FEMALE GENITAL MUTILATION/CUTTING (FGM/C) AND CHILD MARRIAGE IN SUDAN – ARE THERE ANY CHANGES TAKING PLACE?

AND IN-DEPTH ANALYSIS USING MULTIPLE INDICATORS CLUSTER SURVEYS (MICS) SUDAN HOUSEHOLD HEALTH SUREVEYS (SHHS)

Produced with financial support from DFID as a contribution to UNICEF-UNFPA-WHO Sudan Free of FGC Programme

Khartoum, June 2016

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An in-depth analysis using Multiple Indicators Cluster Surveys (MICS) and Sudanese Household and Health Surveys (SHHS)

Reported and Prepared

by

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Khartoum, June 2016

FOREWORD

The Government of Sudan, represented by the National Council of Child Welfare, and the UNICEF Representative in Sudan are pleased to endorse this final report on Female Genital Mutilation/Cutting (FGM/C) and Child Marriage (CM). This is an in-depth statistical analysis using MICS 2014 data source, performed by an international consultant contracted by UNICEF on behalf of the Sudan Free of FGC programme, a joint programme between UNICEF, UNFPA and WHO Sudan.

The evaluation provides to Government, UNICEF, Donors, UN agencies, Partners, Local Authorities and Academic Institutions, sound and credible evidence that is extremely useful for developing adequate strategies and appropriate programmes and partnerships. This is to ensure greater impact on the acceleration of ending FGM/C and CM practices in Sudan.

Sudan is committed to the elimination of the harmful practices of FGM/C and CM which represent major challenges for women's wellbeing and equitable gender development: 86.6 percent of women and girls aged 15-49 years, are affected by FGM/C and 38 percent of all women aged 20-49 years were married before their 18th birthday as revealed by MICS 2014. The National Strategy on the Abandonment of FGM/C adopted in 2008, was extended to 2018 to eliminate this practice and a draft national strategy on abandoning child marriage is under discussion.

We are grateful for the solidarity of partners that are supporting and funding community based interventions aimed at ending the FGM/C practice in Sudan. We especially thank the UK through the Department for International Development (DFID) for its support of this report and full funding of the Sudan Free of FGC programme.

We wish to thank UNICEF, which played a strong and leading technical and financial role in generating this robust evidence through the sophisticated trend analysis using the age-cohort method and survival analysis techniques. This yielded a sound understanding of the real magnitude of FGM/C prevalence among the new generation, and the encouraging perspective of ending FGM/C practice during the mid-term period of 25 years.

We are also grateful for the solid technical expertise of the international consultant Dr. Macoumba Thiam, who successfully performed this in-depth secondary analysis of MICS data. In addition, we highly appreciate the valuable technical collaboration of the Central Bureau of Statistics and UNICEF staff.

We encourage all policy-makers, development partners, academic institutions, and the people of Sudan to make effective use of this report to plan, monitor and evaluate relevant goals and objectives addressing the long-term challenging societal and social norms of the harmful practices of FGM and CM.

Signed on 21st June 2016 by:

For the Government of Sudan

Signature: _____

Mrs. Souad Abdelaal Eltahir

General Secretary of the National Council for Child Welfare (NCCW)

For the United Nations Children's Fund (UNICEF)

Signature: _____

Mr. Geert Cappelaere

UNICEF Representative in Sudan

For the Government of Sudan Central Bureau of Statistics

Signature: _____

Dr. Yassin Elhag Abdin

Director General, Central Bureau of Statistics

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I am grateful for the vital role played by the experts and specialists of Child Protection in providing key contextual cultural elements of explanations of findings and inequalities. They include: Child Protection Specialists Tamador Ahmed Abdalla, Amel Salih, Nahla Yousif Khiery and Samira Amin, National Expert.

I appreciate the valuable contribution of the experts at the Central Bureau of Statistics (CBS) in Sudan, Mr. Siddig Osman, statistician at CBS who provided adequate information for better understanding of the methodology of FGM/CM data collection and questionnaires since 2000, including the guidance related to the raw data.

I would also like to recognize the key technical quality assurance role plaid by UNICEF HQ in New-York Claudia Cappa, Statistics Specialist of Child Protection, Child Disability, ECD at Data and Analytics Section, Division of Data, Research and Policy and UNICEF Regional Adviser of Monitoring and Evaluation Roumiana Gantcheva.

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EXECUTIVE SUMMARY

The main objective of this study is to investigate the level, trends and factors associated with FGM/C and child marriage in Sudan. It also aims to examine closely the way FGM/C was measured in the country, by the four nationwide surveys conducted since 2000: 2 Sudanese Household and Health Surveys (SHHS) and 2 Multiple Indicator Cluster Surveys (MICS). After a thorough examination of the comparability of the data, the analysis was mainly based on the 2014 MICS using the age-cohort approach for trend analysis. The main findings are listed below, followed by a few recommendations.

FGM/C AMONG WOMEN

Universal knowledge of FGM/C: FGM/C is widely known in Sudan by women in the reproductive age (15-49 years). Overall, 96 percent of them have ever heard about the practice. This percentage varies from 71.5 percent in Central Darfur to 99.3 percent in North Kordofan. However, in the large majority of the states (13 states out of 18), the percentage of women familiar with FGM/C does not vary significantly and is higher than the one recorded at the national level (between 96 and 99 percent). There is virtually no variation between women's marital status, level of education and household wealth.

A high FGM/C prevalence among women with marked geographic disparities: The FGM/C prevalence in Sudan in 2014 was 86.6 percent. It is slightly higher in rural areas (87.2 percent) than in urban areas (85.5 percent). By contrast, it varies extensively across the 18 states, from a minimum of 45.4 percent in Central Darfur to a maximum of 97.7 percent in West Kordofan. Many factors may explain this particular pattern, but two of them seem to have the strongest association with the FGM/C practice, independently and in interaction: ethnicity and migration.

The ethnic composition of the states in Sudan is not homogeneous. Some states have ethnic groups that all practice FGM/C while other states have large ethnic groups that historically do not. These differences account for a large part in the variances in inter-state FGM/C prevalence. As for migration, Sudan's history is one of population flux and mixing. And this movement contributed to the diffusion of the practice.

FGM/C is generally performed between age 5 and 9 years: Nearly two thirds of circumcised women (63.7 percent) were cut between ages 5 and 9 years. There are slight, but statistically significant, differences in timing of cutting by area of residence, while variations by state are substantial.

Flesh removal and sealing of genital area are widely practiced during the circumcision: At the national level, 90 percent of the circumcised women have their flesh removed from the genital area, 3.6 percent have their genital area nicked without removing flesh and 77.0 percent have their genital area sewn closed (or sealed). By location of residence, genital area sealing does not vary, while flesh removal is more widespread in rural areas than in urban areas. The contrary is observed for the nicking of the genital area without flesh removal. By state, the sealing of the genital area is widely practiced in Gezira, West Kordofan, Sinnar and Northern where 90.0 percent to 94.6 percent of circumcised women have their genital area sewn closed. In contrast, this percentage is lowest in the Darfur states: 36.7 percent

in Central Darfur. The closing of the genital area and flesh removal are less practiced in the recent period. The opposite is observed for the nicking of the genital area without flesh removal.

The FGM/C practice is more and more medicalized: FGM/C is mainly performed by trained midwives (for 63.6 percent of circumcised women) followed by traditional circumcisers who performed the FGM/C on 28.7 percent of circumcised women. This pattern varies significantly and according to area of residence. In urban areas, trained midwives have circumcised 77.9 percent of women compared to 56.7 percent in rural areas. The FGM/C practice is more and more medicalized, with trained midwives taking the lead and other health professionals playing a minor role. The percentage of women aged 15-49 years cut by trained midwives increases from 55.4 percent in the period 1966-1979 to 76.0 percent in the years 2000-2014.

Though illegal in Sudan, re-circumcision is performed on one in four women who ever gave birth: Re-circumcision is not as widespread as circumcision but was performed on one in every four women who ever gave birth. Re-circumcision (or Adal) is a repeated act in the lifetime of married women, after birth. The procedure consists of re-sewing the genital parts following childbirth. It is also practiced for cosmetic reasons such as making the vagina tighter even without giving birth.

Re-circumcision is a geographically concentrated practice. It is widely practiced in Kassala (62.5 percent), Gadarif (52.2 percent) and Sinnar (46.4 percent). It is less practiced in the Darfur states and in South Kordofan, where the prevalence varies between 5.0 percent (East Darfur) and 16.9 percent (South Darfur).

Re-circumcision is significantly more practiced on women circumcised recently and among women who were circumcised at a very early age (before age 5). The link with cutting age may reflect more complications during delivery experienced by women who underwent the procedure at an early age and require a correction of the FGM/C after delivery. It may also stem from the fact that older women are over-represented among those circumcised at a younger age and, as they are older, they were exposed longer to the risk of being re-circumcised, thus increasing the prevalence among women cut at an early age.

WOMEN'S ATTITUDE TOWARDS THE FGM/C PRACTICE

Women living in States where enhanced anti-FGM/C interventions are implemented favour more FGM/C abandonment: Changing women's attitudes towards FGM/C is key to achieving the goal of freeing Sudan from the practice. Just over half of women (52.8 percent) think FGM/C practice should be abandoned and up to out of five women favour its continuation. The remaining 6.2 percent are not sure. FGM/C abandonment is widely favoured in urban areas where two thirds of women think it should be discontinued. By contrast, less than half of the rural women (45.5 percent) agree. The percentage of women favouring the abandonment of FGM/C practice widely varies across the states, from a minimum of 30.6 percent in East Darfur to a maximum of 71.0 percent in Khartoum.

In 10 states, enhanced anti-FGM/C interventions are implemented: Northern, River Nile, Red Sea, Kassala, Gadarif, Khartoum, Gezira, Sinnar, South Darfur and North Kordofan.

Women living in those states are more favourable of the abandonment of the FGM/C practice than women living in the other states: 57 percent of them think the practice should be discontinued as opposed to 45.9 percent of women in the other states.

Women's attitudes towards FGM/C practice fluctuates according to education, marital status, household wealth, and slightly by age, though statistically significant. Better educated and wealthiest women favour more the abandonment of the practice.

Women's FGM/C status and their use of the *Saleema* word, shape more their attitude towards FGM/C: The multivariate analysis reveals that among all predictive variables considered here, women's FGM/C status and the use of the *Saleema* word (proxy of being exposed to the *Saleema* C4D initiative) have the strongest association with their attitude towards the FGM/C practice. This is followed by education. Although important, wealth, age, state and marital status are less discriminant. Uncircumcised women are 7 times more likely to think FGM/C should be discontinued compared to those circumcised. Women using the *Saleema* word to name uncircumcised girls are 6 times more likely to reject FGM/C than women using other expressions.

FGM/C attitude is not reflected in the practice: In all states, the prevalence is substantially higher than the percentage of women who believe FGM/C should be abandoned - except in Central Darfur (where the prevalence is lower), West Darfur, Blue Nile and in some extent Khartoum (where the difference between the two percentages is narrow).

FGM/C AMONG GIRLS

Two thirds of girls currently aged 0-14 are at risk of being cut before reaching age 15: In 2014, 31.5 percent of all girls aged 0 to 14 years in Sudan, were already circumcised. This prevalence is higher among rural girls (33.0 percent) than among girls living in urban areas (27.8 percent). However, these percentages underestimate what would be the final FGM/C prevalence among the 0-14 year-olds when they will all reach age 14 years. The adjusted prevalence reveals that FGM/C predominance among girls currently aged 0-14 years would be 66.3 percent after they reached age 14 years. In rural areas, 70.9 percent will be circumcised, compared to 56.2 percent in urban areas. Therefore, girls living in rural areas are 20.7 percent more likely to be circumcised than girls residing in urban areas.

Nowhere to hide for girls: FGM/C is practiced on girls in all states at a significantly high level but variations are more substantial than by area of residence, with the adjusted prevalence wavering significantly from a minimum of 27.8 percent in West Darfur to a maximum of 83.4 percent in White Nile. The observed occurrence also broadly varies by state, from 12.1 percent in West Darfur to 55.6 percent in Red Sea.

FGM/C prevalence among girls is higher in States with enhanced anti-FGM/C interventions: Variation in FGM/C prevalence among girls across states are partly explained by ethnicity and population movements, as similarly among women. However, other factors are to be considered in explaining state variation in FGM/C prevalence among girls, including in mother's characteristics by state, in the intensity of anti-FGM/C campaigns in the states, and so forth. It is noticeable that 9 out of the 11 States with the highest observed rates are also the 9 States where enhanced anti-FGM/C interventions are

implemented: Red Sea, River Nile, North Kordofan, Kassala, Northern, Gezira, Gadarif, Khartoum and Sinnar. Rather than implying poor performance of these interventions in preserving girls from circumcision, this association may be the result of the interventions targeting states where girls are most at risk.

Girls are cut at age 5.7 on average: The mean age at circumcision among circumcised girls aged 0-14 is 5.7 years. It significantly differs by area of residence (slightly) and across states (widely). Variations across states are more important with the mean age increasing from a minimum of 3.7 years in Kassala to a maximum of 7.8 years in East Darfur. Circumcision of girls at an early age (before age 5) is more practiced in five States: Red Sea (23.6 percent), Kassala, River Nile, North Kordofan and Blue Nile (between 10 and 16 percent). By contrast, circumcision before age 5 years does not virtually exist in Gezira and in the five Darfur states (prevalence is below 1.5 percent).

FGM/C INTERGENERATIONAL TRANSMISSION

FGM/C status varies significantly according to mothers' background characteristics considered here. The daughter's likelihood of being cut is lowest if the mothers are young, well-educated and married late. Better educated mothers tend to circumcise their daughters less. Those who do it, perform it at a later age as compared to less educated mothers. Women living in the wealthiest households and those living in households in the two poorest quintiles equally circumcise their daughters (30 percent).

All variables related to the mothers' personal experience with FGM/C are significantly associated with their daughter's FGM/C status. The most powerful association is between mother's own FGM/C status and her daughter's. The observed prevalence of FGM/C among girls is 34.6 percent if the mothers are cut, compared to 2.3 percent if the mothers are not. This gap is even wider among daughters aged 10-14 years: 75.8 percent vs 5.1 percent. The second most discriminant variable on daughters FGM/C status is the cutting age of the mothers. Women circumcised before age 5 and women who cannot recall their cutting age are most likely to circumcise their daughters.

However, few variables do matter in the intergenerational transmission of FGM/C: The multivariate analysis reveals that only the mother's state of residence, area of residence, education, age at first marriage, FGM/C status and rejection of FGM/C, have a significant and net impact on the risk of their daughters being circumcised. The mother's own FGM/C status is by far the most powerful predictive variable of her daughter's likelihood to be circumcised, all other factors are controlled for. Indeed the risk for a girl to be circumcised too, is 24 times higher if her mother is circumcised than if she is not, confirming the intergenerational transmission of the practice.

It takes more than simply changing mothers' attitude to free daughters from FGM/C: It is noticeable that a mother's attitude towards the FGM/C practice is not as powerful as might be expected. The girl's risk of being cut is just 47 percent higher if the mother does not reject FGM/C, than if she rejects it. This confirms how ingrained FGM/C practice is in the Sudanese culture and how the decision to circumcise a girl is beyond her mother's sole control, as supported by the literature. Even education plays a strong role, since mothers with no formal education are twice more likely to circumcise their daughters than mothers with the highest level of education. The fact that the mother's use of the *Saleema* word is not significantly associated with her daughter's likelihood to be circumcised is another

indication that changes in mother's attitude towards FGM/C (in that case changes in her language) is not enough to overcome the powerful cultural norms and social mechanism that drive the practice in Sudan. It is just a first, but certainly important, step in the long path leading to freeing Sudan from FGM/C.

Another possible explanation is, as argued by the theory of diffusion of innovations (Rogers, 2003), that the number of adopters of the word *Saleema* has not yet reached its critical mass to self-sustain its circulation into the society. This is crucial to creating a new social norm favourable of the FGM/C rejection. In fact, in the case of FGM/C in Sudan, social norms matter more than isolated individual opinion on the issue to create a social transformation.

CHANGES IN FGM/C PREVALENCE OVER TIME

FGM/C is declining in Sudan more than perceivable through the overall prevalence: The prevalence among the younger generation (0-14 years) is 66.3 percent compared to 88.3 percent among the 30-34 year olds and 91.8 percent among the 45-49 year old. This corresponds to a 25 percent decrease in the FGM/C occurrence between the generations aged 0-14 years and 30-34 years; and a 21 percent decrease in the FGM/C prevalence between the generations aged 0-14 years and 15-29 years. This important downtrend gives a clear indication that the FGM/C practice is being abandoned in Sudan, though not clearly perceivable in the trends of the national prevalence.

The changes mainly took place recently: since the percent decrease is far higher between the two youngest generations (21.8 percent) than between the two oldest generations (3.9 percent). In few states, the timing and the nature of the change is quite different from the general pattern described in the above two bullets. On the one hand, Central Darfur, Khartoum and to a lesser extent Gezira, where a substantial decrease occurred between the two oldest generations, thus changes started earlier in those states. On the other hand, West Kordofan witnessed an important increase in FGM/C prevalence (-13.5 percent) between the two oldest generations, as well as Blue Nile (-3.9 percent) and West Darfur (-0.9 percent). This means that the FGM/C practice was adopted by individuals in the states that normally did not practice it or that important flows of migrants from states where the practice is well-established settled in those locations.

If past trends in FGM/C prevalence are maintained, FGM/C could be eliminated among girls born after 2040: Based on the assumption that future trends in FGM/C prevalence will follow the same pattern as in the past, it is possible to forecast FGM/C patterns for the upcoming years. More interestingly, to estimate the duration in reaching a prevalence of 0.0 percent or of any other value among girls aged 0-14 years by solving the equation for Y equals that particular value. The findings show that the FGM/C levels will decrease sharply to yield for the first time 0.0 percent among girls born 26 years and a half after the 2014 MICS. In other words FGM/C could be eliminated among girls born after the year 2040.

ASSOCIATION BETWEEN FGM/C ON MARRIAGE, REPRODUCTIVE HEALTH AND EDUCATION

Association between FGM/C and marriage: The findings of survival analysis **confirm** the hypothesis that being circumcised is associated with increased risk of early/child marriage (since cut teenagers are more likely to get married than those not) but **contradict** the cultural belief that not being cut hampers a woman's chance to find a husband. Indeed the findings show the opposite for women aged 30-49 and found no relationships among the 20-29-year old.

Association between FGM/C and women's education: circumcised women are significantly more likely to be better educated than those not circumcised, and this is true for both urban and in rural areas and across all age groups. However, the situation varies significantly by state. In the two states of North Kordofan and River Nile, uncircumcised women are slightly better educated than circumcised ones. In the states of Kassala and Central Darfur, there is virtually no difference. Based on the findings above, it is not clear whether or not FGM/C is negatively associated with education in Sudan, as found elsewhere and supported by the literature. This ambivalent relationships between education and the practice was already found when examining the variation in FGM/C prevalence by women's background characteristics.

"EVALUATION" OF THE SALEEMA INITIATIVE

One in 7 women (14.2 percent) uses the word *Saleema* to name uncircumcised girls: The use of the word *Saleema* is more widespread in urban areas where 22.9 percent of women use it as compared to only 9.8 percent in rural areas. The most striking differences, however, appear by state. The word *Saleema* is far more used in the Blue Nile state (35.5 percent) than in other states where between 4.4 percent and 21.3 percent use it. The *Saleema* description is expected to be higher when there are focused programmes and use of mass media. East Darfur was of the least and latest reached out to, indicating the reason for the low prevalence of the use of the word. "*Saleema"* is mostly heard among young, never married, better educated, wealthier and uncircumcised women.

The use of the word *Saleema* is significantly associated with positive FGM/C attitudes and practice: Women using the word *Saleema* to name uncircumcised girls are more open to the idea of abandoning FGM/C, than women using other descriptions. While 88.6 percent of women applying the *Saleema* word favour the discontinuation of FGM/C practice, only 62.4 percent of women using the expression "not circumcised" and less than 50 percent of women using other words/expressions, agree. As for practice, FGM/C is 30 percent higher among girls whose mothers do not make use of the word *Saleema* (32.5 percent) than girls whose mothers use it (23.0 percent). This holds irrespective of the daughters' age group. However, this is in no way proof of a causal relationship because the circumcision may have been performed well before the mothers started saying the word *Saleema*.

