ __ __ __	1 2 ⇨ BH9	__ __	1 2	__ __ ⇨ Next Line	Days 1 Months 2 Years3	__ __	
02		1 2	1 2	__ __	__ __ __ __	1 2 ⇨ BH9	__ __	1 2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1 2
03		1 2	1 2	__ __	__ __ __ __	1 2 ⇨ BH9	__ __	1 2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1 2
04		1 2	1 2	__ __	__ __ __ __	1 2 ⇨ BH9	__ __	1 2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1 2
05		1 2	1 2	__ __	__ __ __ __	1 2 ⇨ BH9	__ __	1 2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1 2
06		1 2	1 2	__ __	__ __ __ __	1 2 ⇨ BH9	__ __	1 2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1 2
07		1 2	1 2	__ __	__ __ __ __	1 2	__ __	1 2	__ __	Days 1	__ __	1 2

BH Line No.	BH1. WHAT NAME WAS GIVEN TO YOUR (*first/next*) BABY?	BH2. WERE ANY OF THESE BIRTHS TWINS? 1 Single 2 Multiple		BH3. Is (*name*) A BOY OR A GIRL? 1 Boy 2 Girl		BH4. IN WHAT MONTH AND YEAR WAS (*name*) BORN? *Probe*: WHAT IS HIS/HER BIRTHDAY?		BH5. Is (*name*) STILL ALIVE? 1 Yes 2 No		BH6. HOW OLD WAS (*name*) AT HIS/HER LAST BIRTHDAY? *Record age in completed years.*	BH7. Is (*name*) LIVING WITH YOU? 1 Yes 2 No		BH8. *Record household line number of child (from HL1)* *Record "00" if child is not listed.*	BH9. *If dead:* HOW OLD WAS (*name*) WHEN HE/SHE DIED? *Record days if less than 1 month; record months if less than 2 years; or years*		BH10. WERE THERE ANY OTHER LIVE BIRTHS BETWEEN (*name of previous birth*) AND (*name*), INCLUDING ANY CHILDREN WHO DIED AFTER BIRTH? 1 Yes 2 No	
		S	M	B	G	Month	Year	Y	N	Age	Y	N	Line No	Unit	Number	Y	N
									⇨ BH9				⇨ BH10	Months 2 Years3			

BH Line No.	**BH1.** WHAT NAME WAS GIVEN TO YOUR (*first/next*) BABY?	**BH2.** WERE ANY OF THESE BIRTHS TWINS? 1 Single 2 Multiple		**BH3.** Is (*name*) A BOY OR A GIRL? 1 Boy 2 Girl		**BH4.** IN WHAT MONTH AND YEAR WAS (*name*) BORN? *Probe*: WHAT IS HIS/HER BIRTHDAY?		**BH5.** Is (*name*) STILL ALIVE? 1 Yes 2 No		**BH6.** HOW OLD WAS (*name*) AT HIS/HER LAST BIRTHDAY? *Record age in completed years.*	**BH7.** Is (*name*) LIVING WITH YOU? 1 Yes 2 No		**BH8.** *Record household line number of child (from HL1)* *Record "00" if child is not listed.*	**BH9.** *If dead:* HOW OLD WAS (*name*) WHEN HE/SHE DIED? *Record days if less than 1 month; record months if less than 2 years; or years*		**BH10.** WERE THERE ANY OTHER LIVE BIRTHS BETWEEN (*name of previous birth*) AND (*name*), INCLUDING ANY CHILDREN WHO DIED AFTER BIRTH? 1 Yes 2 No	
		S	M	B	G	Month	Year	Y	N	Age	Y	N	Line No	Unit	Number	Y	N
08		1	2	1	2	__ __	__ __ __ __	1	2 ⇨ BH9	__ __	1	2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1	2
09		1	2	1	2	__ __	__ __ __ __	1	2 ⇨ BH9	__ __	1	2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1	2
10		1	2	1	2	__ __	__ __ __ __	1	2 ⇨ BH9	__ __	1	2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1	2
11		1	2	1	2	__ __	__ __ __ __	1	2 ⇨ BH9	__ __	1	2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1	2
12		1	2	1	2	__ __	__ __ __ __	1	2 ⇨ BH9	__ __	1	2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1	2
13		1	2	1	2	__ __	__ __ __ __	1	2 ⇨ BH9	__ __	1	2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1	2
14		1	2	1	2	__ __	__ __ __ __	1	2 ⇨ BH9	__ __	1	2	__ __ ⇨ BH10	Days 1 Months 2 Years3	__ __	1	2

373

BH Line No.	BH1. WHAT NAME WAS GIVEN TO YOUR (first/next) BABY?	BH2. WERE ANY OF THESE BIRTHS TWINS? 1 Single 2 Multiple	BH3. Is (name) A BOY OR A GIRL? 1 Boy 2 Girl	BH4. IN WHAT MONTH AND YEAR WAS (name) BORN? Probe: WHAT IS HIS/HER BIRTHDAY?		BH5. Is (name) STILL ALIVE? 1 Yes 2 No	BH6. HOW OLD WAS (name) AT HIS/HER LAST BIRTHDAY? Record age in completed years.	BH7. Is (name) LIVING WITH YOU? 1 Yes 2 No	BH8. Record household line number of child (from HL1) Record "00" if child is not listed.	BH9. If dead: HOW OLD WAS (name) WHEN HE/SHE DIED? Record days if less than 1 month; record months if less than 2 years; or years		BH10. WERE THERE ANY OTHER LIVE BIRTHS BETWEEN (name of previous birth) AND (name), INCLUDING ANY CHILDREN WHO DIED AFTER BIRTH? 1 Yes 2 No
		S M	B G	Month	Year	Y N	Age	Y N	Line No	Unit	Number	Y N

BH11. HAVE YOU HAD ANY LIVE BIRTHS SINCE THE BIRTH OF (name of last birth in BIRTH HISTORY Module)?	Yes ....1 No...2	1⇨Record birth(s) in Birth History

CM12A. *Compare number in CM10 with number of births in the* B*irth* H*istory* *Module above and check:*

☐ *Numbers are same* ⇨ *Continue with CM13.*

☐ *Numbers are different* ⇨ *Probe and reconcile.*

CM13. *Check BH4 in* B*irth* H*istory* *Module: Last birth occurred within the last 2 years, that is, since (month of interview) in* **2012** *(if the month of interview and the month of birth are the same, and the year of birth is* **2012***, consider this as a birth within the last 2 years)*

☐ *No live birth in last 2 years.* ⇨ *Go to* I*llness* S*ymptoms* *Module.*

☐ *One or more live births in last 2 years.* ⇨ *Record name of last born child and continue with Next Module.*

Name of last-born child_____

If child has died, take special care when referring to this child by name in the following modules.

DESIRE FOR LAST BIRTH   DB

This module is to be administered to all women with a live birth in the 2 years preceding the date of interview.
Record name of last-born child from CM13 here _____.
Use this child's name in the following questions, where indicated.

DB1. WHEN YOU GOT PREGNANT WITH (*name*), DID YOU WANT TO GET PREGNANT AT THAT TIME?	Yes .... 1 No 2	1⇨Next Module
DB2. DID YOU WANT TO HAVE A BABY LATER ON, OR DID YOU NOT WANT ANY (MORE) CHILDREN?	Later... 1 No more.. 2	2⇨Next Module
DB3. HOW MUCH LONGER DID YOU WANT TO WAIT? *Record the answer as stated by respondent.*	Months ....1 __ __ Years ....2 __ __ DK 998	

MATERNAL AND NEWBORN HEALTH		MN

This module is to be administered to all women with a live birth in the 2 years preceding the date of interview.
Record name of last-born child from CM13 here _____.
Use this child's name in the following questions, where indicated.

MN1. DID YOU SEE ANYONE FOR ANTENATAL CARE DURING YOUR PREGNANCY WITH (*name*)?	Yes ....1 No 2	2⇨MN5

MN2. WHOM DID YOU SEE?
 	
Probe:
ANYONE ELSE?
 	
Probe for the type of person seen and circle all answers given.
	Health professional:
	    Doctor .... A
	    Nurse midwife.. B
	    Health visitor...C
	    Certified midwife .... D
	    Medical assistant ....E
	Other person
	    Traditional birth attendant/Daya habil ....F
	    Community health worker ....G
	
	Other (*specify*)_____ X	

MN2A. HOW MANY WEEKS OR MONTHS PREGNANT WERE YOU WHEN YOU FIRST RECEIVED ANTENATAL CARE FOR THIS PREGNANCY? *Record the answer as stated by respondent.*	Weeks.....................................1 __ __ Months ....2 0 __ DK 998	
MN3. HOW MANY TIMES DID YOU RECEIVE ANTENATAL CARE DURING THIS PREGNANCY? *Probe to identify the number of times antenatal care was received. If a range is given, record the minimum number of times antenatal care received.*	Number of times ....__ __ DK 98	
MN4. AS PART OF YOUR ANTENATAL CARE DURING THIS PREGNANCY, WERE ANY OF THE FOLLOWING DONE AT LEAST ONCE: [A] WAS YOUR BLOOD PRESSURE MEASURED? [B] DID YOU GIVE A URINE SAMPLE? [C] DID YOU GIVE A BLOOD SAMPLE?	Yes No Blood pressure ....1 2 Urine sample ....1 2 Blood sample...1 2	
MN4D. WHILE YOU WERE RECEIVING ANTENATAL CARE, WAS THE TYPE OF YOUR DELIVERY DISCUSSED (NORMAL OF CAESAREAN SECTION) WITH YOU?	Yes ....1 No 2	
MN4E. WHILE YOU WERE RECEIVING ANTENATAL CARE, WAS THE PLACE OF YOUR DELIVERY DISCUSSED WITH YOU?	Yes ....1 No 2	
MN4F. DURING YOUR PREGNANCY WITH (*name)* DID YOU USE IRON OR FEFOL TABLETS OR SYRUP LIKE THESE? *Show the tablets*	Yes ....1 No ....2 DK 8	
MN5. DO YOU HAVE AN IMMUNIZATION CARD OR OTHER DOCUMENT WITH YOUR OWN IMMUNIZATIONS LISTED? MAY I SEE IT PLEASE? *If a card is presented, use it to assist with answers to the following questions.*	Yes (card seen) ....1 Yes (card not seen)...2 No...3 DK 8	

MN6. WHEN YOU WERE PREGNANT WITH (*name*), DID YOU RECEIVE ANY INJECTION IN THE SHOULDER TO PREVENT THE BABY FROM GETTING TETANUS, THAT IS CONVULSIONS AFTER BIRTH?	Yes ....1 No..2 DK 8	 2⇨MN9 8⇨MN9
MN7. HOW MANY TIMES DID YOU RECEIVE THIS TETANUS INJECTION DURING YOUR PREGNANCY WITH (*name*)?	Number of times ....__ DK 8	 8⇨MN9
MN8. *How many tetanus injections during last pregnancy were reported in MN7?* ☐ *At least two tetanus injections during last pregnancy.* ⇨ *Go to MN17.* ☐ *Only one tetanus injection during last pregnancy.* ⇨ *Continue with MN9.*		
MN9. DID YOU RECEIVE ANY TETANUS INJECTION AT ANY TIME BEFORE YOUR PREGNANCY WITH (*name*), EITHER TO PROTECT YOURSELF OR ANOTHER BABY?	Yes ....1 No..2 DK 8	 2⇨MN17 8⇨MN17
MN10. HOW MANY TIMES IN YOUR LIFE DID YOU RECEIVE A TETANUS INJECTION BEFORE YOUR PREGNANCY WITH (*name*)? *If 5 or more times, record '5'.*	Number of times ....__ DK 8	 8⇨MN17
MN11. HOW MANY YEARS AGO DID YOU RECEIVE THE LAST TETANUS INJECTION BEFORE YOUR PREGNANCY WITH (*name*)? *If less than 1 year, record '00'.*	Years ago ....__ __	

MN17. WHO ASSISTED WITH THE DELIVERY OF (*name*)?
 	
Probe:
ANYONE ELSE?
 	
Probe for the type of person assisting and circle all answers given.
 	
If respondent says no one assisted, probe to determine whether any adults were present at the delivery.
	Health professional:
	    Doctor .... A
	    Nurse midwife... B
	    Health visitor C
	    Certified midwife .... D
	    Medical assistant...E
	
	Other person
	    Traditional birth attendant/ Daya habil ....F
	    Community health worker ....G
	
	Other (*specify*)_____ X
	No one ....Y	

MN18. WHERE DID YOU GIVE BIRTH TO (*name*)?
 	
Probe to identify the type of source.
 	
If unable to determine whether public or private, write the name of the place.
 	
    _____
(Name of place)
	Home ....
	    Respondent's home 11
	    Other home..12
	
	Public sector
	    Government hospital 21
	    Government clinic / health centre 22
	    Government health post..............................23
	
	    Other public (*specify*)_____ 26
	
	Private medical sector
	    Private hospital 31
	    Private clinic 32
	
	    Other private
	        medical (*specify*) _____ 36
	Other (*specify*)_____ 96
		11⇨MN20
		12⇨MN20
		
		96⇨MN20

MN18A. WHAT WAS THE MODE OF DELIVERY OF (*name*)?	Vaginal delivery ....1 Assisted delivery (vacuum or forceps) ....2 Caesarean section……………………………3	1⇨MN20 2⇨MN20
MN19A. WHEN WAS THE DECISION MADE TO HAVE THE CAESAREAN SECTION? WAS IT BEFORE OR AFTER YOUR LABOUR PAINS STARTED?	Before...1 After 2	
MN20. WHEN (*name*) WAS BORN, WAS HE/SHE VERY LARGE, LARGER THAN AVERAGE, AVERAGE, SMALLER THAN AVERAGE, OR VERY SMALL?	Very large ....1 Larger than average ....2 Average ....3 Smaller than average..4 Very small ....5 DK 8	
MN21. WAS (*name*) WEIGHED AT BIRTH?	Yes ....1 No ....2 DK 8	 2⇨MN23 8⇨MN23
MN22. HOW MUCH DID (*name*) WEIGH? *If a card is available, record weight from card.*	From card .... 1 (kg) __ . __ __ __ From recall.............................. 2 (kg) __ . __ __ __	

	DK 99998	
MN23. HAS YOUR MENSTRUAL PERIOD RETURNED SINCE THE BIRTH OF (*name*)?	Yes ....1 No 2	
MN24. DID YOU EVER BREASTFEED (*name*)?	Yes ....1 No 2	2⇨Next Module (Post-natal health checks)
MN25. HOW LONG AFTER BIRTH DID YOU FIRST PUT (*name*) TO THE BREAST? *If less than 1 hour, record "00" hours.* *If less than 24 hours, record hours.* *Otherwise, record days.*	Immediately ....000 Hours ....1 __ __ Days ....2 __ __ DK / Don't remember 998	
MN26. IN THE FIRST THREE DAYS AFTER DELIVERY, WAS (*name*) GIVEN ANYTHING TO DRINK OTHER THAN BREAST MILK?	Yes ....1 No 2	2⇨Next Module (Post-natal health checks)
MN27. WHAT WAS (*name*) GIVEN TO DRINK? *Probe:* ANYTHING ELSE?	Milk (other than breast milk) .... A Plain water .... B Sugar or glucose water ....C Gripe water .... D Sugar-salt-water solution ....E Fruit juice...F Infant formula .... G Tea / herbal Infusions.. H Honey ....I Other (*specify*)_____ X	

380

POST-NATAL HEALTH CHECKS		PN

This module is to be administered to all women with a live birth in the 2 years preceding the date of interview.
Record name of last-born child from CM13 here _____ .
Use this child's name in the following questions, where indicated.

PN1. *Check MN18: Was the child delivered in a health facility?*

☐ *Yes, the child was delivered in a health facility (MN18=21-26 or 31-32)* ⇨ *Continue with PN2.*

☐ *No, the child was not delivered in a health facility (MN18=11-12 or 96)* ⇨ *Go to PN6.*

PN2. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT WHAT HAPPENED IN THE HOURS AND DAYS AFTER THE BIRTH OF (*name).* YOU HAVE SAID THAT YOU GAVE BIRTH IN (*name or type of facility in MN18*). HOW LONG DID YOU STAY THERE AFTER THE DELIVERY? *If less than one day, record hours.* *If less than one week, record days.* *Otherwise, record weeks.*	Hours .... 1 __ __ Days .... 2 __ __ Weeks .... 3 __ __ DK / Don't remember 998	
PN3. I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (*name*)'S HEALTH AFTER DELIVERY – FOR EXAMPLE, SOMEONE EXAMINING (*name*), CHECKING THE CORD, OR SEEING IF (*name*) IS OK. BEFORE YOU LEFT THE (*name or type of facility in MN18*), DID ANYONE CHECK ON (*name*)'S HEALTH?	Yes ....1 No 2	
PN4. AND WHAT ABOUT CHECKS ON <u>YOUR</u> HEALTH – I MEAN, SOMEONE ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU? DID ANYONE CHECK ON <u>YOUR</u> HEALTH BEFORE YOU LEFT (*name or type or facility in MN18*)?	Yes ....1 No 2	
PN5. NOW I WOULD LIKE TO TALK TO YOU ABOUT WHAT HAPPENED AFTER YOU LEFT (*name or type of facility in MN18*). DID ANYONE CHECK ON (*name*)'S HEALTH AFTER YOU LEFT (*name or type of facility in MN18*)?	Yes ....1 No 2	1⇨PN11 2⇨PN16

PN6. *Check MN17: Did a health professional, traditional birth attendant, or community health worker assist with the delivery?*

☐ *Yes, delivery assisted by a health professional, traditional birth attendant, or community health worker (MN17=A-G)* ⇨ *Continue with PN7.*

☐ *No, delivery not assisted by a health professional, traditional birth attendant, or community health worker (A-G not circled in MN17)* ⇨ *Go to PN10.*