There is still a long way to go for the *Saleema* initiative, though the path is already paved: if the use of the word is a marker of the responsiveness to the *Saleema* campaign, then one can conclude that the initiative is at its first stage in reaching out to its audience. According to the theories of social change and innovation, change is diffused through a group by first being adopted by the vanguards who typically belong to the elite and have the most modern characteristics. In the case of Sudan, these women are the young, single, well educated, and living in wealthier households.

CHILD MARRIAGE

Child marriage is a common practice in Sudan: More than one tenth (11.9 percent) of women aged 15-49 years were married before 15 years of age. The practice is slightly more common in rural than in urban areas and widely differs across the states, from a minimum of 5.1 percent in Northern to a maximum of 18.6 percent in Kassala. The practice is more widespread in the Darfur and Kordofan states than elsewhere. The same pattern is observed when considering women aged 20-49 years. This similarity of both patterns is an indication that the phenomenon is not recent in the country. Marriage before age 18 years is considered child marriage, but it is very common in Sudan, since nearly two-fifths of all women aged 20-49 years were already married before their 18th birthday (38.0 percent). Marriage among adolescent girls is widespread in Sudan. More than one in five adolescents (21.2 percent) is or has already been married. It is more common in rural areas (26.0 percent) than in urban areas (11.2 percent). Differences across states are marked, with the prevalence varying from a minimum of 12.0 percent in Khartoum to 33.1 percent in Gadarif.

Profiling ever-married adolescents: Ever-married adolescents are significantly different from the never-married ones in terms of area of residence and geographical distribution, level of education, and wealth. They are twice less likely to be found in urban areas (17.4 percent of them live in cities) than never-married ones (37.0 percent). In terms of geographical distribution, ever-married adolescents are twice less likely to live in Northern and Khartoum and more likely to reside in Gadarif, Kassala, Blue Nile and North Kordofan, than the never-married ones. Ever-married adolescents are 2.5 times more likely to have received no formal education than never married ones.

Marriage among adolescents and FGM/C: Marriage is significantly associated with attitude towards FGM/C among adolescents. Never-married adolescents are twice more likely to call an uncircumcised girl *Saleema* than ever-married ones. They are also more likely to favour abandonment of FGM/C (57.5 percent) than ever-married adolescents (37.7 percent). Furthermore, the practice is slightly, but significantly, higher among ever-married adolescents (85.6 percent) than among never-married ones (80.5 percent). Among circumcised adolescents, the characteristics of the circumcision differ significantly according to marital status. The form of circumcision received changes slightly between the two groups but differences in type of performer are more marked. Ever-married adolescents are twice more likely to have been circumcised by traditional circumciser than never-married ones.

RECOMMENDATIONS

Based on the findings summarized above, we formulate the following general and specific recommendations toward the stakeholders of the programme strategies to promote abandonment of FGM/C in Sudan:

General recommendations

- In terms of interventions: More support should be provided for the continuation and even scaling up of intensive large community-based interventions to free Sudan from FGM/C in one generation, given the encouraging findings on the downtrend of the FGM/C prevalence.

- In terms of data and evidence-based making decision: The huge heterogeneity of the states in respect of all FGM/C aspects analysed here, call for a preparation of an FGM/C profile for each state based on the current analysis. This should be done as quickly as possible while the 2014 MICS data are still fresh.

Specific recommendations

- Ethnicity and migration should be explicitly taken into account in all strategies to end FGM/C practice in Sudan, starting with collecting data on both aspects in future information gathering including questions on FGM/C.

- The anti-FGM/C blueprint should design and implement intensified programs directed towards trained midwives in order to rally them all behind abandonment of FGM/C. The more medicalized the practice, a unique an opportunity to reach out to a larger number of women with authorized voices (the health personnel) and to conduct individualized counselling against FGM/C, is given a more efficient way than delivering group messages.

- The anti-FGM/C programs should integrate re-circumcision as an explicit focus with specifically designed interventions, since it has received far less attention than circumcision.

- Efforts to promote education should be considered as an integrated part of the programmes to end FGM/C. Education proved to be among the rare mothers' acquired characteristics that are significantly associated with the daughter's FGM/C status, and that can be impacted by specific interventions.

- Seemingly, the efforts to end child marriage should be viewed as a stand-alone program but also as a means to promote abandonment of FGM/C in Sudan, since girls from mothers who married later are less likely to be circumcised, as the same for education.

- FGM/C abandonment among girls should equally focus on all actors involved in the decision-making of the cutting, and not primarily on mothers. This should start with the collection of information on parties involved in the decision-making process in future surveys as is already implemented with place of delivery.

- The findings of this study should be used to better tailor the sensitization campaigns

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LIST OF ACRONYMS

C4D	Communication for Development
CBS	Central Bureau of Statistics
CM	Child marriage
DFID	Department for International Development
FGM/C	Female Genital Mutilation/Cutting
FP	Family Planning
MICS	Multiple Indicators Cluster Survey
RH	Reproductive Health
SHHS	Sudanese Household and Health Survey
UK	United Kingdom
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

INTRODUCTION

The World Health Organization (WHO) defines female genital mutilation/cutting (FGM/C) as "*all procedures involving partial or total removal of the female external genitalia or other injury to the female genital organs for non-medical reasons*" (WHO, 2008). FGM/C is considered a fundamental violation of human rights and its health and psychological consequences on Sudanese women are tremendous (UNFPA/WHO, 2013). Yet, at least 200 million girls and women in 30 countries have undergone FGM/C, though the exact number remains unknown (UNICEF, 2016).

Sudan is one of the countries where the practice is the most widespread. The 2014 MICS found that 86.6 percent of all women in the reproductive age (15-49 years) are circumcised and 31.5 percent of girls aged 0-14 years were already cut (CBS, 2016). Though substantial variations exist across the states, the FGM/C predominance among women remains high everywhere, ranging from 45 percent in Central Darfur to 98 percent in North Kordofan. In one third of the 18 states, the prevalence is between 94 percent and 98 percent (CBS, 2016). Different types of FGM/C are performed on women in Sudan, including the most severe one (infibulation) that consists of sewing the genital opening after removal of the flesh.

For decades, several national and international initiatives have been undertaken and programs implemented to end the FGM/C practice in Sudan. Many donors are supporting and funding such projects, especially the UK through the Department for International Development (DFID). There is an intensification of programmes to promote the abandonment of FGM/C in Sudan over recent years. In 2008, the National Strategy on the Abandonment of FGM/C was extended for 2008-2018. At the same time, the UNFPA-UNICEF Joint Programme on FGM/C was established. In 2013, the Sudan Free of FGM/C programme launched, and is the largest single country joint programme on FGM/C abandonment in the world. As part of these efforts, the National Council on Child Welfare coordinates a national task force and a national initiative, *Saleema*, aimed at changing the social norms associated with uncut girls. However, impact of such interventions has yet to produce a substantial decline in FGM/C prevalence.

As for child marriage (CM), it is also a widespread practice in Sudan. According to the 2014 Multiple Indicators Cluster Survey (MICS), 11.9 percent of women aged between 15-49 years were married before age 15 and 38.0 percent of women aged 20-49 years were married before age 18 years.

The main objective of this study is to investigate the dynamic of the FGM/C practice in Sudan and child marriage, using nationwide surveys conducted since 2000. The specific targets of this study are to:

- Provide adequate clarifications on the difference between the methodology of data collection and measurement of FGM/C prevalence applied to the various household surveys, completed in Sudan since 2000
- Generate statistical trends analysis of prevalence of FGM/C and child marriage practices in Sudan using different sources of data
- Perform data analysis that identify the most affected groups including by state, socioeconomic profile, wealth quintile index, cohort/ generation

- Complete the correlation analysis of knowledge of the *Saleema* initiative by women with the differential gains made in prevalence of FGM/C by states during the last five years.

The rest of the report is articulated through approximately six sections followed by a segment containing the main conclusions and recommendations:

- Methodology
- FGM/C knowledge, practice and beliefs among women aged 15-49 years
- FGM/C Among Girls Aged 0-14 Years
- Changes in FGM/C Practice Over Time and association between female circumcision on the one hand and Marriage, Childbearing and Education on the other
- Association Between the *Saleema* C4D Initiative and FGM/C Practice and Beliefs
- Child marriage

Several national and international initiatives have been undertaken and programs implemented to end the FGM/C practice in Sudan

PART I.

METHODOLOGY

INTRODUCTION

This first section aims to answer the principal question of the study: "How is FGM/C measured in Sudan by the nationwide surveys?" It also details the method of analysis used, especially how the changes in FGM/C prevalence, if any, will be investigated.

I. FGM/C IN HOUSEHOLD SURVEYS CONDUCTED IN SUDAN

Sudan has collected data on FGM/C since 2000 through four nationwide surveys:

- The 2000 MICS, that followed the MICS international standards
- The 2006 Sudan Health and Household Survey (SHHS1), that used a modified version of the MICS methodology that impacted the FGM/C data comparability as we will see later
- The 2010 Sudanese Health and Household Survey (SHHS2), that used the same methodology as the 2006 SHHS
- The 2014 MICS followed the MICS global standard

The sections below describes the aspects of FGM/C measured by the four surveys, the way they were measured and also discussed is the issue of the data comparability.

1.1 FGM/C data collected by household surveys in Sudan

Overall, seven broad aspects regarding FGM/C knowledge, attitude and practices were covered by one or more of the four surveys through ways that are more or less different:

- Women's knowledge of FGM/C
- Women's awareness about FGM/C campaign
- Women's personal experience with FGM/C
- Women's daughter's experience with FGM/C
- Women's intention to perform FGM/C on their daughters
- Women's opinion on FGM/C
- Discussion with the husband about FGM/C and husband's opinion on FGM/C

Table 1 outlines the specific questions asked for each of the above aspects (23 overall) and identifies the survey(s) that presented them.

The data reveals that among the 23 items, only women's FGM/C status and the circumcision performer were collected by all four surveys. Three surveys collected information on women's opinion about continuation/discontinuation of FGM/C. Two surveys collected data on women's intention to perform FGM/C on their daughters who are not yet circumcised and on daughters/girls experience with FGM/C. All other information was collected by only one survey. This makes it quite challenging to conduct trends analysis using the four surveys.

Table 1. Data collected on FGM/C and the related surveys that collected them

FGM/C aspects covered by the surveys	Survey			
	MICS 2000	SHHS 2006	SHHS 2010	MICS 2014
Women's knowledge of FGM/C				
- Awareness about FGM/C (Ever heard about FGM/C)				√
- Knowledge of any type of FGM/C	√			
- Knowledge of specific types of FGM/C	√			
- Knowledge of the consequences of FGM/C on delivery	√			
Women's awareness about FGM/C campaign				
- Awareness about an FGM/C campaign	√			
- Awareness about the *Saleema* initiative				√
Women's personal experience with FGM/C				
- Woman's FGM/C status (if the woman is circumcised or not)	√	√	√	√
- Type of circumcision	√			√
- Age at circumcision				√
- Circumcision performer	√	√	√	√
- Re-circumcision status (if ever-married woman is re-circumcised or not)				√
Women's daughter's experience with FGM/C				
- Total number of daughters circumcised	√			√
- FGM/C status for each daughter	√			√
- Age at circumcision for each circumcised daughter	√			√
- FGM/C performer for each circumcised daughter	√			√
- Tools used in circumcision for each circumcised daughter	√			
- Kinds of complication the circumcised girl was exposed to after circumcision	√			
Women's intention to perform FGM/C on their daughters				
- Woman's intention to circumcise her daughters who are not yet circumcised		√	√	
Women's opinion on FGM/C				
- Women's opinion about continuation/discontinuation of FGM/C		√	√	√
- Women's opinion/appreciation of FGM/C	√			
- Reasons appreciating/not appreciating FGM/C	√			
Discussion with the husband about FGM/C and husband's opinion on FGM/C				
- Discussion about FGM/C with the husband	√			
- Women's husband's opinion on FGM	√			

1.2 FGM/C data collection method and level of measurement

The data on FGM/C were collected differently across the four surveys. Variances exist both at the level the information was collected (household level vs. individual level) and the subgroups for which the data were collected. For each survey, the following points present the data collection method, which questionnaires were used, who answered the questions and which subgroups were targeted.

a) The 2000 Multiple Indicator Cluster Surveys (MICS)

The 2000 MICS is the one out of the four surveys that collected the most detailed data on FGM/C. Unfortunately, it was limited to ever-married women aged 15-49 and it collected FGM/C data on all women's daughters, irrespective of their age and whether or not they are still alive. All questions were included in the women's individual questionnaire and were directly answered by the women themselves.

The information gathered and the target subgroups were:

- For all ever-married women aged 15-49: Knowledge of a type of FGM/C; Knowledge of specific types of FGM/C; FGM/C status; Approval/rejection for FGM/C; Reasons of approval/rejection for FGM/C; Discussion about FGM/C with the husband; Husband's opinion on FGM/C; and Awareness of FGM/C campaigns.
- For ever-married circumcised women aged 15-49: Type of circumcision received.
- For ever-married women aged 15-49 who have daughters: Total number of daughters circumcised.
- For each circumcised daughter of ever-married women aged 15-49: Circumcision performer; Age at circumcision; Tools used in circumcision; Kinds of complications the girl was exposed to when circumcised.

b) The 2006 and 2010 Sudanese Household and Health Surveys (HHHS)

The 2006 and 2010 SHHS used the same methodology to collect data on FGM/C through both the household questionnaire and the women's individual questionnaire. The household questionnaire collected details on the FGM/C status for all women living in the household, no matter their age, and for each circumcised woman - the person who performed the circumcision. The head of household answered the questions for all women, not the women themselves.

The women's individual questionnaire included two questions on FGM/C. The first was asked to all women aged 15-49 to find out if they favour or not the continuation of FGM/C practice. The second question was only for ever-married women who have living daughters and was aimed at collecting the mother's intention to circumcise their daughters who are not yet circumcised.

c) The 2014 Multiple Indicator Cluster Surveys (MICS)

The 2014 MICS collected all FGM/C data through the woman's individual questionnaire. Therefore, the women aged 15-49 were the ones who directly answered the questions, indicated below:

- To women aged 15-49: Awareness about FGM/C.
- To women aged 15-49 who ever heard about FGM/C: FGM/C status; Opinion on the continuation/discontinuation of the practice; and Awareness about the *Saleema* initiative.
- To circumcised women aged 15-49: Type of FGM/C received and Circumcision performer.
- To ever-married circumcised women aged 15-49: Re-circumcision (Adal).
- For each daughter aged 0-14 of each ever-married woman aged 15-49 with living children: FGM/C status.
- For each circumcised daughter aged 0-14 of each ever-married woman aged 15-49 with living children: Age at circumcision, Circumcision performer.

II. METHOD OF MEASUREMENT OF FGM/C PREVALENCE AND ITS VARIATIONS OVER TIME

The present report will: (i) compute the prevalence of FGM/C among women aged 15-49 years and girls aged 0-14 years, proceeding if necessary with some adjustment; (ii) analyse its geographic disparities and variation by women's and girls' characteristics; (iii) examine the trends in prevalence; (iv) analyse some characteristics related to the circumcision, cutting age, circumciser, etc., (v) describe women's attitudes towards the FGM/C practice; and (vi) investigate the child marriage issue.

The following sections describe in detail the process of computation of the FGM/C prevalence and the method of FGM/C trends analysis. For the other aspects of the study (geographic variations and correlations of FGM/C practice and beliefs and child marriage), we will resort to bivariate analysis with statistical tests of significance and multivariate examination, using survival analysis techniques and more classic approaches.

2.1 Computation of the FGM/C prevalence

The FGM/C prevalence will be calculated separately for women aged 15-49 years and for girls aged 0-14 years. Since virtually all women are already circumcised by age 15 years, the FGM/C prevalence among women aged 15-49 is simply the percentage of those who report being circumcised.

By contrast, the proportion of circumcised girls aged 0-14 years at the time of the survey is not a definite FGM/C prevalence among girls, since many of them reported as uncircumcised will undergo circumcision before reaching age 15 years. Their FGM/C status will therefore change, thus increasing the FGM/C commonness in the age group 0-14 years.

Therefore, we will compute an adjusted overall FGM/C frequency among girls aged 0-14 years. The adjustment takes into account censorship of the observations due to not all girls completing their period of exposure to the risk of undergoing an FGM/C. To do so, we will resort to two survival analysis techniques: the Kaplan-Meier estimates of survival/failure to a time-related event and the Cox regression method. For an event for which its occurrence depends on time of exposure, such as being cut or not, the Kaplan-Meier estimate computes, among others, the cumulative probability that an individual survives or fails to survive the event. In the case of the risk of undergoing an FGM/C, this means that at each age between 0 and 14, the Kaplan-Meier estimates give the cumulative probability that a girl be cut between 0 and that age. Therefore at age 14 years, the Kaplan-Meier estimates gives the likelihood of being cut between ages 0 and 14 years. This value is a measure of the definite prevalence of FGM/C among a cohort of girls completely exposed to the risk of being cut between age 0 and 14 years.

We will then examine variations of the occurrences according to area of residence, state and different characteristics of the girls and their mothers. Since the data are sample-weighted (pweight), we compute a Wald Chi-square using the Cox regression-based test for equality of the curves of the risk with being cut by age, across different subgroups of girls.

Finally, we also conduct a semi-parametric cox regression to evaluate the net impact of different characteristics related to the mothers on the girls' risk of being circumcised between ages 0 and 14.

2.2 Method of analysis of changes in FGM/C prevalence over time

Trends in FGM/C will be analysed using two different approaches: (i) by comparing the prevalence from the four nationwide surveys since 2000; (ii) by comparing FGM/C cases and associated factors among different age groups from the 2014 MICS data only, the so-called age-cohort approach.

The first approach, which is the most straightforward, consists of comparing the overall FGM/C predominance computed with the data of the four nationwide surveys conducted between 2000 and 2014 (2 SHHS and 2 MICS surveys). Women's FGM/C statuses were collected differently by the SHHSs and the MICSs. The 2000 MICS asked ever-married women aged 15-49 about their FGM/C experience and the 2014 MICS survey asked the same question but for all women aged 15-49, irrespective of their marital status. As for the 2006 and the 2010 SHHSs, they collected FGM/C status through the household questionnaire for all women living in the household, no matter their age or marital status. It is therefore possible to analyse: (i) for the trends in FGM/C prevalence; (ii) for the period 2006-2014, trends in FGM/C among all women aged 15-49 years.

However, this method may be flawed by: (i) differences in the methodology of collecting the FGM/C data across the surveys; (ii) differences in the quality of the data by survey; and (iii) changes in the type of variables collected by the different surveys. Moreover, the overall prevalence may not be the right indicator to measure changes in FGM/C practice if such variations occurred in a recent period and/or if they took place in certain parts of the country and within specific groups with possible increases occurring elsewhere. In such a case, the increase may offset the decrease observed elsewhere, yielding to a constant FGM/C prevalence overtime that gives the false impression that nothing has changed.

For these reasons, we will rather track changes in FGM/C prevalence, if any, in a more refined way that consists of applying the so-called age-period-cohort approach to the 2014 MICS data. In other words, we will compare the FGM/C prevalence of different age groups in 2014. For the age group 0-14 years, we will use the adjusted prevalence. Given that FGM/C is performed before age 15 for almost all women, one can reasonably assume that the rate among the different age groups of women aged 15-49 years will no longer change. This means that the practice among a given age group conveys information on the prevailing context during the years women of the age group were aged 0 to 15 years, that is, their period of exposure to FGM/C.

III. Method of Analysis and Limitations of the Data

This chapter presents the different methods of analysis that we will use throughout this document. It will also address the limitations of the data and method of study.

3.1 Method of analysis

Two types of methods are used in this document: bivariate and multivariate analysis. The bivariate analysis consists of crossing two or three variables and testing associations using the Pearson chi-square test and the Wald chi-square test. Bivariate analysis is used to measure and test the significance of variances across states, area of residence and according to different characteristics of women in FGM/C prevalence, knowledge, beliefs and practice.

The multivariate analysis consists of binomial logistic and Cox semi-parametric regression. We run a binomial logistic regression to predict the probability of a woman favouring the abandonment of the FGM/C practice based on the state where she lives, her area of residence, age group, education, marital status, household wealth, FGM/C status and her use of the word *Saleema*.

We run two Cox semi-parametric regressions to ascertain the net impact of some mothers' characteristics on the likelihood of their daughters being cut.

The first model is run on daughters of all women and includes the following predictive variables[1]:

- Mothers' background characteristics: State, area of residence, generation (age), education, household wealth, marital status and age at first marriage
- Mothers' characteristics related to FGM/C: FGM/C status attitude and use of the word *Saleema* to name uncircumcised girls[2].

The second model is run on daughters from circumcised mothers and includes the following predictive variables:

- Mothers' background characteristics: State, area of residence, generation (age), education, household wealth, marital status and age at first marriage
- Mothers' characteristics related to FGM/C: Cutting age, type of circumcision performer, attitude towards FGM/C and use of the word *Saleema* to name uncircumcised girls[3].

All the above analysis are explained in detail in the chapters and sections where they are used.

3.2 Limitations of the methodology

The limitations of the different methods are addressed in detail in the respective chapters and sections where the methods are used.

[1] Girls age matters in the risk of being cut, but the Cox regression takes this into account in the calculation of the risk so that it is not needed to add age as a predictive variable in the model.
[2] Re-circumcision status is not included to avoid restricting the analysis to only circumcised women
[3] Re-circumcision status is not included to avoid restricting the analysis to only circumcised women

PART II.

FGM/C KNOWLEDGE, PRACTICE AND BELIEFS AMONG WOMEN AGED 15-49 YEARS

INTRODUCTION

This part examines three aspects related to FGM/C among women in the reproductive age (15-49 years): women's FGM/C knowledge, FGM/C status and attitude towards the practice. For each aspect, we will analyse the geographic disparities by women's characteristics.

I. WOMEN'S KNOWLEDGE OF FGM/C

Though FGMC/C is deeply rooted in Sudanese culture and widely practiced, it may be useful to look at how widespread the knowledge of the practice is and how it varies across the area of residence, the states and some of the women's background characteristics.

The 2014 MICS asked women if they had ever heard about FGM/C as an introductory question to the FGM/C module. Such a question, was unfortunately unavailable in the previous SHHS surveys. As for the 2000 MICS, it asked women if they know of a type of FGM. The fact of having heard about FGM/C in no way means that one knows a type of FGM/C. Conversely, ignoring a type of FGM/C does not mean that one has never heard of the practice. Therefore, this chapter will focus on the current situation of knowledge of FGM/C rather than trends analysis.

1.1 Women's knowledge of FGM/C and variation by area of residence and State

FGM/C is widely known in Sudan by women in the reproductive age (15-49 years). Overall, 96 percent of them have ever heard about the practice[4]. Knowledge of FGM/C varies slightly by area of residence and widely by state as shown in Figure 1.

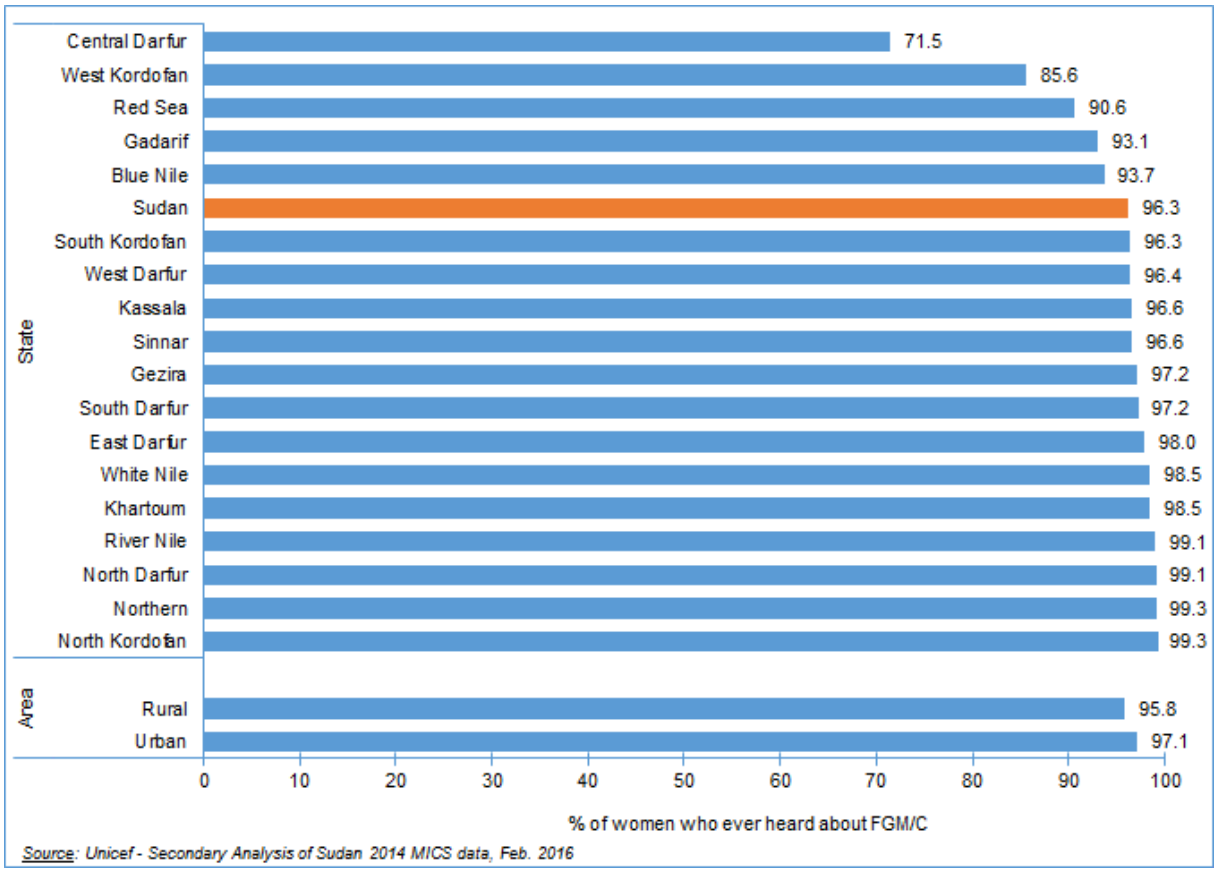
FGM/C is slightly more known in urban areas (97.1 percent) than in rural areas (95.8 percent). Though small, this difference in knowledge of FGM/C between the two areas of residence is statistically significant.

By state, the percentage of women who know of FGM/C varies from a minimum of 71.5 percent in Central Darfur to a maximum of 99.3 percent in North Kordofan. However, in 13 States out of 18, the percentage does not vary much and is higher than the one recorded at the national level (between 96 and 99 percent). In three states, it is comprised between 91 and 94 percent (Red Sea, Gadarif and Blue Nile). In Central Darfur and West Kordofan, only 71.5 percent and 85.6 percent respectively, have ever heard about FGM/C.

The low percentage of women who ever heard about FGM/C in Central Darfur is due to the ethnic composition of residents who were not used to FGM/C practice such as Fur, Hawsa or Umbarraro.

[4] It is difficult to imagine how a woman aged 15-49 would have never heard of FGM/C in a country where virtually 9 women out of 10 are circumcised. What does this really mean? Were they really unaware? Or were they reluctant to talk to the enumerator?

Figure 1. Among women aged 15-49 years, percentage who ever heard about FGM/C by area of residence and State (Sudan 2014 MICS)



The differences are statistically is significant at the 5% level for both variables "Area of residence" and "State".

1.2 Variation in women's FGM/C knowledge by their background characteristics

Variation in FGM/C knowledge is examined according to the following women's background characteristics: age, education, marital status and household wealth. The associations found between FGM/C knowledge and those variables will not necessarily mean that the background characteristics explain the FGM/C knowledge. For instance, a woman may have heard about FGM/C well before she lives in her current household, or before she got married.

The findings contained in Table 2 show that knowledge of FGM/C varies significantly by education and household wealth and not by age and marital status. The more a woman is educated, the most likely she is to have ever heard about FGM/C. Virtually all women with a high level of education (99.5 percent) know of FGM/C compared to 92.3 percent of women with no formal education. Seemingly, 99.0 percent of women living in the wealthiest households know of FGM/C compared to 92.6 percent of the women in households belonging to the second poorest wealth quintile.

Table 2. Percentage of women aged 15-49 years who ever heard about FGM/C by area of residence, age, education, marital status and wealth (Sudan MICS 2014)

Women's characteristics	% who ever heard about FGM/C	Number of women who ever heard about FGM/C	Total number of women
Total	96.3	17 620	18 302
Age group (years) (ns)			
15-19	96.3	3 571	3 708
20-29	96.3	6 284	6 522
30-34	95.8	4 886	5 099
40-49	96.9	2 880	2 972
Education (*)			
None	92.3	5 399	5 848
Primary	96.9	5 939	6 128
Secondary	99.2	4 328	4 361
Higher	99.5	1 954	1 965
Marital Status (ns)			
Never married	96.6	5 359	5 547
Currently married	96.1	11 399	11 867
Formerly married	97.1	862	889
Household Wealth (*)			
Poorest	95.9	3 112	3 246
Second	92.6	3 130	3 380
Middle	95.2	3 473	3 646
Fourth	97.9	3 678	3 759
Richest	99.0	4 226	4 271

(*): The differences are statistically significant at the 5% level.

(ns): The differences are not statistically significant at the 5% level.

II. FGM/C PREVALENCE AMONG WOMEN

The 2014 MICS survey allows computation of FGM/C prevalence among both girls aged 0-14 years and women aged 15-49 years. As mentioned in the methodology section, the levels among these two groups has different meanings. While prevalence among women aged 15-49 years reflects their final FGM/C status since there is virtually no circumcision after age 15, this is not the case for girls. Not all girls aged 0-14 years have completed their period of exposure to the risk of undergoing circumcision. This chapter deals with predominance among women while the one following refers specifically to the FGM/C prevalence among girls.

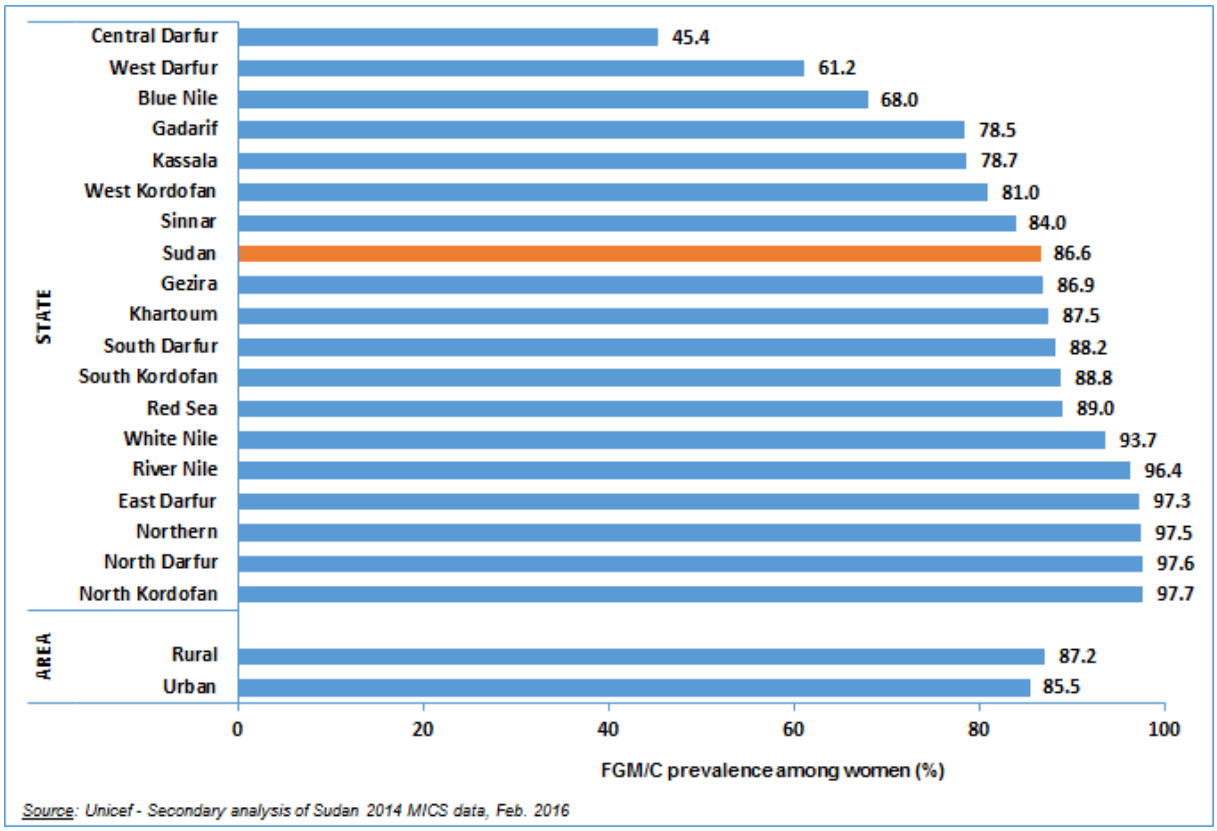
2.1 FGM/C prevalence among women and variation by area of residence and State

The overall prevalence of FGM/C in Sudan in 2014 among those aged 15-49 years, is 86.6 percent (Figure 2). FGM/C rates are slightly higher in rural areas (87.2 percent) than in urban areas (85.5 percent). By contrast, it varies significantly across the 18 states, from a minimum of 45.4 percent in Central Darfur to a maximum of 97.7 percent in West Kordofan.

The 18 States can be grouped into 4 categories depending on the level of their FGM/C prevalence:

- States with very high prevalence of FGM/C, ranging from 93.7 percent to 97.7 percent: White Nile; River Nile; East-Darfur; Northern; North Darfur; North Kordofan.
- States with prevalence above the national level but lower than 90 percent (from 86.9 percent to 89.0 percent): Gezira; Khartoum; South Darfur; South Kordofan and Red Sea.
- States with intermediate prevalence (from 61.2 percent to 84 percent): West Darfur; Blue Nile; Gadarif; Kassala; West Kordofan; Sinnar.
- Central Darfur stands out as the only state where less than half of the women aged 15-49 years (45.5 percent) are circumcised.

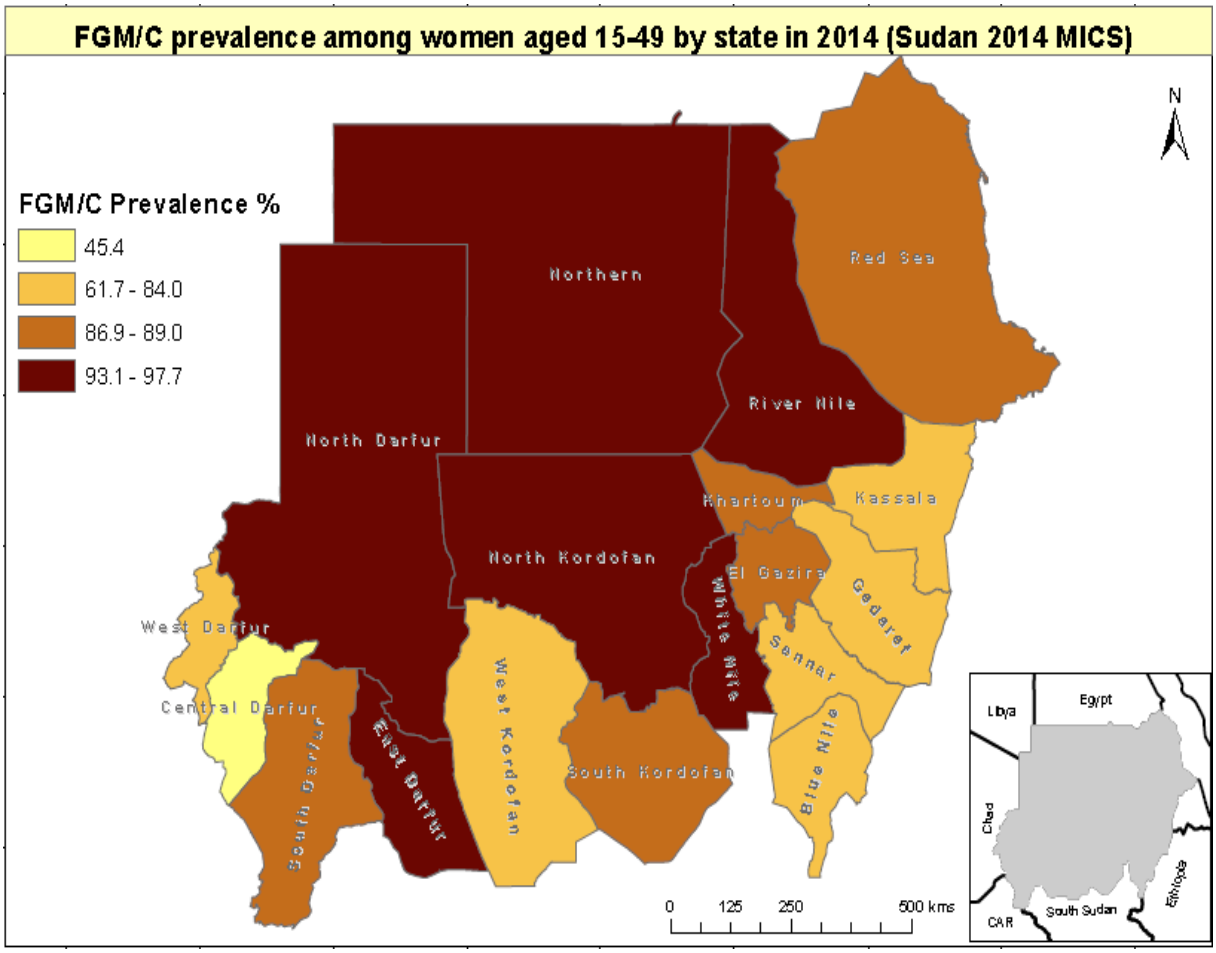
Figure 2. FGM/C prevalence among women aged 15-49 years in Sudan in 2014 by State and area of residence (Sudan 2014 MICS)



The difference between States prevalence is statistically significant at the 5 percent level

Map 1 of FGM/C prevalence by state reveals a general geographic pattern more common in the northern States than in the southern ones, with the notable exception of East Darfur, a southern state with an FGM/C level as high as in the northern states.

Map 1. FGM/C prevalence in 2014 among women aged 15-49 years by State (Sudan 2014 MICS)



Many factors may explain this particular pattern, but two of them seem to have the most significant association with the FGM/C practice, independently and in interaction: ethnicity and migration[5].

Ethnicity: According to UNFPA (2015), "*ethnicity is the most significant factor in FGM prevalence, cutting across socio-economic class and level of education. Members of certain ethnic groups often adhere to the same social norms, including whether or not to practice FGM, regardless of where they live*". The ethnic composition of the states in Sudan is not homogeneous. Some states have ethnic groups that all practice FGM/C while others have large ethnic groups that historically do not practice FGM/C. These differences account for a large part in the variances in inter-state FGM/C prevalence. For instance, Central and West Darfur have always been historically on low frequency for the ethnic composition of residents who were not used to the FGM/C practice such as Fur, Hawsa or Umbarraro.

[5] Linkage between Migration, Ethnicity and FGM/C is not presented here as findings of the analysis of the MICS and SHHS data. Rather it is a discussion made by the Child Protection section of UNICEF on possible relationships between FGM and both variables based on what is known about the Sudanese socioeconomic and historical context.

Table 3 below, gives the ethnic composition of the states and their practicing FGM/C or not.