PN7. YOU HAVE ALREADY SAID THAT (*person or persons in MN17*) ASSISTED WITH THE BIRTH. NOW I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (*name*)'S HEALTH AFTER DELIVERY, FOR EXAMPLE EXAMINING (*name*), CHECKING THE CORD, OR SEEING IF (*name*) IS OK. AFTER THE DELIVERY WAS OVER AND BEFORE (*person or persons in MN17*) LEFT YOU, DID (*person or persons in MN17*) CHECK ON (*name*)'S HEALTH?	Yes ....1 No 2	
PN8. AND DID (*person or persons in MN17*) CHECK ON <u>YOUR</u> HEALTH BEFORE LEAVING? BY CHECK ON YOUR HEALTH, I MEAN ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU.	Yes ....1 No 2	
PN9. AFTER THE (*person or persons in MN17*) LEFT YOU, DID ANYONE CHECK ON THE HEALTH OF (*name*)?	Yes ....1 No 2	1⇨PN11 2⇨PN18
PN10. I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (*name*)'S HEALTH AFTER DELIVERY – FOR EXAMPLE, SOMEONE EXAMINING (*name*), CHECKING THE CORD, OR SEEING IF THE BABY IS OK. AFTER (*name*) WAS DELIVERED, DID ANYONE CHECK ON HIS/HER HEALTH?	Yes ....1 No 2	2⇨PN19
PN11. DID SUCH A CHECK HAPPEN ONLY ONCE, OR MORE THAN ONCE?	Once ....1 More than once...................................2	1⇨PN12A 2⇨PN12B
PN12A. HOW LONG AFTER DELIVERY DID THAT CHECK HAPPEN? **PN12B**. HOW LONG AFTER DELIVERY DID THE FIRST OF THESE CHECKS HAPPEN? *If less than one day, record hours.* *If less than one week, record days.* *Otherwise, record weeks.*	Hours .... 1 __ __ Days .... 2 __ __ Weeks.. 3 __ __ DK / Don't remember 998	

PN13. WHO CHECKED ON (*name*)'S HEALTH AT THAT TIME?	Health professional
	    Doctor .... A
	    Nurse midwife.. B
	    Health visitor..C
	    Certified midwife .... D
	    Medical assistant ....E
	
	Other person
	    Traditional birth attendant /Dayat habel......F
	    Community health worker ....G
	
	Other (*specify*)_____ X	

PN14. WHERE DID THIS CHECK TAKE PLACE?
 	
Probe to identify the type of source.
 	
If unable to determine whether public or private, write the name of the place.
 	
    _____
(Name of place)
	Home
	    Respondent's home 11
	    Other home...12
	
	Public sector
	    Government hospital 21
	    Government clinic / health centre 22
	    Government health post.............................23
	    Other public (*specify*) _____ 26
	
	Private medical sector
	    Private hospital 31
	    Private clinic..32
	
	    Other private
	        medical (*specify*) _____ 36
	
	Other (*specify*)_____ 96	

PN15. *Check MN18: Was the child delivered in a health facility?*
 	
    ☐ *Yes, the child was delivered in a health facility (MN18=21-26 or 31-36) ⇨ Continue with PN16.*
 	
    ☐ *No, the child was not delivered in a health facility (MN18=11-12 or 96) ⇨ Go to PN17.*		

PN16. AFTER YOU LEFT (*name or type of facility in MN18*), DID ANYONE CHECK ON <u>YOUR</u> HEALTH?	Yes ....1 No 2	1⇨PN20 2⇨Next Module (Illness symptoms)

PN17. *Check MN17: Did a health professional, traditional birth attendant, or community health worker assist with the delivery?*
    ☐ *Yes, delivery assisted by a health professional, traditional birth attendant, or community health worker (MN17=A-G) ⇨ Continue with PN18*
 	
    ☐ *No, delivery not assisted by a health professional, traditional birth attendant, or community health worker (A-G not circled in MN17) ⇨ Go to PN19*		

PN18. AFTER THE DELIVERY WAS OVER AND (*person or persons in MN17*) LEFT, DID ANYONE CHECK ON <u>YOUR</u> HEALTH?	Yes ....1 No 2	1⇨PN20 2⇨Next Module (Illness symptoms)
PN19. AFTER THE BIRTH OF (*name*), DID ANYONE CHECK ON <u>YOUR</u> HEALTH? I MEAN SOMEONE ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU.	Yes ....1 No 2	2⇨Next Module (Illness symptoms)
PN20. DID SUCH A CHECK HAPPEN ONLY ONCE, OR MORE THAN ONCE?	Once ....1 More than once..2	1⇨PN21A 2⇨PN21B
PN21A. HOW LONG AFTER DELIVERY DID THAT CHECK HAPPEN? **PN21B**. HOW LONG AFTER DELIVERY DID THE FIRST OF THESE CHECKS HAPPEN? *If less than one day, record hours.* *If less than one week, record days.* *Otherwise, record weeks.*	Hours .... 1 __ __ Days .... 2 __ __ Weeks... 3 __ __ DK / Don't remember 998	

PN22. WHO CHECKED ON <u>YOUR</u> HEALTH AT THAT TIME?	Health professional
	    Doctor .... A
	    Nurse midwife... B
	    Health visitor..C
	    Certified midwife .... D
	    Medical assistant..E
	
	Other person
	    Traditional birth attendant (Dayat habel)......F
	    Community health worker ....G
	
	Other (*specify*)_____ X	

PN23. WHERE DID THIS CHECK TAKE PLACE?	Home	
	Respondent's home 11	
Probe to identify the type of source.	Other home...12	
If unable to determine whether public or	Public sector	
private, write the name of the place.	Government hospital 21	
	Government clinic / health centre 22	
	Government health post..............................23	
_____	Other public (*specify*) _____ 26	
(Name of place)		
	Private medical sector	
	Private hospital 31	
	Private clinic 32	
	Private maternity home 33	
	Other private	
	medical (*specify*) _____ 36	
	Other (*specify*)_____ 96	

ILLNESS SYMPTOMS   IS

IS1. *Check List of Household Members, columns HL7B and HL15:*

Is the respondent the mother or caretaker of any child under age 5?

☐ *Yes ⇨ Continue with IS2.*

☐ *No ⇨ Go to Next Module.*

| **IS2**. SOMETIMES CHILDREN HAVE SEVERE ILLNESSES AND SHOULD BE TAKEN IMMEDIATELY TO A HEALTH FACILITY. WHAT TYPES OF SYMPTOMS WOULD CAUSE YOU TO TAKE A CHILD UNDER THE AGE OF 5 TO A HEALTH FACILITY RIGHT AWAY? *Probe:* ANY OTHER SYMPTOMS? *Keep asking for more signs or symptoms until the mother/caretaker cannot recall any additional symptoms.* *Circle all symptoms mentioned, but do <u>not</u> prompt with any suggestions* | Child not able to drink or breastfeed .... A
Child becomes sicker .... B
Child develops a fever C
Child has fast breathing ....D
Child has difficulty breathing............................ E
Child has blood in stool ....F
Child is drinking poorly ....G

Other (*specify*) _____X

Other (*specify*) _____Y

Other (*specify*) _____Z | |

CONTRACEPTION CP

CP1. I WOULD LIKE TO TALK WITH YOU ABOUT ANOTHER SUBJECT – FAMILY PLANNING. ARE YOU PREGNANT NOW?	Yes, currently pregnant ....1 No ....2 Unsure or DK 8	1⇨CP2A
CP2. COUPLES USE VARIOUS WAYS OR METHODS TO DELAY OR AVOID A PREGNANCY. ARE YOU CURRENTLY DOING SOMETHING OR USING ANY METHOD TO DELAY OR AVOID GETTING PREGNANT?	Yes ....1 No 2	1⇨CP3
CP2A. HAVE YOU EVER DONE SOMETHING OR USED ANY METHOD TO DELAY OR AVOID GETTING PREGNANT?	Yes ....1 No 2	1⇨Next Module (Unmet need) 2⇨Next Module (Unmet need)
CP3. WHAT ARE YOU DOING TO DELAY OR AVOID A PREGNANCY? *Do not prompt.* *If more than one method is mentioned, circle each one.*	IUD...C Injectables .... D Implants..E Pill...F Male condom .... G Female condom... H Diaphragm...I Foam / Jelly .... J Lactational amenorrhoea method (LAM) ....K Periodic abstinence / Rhythm ....L Withdrawal... M Other (*specify*)_____ X	

UNMET NEED		UN

UN1. *Check CP1: Currently pregnant?*		
☐ *Yes, currently pregnant* ⇨ *Continue with UN2.*		
☐ *No, unsure or DK* ⇨ *Go to UN6.*		

UN2. Now I would like to talk to you about your current pregnancy. When you got pregnant, did you want to get pregnant at that time?	Yes ....1 No 2	1⇨UN4
UN3. Did you want to have a baby later on or did you not want any (more) children?	Later ....1 No more 2	
UN4. Now I would like to ask some questions about the future. After the child you are now expecting, would you like to have another child, or would you prefer not to have any more children?	Have another child ....1 No more / None ....2 Undecided / DK 8	1⇨UN7 2⇨UN13 8⇨UN13
UN6. Now I would like to ask you some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?	Have (a/another) child ....1 No more / None ....2 Says she cannot get pregnant ....3 Undecided / DK 8	 2⇨UN9 3⇨UN11 8⇨UN9
UN7. How long would you like to wait before the birth of (a/another) child? *Record the answer as stated by respondent.*	Months .... 1 __ __ Years .... 2 __ __ Does not want to wait (soon/now) ....993 Says she cannot get pregnant ....994 Other ....996 DK 998	 994⇨UN11

UN8. *Check CP1: Currently pregnant?*		
☐ *Yes, currently pregnant* ⇨ *Go to UN13.*		
☐ *No, unsure or DK* ⇨ *Continue with UN9.*		