Table 3. Ethnic composition of the States, practice of FGM/C by the ethnic groups and typical age range cutting[6]

State Name	Ethnicity/Tribe	Population of state	Practicing or no FGM/C	Typical age range cutting
North Darfur	Masalit, Zaghawa, Fur, nomadic groups	Same groups	Not all practice e, g, Fur, Hawsa Umbarraro	11-14 years
Northern	Nubians, Danagla, Mahas, Copts	Same groups	Yes	5-8 years
East Sudan (Kassala, Red Sea)	Beja (Halanga, Hadandawa, Beni Amir), Rashaida	Same groups	Yes	Less 5-7 years Rashaida (less than2-5 years)
Gedaref	Shukria, Hawsa, Nuba,	Same groups	Yes	5-11 years
Blue Nile	Anuak, Fellata, Nuba	Same groups	Yes	5-11 years
Gezira	Fulani, Hawsa, Ja'aleen, magharba, Abdallab, Copts	Same groups	Yes	5-8 years
White Nile	Hassania, Danagla, Copts	Same groups	Yes	5-8 years
North Kordofan	Hamar, Baggara, Messeria, Rizagat	Same groups	Yes All practice	7-12 years
South Kordofan	Messeria, Dinka, Nuba	Same groups	Merreriya yes, Dinka and Nuba no	7-12 years
River Nile	Ja'aleen, Shawaiga, Abdallab, Copts	Same groups	Yes	5-8 years
South Darfur	Masalit, Zaghawa, Fur, nomadic, Ta'isha groups, Rizaigat	Same groups	Not all practice e, g, Fur, Hawsa Umbarraro	7-12 years
West Darfur	Masalit, Zaghawa, Fur, Ta'isha, nomadic groups	Same groups	Not all practice e, g, Fur, Hawsa Umbarraro	7-12 years
East Darfur	Barbo, Rizagat, Ma'alia, Ta'isha		Not all practice e, g, Fur, Hawsa Umbarraro	
Khartoum	All tribal groups including from South Sudan		Yes except for those with focused programming, Hawsa	5-7 years

Migration combined with ethnicity[7]: The map of prevalence coincides with the movement between Border states such as Kassala and Northern. White Nile has this historical precedence in receiving migrants from the north for business or from the south to go back. The belt of migration is clear in western Sudan where nomadic groups move in North Kordofan borders with North Darfur, making a process of movements between north, central and south and another one from west to the east.

[6] This table is not derived from analysis of the MICS nor the SHHS data. Rather, the information it contains is gathered and provided by the Child Protection Section of UNICEF Sudan.

[7] Past pattern of migration has indeed played a role in the diffusion of FGM/C practice. However, population movements in the modern days may have had a more significant impact on FGM/C beliefs and practices. Though relevant, this aspect that requires external data is not analysed here.

The nomadic groups around the two belts are high practicing groups infiltrating and persistently holding on to the practice.

Indeed, Sudan's history is one of population flux and mixing. The amassing of armies in the capital in the 19th century brought in migrants from all over the country, as did the expansion of agricultural schemes in, for example, the Gezira region of central Sudan and eastern Sudan in the 20th century. Various populations of West African origin, including Fulani and Hausa speakers, have settled in Sudan, with the encouragement of the Condominium government.

Gezira was the state most receiving migrants from west and central Africa during the 19th century. Camps of farmers included ethnic groups who do not cut such as Hawsa, Fellata and some Nuba. During the North-South war, the Red Sea, Al-Gadarif and Blue Nile were the most receiving states in northern Sudan for migrants from the South. White Nile continued to be a boarder state for migrations from and to the south. Among the most sending states were: Northern, South Kordofan, West Darfur, North Kordofan and River Nile. During the Darfur conflict, people migrated to the urban centres of the states, to Kordofan and many moved to Khartoum to settle in old quarters of the city where most southern displaced lived.

One of the limits on movement came in the late 1920s, when an attempt by British administrators to protect the South Sudanese, Nuba and others, from the depredations of slave traders and merchants led to the establishment of 'Closed Districts', cut off from northern influence. When the Ordinance was lifted in the mid-1940s, the evidence of FGM/C in the south was trivial and most attempts to ban it were focused in the North. However, some southern displaced who stayed in the North started practicing being part of a cultural integration process.

2.2 Variation in FGM/C prevalence by women's background characteristics

This section examines the variation in FGM/C prevalence among women by some of their background characteristics including age, education, marital status and household wealth. A woman may have acquired these characteristics well after being cut (FGM/C is generally performed before age 15). Therefore, the findings in Table 3 in no way suggest that these background characteristics explain women's FGM/C status. Rather, they provide an indication as to which groups of women the rate of FGM/C is higher and in which groups it is lower.

Findings in table 4 show that FGM/C prevalence varies significantly across all four background characteristics. The most striking variations are observed by education. The practice of FGM/C increases regularly from 76.8 percent among the non-educated women and up to 91.8 percent among the most educated ones. Variation by age and household wealth are also important. The older the generation, the higher the FGM/C prevalence. Predominance among the 15-19 year olds is 81.6 percent and reaches 91.8 percent among the oldest generation (aged 40-49 years). By wealth, FGM/C is highest among the two richest quintiles (90.0 percent and 91.6 percent) and lowest among the middle classes (81 percent to 82 percent). The rate among women in the poorest household is also high (88 percent). By contrast, differences in FGM/C prevalence are slight by marital status.

Table 4. FGM/C prevalence in 2014 among women aged 15-49 years by age, education, marital status and household wealth (Sudan MICS 2014)

Variables	FGM/C prevalence among aged 15-49 years (%)	Number of circumcised women aged 15-49 years	Number of women aged 15-49 years
Total	86.6	15 853	18 302
Age group (*)			
15-19 years	81.6	3 028	3 708
20-29 years	86.7	5 653	6 522
30-39 years	87.3	4 451	5 099
40-49 years	91.6	2 722	2 972
Education (*)			
None	76.8	4 491	5 848
Primary	90.4	5 541	6 128
Secondary	92.1	4 018	4 361
Higher	91.8	1 804	1 965
Marital status (*)			
Never married	84.2	4 669	5 547
Currently married	87.6	10 395	11 867
Formerly married	88.8	789	889
Household wealth (*)			
Poorest	88.0	2 855	3 246
Second	81.7	2 761	3 380
Middle	80.7	2 944	3 646
Fourth	90.0	3 381	3 759
Richest	91.6	3 912	4 271

(*): The differences are statistically significant at the 5% level.
(ns): The differences are not statistically significant at the 5% level.

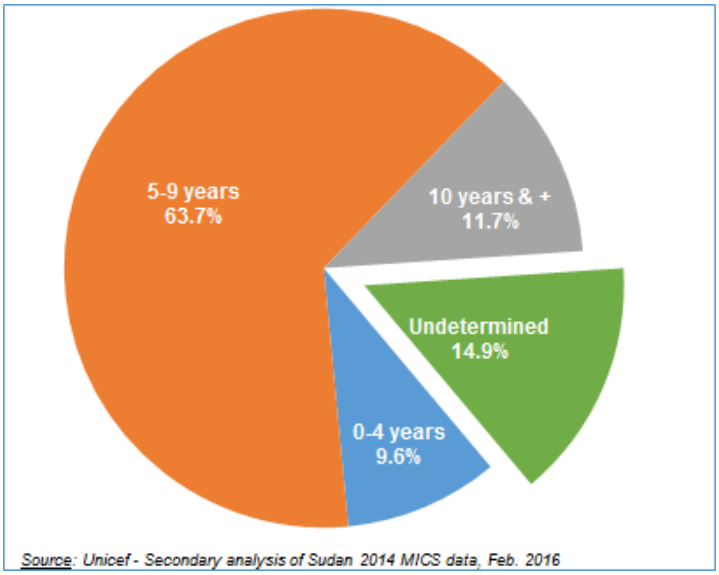
III. FGM/C TIMING AMONG WOMEN

3.1 Age at circumcision

FGM/C was generally performed on women aged 15-49 years when they were 5 to 9 years old. Nearly two thirds of them (63.7 percent) were cut at that age (Figure 14). For around 10 percent of them respectively, the event took place when they were aged 0-4 years and 10 years and plus. FGM/C was rarely performed after age 14 - only 0.4 percent of women were cut at age 15 and upward.

Age at cutting is undetermined for a non-negligible percent of circumcised women (15 percent). This is probably FGM/C performed at a very young age so that the women could not remember it.

Figure 3. Distribution (%) of the circumcised women aged 15-49 by age at cutting (Sudan 2014 MICS)



Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

In 2014, 33.0 percent of rural girls aged 0-14 years were circumcised

Due to this high percentage of missing age, the mean age at circumcision will not be reliable and will not be representative of the calendar of circumcision among all women. The percentage of undetermined cutting age varies substantially by area of residence, across states and the modalities of women's background characteristics. Moreover, the current background characteristics may be very different from the ones at the time of the cutting (for 60 percent of circumcised women, the FGM/C was performed more than 35 years ago, cf. Section 3.2 below). For these reasons, it may be misleading to analyse the variation in FGM/C timing by area of residence, state and background characteristics.

3.2 Period of the circumcision

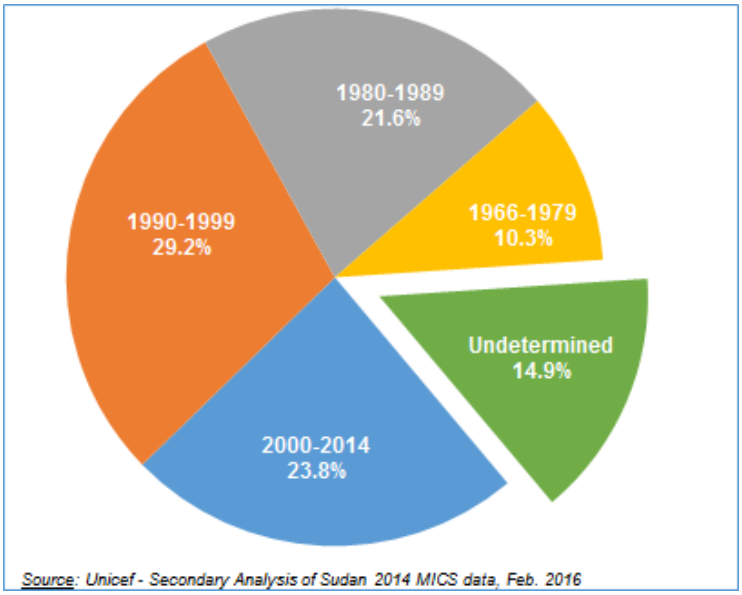
Figure 4 shows that the circumcision of women aged 15-49 years took place a long time ago for most of them.

For 6 in 10 women, their FGM/C was performed between 1966 and 1999, which is more than 15 years ago. And for 31.9 percent of them, the circumcision dated back to more than 25 years ago.

This confirms that current women's background characteristics cannot be used to explain their FGM/C status, nor some of their characteristics (age at circumcision, type of FGM/C performer, form of FGM/C received).

For a substantial proportion of women (14.9 percent), the period of the circumcision is undetermined.

Figure 4. Distribution (%) of the circumcised women aged 15-49 years by period of the circumcision (Sudan 2014 MICS)



Source: Unicef - Secondary Analysis of Sudan 2014 MICS data, Feb. 2016

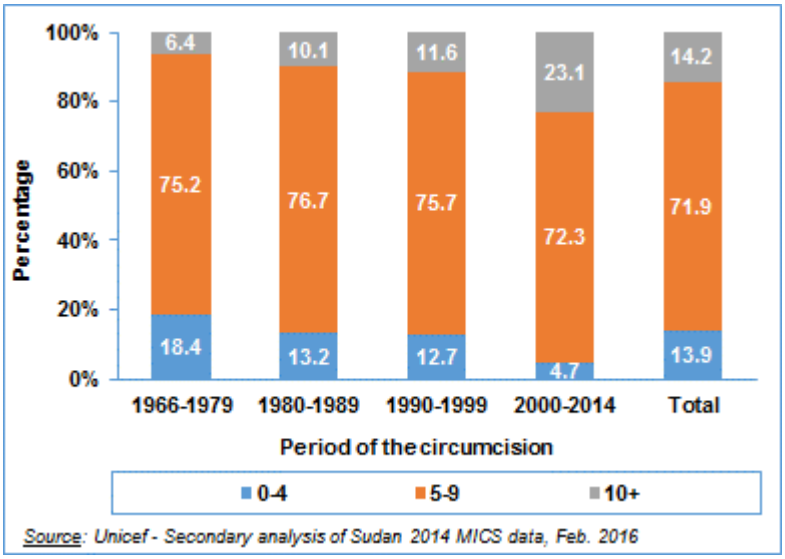
3.3 Variation in cutting age by period of circumcision

Figure 5 shows that circumcision is performed at a later age in the recent period (2000-2014) compared to the past among women aged 15-14 years. The increase in cutting age was initiated between the periods 1966-1979 and during the 1980s. The situation has since remained relatively stable between the two following decades (1980s and 1990s) before resuming its decline up to the present.

Among women before 1980, 18.4 percent were circumcised before age 5 as compared to 4.7 percent only among those cut between 2000 and 2014.

Seemingly, the percentage of women cut between ages 5 and 9 years has decreased from 75.2 percent down to 72.3 percent between the period 1966-1979 and 2000-2014. Conversely, the percentage of women circumcised at age 10 and upward regularly increases from 6.4 percent among women cut in 1966-1979 up to 23.1 percent among the most recently cut (in 2000-2014).

Figure 5. Distribution (%) of the circumcised women aged 15-49 years by age of circumcision according to the period when the circumcision was performed (Sudan 2014 MICS)



Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

IV. FORMS OF CIRCUMCISION RECEIVED BY WOMEN

During the circumcision process, the woman has either her flesh removed from the genital area (well known as either labia cutting or clitorodectomy), or her genital area nicked without removing flesh. Moreover the circumcised woman may have her genital area sewn closed (or sealed) or not[8]. This chapter examines how prevalent these different forms of FGM/C are in Sudan, and how they vary across states and by period of circumcision.

4.1 Form of circumcision and variation by area of residence and State

At the national level, 90 percent of the circumcised women have their flesh removed from the genital area, 3.6 percent have their genital area nicked without removing flesh and 77.0 percent have their genital area sewn closed/or sealed (Figure 6).

By area of residence, it shows that genital area sealing does not vary, while flesh removal is more widespread in rural areas (92.1 percent) than in urban areas (85.4 percent). The contrary is observed for the nicking of the genital area without flesh removal (7.0 percent in urban areas vs. 2.0 percent in rural areas).

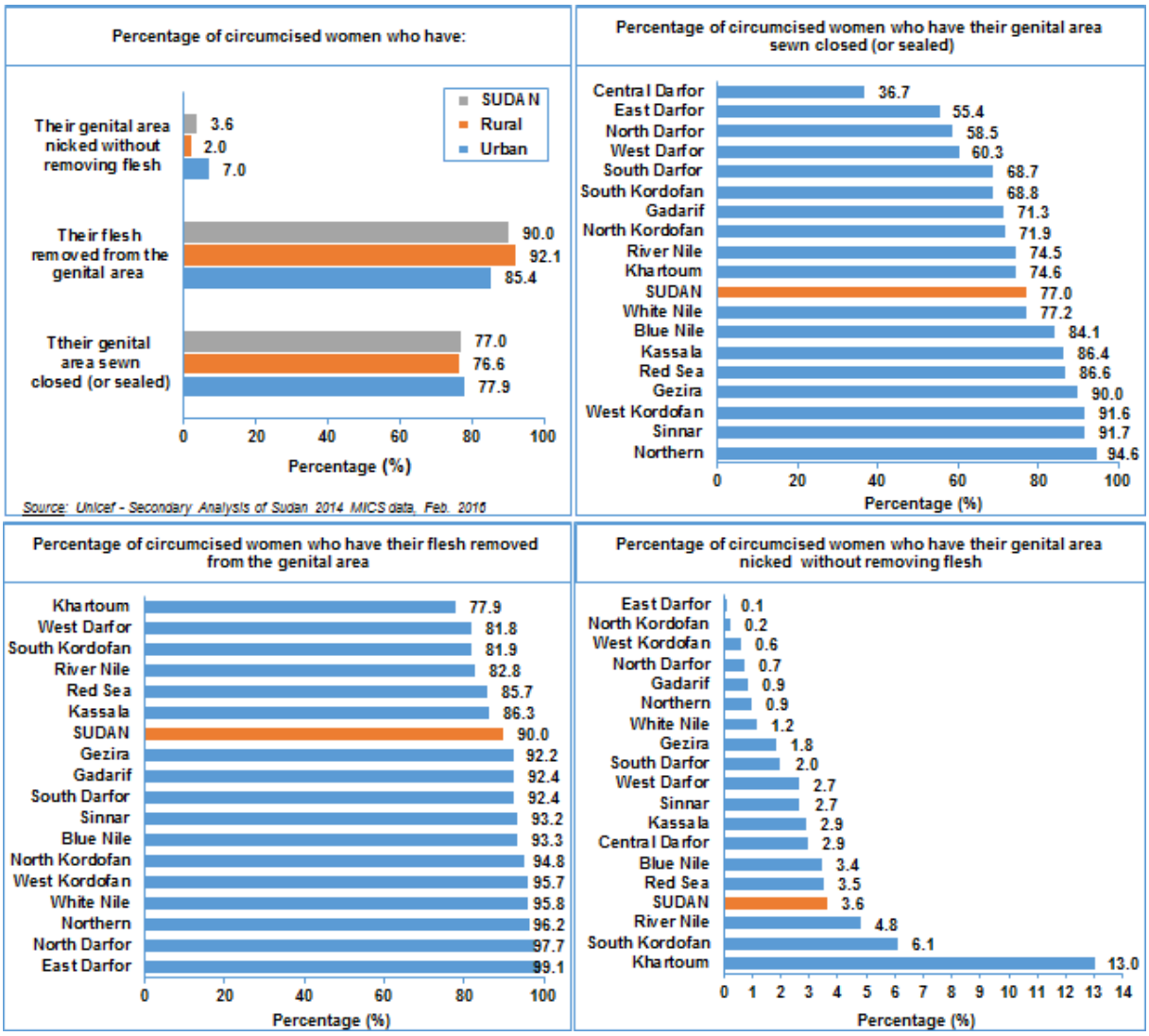
In terms of geographic variations, Figure 6 also reveals marked disparities at the state level for all three practices. The sealing of the genital area is widely practiced in Gezira, West Kordofan, Sinnar and Northern - where 90.0 percent to 94.6 percent of circumcised women have their genital area sewn closed. In contrast, this percentage is lowest in the Darfur states: 36.7 percent in Central Darfur and between 55.4 percent and 68.7 percent in the East, North, West and South Darfur. In the remaining states, the percentage varies from 68.8 percent to 86.6 percent.

Flesh removal is widely practiced in all states, with its prevalence varying from 77.9 percent in Khartoum to 99.1 percent in East Darfur. In West Darfur, South Kordofan, River Nile, Red Sea and Kassala, the prevalence varies between 81.8 percent and 86.3 percent. In the other states, it varies from 90.0 percent and 99.1 percent.

As for the nicking of the genital area without flesh removal, it is rarely practiced, except in Khartoum where 13.0 percent of the circumcised women experienced this particular practice. Elsewhere, the prevalence varies from 0.1 percent to 6.1 percent.

[8] Using these three questions, the MICS report has created a typology of FGM/C by distinguishing three **exclusive** modalities with their percentages adding up to 100%: “Had flesh removed”, “Were nicked” and “Were sewn closed”. The percentage of the MICS report and the one in the present report do not correspond for the modalities “Had flesh removed”, “Were nicked”.

Figure 6. Distribution (%) of the circumcised women aged 15-49 by form of circumcision, by area of residence and State (Sudan 2014 MICS)



4.2 Form of FGM/C received and timing of the circumcision

Figure 7 shows that closing of the genital area and flesh removal are less practiced in the recent period. The opposite is observed for the nicking of the genital area without flesh removal. For instance, 81.9 percent of women circumcised before 1980, have their genital area sewn closed compared to 72.1 percent among those circumcised between 2000 and 2014, corresponding to a decline of 11.9 percent. The decrease in flesh removal between the two groups of women is less significant (7.6 percent).

The decline in sealing of the genital area and flesh removal are more marked between the two most recent periods, suggesting that the downward trend has lately gained momentum.