UN9. *Check CP2: Currently using a method?*
 	
     ☐ *Yes* ⇨ *Go to UN13.*
 	
     ☐ *No* ⇨ *Continue with UN10.*		

UN10. DO YOU THINK YOU ARE PHYSICALLY ABLE TO GET PREGNANT AT THIS TIME?	Yes ....1 No ....2 DK 8	1 ⇨UN13 8 ⇨UN13

UN11. WHY DO YOU THINK YOU ARE NOT PHYSICALLY ABLE TO GET PREGNANT?	Infrequent sex / No sex .... A
	 Menopausal..B
	 Never menstruated C
	 Hysterectomy (surgical removal
	     of uterus) .... D
	 Has been trying to get pregnant
	     for 2 years or more without result................E
	 Postpartum amenorrheic ....F
	 Breastfeeding .... G
	 Too old .... H
	 Fatalistic I
	
	 Other (*specify*) _____ X
	
	 DK ....Z	

UN12. *Check UN11: "Never menstruated" mentioned?*
 	
     ☐ *Mentioned* ⇨ *Go to Next Module.*
 	
     ☐ *Not mentioned* ⇨ *Continue with UN13.*		

UN13. WHEN DID YOUR LAST MENSTRUAL PERIOD START? *Record the answer using the same unit stated by the respondent.*	Days ago .... 1 __ __ Weeks ago .... 2 __ __ Months ago .... 3 __ __ Years ago .... 4 __ __ In menopause / Has had hysterectomy ....994 Before last birth ....995 Never menstruated 996	

FEMALE GENITAL MUTILATION/CUTTING		FG
FG1. HAVE YOU EVER HEARD OF FEMALE CIRCUMCISION?	Yes .... 1 No 2	2⇨Next Module (Domestic violence)
FG3. HAVE YOU YOURSELF EVER BEEN CIRCUMCISED?	Yes .... 1 No 2	2⇨FG8C
FG4. NOW I WOULD LIKE TO ASK YOU WHAT WAS DONE TO YOU AT THAT TIME. WAS ANY FLESH REMOVED FROM THE GENITAL AREA?	Yes .... 1 No .... 2 DK 8	1⇨FG6
FG5. WAS THE GENITAL AREA JUST NICKED WITHOUT REMOVING ANY FLESH?	Yes .... 1 No .... 2 DK 8	
FG6. WAS THE GENITAL AREA SEWN CLOSED? *If necessary, probe: Was it sealed?*	Yes .... 1 No .... 2 DK 8	
FG7. HOW OLD WERE YOU WHEN YOU WERE CIRCUMCISED? *If the respondent does not know the exact age, probe to get an estimate*	Age at circumcision.....................................__ __ DK / Don't remember / Not sure 98	

FG8. WHO PERFORMED THE CIRCUMCISION?	Health professional
	    Doctor... 11
	    Nurse Midwife 12
	    Health visitor 13
	    Certified midwife............................. 14
	    Medical assistant............................. 15
	    Other health
	        professional (*specify*) _____16
	
	Traditional persons
	    Traditional birth attendant.......................... 22
	    Other
	        traditional (*specify*)_____26
	
	DK 98	

FG8A. *Check MA1 and MA5: Is the respondent currently married or ever married?* ☐ *No ⇨ Go to FG22* ☐ *Yes ⇨ Continue with FG8B*		
FG8B. DID YOU PERFORM RE CIRCUMCISION (ADAL) ?	Yes .... 1 No .... 2 DK 8	
FG8C. *Check MA1 and MA5: Is the respondent currently married or ever married?* ☐ *No ⇨ Go to FG22* ☐ *Yes ⇨ Continue with FG9*		

FG9. *Check CM5 for Number of daughters at home and CM7 for Number of daughters elsewhere, and sum the answers here*	Total number of living daughters ....___ ___	

FG10. JUST TO MAKE SURE THAT I HAVE THIS RIGHT, YOU HAVE *(total number in FG9)* LIVING DAUGHTERS. IS THIS CORRECT?

☐ *Yes*

    ☐ *One or more living daughters ⇨ Continue with FG11*

    ☐ *Does not have any living daughters ⇨ Go to FG22*

☐ *No ⇨ Check responses to CM1 – CM10 and make corrections as necessary, until FG10 = Yes*

FG11. *Ask the respondent to tell you the name(s) of her daughter(s), beginning with the youngest daughter (if more than one daughter). Write down the name of each daughter in FG12. Then, ask questions FG13 to FG20 for each daughter at a time.*

The total number of daughters in FG12 should be equal to the number in FG9.

If more than 4 daughters, use additional questionnaires.

	Daughter #1	Daughter #2	Daughter #3	Daughter #4
FG12. *Name of daughter*	_____	_____	_____	_____
FG13. HOW OLD IS *(name)*?	Age .... ___ ___	Age.............. ___ ___	Age .... ___ ___	Age .... ___ ___
FG14. *Is (name)* YOUNGER THAN 15 YEARS OF AGE?	Yes ....1 No ....2 *If "No", go to FG13 for next daughter. If no more daughters, go to FG22.*	Yes .... 1 No .... 2 *If "No", go to FG13 for next daughter. If no more daughters, go to FG22.*	Yes........................ 1 No .... 2 *If "No", go to FG13 for next daughter. If no more daughters, go to FG22.*	Yes.........................1 No..........................2 *If "No", go to FG13 for next daughter in an additional questionnaire. If no more daughters, go to FG22.*
FG15. IS *(name)* CIRCUMCISED?	Yes ....1 No2 *If "No", go to FG13 for next daughter. If no more daughters, go to FG22.*	Yes .... 1 No2 *If "No", go to FG13 for next daughter. If no more daughters, go to FG22.*	Yes........................ 1 No2 *If "No", go to FG13 for next daughter. If no more daughters, go to FG22.*	Yes.........................1 No2 *If "No", go to FG13 for next daughter in an additional questionnaire. If no more daughters, go to FG22.*

FG16. HOW OLD WAS (*name*) WHEN THIS OCCURRED? *If the respondent does not know the age, probe to get an estimate.*	Age .... ___ ___ DK98	Age.............. ___ ___ DK98	Age .... ___ ___ DK98	Age .... ___ ___ DK98
FG20. WHO PERFORMED THE CIRCUMCISION?	Health professional Doctor ....11 Nurse midwife....12 Health visitor......13 Certified midwife ... .14 Medical assistant ... .15 Other health professional (*specify*) _____ 16 Traditional persons Traditional birth attendant.........22 Other traditional (*specify*) _____ 26 DK98	Health professional Doctor .... 11 Nurse midwife ... 12 Health visitor ..... 13 Certified midwife .. .. 14 Medical assistant .. .. 15 Other health professional (*specify*) _____ 16 Traditional persons Traditional birth attendant .... 22 Other traditional (*specify*) _____ 26 DK 98	Health professional Doctor................ 11 Nurse midwife ... 12 Health visitor ..... 13 Certified midwife... .... 14 Medical assistant... .... 15 Other health professional (*specify*) _____ 16 Traditional persons Traditional birth attendant .... 22 Other traditional (*specify*) _____ 26 DK........................ 98	Health professional Doctor ....11 Nurse midwife ...12 Health visitor .....13 Certified midwife ... .14 Medical assistant ... .15 Other health professional (*specify*) _____ 16 Traditional persons Traditional birth attendant.........22 Other traditional (*specify*) _____ 26 DK........................98
FG21.	*Go back to FG13 for next daughter. If no more daughters, continue with FG22.*	*Go back to FG13 for next daughter. If no more daughters, continue with FG22.*	*Go back to FG13 for next daughter. If no more daughters, continue with FG22.*	*Go back to FG13 in first column of additional questionnaire for next daughter. If no more daughters, continue with FG22.*
				Tick here if additional questionnaire used. ☐

FG22 DO YOU THINK THIS PRACTICE SHOULD BE CONTINUED OR SHOULD IT BE DISCONTINUED	Continued .... 1 Discontinued .... 2 Depends .... 3 DK.. 8	
FG23 WHAT DO YOU NAME GIRL WHO IS NOT CIRCUMCISED ?	Not circumcised .... 1 Intact (Salema)... 2 Not sanitized/unclean (Ma mutahara) .... 3 Other (*specify*) _____ 8	

ATTITUDES TOWARD DOMESTIC VIOLENCE   DV

DV1. SOMETIMES A HUSBAND IS ANNOYED OR ANGERED BY THINGS THAT HIS WIFE DOES. IN YOUR OPINION, IS A HUSBAND JUSTIFIED IN HITTING OR BEATING HIS WIFE IN THE FOLLOWING SITUATIONS:

[A]   IF SHE GOES OUT WITHOUT TELLING HIM?

[B]   IF SHE NEGLECTS THE CHILDREN?

[C]   IF SHE ARGUES WITH HIM?

[D]   IF SHE REFUSES TO HAVE SEX WITH HIM?

[E]   IF SHE BURNS THE FOOD?