Nicking of genital area without flesh removal remains marginal (between 1.9 percent and 5.5 percent according to the period) though being increasingly adopted recently.

Figure 7. Percentage of circumcised women aged 15-49 years who were sewn closed, had flesh removed, were nicked by period of circumcision (Sudan 2014 MICS)

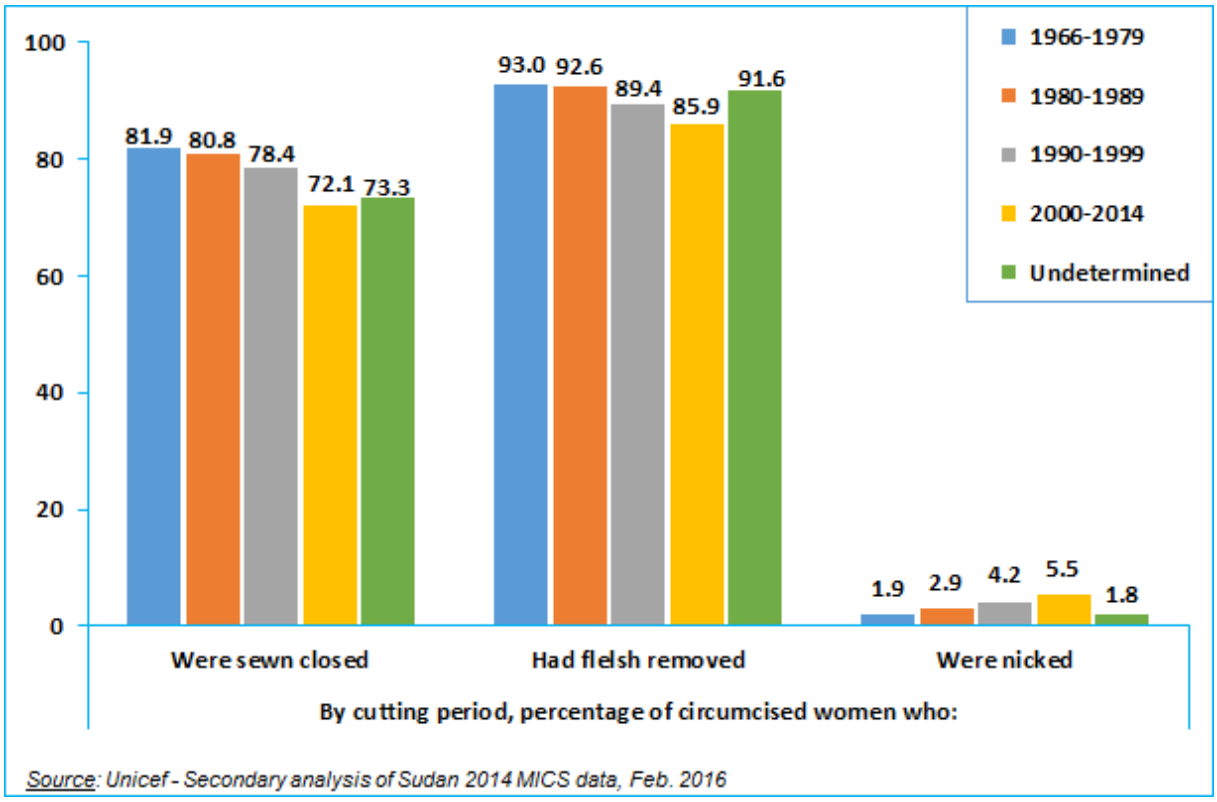
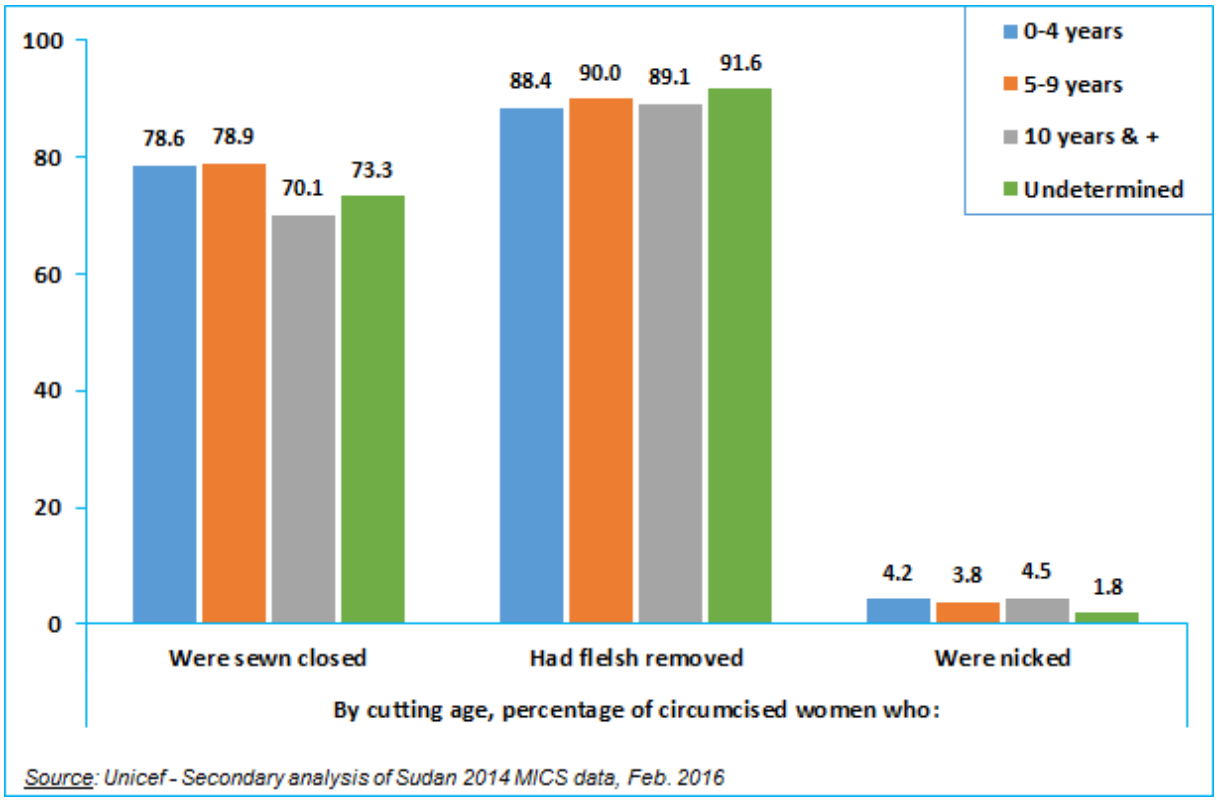


Figure 8 reveals that sealing of the genital area depends on the age at circumcision, while flesh removal is performed independently of the cutting age. Among women cut before age 10, 79 percent have their genital area sealed as compared to 60.9 percent among those circumcised at ages 15 or later, corresponding to a decrease of 22.9 percent. The percentage is 70.4 percent among women cut between ages 10 and 14.

The nicking of the genital area without flesh removal does not vary across age at cutting except for those circumcised after age 15, for whom the percentage is higher, but this stems from the fewer cases in that group.

Figure 8. Percentage of circumcised women aged 15-49 years who were sewn closed, had flesh removed, were nicked by age at circumcision (Sudan 2014 MICS)



V. TYPE OF FGM/C PERFORMERS

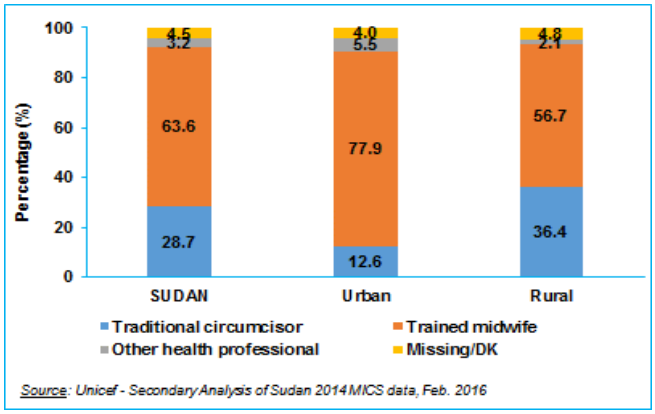
FGM/C is performed by either medical personnel or traditional circumcisers. This chapter analyses the distribution of circumcised women by the type and performer, its variation by area of residence, across states and according to the period of the circumcision.

5.1 Type of FGM/C performer and variation by area of residence and State

FGM/C is mainly performed by trained midwives (for 63.6 percent of circumcised women) followed by traditional circumcisers who performed the FGM/C on 28.7 percent of circumcised women (Figure 9). Other health professionals have performed the procedure for only 3.2 percent of the circumcised women.

This pattern varies significantly and extensively according to area of residence. In urban areas, trained midwives have circumcised 77.9 percent of women compared to 56.7 percent in rural areas.

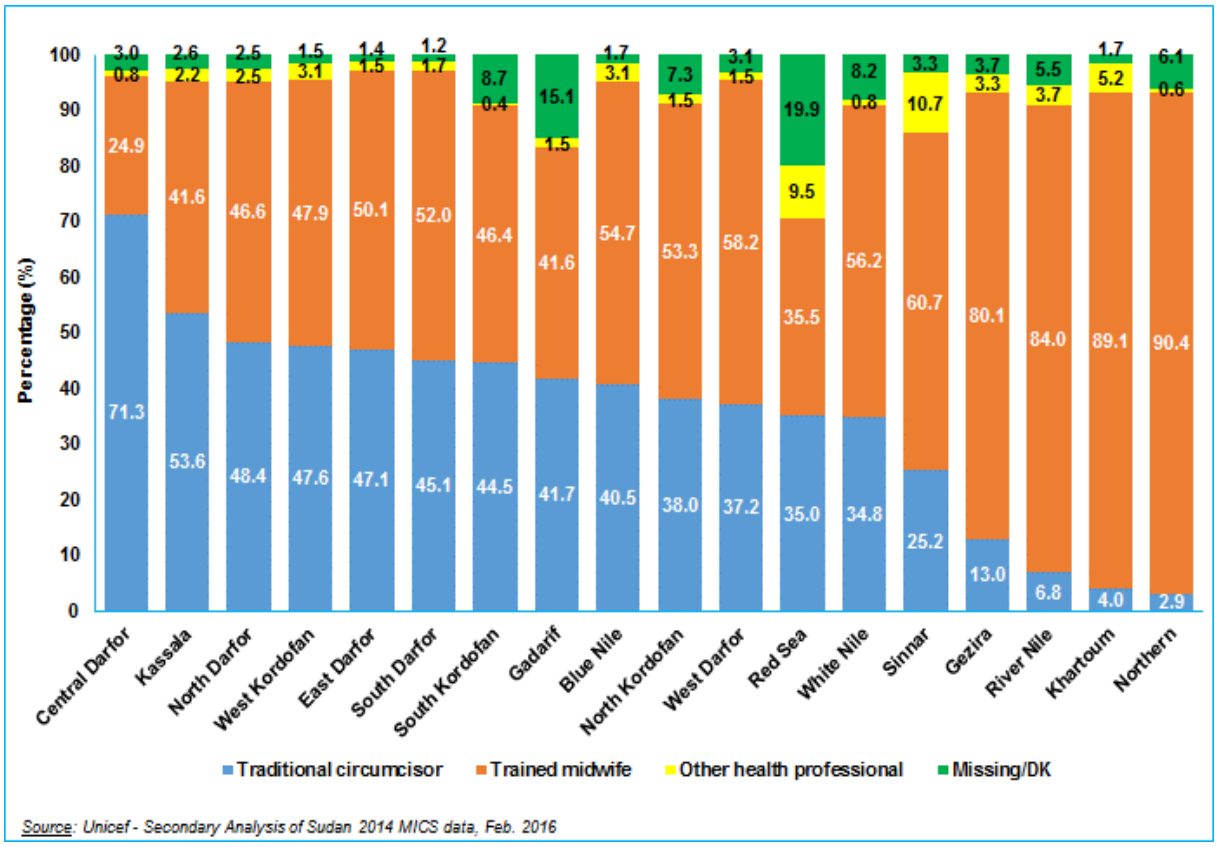
Figure 9. Distribution of circumcised women aged 15-49 by person who performed the circumcision and area of residence (Sudan 2014 MICS)



Urban/rural differences are statistically significant at the 5% level.

Figure 10 shows that the type of performers varies even more by state. Traditional circumcisers have performed the FGM/C procedure for more than half of the circumcised women in Central Darfur (71.3 percent) and Kassala (53.6 percent). By contrast, in four States, FGM/C is performed by trained midwives on more than 80 percent of women: Northern (90.4 percent), Khartoum (89.1 percent), River Nile (84.0 percent) and Gezira (80.1 percent).

Figure 10. Distribution of circumcised women aged 15-49 by person who performed the circumcision by State (Sudan 2014 MICS)



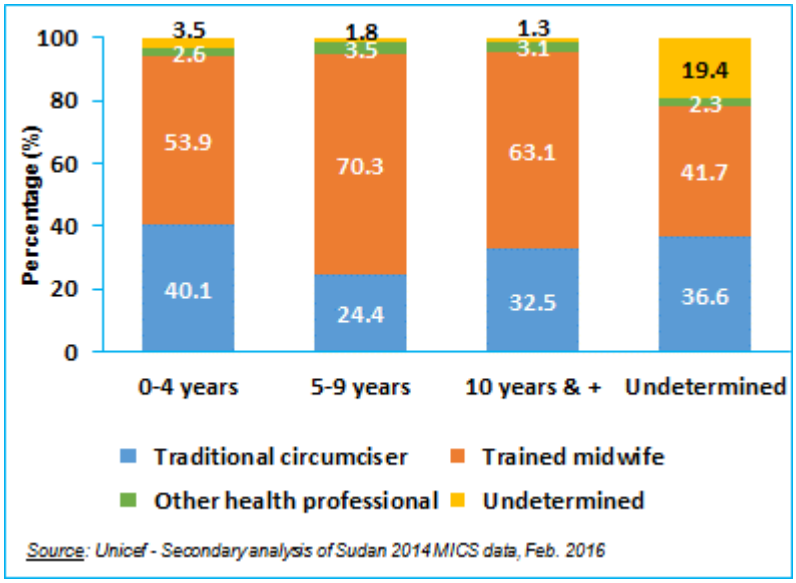
Inter-state differences are statistically significant at the 5% level.

5.2 Variation in the type of FGM/C performer by age at circumcision

Irrespective of the age at circumcision, midwives are the ones who most performed the procedure, followed by traditional circumciser and other health professionals intervening rarely (Figure 11).

Traditional circumcisers are most involved when the circumcision is to be performed on under-5 years girls (40.1 percent) than on girls aged 5-9 (24.4 percent) or above 10 (32.5 percent).

Figure 11. Distribution of circumcised women aged 15-49 by person who performed the circumcision according to the age at circumcision (Sudan 2014 MICS)



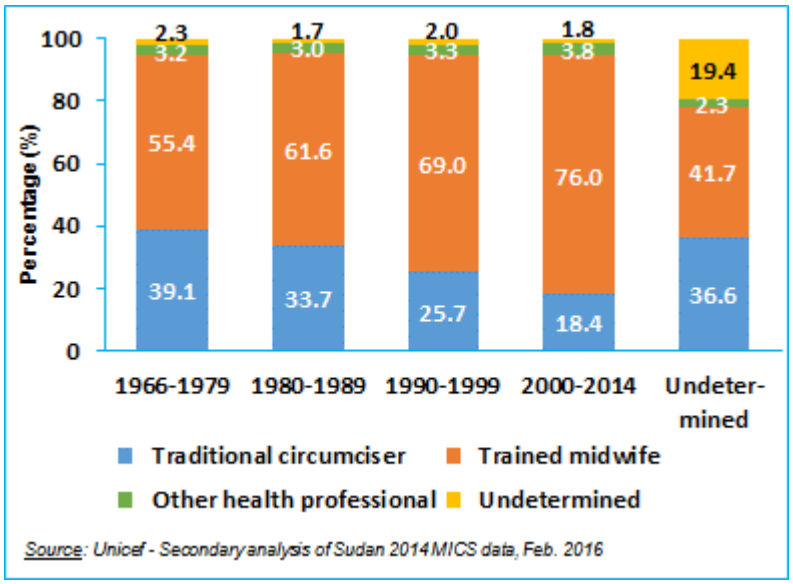
Differences in the distribution by cutting age are statistically significant at the 5% level.

5.3 Changes in the type of FGM/C performer over time

Figure 12 confirms what was already observed - that the FGM/C practice is more and more medicalized, with trained midwives taking the lead and other health professionals playing a minor role.

The percentage of women aged 15-49 years cut by trained midwives increases from 55.4 percent in the period 1966-1979 to 76.0 percent in the years 2000-2014. In the same period, the percentage of women cut by traditional circumcisers decreases from 39.1 percent down to 18.4 percent.

Figure 12. Distribution of circumcised women aged 15-49 by person who performed the circumcision according to the period of the circumcision (Sudan 2014 MICS)



Differences in the distribution by cutting period are statistically significant at the 5% level.

VI. RE-CIRCUMCISION AMONG WOMEN AGED 15-49 YEARS WHO EVER GAVE BIRTH

Re-circumcision (or Adal) is a repeated act in the lifetime of married women, after birth. The procedure consists of resewing the genital parts following childbirth. According to Nafisa Badri (2004), though re-circumcision is "*considered illegal in Sudan, the practice is still common*", but *"there is no explicit definition of re-infibulation which is still not considered by many activists as a posing problem that needs intervention." It is practiced* for five major reasons: purification, cleanliness, avoidance of vaginal discharge, beauty, and preparation of the wife as a 'new bride'.

According to (Ahmed et al., 2004) re-circumcision is also practiced for cosmetic reasons such as making the vagina tighter even without giving birth. But from a gender power perspective it is a cultural norm for retaining the virginity status understood as having a narrow opening. Making sex difficult for men is another normative expectation by both males and females, one for regaining the virginity status and the other for men to prove virility and sexual power. Failure to make intercourse with closed vagina is a disempowering manipulative process by married women (Ahmed et al., 2004).

The sections below reveal the prevalence of the phenomenon in Sudan for the first time, as well as its geographical variations. However, one of the limitations of the analysis is the fact that the questionnaire does not allow proper distinction between re-circumcision and re-infibulation (re-circumcision with tightening of vagina). Therefore, re-circumcision as analysed here can capture both, as anecdotally women who answered the question on re-circumcision may or may not know what was actually done.

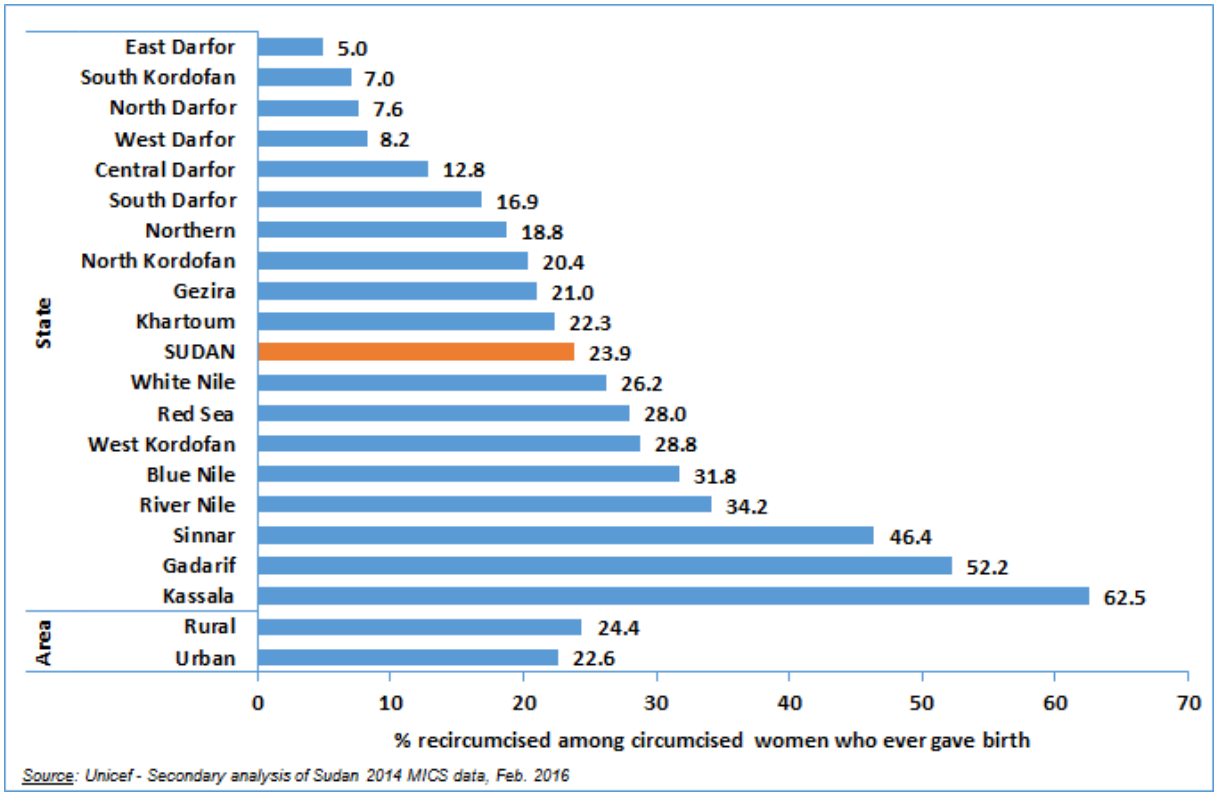
6.1 Prevalence of re-circumcision and variation by area of residence and State

Figure 13 shows that re-circumcision is not as widespread as circumcision but was performed on one in four women who ever gave birth. Figure 14 shows that this percentage is the same among women who gave birth in the last 12 months.

The difference by area of residence is not statistically significant. By contrast, disparity across states is substantial, indicating that it is a geographically concentrated practice. It is widely carried out in Kassala (62.5 percent), Gadarif (52.2 percent) and Sinnar (46.4 percent). It is less practiced in the Darfur states and in South Kordofan, where the prevalence ranges between 5.0 percent (East Darfur) and 16.9 percent (South Darfur). In the remaining states, the prevalence is comprised between 20.4 percent and 34.2 percent.

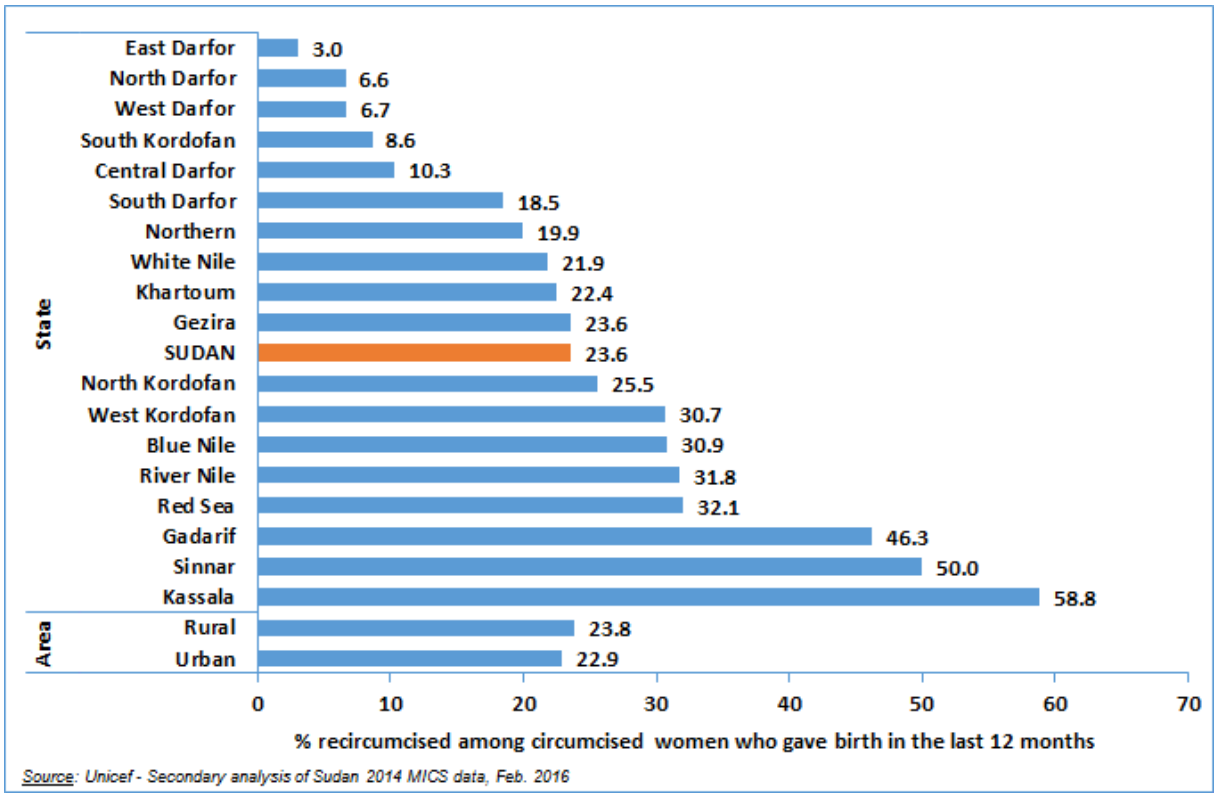
The same pattern holds true among women who delivered in the last 12 months.

Figure 13. Percentage re-circumcised among circumcised women who ever gave birth by area of residence and State (Sudan 2014 MICS)



Inter-state differences are statistically significant at the 5% level. Urban/rural differences are not.

Figure 14. Percentage re-circumcised among circumcised women who gave birth in the last 12 months by area of residence and State (Sudan 2014 MICS)



Inter-state differences are statistically significant at the 5% level. Urban/rural differences are not.

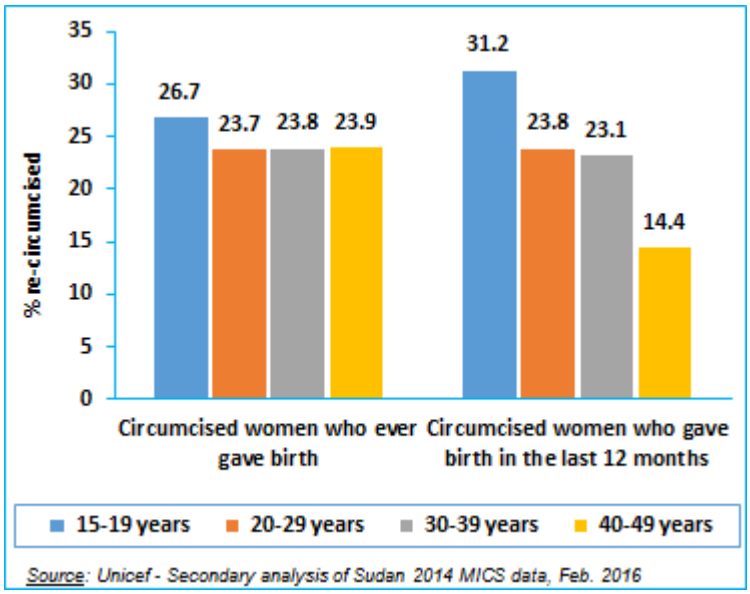
6.2 Variation in the prevalence of re-circumcision by current age

The prevalence of re-circumcision does not differ significantly among women who ever gave birth, but it does among women who gave birth in the last 12 months (Figure 15).

Among women who gave birth in the last 12 months, prevalence of re-circumcision is twice higher among the teenagers (15-19 years) than among the 40-49-year olds (31.2 percent vs. 14.4 percent). The prevalence is stable between 23 percent and 24 percent among the 20 to 39-year olds.

As argued by (Ahmed et al., 2004), from a gender power perspective, re-circumcision is a cultural norm for retaining the virginity status understood as having a narrow opening. That is why it is seen more among younger married females than older ones, who are still in the transition to accept loss of virginity.

Figure 15. Re-circumcision prevalence among circumcised women aged 15-49 years who ever gave birth and among those who gave birth in the last 12 months by age group (Sudan 2014 MICS)



Differences in re-circumcision prevalence are statistically significant at the 5% level among circumcised women who gave birth in the last 12 months, but not among those who ever gave birth.

6.3 Variation in the prevalence of re-circumcision by cutting age

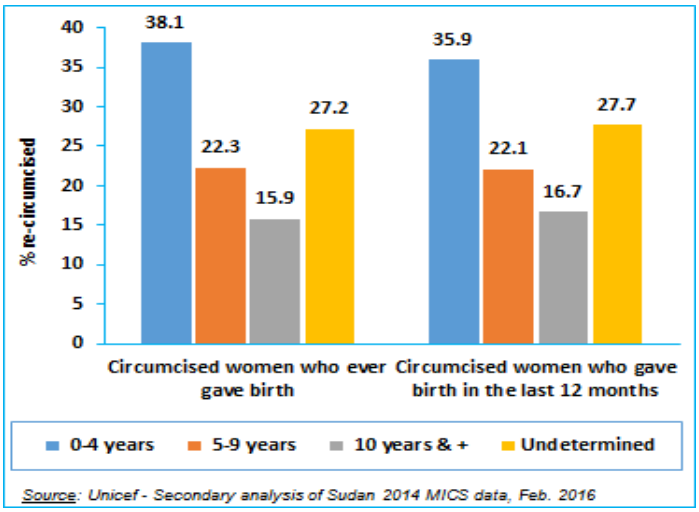
Re-circumcision is significantly more common among women who were circumcised at a very early age (before age 5) than at an older age. This pattern is observed both among women who ever gave birth and those who gave birth in the last 12 months.

For instance, among women who ever gave birth, the prevalence is 38.1 percent as compared to 15.9 percent among women circumcised at age 10 or later, and 22.3 percent among women cut between 5 and 9 years of age.

This relationship may reflect more complications at delivery, experienced by women cut at an early age that requires correction of the FGM/C after the birth.

It may also stem from the fact that older women are over-represented among women circumcised at a younger age and, as they are older, they were exposed longer to the risk of being re-circumcised, thus increasing the prevalence among women cut at an early age.

Figure 16. Re-circumcision prevalence among circumcised women aged 15-49 years who ever gave birth and among those who gave birth in the last 12 months by age group (Sudan 2014 MICS)



Differences in re-circumcision prevalence are statistically significant at the 5% level among both groups of women.

6.4 Variation in the prevalence of re-circumcision by cutting period

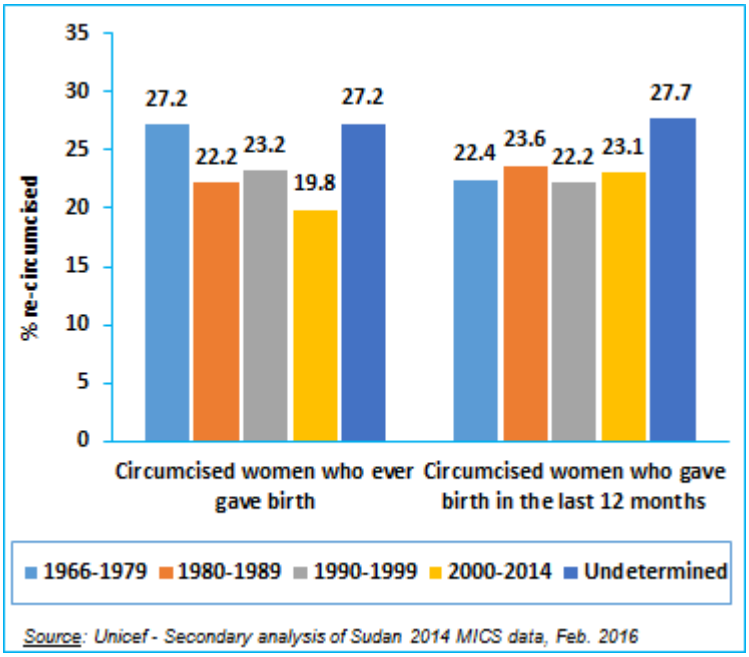
Among women who ever gave birth, re-circumcision is significantly more practiced on those who were circumcised earlier than on those circumcised recently.

The prevalence of re-circumcision varies from 27.2 percent among women circumcised in the period 1966-1979 to 19.8 percent among women cut between 2000 and 2014.

This relationship reflects the fact that women circumcised recently are younger and are exposed to the repeated risk of re-circumcision during a shorter period of time, resulting in a lower prevalence.

Such a difference does not exist among women who delivered in the last 12 months.

Figure 17. Re-circumcision prevalence among circumcised women aged 15-49 years who ever gave birth and among those who gave birth in the last 12 months by age group (Sudan 2014 MICS)



Differences in re-circumcision prevalence are statistically significant at the 5% level among circumcised women who ever gave birth, but not among those who gave birth in the last 12 months.

VII. WOMEN'S ATTITUDE TOWARDS FGM/C: CURRENT SITUATION AND CHANGES OVER TIME

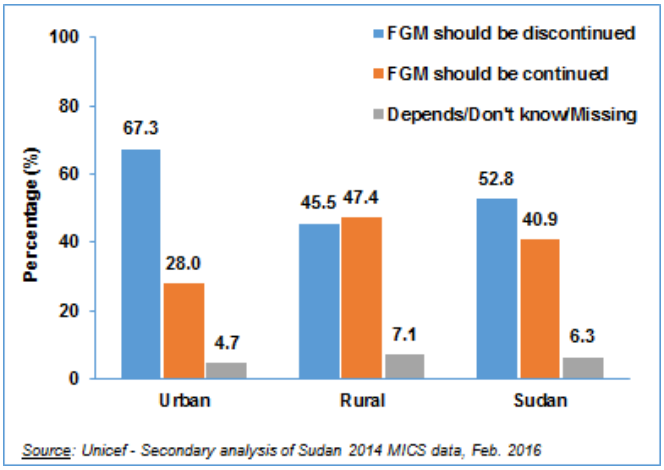
Changing women's outlook towards FGM/C is key to achieving the goal of freeing Sudan from the practice. Moreover, attitudes are more volatile than practice and changes may be detected in attitude earlier and easier than in practice. Finally, given the objective of the *Saleema* initiative to specifically target approaches towards FGM/C, it is important to track any changes in women's attitude as part of the assessment of the interventions aimed at ending FGM/C in Sudan.

7.1 Women's attitudes towards FGM/C and variation by area of residence and State

Women who ever heard about FGM/C were asked if they think that the practice should be continued or discontinued. Figure 18 shows that just over half of women (52.8 percent) think FGM/C should be abandoned and up to two out of five women (40.9 percent) favour its continuation. The remaining 6.2 percent are not sure.

FGM/C abandonment is widely favoured in urban areas where two thirds of women (67.3 percent) think it should be discontinued. In contrast, less than half of the rural women (45.5 percent) think so.

Figure 18. Percent distribution of women aged 15-49 who ever heard about circumcision by their opinion on the continuation of the FGM/C practice (Sudan 2014 MICS)

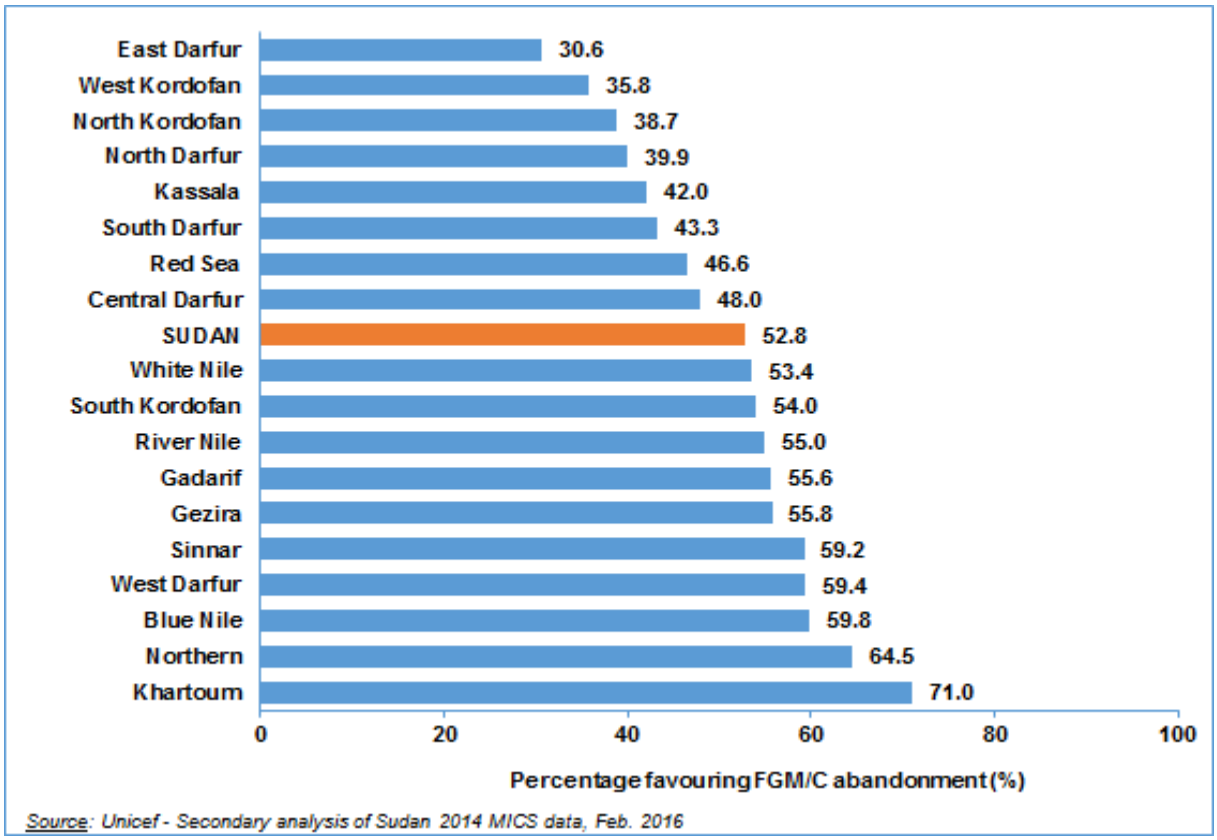


Urban/Rural differences are statistically significant at the 5% level.

The percentage of women favouring the abandonment of FGM/C practice varies widely across the states, from a minimum of 30.6 percent in East Darfur to a maximum of 71.0 percent in Khartoum, as shown by Figure 19. Less than half of the population in the following states are pro-abandonment of the FGM/C practice: The East, North, South and Central Darfur, the West and North Kordofan and the eastern states of Kassala and Red Sea. Khartoum stands out with 71.0 percent of women who believe FGM/C should be discontinued. In the 9 remaining states, more than half of the women (between 53.4 percent and 64.5 percent) agree.

Many factors may explain the low abandonment preference in the Darfur, Kordofan and Eastern states listed above. For instance, West Kordofan has more nomadic groups adhering to FGM/C, and programming to reach out to them was meagre. One of the explanations to the eastern belt is the existence of the Beja groups who are known for conservatism and strong adherence to the FGM/C practice. The percentage of women favouring abandonment of FGM/C is the lowest in East Darfur, a state that has also one of the highest FGM/C prevalence (97.3 percent). Moreover, ethnic composition is another possible factor associated with low abandonment preference. East Darfur has more Fur, who were not used to cutting. Their closeness to similar border ethnic groups who are affected by war, conflict and migration, meant cutting girls became a newly acquired norm to protect them from rape and to preserve honour of ethnic groups by avoiding defamation if not cut.