	Yes	No	DK
Goes out without telling	1	2	8
Neglects children	1	2	8
Argues with him	1	2	8
Refuses sex	1	2	8
Burns food	1	2	8

HIV/AIDS		HA
HA1. NOW I WOULD LIKE TO TALK WITH YOU ABOUT SOMETHING ELSE. HAVE YOU EVER HEARD OF AN ILLNESS CALLED AIDS?	Yes ....1 No...2	2⇨WM11
HA2. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY HAVING JUST ONE UNINFECTED SEX PARTNER WHO HAS NO OTHER SEX PARTNERS?	Yes ....1 No...2 DK 8	
HA3. CAN PEOPLE GET THE AIDS VIRUS BECAUSE OF WITCHCRAFT OR OTHER SUPERNATURAL MEANS?	Yes ....1 No...2 DK 8	
HA4. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY USING A CONDOM EVERY TIME THEY HAVE SEX?	Yes ....1 No...2 DK 8	
HA5. CAN PEOPLE GET THE AIDS VIRUS FROM MOSQUITO BITES?	Yes ....1 No...2 DK 8	
HA6. CAN PEOPLE GET THE AIDS VIRUS BY SHARING FOOD WITH A PERSON WHO HAS THE AIDS VIRUS?	Yes ....1 No...2 DK 8	
HA7. IS IT POSSIBLE FOR A HEALTHY-LOOKING PERSON TO HAVE THE AIDS VIRUS?	Yes ....1 No...2 DK 8	
HA8. CAN THE VIRUS THAT CAUSES AIDS BE TRANSMITTED FROM A MOTHER TO HER BABY: [A] DURING PREGNANCY? [B] DURING DELIVERY? [C] BY BREASTFEEDING?	Yes No DK During pregnancy ....1 2 8 During delivery ....1 2 8 By breastfeeding 1 2 8	
HA9. IN YOUR OPINION, IF A FEMALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD SHE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes ....1 No...2 DK / Not sure / Depends 8	
HA10. WOULD YOU BUY FRESH VEGETABLES FROM A SHOPKEEPER OR VENDOR IF YOU KNEW THAT THIS PERSON HAD THE AIDS VIRUS?	Yes ....1 No...2 DK / Not sure / Depends 8	
HA11. IF A MEMBER OF YOUR FAMILY GOT INFECTED WITH THE AIDS VIRUS, WOULD YOU WANT IT TO REMAIN A SECRET?	Yes ....1 No...2 DK / Not sure / Depends 8	
HA12. IF A MEMBER OF YOUR FAMILY BECAME SICK WITH AIDS, WOULD YOU BE WILLING TO CARE FOR HER OR HIM IN YOUR OWN HOUSEHOLD?	Yes ....1 No...2 DK / Not sure / Depends 8	

HA13. *Check CM13: Any live birth in last 2 years?*
☐ *No live birth in last 2 years (CM13="No" or blank)* ⇨ *Go to HA24.*
☐ *One or more live births in last 2 years* ⇨ *Continue with HA14.*

HA14. *Check MN1: Received antenatal care?*
☐ *Received antenatal care* ⇨ *Continue with HA15.*
☐ *Did not receive antenatal care* ⇨ *Go to HA24.*

HA15. DURING ANY OF THE ANTENATAL VISITS FOR YOUR PREGNANCY WITH (*name*), WERE YOU GIVEN ANY INFORMATION ABOUT:		Y	N	DK	
[A] BABIES GETTING THE AIDS VIRUS FROM THEIR MOTHER?	AIDS from mother	1	2	8	
[B] THINGS THAT YOU CAN DO TO PREVENT GETTING THE AIDS VIRUS?	Things to do	1	2	8	
[C] GETTING TESTED FOR THE AIDS VIRUS?	Tested for AIDS	1	2	8	
WERE YOU: [D] OFFERED A TEST FOR THE AIDS VIRUS?	Offered a test	1	2	8	

HA16. I DON'T WANT TO KNOW THE RESULTS, BUT WERE YOU TESTED FOR THE AIDS VIRUS AS PART OF YOUR ANTENATAL CARE?	Yes ....1 No ....2 DK 8	2⇨HA19 8⇨HA19
HA17. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes ....1 No ....2 DK 8	2⇨HA22 8⇨HA22
HA18. REGARDLESS OF THE RESULT, ALL WOMEN WHO ARE TESTED ARE SUPPOSED TO RECEIVE COUNSELLING AFTER GETTING THE RESULT. AFTER YOU WERE TESTED, DID YOU RECEIVE COUNSELLING?	Yes ....1 No ....2 DK 8	1⇨HA22 2⇨HA22 8⇨HA22

HA19. *Check MN17: Birth delivered by health professional (A, B, C, D or E)?*
☐ *Yes, birth delivered by health professional (MN17 = A, B, C, D or E)* ⇨ *Continue with HA20.*
☐ *No, birth not delivered by health professional (MN17 = else)* ⇨ *Go to HA24.*

HA20. I DON'T WANT TO KNOW THE RESULTS, BUT WERE YOU TESTED FOR THE AIDS VIRUS BETWEEN THE TIME YOU WENT FOR DELIVERY BUT BEFORE THE BABY WAS BORN?	Yes ....1 No 2	2⇨HA24
HA21. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes ....1 No 2	
HA22. HAVE YOU BEEN TESTED FOR THE AIDS VIRUS SINCE THAT TIME YOU WERE TESTED DURING YOUR PREGNANCY?	Yes ....1 No 2	1⇨HA25

HA23. WHEN WAS THE MOST RECENT TIME YOU WERE TESTED FOR THE AIDS VIRUS?	Less than 12 months ago 1	1⇨WM11
	12-23 months ago..2	2⇨WM11
	2 or more years ago..3	3⇨WM11
HA24. I DON'T WANT TO KNOW THE RESULTS, BUT HAVE YOU EVER BEEN TESTED TO SEE IF YOU HAVE THE AIDS VIRUS?	Yes ....1 No...2	2⇨HA27
HA25. WHEN WAS THE MOST RECENT TIME YOU WERE TESTED?	Less than 12 months ago....................................1 12-23 months ago ....2 2 or more years ago 3	
HA26. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes 1	1⇨WM112 ⇨WM118 ⇨WM11
	No...2	
	DK 8	
HA27. DO YOU KNOW OF A PLACE WHERE PEOPLE CAN GO TO GET TESTED FOR THE AIDS VIRUS?	Yes ....1 No...2	

WM11. *RECORD THE TIME.*	Morning .... 1 Afternoon .... 2 Hour and minutes.............................__ __ : __ __	

WM11A.
Indicate to the respondent that you will need to take a blood sample for anaemia and explain that the results will provided to her immediately.

Ask the respondent for permission?
- ☐ *Yes, permission is given*
- ☐ *No, permission is not given*

WM12. *Check List of Household Members, columns HL7 and HL15:*
Is the respondent the mother or caretaker of any child age 0-4 living in this household?

- ☐ *Yes* ⇨ *Proceed to complete the result of woman's interview (WM7) on the cover page and then go to QUESTIONNAIRE FOR CHILDREN UNDER FIVE for that child and start the interview with this respondent.*

- ☐ *No* ⇨ *End the interview with this respondent by thanking her for her cooperation and proceed to Complete the result of woman's interview (WM7) on the cover page.*

MID UPPER ARM CIRCUMFERENCE(MUAC)	MU

After questionnaires for all women and children are complete, then measurer takes the MUAC measures ==from the respondent .(women and children)==

MU1. Measurer's name and number:	Name _____ __ __
MU2. Mid upper arm circumference (MUAC)	Circumference (cm) __ __ . __ Circumference not measured 999.9

HAEMOGLOBIN TESTING (ANAEMIA)	HT

After questionnaires for all women and children are complete, the measurer ==measures==draws a sample of blood for testing the Haemoglobin.

HT1. *Check WM11A: Permission given?*

☐ *Yes ⇨ Continue with HT2.*

☐ *No ⇨ Go to HT4.*

HT2. Result of the HB measurement	HB measured ....1 Women not present 2	2⇨HT4
	Other (*specify*) _____ 6	6⇨HT4
HT3. HB measurements	.... ___ ___ . ___	

HT4. *Is there another woman in the household who is eligible for the blood test?*

☐ *Yes ⇨ Go to the Haemoglobin testing module ==in the next woman questionnaire==.*

☐ *No ⇨ End the testing procedure.*

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations

Appendix F3: Questionnaire for Children Under-Five

▁▃▅MICS

QUESTIONNAIRE FOR CHILDREN UNDER FIVE
Sudan Multiple Indicator Survey 2014

UNDER-FIVE CHILD INFORMATION PANEL	UF
This questionnaire is to be administered to all mothers or caretakers (see List of Household Members, column HL15) who care for a child that lives with them and is under the age of 5 years (see List of Household Members, column HL7B). *A separate questionnaire should be used for each eligible child.*	
UF0. State code ___ ___	
UF1. Cluster number : ___ ___	**UF2**. Household number: ___ ___
UF3. Child's name: Name_____	**UF4**. Child's line number: ___ ___
UF5. Mother's / Caretaker's name: Name_____	**UF6**. Mother's / Caretaker's line number: ___ ___
UF7. Interviewer's name and number: Name_____ ___ ___	**UF8**. Day / Month / Year of interview: ___ ___ / ___ ___ / 2 0 14

Repeat greeting if not already read to this respondent: WE ARE FROM THE CENTRAL BUREAU OF STATISTICS. WE ARE CONDUCTING A SURVEY ABOUT THE SITUATION OF CHILDREN, FAMILIES AND HOUSEHOLDS. I WOULD LIKE TO TALK TO YOU ABOUT (*child's name from UF3*)'S HEALTH AND WELL-BEING. THE INTERVIEW WILL TAKE ABOUT *35* MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.	*If greeting at the beginning of the household questionnaire has already been read to this person, then read the following:* NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT (*child's name from UF3*)'S HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT *35* MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.

MAY I START NOW?
- ☐ *Yes, permission is given ⇨ Go to UF12 to record the time and then begin the interview.*
- ☐ *No, permission is not given ⇨ Circle 03 in UF9. Discuss this result with your supervisor.*

UF9. Result of interview for children under 5	Completed... 01
	Not at home 02
Codes refer to mother/caretaker.	Refused 03
	Partly completed 04
	Incapacitated.. 05
	Other (*specify*) _____ 96

UF10. Field editor's name and number:	**UF11**. Main data entry clerk's name and number:
Name_____ __ __	Name_____ __ __

| UF12. *Record the time.* | Morning...1
 Afternoon...2

 Hour and minutes .... __ __ : __ __ | |

AGE		**AG**

AG1. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE DEVELOPMENT AND HEALTH OF (*name*).
 	
 ON WHAT DAY, MONTH AND YEAR WAS (*name*) BORN?
 	
 Probe:
 WHAT IS HIS / HER BIRTHDAY?
 	
 If the mother/caretaker knows the exact birth date, also enter the day; otherwise, circle 98 for day.
 	
 Month and year must be recorded.
	Date of birth
	  Day ....__ __
	
	  DK day 98
	
	  Month...__ __
	
	  Year ....2 0 __ __	

AG2. HOW OLD IS (*name*)? *Probe*: HOW OLD WAS (*name*) AT HIS / HER LAST BIRTHDAY? *Record age in completed years.* *Record '0' if less than 1 year.* *Compare and correct AG1 and/or AG2 if inconsistent.*	Age (in completed years)................................. __	

401

BIRTH REGISTRATION MODULE		BR
BR1. DOES *(name)* HAVE A BIRTH CERTIFICATE? *If yes, ask:* MAY I SEE IT?	Yes, seen .... 1 Yes, not seen .... 2 No .... 3 DK 8	1⇨Next Module (Early Childhood development) 2⇨Next Module (Early Childhood development)
BR2. HAS *(name)*'S BIRTH BEEN REGISTERED WITH THE CIVIL AUTHORITIES?	Yes .... 1 No .... 2 DK 8	1⇨Next Module (Early Childhood development) 8⇨BR3
BR2A. WHY WASN'T *(NAME)* REGISTERED?	Very expensive .... 1 Too far .... 2 Did not know that a birth certificate is supposed to be registered .... 3 Other (*specify*) _____ 6	
BR3. DO YOU KNOW HOW TO REGISTER *(name)*'S BIRTH?	Yes .... 1 No 2	

EARLY CHILDHOOD DEVELOPMENT MODULE		EC
EC1. HOW MANY CHILDREN'S BOOKS OR PICTURE BOOKS DO YOU HAVE FOR (*name*)?	None .... 00 Number of children's books .... 0 __ Ten or more books 10	
EC2. I AM INTERESTED IN LEARNING ABOUT THE THINGS THAT (*name*) PLAYS WITH WHEN HE/SHE IS AT HOME. DOES HE/SHE PLAY WITH: [A] HOMEMADE TOYS (SUCH AS DOLLS, CARS, OR OTHER TOYS MADE AT HOME)? [B] TOYS FROM A SHOP OR MANUFACTURED TOYS? [C] HOUSEHOLD OBJECTS (SUCH AS BOWLS OR POTS) OR OBJECTS FOUND OUTSIDE (SUCH AS STICKS, ROCKS, ANIMAL SHELLS OR LEAVES)? *If the respondent says "YES" to the categories above, then probe to learn specifically what the child plays with to ascertain the response.*	Y N DK Homemade toys .... 1 2 8 Toys from a shop .... 1 2 8 Household objects or outside objects 1 2 8	

EC4. *Check AG2: Age of child.*
 	
   ☐   *Child age: Newborn (less than a year, 1 or 2 ⇨ Go to Next Module.*
 	
   ☐ *Child age 3 or 4 ⇨ Continue with EC5.*		

EC5. DOES (*name*) ATTEND ANY ORGANIZED LEARNING OR EARLY CHILDHOOD EDUCATION PROGRAMME, SUCH AS A PRIVATE OR GOVERNMENT FACILITY, INCLUDING KINDERGARTEN OR COMMUNITY CHILD CARE?	Yes... 1 No .... 2 DK 8	2⇨IM20 8⇨IM20
EC5A. DURING THE LAST SEVEN DAYS OF THE PREVIOUS SCHOOL YEAR (2013-2014), HOW MANY DAYS DID (*name*) ATTEND THIS PROGRAM?	Number of days _____ _____ DK 8	

BREASTFEEDING AND DIETARY INTAKE		BD

BD1. *Check AG2: Age of child*

☐ *Child age 0, 1 or 2 ⇨ Continue with BD2.*

☐ *Child age 3 or 4 ⇨ Go to IM20 in the immunization module.*

BD2. HAS (*name*) EVER BEEN BREASTFED?	Yes...1 No...2 DK...8	2⇨BD4 8⇨BD4
BD3. IS (*name*) STILL BEING BREASTFED?	Yes...1 No...2 DK...8	
BD4. YESTERDAY, DURING THE DAY OR NIGHT, DID (*name*) <u>DRINK ANYTHING FROM A BOTTLE WITH A NIPPLE</u>?	Yes...1 No...2 DK...8	
BD5. DID (*name*) <u>DRINK ORS (ORAL REHYDRATION SOLUTION)</u> YESTERDAY, DURING THE DAY OR NIGHT?	Yes...1 No...2 DK...8	
BD6. DID (*name*) <u>DRINK OR EAT VITAMIN OR MINERAL SUPPLEMENTS OR ANY MEDICINES</u> YESTERDAY, DURING THE DAY OR NIGHT?	Yes...1 No...2 DK...8	

BD7. NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) LIQUIDS THAT (*name*) MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. I AM INTERESTED TO KNOW WHETHER (*name*) HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS.

PLEASE INCLUDE LIQUIDS CONSUMED OUTSIDE OF YOUR HOME.

DID (*NAME*) DRINK (*NAME OF ITEM*) YESTERDAY DURING THE DAY OR THE NIGHT:

		Yes	No	DK
[A] PLAIN WATER?	Plain water	1	2	8
[B] JUICE OR JUICE DRINKS?	Juice or juice drinks	1	2	8
[C] BROTH / CLEAR SOUP (SALEGA/ MARAGA)?	Soup	1	2	8
[D] MILK SUCH AS TINNED, POWDERED, OR FRESH ANIMAL MILK?	Milk	1	2	8
If yes: HOW MANY TIMES DID (*name*) DRINK MILK? *If 7 or more times, record '7'.* *If unknown, record '8'.*	Number of times drank milk..............................__			
[E] INFANT FORMULA?	Infant formula	1	2	8
If yes: HOW MANY TIMES DID (*name*) DRINK INFANT FORMULA? *If 7 or more times, record '7'.* *If unknown, record '8'.*	Number of times drank infant formula .... __			
[F] ANY OTHER LIQUIDS?	Other liquids	1	2	8

		Yes	No	DK
(Specify)_____				

BD8. NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) FOODS THAT (*name*) MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. AGAIN, I AM INTERESTED TO KNOW WHETHER (*name*) HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS.

PLEASE INCLUDE FOODS CONSUMED OUTSIDE OF YOUR HOME.

DID (*name*) EAT (*Name of food*) YESTERDAY DURING THE DAY OR THE NIGHT:		Yes	No	DK
[A] YOGURT?	Yogurt	1	2	8
If yes: HOW MANY TIMES DID (*name*) DRINK OR EAT YOGURT? *If 7 or more times, record '7'. If unknown, record '8'.*	Number of times drank/ate yogurt .... __			
[B] ANY CERELAC?	Cerelac….	1	2	8
[C] BREAD, RICE, MACARONA, PORRIDGE (ASYDA), OR OTHER FOODS MADE FROM GRAINS?	Foods made from grains…	1	2	8
[D] PUMPKIN, CARROTS, SWEET POTATOES?	Pumpkin, carrots….	1	2	8
[E] POTATOES, MANIOC, CASSAVA, OR ANY OTHER FOODS MADE FROM ROOTS?	Potatoes, manioc, cassava, etc…..	1	2	8
[F] ANY GREEN, LEAFY VEGETABLES LIKE SPINACH OR MOLAOKHIYA/ WARAG/ THALIG/ ROCKET?	Green, leafy vegetables…	1	2	8
[G] MANGOES, PAPAYAS OR DALEB?	Mangoes……	1	2	8
[H] ANY OTHER FRUITS OR VEGETABLES?	Other fruits or vegetables…	1	2	8
[I] LIVER, KIDNEY, HEART, INTESTINES, SPLEEN OR OTHER ORGAN MEATS?	Liver, kidney…..	1	2	8
[J] ANY MEAT, SUCH AS BEEF, LAMB, GOAT, CAMEL, PORK CHICKEN, OR DUCK?	Meat, such as beef, lamb, goat, etc…..	1	2	8
[K] EGGS?	Eggs…	1	2	8
[L] FRESH OR DRIED FISH / KAJEED, SARDEEN/ FASEEKH OR SHELLFISH?	Fresh or dried fish….	1	2	8
[M] ANY FOODS MADE FROM BEANS, LENTILS, CHICKPEAS, FAVA BEANS, LEMA BEANS, ADASEEYA OR LUBYA?	Foods made from lentils….	1	2	8
[N] CHEESE OR OTHER FOOD MADE FROM MILK (MULAH ALROOB, MOLAH ALLABAN, MISH?	Cheese ……	1	2	8
[O] ANY OTHER SOLID, SEMI-SOLID, OR SOFT FOOD THAT I HAVE NOT MENTIONED? (Specify)_____	Other food……	1	2	8

BD9. *Check BD8 (Categories "A" through "O").*

☐ *If you circle "Yes" at least once or all answers where "DK ⇨ Go to BD11.*
☐ *Else ⇨ Continue with BD10.*

BD10. *Probe to determine whether the child ate any solid, semi-solid or soft foods yesterday during the day or night.*

☐ *The child did not eat or the respondent does not know ⇨ Go to Next Module.*
☐ *The child ate at least one solid, semi-solid or soft food item mentioned by the respondent ⇨ Go back to BD8 and record food eaten yesterday [A to O]. When finished, continue with BD11.*

| BD11. HOW MANY TIMES DID (*name*) EAT ANY SOLID, SEMI-SOLID OR SOFT FOODS YESTERDAY DURING THE DAY OR NIGHT?