Figure 19. Percentage of women aged 15-49 who ever heard about FGM/C who think that FGM/C practice should be discontinued by State (Sudan 2014 MICS)

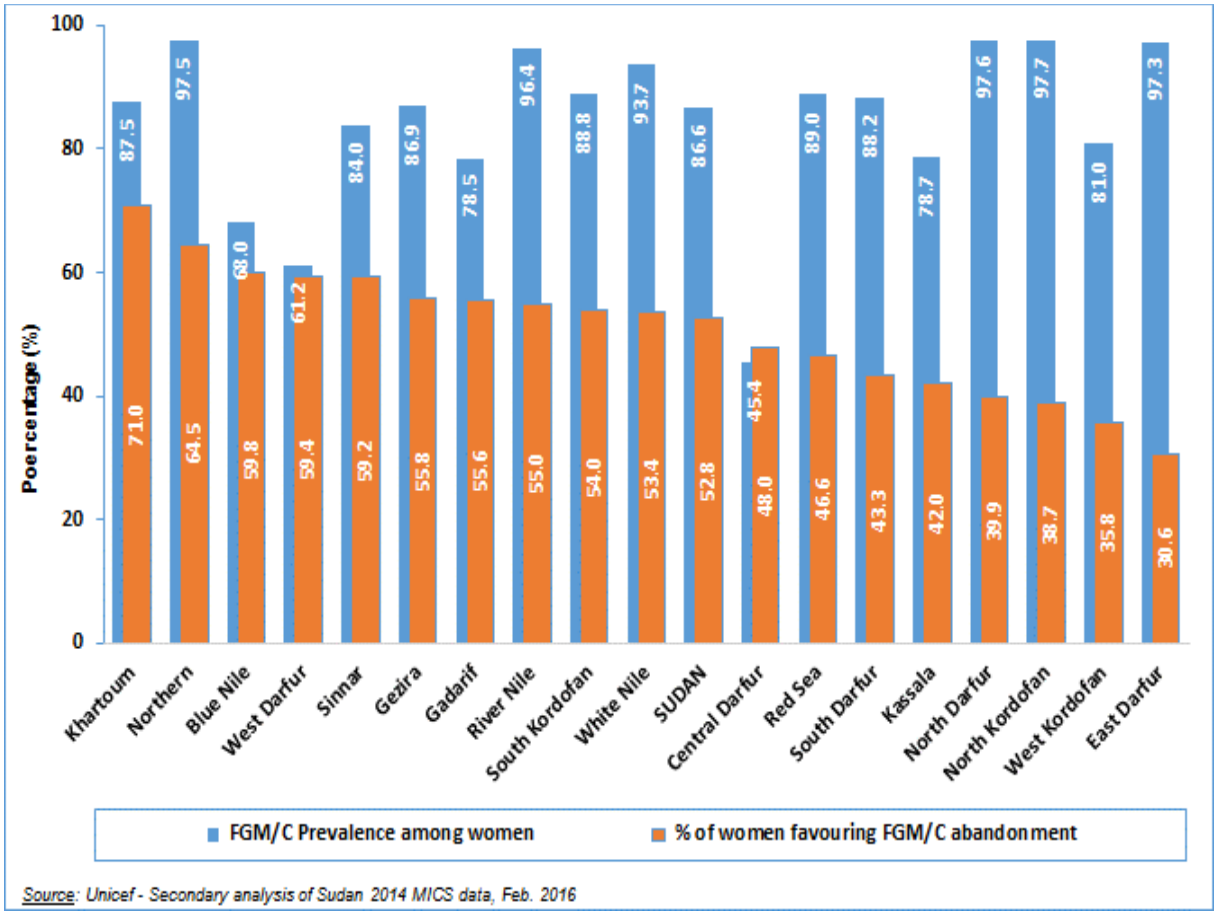


Inter-state differences are statistically significant at the 5% level.

The comparison between FGM/C predominance and the percentage of women favouring its abandonment reveals that there is no direct link between the two (Figure 20). However, in all states the prevalence is substantially higher than the percentage of women thinking that FGM/C should be abandoned, except in Central Darfur (where the prevalence is lower), West Darfur, Blue Nile and to some extent Khartoum (where the difference between the two percentages is narrow).

The gap between practice and beliefs is wider in the four States that also have the lowest percentage of women pro-FGM/C abandonment: East and North Darfur, North and West Kordofan. In these states, FGM/C is 2.4 to 3.2 times higher than the percentage of women favouring the abandonment of the practice.

Figure 20. Comparison between FGM/C prevalence and the percentage of women aged 15-49 who ever heard about FGM/C who think that FGM/C practice should be discontinued by State (Sudan 2014 MICS)



Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

7.2 Variation in women's attitude towards FGM/C by their background characteristics

Women's attitudes towards FGM/C practice vary according to education, marital status and household wealth, and slightly by age, though statistically significant (Table 5). Socioeconomic variables (education and wealth) have the strongest association with attitude towards FGM/C practice. The higher the level of education, the higher the percentage against FGM/C. For instance, 79.1 percent of women with the highest level of education and 69.0 percent of women with secondary education are for the abandonment of FGM/C, compared to less than half of women with no formal (37.3 percent) and women with just a primary level of education (46.3 percent). Seemingly, attitude towards FGM/C is positively associated with wealth: 71.6 percent of women living in the wealthiest households and 60.3 percent of those living in the second wealthiest household are in favour of FGM/C abandonment as compared to 32.3 percent and 38.8 percent of women living in households belonging to the two poorest quintiles.

Current marital status also plays a role in shifting attitude away from FGM/C. Never and formerly-married women are more likely to be against FGM/C practice than women currently married. Less than half of married women (48.3 percent) think that FGM/C should be discontinued, compared to 61.7 percent of the single and 56.3 percent of those formerly married.

Table 5. Percent distribution of women aged 15-49 years who ever heard about FGM/C by their opinion about the continuation or abandonment of FGM/C practice by some of their background characteristics (Sudan 2014 MICS)

Background characteristics	Should FGM/C practice be continued or discontinued?				Should FGM/C practice be continued or discontinued
	Continued	Discontinued	Depends/ Don't know/ Missing	Total	
Total	40.9	52.8	6.3	100.0	17 620
Age (*)					
15-19	38.9	53.3	7.8	100.0	3 571
20-29	42.1	52.0	5.9	100.0	6 284
30-39	41.7	52.3	6.0	100.0	4 886
40-49	39.7	54.5	5.8	100.0	2 880
Education (*)					
None	54.9	37.3	7.7	100.0	5 399
Primary	47.3	46.3	6.4	100.0	5 939
Secondary	25.7	69.0	5.3	100.0	4 328
Higher	16.9	79.1	4.0	100.0	1 954
Current marital status (*)					
Never married	31.5	61.7	6.8	100.0	5 359
Currently married	45.7	48.3	6.0	100.0	11 399
Formerly married	37.1	56.3	6.6	100.0	862
Wealth index quintile (*)					
Poorest	61.9	32.3	5.9	100.0	3 112
Second	54.9	38.8	6.3	100.0	3 130
Middle	40.6	52.8	6.6	100.0	3 473
Fourth	32.0	60.3	7.7	100.0	3 678
Richest	23.3	71.6	5.1	100.0	4 226

(*): Differences are statistically significant at the 5% level.

7.3 Factors associated with favourable attitudes towards FGM/C abandonment

One can reasonably assume that some of the women's background characteristics and their FGM/C status are anterior to their current attitude towards the FGM/C practice. We can make the assumption then that those factors contribute to explain women's favouring or not of FGM/C. In order to ascertain the net impact of these characteristics on women's attitude towards the FGM/C practice, we ran a binomial logistic regression to predict the probability of a woman favouring the abandonment of FGM/C. This is based on the state where she lives, her area of residence, age group, education, marital status, household wealth, FGM/C status and her use of the word *Saleema*. The method of regression used is the Forward LR that only retains independent variables with a significant contribution to the model. Table 7 summarizes the findings of the regression.

Table 6 shows that the model is statistically significant (p = 0.0000). It explains 29.2 percent (Nagelkerke R^2) of the variance in women's attitude towards the FGM/C practice and correctly classifies 71.0 percent of women. It also reveals that all independent variables included in the model have a significant (at the 5 percent level) impact on attitude towards FGM/C.

Among all predictive variables considered here, women's FGM/C status and the use of the *Saleema* word (proxy of being exposed to the *Saleema* C4D initiative) have the strongest association with their attitude towards the FGM/C practice. They are followed by education. Although important, wealth, age, state and marital status are less discriminant.

Uncircumcised women are 7 times more likely to think that the FGM/C practice should be discontinued compared to circumcised women. Women using the *Saleema* word to name uncircumcised girls are 6 times more likely to reject FGM/C than those using other expressions. As for education, it is significantly and positively associated with the rejection of the FGM/C procedures. Women with the highest level of education are 3.8 times more likely to favour the abandonment of FGM/C than women with no formal education. Those who have a secondary level of education are 3 times more likely to reject the practice than uneducated women. The household wealth is similarly associated with attitude towards FGM/C. The wealthier the household where they live, the more likely women are to think the FGM/C should be discontinued. For instance, women living in households belonging to the two richest quintiles are twice more likely to reject FGM/C than those living in the poorest households.

Age is also associated with an increased likelihood of rejecting FGM/C, though one might expect young women to have a more negative opinion about that old tradition. Being single and residing in urban areas respectively increase the likelihood of rejecting FGM/C significantly but slightly.

As per accordance with state, it is also associated with the likelihood of rejecting the FGM/C practice. Women living in only 4 states (South Kordofan, Sinnar, Gadarif and West Darfur) have significantly different attitudes towards the FGM/C practice than those of the Northern women (the reference modality). For example in South Kordofan, women are 50 percent more likely to favour the abandonment of the practice than the Northern women. In comparison, in River Nile, Red Sea and Kassala, women are 31 percent to 41 percent less likely to believe in the discontinuation of FGM/C as

opposed to their Northern counterparts. There is no clear indication from the regression findings that women are significantly more pro-FGM/C abandonment in these states than elsewhere[9].

As per accordance with state, it is also associated with the likelihood of rejecting the FGM/C practice

[9] The variable that splits the States into two groups according to whether or not they receive enhanced interventions could not be introduced in the regression model along with the variable States due to the fact the first one is just a combination of the modalities of the latter. Such a situation would violate one of the assumptions to be met to run a valid logistic regression.

Table 6. Summary of the findings of the logistic regression of women's likelihood of thinking that the FGM/C practice should be discontinued (Sudan 2014 MICS)

Variables and modalities	B	Sig.	Exp(B)	95% C.I. for Exp(B)	
				Lower	Upper
State		0.000			
Northern (Reference)			1.000		
River Nile	-0.458	0.001	0.633	0.486	0.824
Red Sea	-0.372	0.017	0.689	0.507	0.937
Kassala	-0.529	0.000	0.589	0.444	0.782
Gadarif	0.202	0.141	1.224	0.935	1.602
Khartoum	0.111	0.349	1.117	0.886	1.408
Gezira	-0.201	0.073	0.818	0.656	1.019
White Nile	0.030	0.821	1.030	0.795	1.335
Sinnar	0.266	0.053	1.305	0.996	1.709
Blue Nile	-0.150	0.297	0.860	0.649	1.141
North Kordofan	-0.173	0.191	0.841	0.648	1.091
South Kordofan	0.403	0.008	1.497	1.112	2.015
West Kordofan	-0.115	0.419	0.891	0.674	1.178
North Darfur	0.088	0.513	1.091	0.840	1.419
West Darfur	0.166	0.282	1.180	0.873	1.597
South Darfur	-0.035	0.793	0.966	0.743	1.255
Central Darfur	-0.107	0.604	0.899	0.600	1.346
East Darfur	-0.265	0.089	0.767	0.565	1.041
Area of residence		0.003			
Urban	0.145	0.003	1.156	1.052	1.270
Rural (Reference)	0.000		1.000		
Age group (Reference)		0.000			
15-19 years	0.000		1.000		
20-29 years	0.291	0.000	1.338	1.202	1.491
30-39 years	0.509	0.000	1.664	1.475	1.878
40-49 years	0.687	0.000	1.987	1.736	2.275
Education		0.000			
None	0.000		1.000		
Primary	0.437	0.000	1.549	1.413	1.698
Secondary	1.096	0.000	2.992	2.673	3.349
Higher	1.343	0.000	3.830	3.272	4.485
Marital status		0.000			
Never married	0.000		1.000		
Currently married	-0.327	0.000	0.721	0.657	0.793
Formerly married	-0.009	0.917	0.991	0.832	1.180
Household wealth quintile		0.000			
Poorest	0.000		1.000		
Second	0.108	0.079	1.115	0.988	1.258
Middle	0.453	0.000	1.574	1.371	1.806
Fourth	0.687	0.000	1.987	1.694	2.331
Richest	0.688	0.000	1.989	1.664	2.379
FGM/C Status		0.000			
Uncircumcised	1.948	0.000	7.017	6.071	8.110
Circumcised (Reference)	0.000		1.000		
Uses the Saleema Word		0.000			
No (Reference)	0.000		1.000		
Yes	1.786	0.000	5.965	5.205	6.836
Constant	0.749	0.000	2.115		

PART III.

FGM/C AMONG GIRLS AGED 0-14 YEARS

INTRODUCTION

Three aspects of the FGM/C among girls are examined in this part of the report: Prevalence among girls, the calendar of the circumcision and the intergenerational transmission of the FGM/C practice from mothers to daughters. For each aspect, we will conduct bivariate and multivariate analysis to identify its associated factors.

I. FGM/C PREVALENCE AMONG GIRLS AGED 0-14 YEARS

This chapter computes the predominance of FGM/C among girls using a direct and a more refined method to take into account the fact that many girls aged 0-14 years reported as not circumcised at the time of the survey, will be cut as they grow up. Variation of both prevalence rates by area of residence and states are then analysed.

1.1 Observed and adjusted FGM/C prevalence among girls aged 0-14 years

The magnitude of FGM/C among girls is measured here through two approaches - directly and indirectly. The direct approach consists of computing the percentage of girls aged 0-14 years who are already circumcised at the time of the survey (observed prevalence). This percentage underestimates what would be the final FGM/C rate among the 0-14 year olds when they turn 14 years old. In fact, many of the girls reported as not circumcised at the time of the survey will actually be cut sometime before they reach 15 years of age.

The indirect approach uses techniques of survival analysis (Kaplan-Meier estimates) to compute an adjusted prevalence that corrects the bias in the observed prevalence, by taking into account the censorship effect due to not all girls having yet completed their period of exposure to the risk of being circumcised. The adjusted prevalence is the overall probability for a girl to be circumcised between age 0 and 14 years, if the risk of being cut at each age is the same as observed in 2014 among the 0-14 years old by the MICS survey. In other words, the adjusted prevalence is the proportion of circumcised girls among a hypothetical cohort of girls when they all turn 14 years old, if they were exposed at each age between 0 and 14 to the same risks of being cut as observed by the 2014 MICS.

The adjusted prevalence is obtained from the life table generated by the Kaplan-Meier estimates and presented in Table 7. It contains the Stata output of the STS procedure that gives, for each age, the probability of a girl being cut between 0 and that age. For age 14, this is equivalent to the final prevalence of FGM/C among girls aged 0-14 years.

The adjustment is based on two assumptions: (i) the proportion of girls circumcised after age 14 years is negligible and (ii) that proportion does not vary significantly over time. These assumptions make sense since only 0.5 percent of women aged 15-49 years were circumcised after age 14, and this does not vary considerably by age group.

In 2014, 31.5 percent of all girls aged 0 to 14 years in Sudan, had already undergone a form of FGM/C. This is the observed prevalence.

Table 7 shows that the **FGM/C prevalence among girls currently aged 0-14 years would be 66.3 percent after they all turned 14 years old** (adjusted prevalence). That is, after they all completed their exposure to the risk of undergoing FGM/C during that period. This is far more than the 31.5 percent obtained by directly taking the proportion circumcised among girls aged 0-14 years at the time of the survey.

The Table also reveals that by age 9 years, more than half of the girls would be circumcised (54.2 percent).

Table 7. Kaplan-Meier life table for the risk of undergoing FGM/C among girls aged 0-14 years (Sudan MICS 2014)

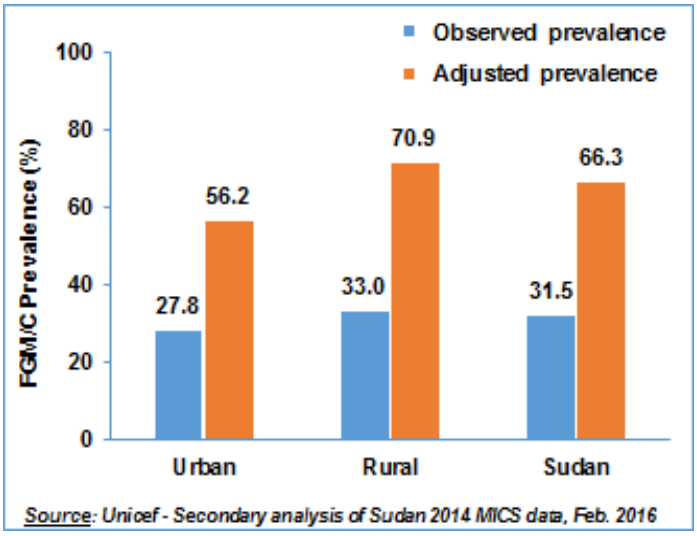
```
        failure _d:  d_fgms==1
  analysis time _t:  timv
             weight:  [pweight=wmweight]
------------------------------------------------
           Beg.            Net     Failure
  Time     Total    Fail    Lost    Function
------------------------------------------------
     1     16113   193.7    1239      0.0120
     2  14680.8    373.4    1126      0.0371
     3  13181.6    398.1    1423      0.0662
     4  11360.4    528.8    1079      0.1097
     5  9752.99      893    1292      0.1912
     6  7568.25    902.3    1023      0.2876
     7  5643.26    827.9   956.3      0.3921
     8  3859.01    595.5   691.7      0.4859
     9  2571.73    279.3   464.8      0.5418
    10  1827.65    259.2   485.3      0.6068
    11  1083.16    52.33     292      0.6258
    12  738.881    32.77   284.4      0.6424
    13  421.682    17.77   186.6      0.6574
    14   217.28    3.655   213.6      0.6632
------------------------------------------------
```

1.2 Variation in FGM/C prevalence among girls by area of residence

In Sudan, circumcision of girls is significantly more practiced in rural areas than in urban areas, reference made either to observed or adjusted prevalence among girls aged 0-14 years (Figure 21). In 2014, 33.0 percent of rural girls aged 0-14 years were circumcised compared to 27.8 percent of urban girls (observed prevalence). By the time they all reach age 14 years, 70.9 percent of rural girls will be circumcised, compared to 56.2 percent in urban areas (adjusted prevalence).

Therefore, rural girls are 20.7 percent more likely to be circumcised than girls residing in urban areas.

Figure 21. Observed and adjusted FGM/C prevalence using Kaplan-Meier estimates among girls aged 0-14 years by area of residence (Sudan 2014 MICS)



Urban/Rural differences are statistically significant at the 5% level.

1.3 Variation in FGM/C prevalence among girls by State

Girls' risk of undergoing FGM/C varies substantially across states, either measured directly or after adjustment (Figure 22). The adjusted prevalence varies considerably from a minimum of 27.8 percent in West Darfur to a maximum of 83.4 percent in White Nile.

- The highest risk is recorded in 5 States where the adjusted prevalence reaches 80 percent: White Nile, North Kordofan, Northern, North Darfur and River Nile.
- In 5 other States, namely Kassala, Gezira, East Darfur, West Kordofan and Red Sea, the risk for girls to be cut before age 15 is higher than at the national level, varying from 67.3 percent to 73.9 percent.
- The risk is minimal in West Darfur (27.8 percent) and in Central Darfur (32.8 percent).
- In the remaining 6 states, the prevalence is high, though lower than the national rate, varying from 52.8 percent to 63.1 percent.