If 7 or more times, record '7'. | Number of times ....__

DK..8 | |

IMMUNIZATION MODULE   IM

If an immunization (child health) card is available, copy the dates in IM3 for each type of immunization recorded on the card. IM6-IM16A will only be asked if a card is not available.

| IM1. DO YOU HAVE A CARD WHERE (*name*)'S VACCINATIONS ARE WRITTEN DOWN?

If yes: MAY I SEE IT PLEASE? | Yes, seen 1
Yes, not seen 2
No card...3 | 1⇨IM3
2⇨IM6 |
| IM2. DID YOU EVER HAVE A VACCINATION (*child health*) CARD FOR (*name*)? | Yes...1
No..2 | 1⇨IM6
2⇨IM6 |

IM3.
(a) *Copy dates for each vaccination from the card.*
(b) *Write '44' in day column if card shows that vaccination was given but no date recorded.*

		Date of Immunization			
		Day	Month	Year	
BCG	**BCG**				
POLIO AT BIRTH	**OPV0**				
POLIO 1 (FIRST DOSE)	**OPV1**				
POLIO 2 (SECOND DOSE)	**OPV2**				
POLIO 3 (THIRD DOSE)	**OPV3**				
PENTA FIRST DOSE	**PENTA1**				
PENTA SECOND DOSE	**PENTA2**				
PENTA THIRD DOSE	**PENTA3**				
MEASLES FIRST DOSE (OR MMR OR MR)	**MEASLES1**				
MEASLES SECOND DOSE (OR MMR OR MR)	**MEASLES2**				

IM4. *Check IM3. Are all vaccines (**BCG to Measles**) recorded?*

☐ *Yes ⇨ Go to IM19A.*

☐ *No ⇨ Continue with IM5.*

IM5. IN ADDITION TO WHAT IS RECORDED ON THIS CARD, DID (*name*) RECEIVE ANY OTHER VACCINATIONS?

☐ *Yes ⇨ Go back to IM3 and probe for these vaccinations and write '66' in the corresponding day column for each vaccine mentioned. When finished, skip to IM19A.*

☐ *No/DK ⇨ Go to IM19.*

IM6. HAS (*name*) EVER RECEIVED ANY VACCINATIONS TO PREVENT HIM/HER FROM GETTING DISEASES INCLUDING VACCINATIONS RECEIVED IN A CAMPAIGN OR IMMUNIZATION DAY OR CHILD HEALTH DAY?	Yes...1 No...2 DK...8	 2⇨IM19A 8⇨IM19A
IM7. HAS (*name*) EVER RECEIVED A BCG VACCINATION AGAINST TUBERCULOSIS – THAT IS, AN INJECTION IN THE ARM?	Yes...1 No...2 DK...8	
IM8. HAS (*name*) EVER RECEIVED ANY VACCINATION DROPS IN THE MOUTH TO PROTECT HIM/HER FROM POLIO?	Yes...1 No...2 DK...8	 2⇨IM11 8⇨IM11
IM9. WAS THE FIRST POLIO VACCINE RECEIVED IN THE FIRST TWO WEEKS AFTER BIRTH?	Yes...1 No...2	
IM10. HOW MANY TIMES WAS THE POLIO VACCINE RECEIVED? *Count only those take during routine immunization*	Number of times...__	
IM11. HAS (*name*) EVER RECEIVED A PENTA VACCINATION – THAT IS, AN INJECTION IN THE LEFT THIGH TO PREVENT HIM/HER FROM GETTING TETANUS, WHOOPING COUGH, DIPHTHERIA, MENINGITIS AND HEPATITIS? *Probe by indicating that PENTA vaccination is sometimes given at the same time as Polio.*	Yes...1 No...2 DK...8	 2⇨IM16 8⇨IM16
IM12. HOW MANY TIMES WAS THE PENTA VACCINE RECEIVED?	Number of times...__	
IM16. HAS (*name*) EVER RECEIVED A MEASLES INJECTION (OR AN MMR OR MR) – THAT IS, A SHOT IN THE LEFT ARM AT THE AGE OF 9 MONTHS OR OLDER - TO PREVENT HIM/HER FROM GETTING MEASLES?	Yes...1 No...2 DK...8	 2 19A 8 19 A
IM16A. HOW MANY TIMES (*name*) RECEIVED MEASLES DOSES?	Measles doses received ....___	
IM19A. PLEASE TELL ME IF (*name*) HAS PARTICIPATED IN ANY OF THE POLIO CAMPAIGNS, POLIO NATIONAL IMMUNIZATION DAYS AND/ OR POLIO CHILD HEALTH DAYS?	Yes...1 No2 DK8	
IM19B. PLEASE TELL ME IF (*NAME*) HAS PARTICIPATED IN ANY OF THE MEASLES CAMPAIGNS, MEASLES NATIONAL IMMUNIZATION DAYS AND/ OR MEASLES CHILD HEALTH DAYS?	Yes...1 No2 DK8	
IM20. *Check AG2: Age of child.* ☐ *6 month or more ⇨ Continue to IM21.* ☐ *0-5 month ⇨ Go to next module (Care of illness).*		
IM21. DID THE (*name*) TAKE ANY VITAMIN A LIKE THIS IN THE LAST 6 MONTH? *Display the capsules & different containers to the respondent*	Yes...1 No...2	 2⇨ IM24

100,000 unit (blue) for 6-11 month *200,000 unit (red) for 12-59 month*	DK...8	8⇨ IM24
IM22. WHEN DID (*name*) RECEIVE THE LAST DOES?	Less than 6 month...1 More than 6 month ....2 DK...8	
IM23. HOW DID YOU GET THE LAST DOSE?	Routine visit to health center ....1 Visit to the health center while child is sick.......2 National campaign ....3 Other (*specify*) _____ .6 DK...8	
IM24. DID THE (NAME) SUFFER FROM VISION DIFFICULTY AFTER SUN SET (NIGHT BLINDNESS)?	Yes...1 No...2 DK 8	

CARE OF ILLNESS MODULE		CA
CA1. IN THE LAST TWO WEEKS, HAS (*name*) HAD DIARRHOEA?	Yes .... 1 No .... 2 DK 8	 2⇨CA7 8⇨CA7
CA2. I WOULD LIKE TO KNOW HOW MUCH (*name*) WAS GIVEN TO DRINK DURING THE DIARRHOEA (INCLUDING BREASTMILK). DURING THE TIME (*name*) HAD DIARRHOEA, WAS HE/SHE GIVEN LESS THAN USUAL TO DRINK, ABOUT THE SAME AMOUNT, OR MORE THAN USUAL? *If 'less', probe*: WAS HE/SHE GIVEN MUCH LESS THAN USUAL TO DRINK, OR SOMEWHAT LESS?	Much less... 1 Somewhat less.. 2 About the same .... 3 More .... 4 Nothing to drink .... 5 DK 8	
CA3. DURING THE TIME (*name*) HAD DIARRHOEA, WAS HE/SHE GIVEN LESS THAN USUAL TO EAT, ABOUT THE SAME AMOUNT, MORE THAN USUAL, OR NOTHING TO EAT? *If 'less', probe:* WAS HE/SHE GIVEN MUCH LESS THAN USUAL TO EAT OR SOMEWHAT LESS?	Much less.. 1 Somewhat less.. 2 About the same .... 3 More .... 4 Stopped food .... 5 Never gave food .... 6 DK 8	
CA3A. DID YOU SEEK ANY ADVICE OR TREATMENT FOR THE DIARRHOEA FROM ANY SOURCE?	Yes .... 1 No .... 2 DK 8	 2⇨CA4 8⇨CA4

CA3B. FROM WHERE DID YOU SEEK ADVICE OR TREATMENT?
 	
 Probe:
 ANYWHERE ELSE?
 	
 Circle all providers mentioned,
 but do NOT prompt with any suggestions.
 	
 Probe to identify each type of source.
 	
 If unable to determine if public or private sector, write the name of the place.
 	
 _____
 (*Name of place*)
	Public sector
	     Government hospital .... A
	     Government health centre............................ B
	     Primary healthcare unit................................ C
	     Community health worker .... D
	     Mobile / Outreach clinic............................... E
	     Other public (*specify*)_____H
	
	 Private medical sector
	     Private hospital / clinic I
	     Private physician ....J
	     Private pharmacy .... K
	     Mobile clinic L
	     Other private medical (*specify*)_____ O
	
	 Other source
	     Relative / Friend .... P
	     Shop ....Q
	     Traditional practitioner .... R
	
	 Other (*specify*) _____X	

CA4. During the time (*name*) had diarrhoea, was (*name*) given to drink: [A] A fluid made from a special packet called *amlah mualajat aljafaf for ORS packet solution*? [B] A pre-packaged ORS fluid for diarrhoea *for pre-packaged ORS fluid*?	Y N DK Fluid from ORS packet ....1 2 8 Pre-packaged ORS fluid 1 2 8	

CA4B. WHERE DID YOU GET THE ORS?
 	
Probe to identify the type of source.
 	
If unable to determine whether public or private, write the name of the place.
 	
    _____
           (Name of place)
	Public sector
	   Government hospital 11
	   Government health centre......................... 12
	   Government health post 13
	   Community health worker 14
	   Mobile / Outreach clinic............................. 15
	   Other public (*specify*)_____ 16
	
	Private medical sector
	   Private hospital / clinic 21
	   Private physician 22
	   Private pharmacy 23
	   Mobile clinic 24
	   Other private medical (*specify*) _____ 26
	
	Other source
	   Relative / Friend 31
	   Shop 32
	   Traditional practitioner 33
	
	Already had at home 40
	
	Other (*specify*) _____ 96	

CA4C. DURING THE TIME (*name*) HAD DIARRHOEA, WAS (*name*) GIVEN:
 	
  [A] ZINC TABLETS?
 	
  [B] ZINC SYRUP?
	Y N DK
	
	Zinc tablets 1 2 8
	
	Zinc syrup...1 2 8	

CA4E. WHERE DID YOU GET THE ZINC?
 	
Probe to identify the type of source.
 	
If unable to determine whether public or private, write the name of the place.
 	
_____
(Name of place)
	Public sector
	    Government hospital 11
	    Government health centre.......................... 12
	    Government health post 13
	    Community health worker 14
	    Mobile / Outreach clinic............................. 15
	    Other public (*specify*)_____ 16
	
	Private medical sector
	    Private hospital / clinic 21
	    Private physician 22
	    Private pharmacy 23
	    Mobile clinic 24
	    Other private medical (*specify*) _____ 26
	
	Other source
	    Relative / Friend 31
	    Shop 32
	    Traditional practitioner 33
	    Present at home………………………… 40
	
	Other (*specify*) _____ 96	

CA4F. DURING THE TIME (*name*) HAD DIARRHOEA, WAS (*name*) GIVEN TO DRINK ANY OF THE FOLLOWING: *Read each item aloud and record response before proceeding to the next item.* [A] *Fresh juice (lemon, karkade, gongoliz)*? [B] *Rice water or starch*? [C] *Water*?	 Y N DK *Fresh juice* ....1 2 8 *Rice water or starch*...................................1 2 8 *Water*...1 2 8	
CA5. WAS ANYTHING (ELSE) GIVEN TO TREAT THE DIARRHOEA?	Yes .... 1 No .... 2 DK 8	 2⇨CA7 8⇨CA7

| CA6. WHAT (ELSE) WAS GIVEN TO TREAT THE DIARRHOEA?

Probe:
ANYTHING ELSE?

Record all treatments given. Write brand name(s) of all medicines mentioned.

_____
(Name) | Pill or Syrup
   Antibiotic .... A
   Antimotility .... B
   Other pill or syrup (Not antibiotic, antimotility
     or zinc) .... G
   Unknown pill or syrup .... H

Injection
   Antibiotic L
   Non-antibiotic .... M
   Unknown injection .... N

Intravenous .... O

Home remedy / Herbal medicine .... Q

Other (*specify*) _____ X | |

CA7. AT ANY TIME IN THE LAST TWO WEEKS, HAS (*name*) HAD AN ILLNESS WITH A COUGH?	Yes .... 1 No .... 2 DK 8	2⇨CA14 8⇨CA14
CA8. WHEN (*name*) HAD AN ILLNESS WITH A COUGH, DID HE/SHE BREATHE FASTER THAN USUAL WITH SHORT, RAPID BREATHS OR HAVE DIFFICULTY BREATHING?	Yes .... 1 No .... 2 DK 8	
CA10. DID YOU SEEK ADVICE OR TREATMENT FOR THE ILLNESS FROM ANY SOURCE?	Yes .... 1 No .... 2 DK 8	2⇨CA12 8⇨CA12
CA11. FROM WHERE DID YOU SEEK CARE (ADVICE OR TREATMENT? *Probe:* ANYWHERE ELSE? *Circle all providers mentioned, but do NOT prompt with any suggestions.* *Probe to identify the type of source and circle the appropriate code.* *If unable to determine if public or private sector, write the name of the place.* _____ *(Name of place)*	**Public sector**: Govt. hospital .... A Govt. health centre.. B Govt. health Unit .... C Village health worker....................................... D Mobile/outreach clinic .... E Other public sector(specify) .... H **Private medical sector:** Private hospital/clinic .... I Private physician... J Private pharmacy.. K Mobile clinic (private)....................................... L Other private sector(specify)............................ O **Other source**: Relative or friend .... P Shop.. Q Traditional healer .... R Other (specify X	
CA12. AT ANY TIME DURING THE ILLNESS, WAS (*name*) GIVEN ANY MEDICINE FOR THE ILLNESS?	Yes .... 1 No .... 2 DK 8	2⇨CA14 8⇨CA14

CA13. WHAT MEDICINE WAS (*name*) GIVEN?
 	
Probe:
ANY OTHER MEDICINE?
 	
Circle all medicines given. Write brand name(s) of all medicines mentioned.
 	
_____
(Names of medicines)
	Antibiotics:
	  Pill / Syrup I
	  Injection .... J
	
	Other medications:
	  Paracetamol/ Panadol /Acetaminophen....... P
	  Aspirin ....Q
	  Ibuprofen.. R
	
	Other (*specify*) _____ X
	DK ....Z	

CA14. *Check AG2: Is child under age 3?* ☐ *Yes* ⇨ *Continue with CA15.*		

413

CA15. THE LAST TIME *(name)* PASSED STOOLS, WHAT WAS DONE TO DISPOSE OF THE STOOLS?	Child used toilet / latrine .... 01 Put / Rinsed into toilet or latrine.................... 02 Put / Rinsed into drain or ditch .... 03 Thrown into garbage (solid waste) .... 04 Buried .... 05 Left in the open .... 06 Other (*specify*) _____ 96 DK 98

UF13. *Record the time.*	Morning .... 1 Afternoon .... 2 Hour and minutes........................... __ __ : __ __

UF13A *Indicate to the respondent that you will need to measure the weight and height of the child and the haemoglobin test later, ask her if she agrees :*

☐ *Yes*

☐ *No*

UF14. *Is the respondent the mother or caretaker of another child age 0-4 living in this household?*

       ☐ *Yes* ⇨*Go to the next QUESTIONNAIRE FOR CHILDREN UNDER FIVE to*   *be administered to the same respondent.*

       ☐ *No* ⇨ *End the interview with this respondent by thanking her/him for her/his cooperation .*
           before you leave the household.

               Check to see if there are other woman's, or under-5 questionnaires to be
               administered in this household

ANTHROPOMETRY MODULE		AN

After questionnaires for all children are complete, the measurer weighs and measures each child.
Record weight and length/height below, taking care to record the measurements on the correct questionnaire for each child. Check the child's name and line number in the List of Household Members before recording measurements.

AN1. *Measurer's name and number:*	Name_____ __ __	
AN2. *Result of height / length and weight measurement:*	Either or both measured 1	
	Child not present 2	2⇨AN6
	Child or mother/caretaker refused 3	3⇨AN6
	Other (*specify*) _____ 6	6⇨AN6
AN3. *Child's weight:*	Kilograms (kg) .... __ __ . __	
	Weight not measured.................................. 99.9	⇨AN3B
AN3A. *Was the child undressed to the minimum?* □ *Yes…………………………………………………..1* □ *No, the child could not be undressed to the minimum………………..2*		
AN3B. *Check age of child in AG2:* □ *Child under 2 years old ⇨ Measure length (lying down).* □ *Child age 2 or more years ⇨ Measure height (standing up).*		
AN4. *Child's length or height:*	Length / Height (cm)....................... __ __ __ . __	
	Length / Height not measured 999.9	⇨ AN4B
AN4A. *How was the child actually measured? Lying down or standing up?*	Lying down.. 1	
	Standing up.. 2	
AN4B. *Mid upper arm circumference (MUAC)*	Circumference (cm) .... __ __ . __	
	Circumference not measured....................... 99.9	
AN5. *Check both child legs for oedema and record the result* *Observe and record*	Child has odema: Yes .... 1 No .... 2 Child not present.. 3 Refused... 4	

AN6. *Is there another child in the household who is eligible for measurement?* □ *Yes ⇨ Record measurements for next child.*

417

HAEMOGLOBIN TESTING (ANAEMIA)		**HT**
After questionnaires for all women and children are complete, the measurer measures the Haemoglobin.		
HT1. *Check AUF14: Permission given?* ☐ *Yes ⇨ Continue with HT2.* ☐ *No ⇨ Go to HT4.*		
HT2. Result of the HB measurement	HB measured .... 1 Child not present .... 2 Other (*specify*)_____ 6	2⇨HT4 6⇨HT4
HT3. HB measurements	___ ___ . ___	
HT4. *Is there another child in the household who is eligible for the blood test?* ☐ *Yes ⇨ Go to the Haemoglobin testing module in the next child questionnaire.* ☐ *No ⇨ End the testing procedure.*		

Field Editor's Observations

Supervisor's Observations

Measurer's Observations

©UNICEFSudan/2015/MohdHamadien