The observed prevalence also differs substantially by state, from 12.1 percent in West Darfur to 55.6 percent in Red Sea. The general pattern that emerges from the observed level by state is that circumcision of girls is more widespread in the north-eastern states than those in the south-west (Map 2 below). More specifically, the states can be grouped into 4 categories based on the percentage of girls circumcised:

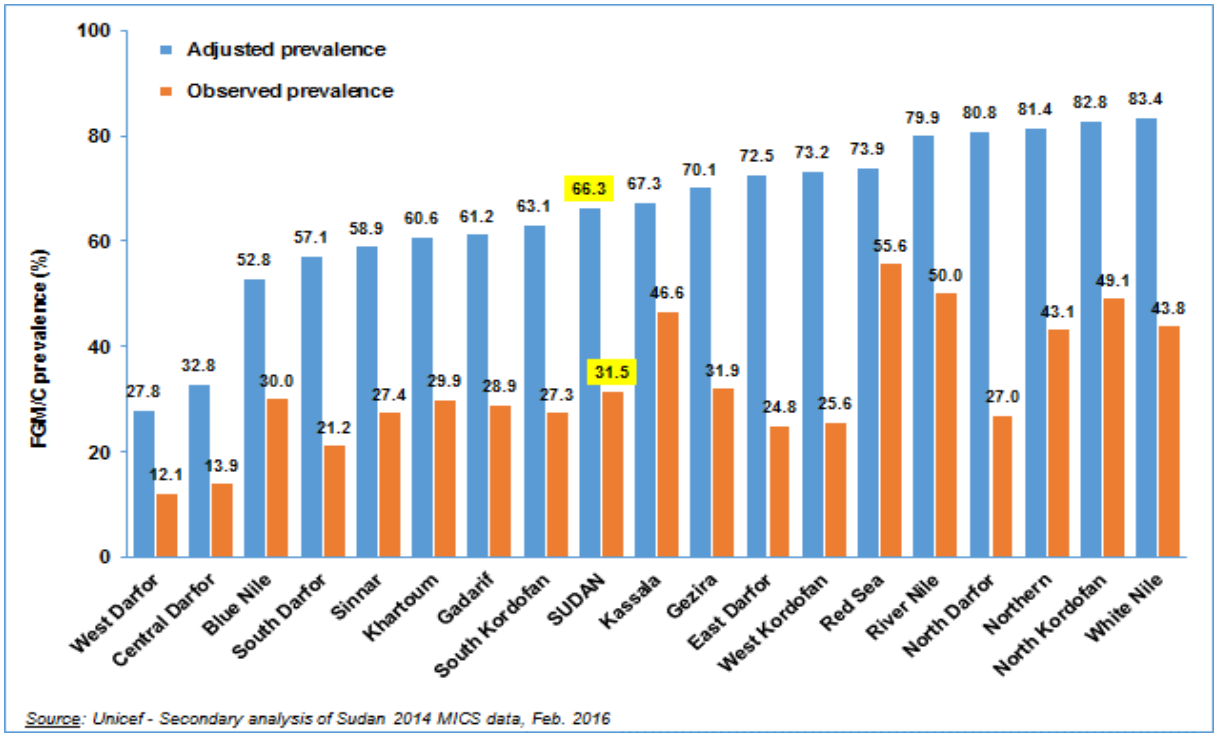
- Red Sea, with the highest rate with more than half of girls (55.6 percent) already circumcised
- A group of 5 States with 43 percent to 50 percent of their girls circumcised (River Nile, North Kordofan, Kassala, White Nile, Northern)
- Ten states with intermediate prevalence, comprised between 21 percent and 40 percent
- Two states with relatively low prevalence: West Darfur (12.1 percent) and Central Darfur (13.9 percent).

This pattern is quite different from the one that emerges from the adjusted prevalence, reflecting differences in the timing of circumcision across states. Indeed, an observed prevalence substantially lower than the adjusted one is an indication that many uncut girls at the time of the survey will be circumcised later before they reach age 15 years, reflecting a later calendar of circumcision in the state. This is, for example, the case of North Darfur, East Darfur and West Kordofan. Conversely, a narrow gap between the observed and the adjusted prevalence for a given state means that circumcision of girls is generally performed early in life. This is the case for instance for Red Sea and Kassala. Chapter VII deals more specifically with the calendar of circumcision.

Differences in FGM/C prevalence among girls across states are partly explained by ethnicity and population movements, as similar to that among women. For instance, states mainly populated by ethnic groups that do not practice FGM/C have the lowest prevalence (e.g. West Darfur and Central Darfur), while states where all of their ethnic groups practice FGM/C have the highest prevalence (e.g. Red Sea, River Nile, North Kordofan, Kassala, White Nile and Northern).

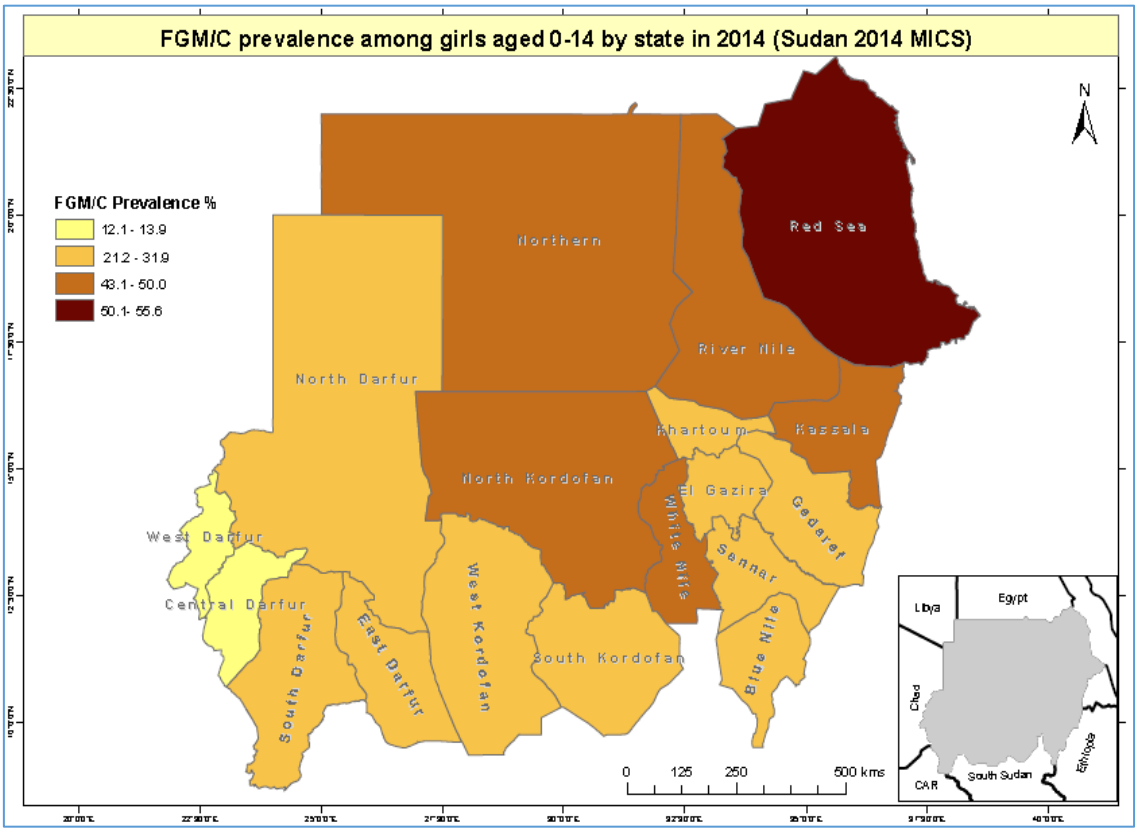
However, other factors are to be considered in explaining state variation in FGM/C presence among girls, including in mother's characteristics by state and variation in intensity of the anti-FGM/C campaigns in the states, and so forth. It is noticeable that 9 out of the 11 states with the highest observed prevalence are also the 9 States where enhanced anti-FGM/C interventions are implemented: Red Sea, River Nile, North Kordofan, Kassala, Northern, Gezira, Gadarif, Khartoum and Sinnar. Rather than implying poor performance of these interventions in preserving girls from circumcision, this association may be the result of the interventions targeting states where girls are most at risk.

Figure 22. Observed and adjusted FGM/C prevalence among girls aged 0-14 by State (Sudan 2014 MICS)



Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

Map 2. FGM/C prevalence in 2014 among girls aged 0-14 years by State (Sudan 2014 MICS)



II. TIMING/CALENDAR OF CIRCUMCISION AMONG GIRLS

The calendar of circumcision is assessed through three indicators: the mean age at circumcision, the percentage of circumcised girls by age and the cumulative risk of undergoing FGM/C by age between 0 and 14 years.

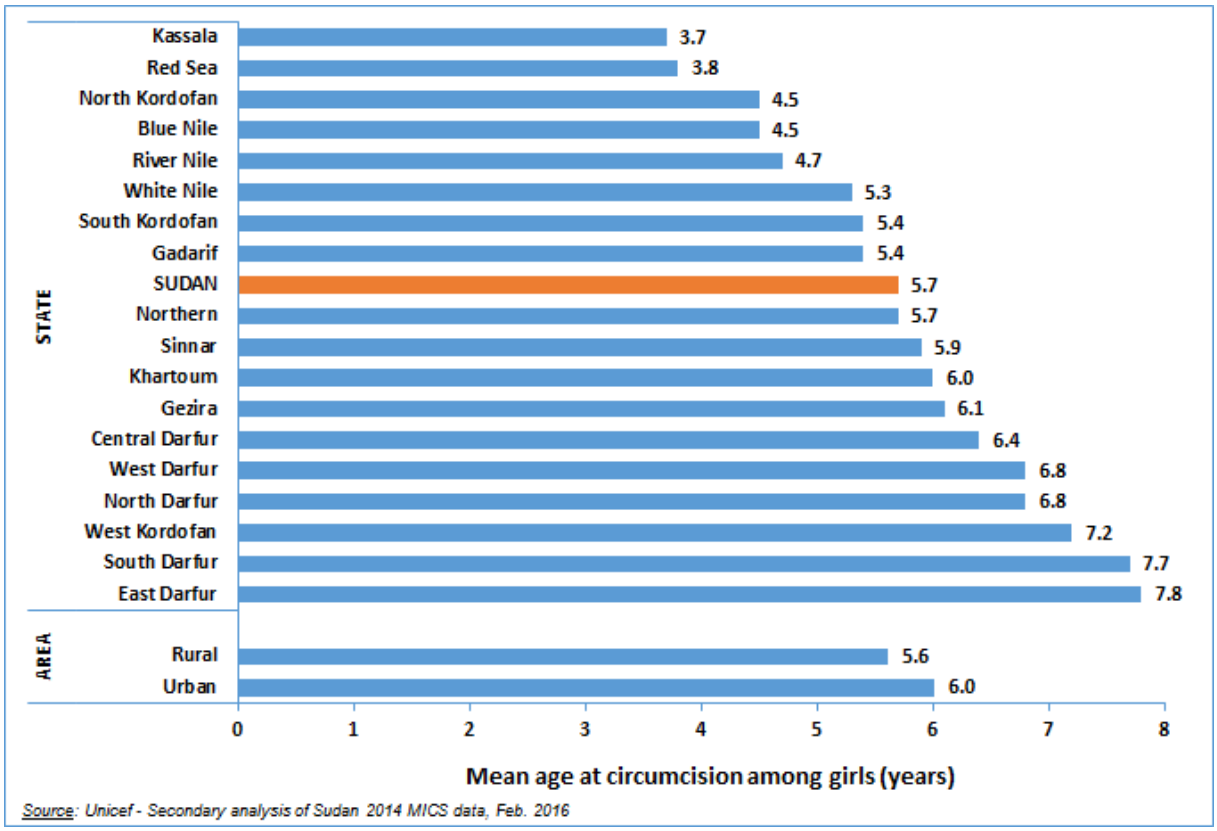
2.1 Timing of circumcision: Mean age at circumcision

The mean age at circumcision among circumcised girls aged 0-14 years is 5.7 years. It significantly varies by area of residence (slightly) and across states (considerably).

By area of residence, circumcision is performed at an earlier age in rural areas (5.6 years) than in urban areas (6.0 years). However, the difference is tight and may stem from the dissimilarities in accuracy of the declaration of cutting age between the two areas.

Variations across states are more important with the mean age increasing from a minimum of 3.7 years in Kassala to a maximum of 7.8 years in East Darfur (Figure 23). In five states (Kassala, Red Sea, North Kordofan, Blue Nile and River Nile), FGM/C is performed on girls at a very early age with the mean age at circumcision falling below 5 years. By contrast, girls undergo FGM/C later in the Darfur states and in West Kordofan, with the mean age at circumcision varying from 6.4 years to 7.8 years. In the remaining states the mean age varies from 5.3 years to 6.1 years.

Figure 23. Mean age at circumcision among circumcised girls aged 0-14 years by State and area of residence (Sudan, 2014 MICS)



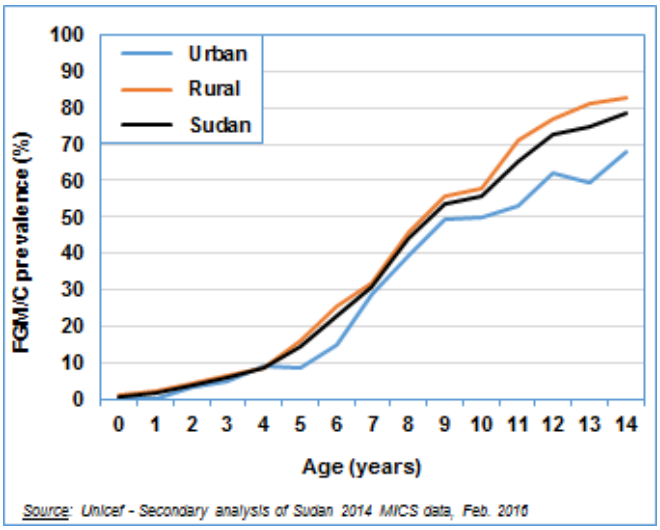
2.2 Timing of circumcision: Percentage of circumcised girls by age

FGM/C is generally performed among girls in Sudan from 5 years of age and upward, as shown by the variation in FGM/C prevalence by age (Figure 24).

The percentage of circumcised girls slowly increases between ages 0 and 4, before steadily increasing up to age 14 years. It is 0.8 percent at age 0 and 9 percent by age 4 years. More than half of the girls (53.8 percent) are already circumcised by age 9 and 78.7 percent of girls aged 14 years.

The same pattern is more or less observed among urban and rural girls. There is no difference in the prevalence between the two areas before age 5. Between ages 5 and 14, the prevalence is slightly, (though statistically significant), higher in rural than in urban areas. The difference is statistically significant at the 5 percent level.

Figure 24. Percentage of circumcised girls by age and area of residence among girls aged 0-14 years (Sudan, 2014 MICS)

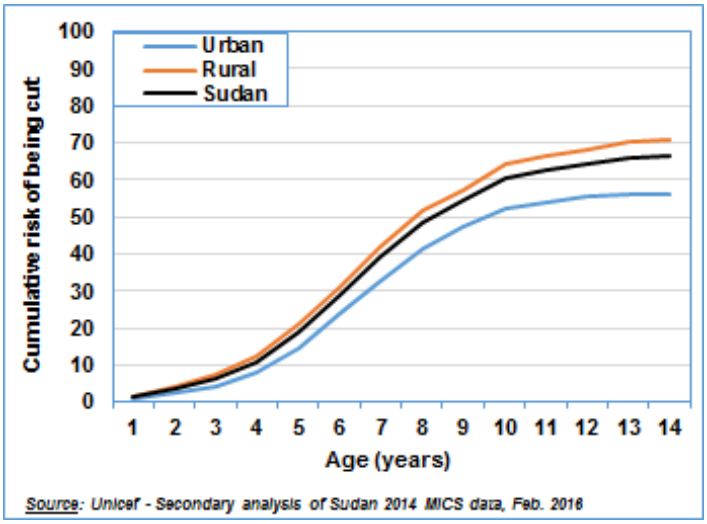


2.3 Timing of circumcision: Cumulative risk of undergoing FGM/C by age

Another way to examine more accurately the calendar of circumcision among girls through the relationship between age and FGM/C status, is to compute the cumulative probability of being cut between birth and each age using the Kaplan-Meier estimates. This is done by area of residence and the findings are illustrated in Figure 25.

The curve of the cumulative probabilities of undergoing FGM/C by age reveals that age 4 to 10 is the high risk period for a girl aged 0-14 years to be cut. It shows that the cumulative risk steadily increases between ages 4 and 10 years, from 11 percent to 61 percent. Before age 4 years and after age 10, the cumulative risks barely increase.

Figure 25. Kaplan-Meier estimates of the cumulative risk of being cut among girls aged 0-14 years by area of residence (Sudan 2014 MICS)



Wald chi2(1) = 73.77 ; Pr>chi2 = 0.0000

Figure 3 also reveals that the risk of undergoing FGM/C for a rural girl aged 0-14 years is significantly higher than in urban areas. The gap in FGM/C risk between the two areas grows wider as age increases.

2.4 Variation in FGM/C timing among girls by 5-year age group

The observed FGM/C prevalence increases significantly with girls' age: 4.3 percent among the under-fives, 31.5 percent among the 5-9-year olds and 69.0 percent among the 10-14 year olds (Figure 26).

The same pattern is observed in both urban and rural areas.

For all three age groups, the prevalence is higher in rural than in urban areas. The difference in predominance between the two areas increases with age to reach its maximum among the age group 10-14: 73.4 percent in rural areas vs. 58.4 percent in urban areas.

Figure 26. FGM/C prevalence in 2014 among girls aged 0-14 years by 5-year age group and area of residence (Sudan, 2014 MICS)

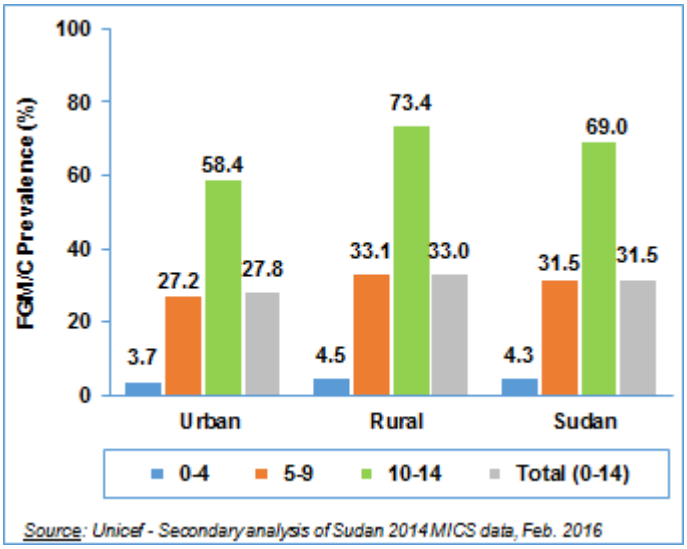


Table 8 shows that the observed prevalence by age group reveals that circumcision of girls at an early age (before age 5) is more practiced in five States: Red Sea (23.6 percent), Kassala, River Nile, North Kordofan and Blue Nile (between 10 percent and 16 percent). By contrast, circumcision before age 5 years is virtually non-existent in Gezira and in the five Darfur states (the rate is below 1.5 percent). In the remaining states, the prevalence is between 2.3 percent and 6.6 percent.

Among girls aged 5-9 years, more than half are already circumcised in 5 states: River Nile, Red Sea, Kassala, White Nile and North Kordofan, compared to less than 20 percent in the 5 Darfur states and in West Kordofan. The prevalence varies from 25 percent to 44 percent in the other states.

FGM/C prevalence among girls aged 10-14 years exceeds 80 percent in North Kordofan (87 percent), White Nile (85.4 percent) and Northern (84.4 percent), or is close to it in River Nile, Red Sea and North Darfur. Central and West Darfur record the lowest prevalence with three out of ten girls aged 10-14 years cut.

Table 8. Percentage of circumcised girls by 5-year age group and State (Observed FGM/C prevalence in 2014) (Sudan MICS 2014)

State	5-year age group of the girls				Number of girls aged 0-14 years
	0-4 years	5-9 years	10-14 years	Total (0-14 years)	
Northern	4.8	44.1	84.4	43.1	323
River Nile	15.6	58.0	79.5	50.0	508
Red Sea	23.6	60.4	78.3	55.6	326
Kassala	16.4	53.9	71.0	46.6	674
Gadarif	4.4	27.9	68.2	28.9	937
Khartoum	3.0	31.3	63.1	29.9	2 205
Gezira	0.2	34.8	70.2	31.9	2 790
White Nile	6.6	50.6	85.4	43.8	876
Sinnar	2.6	28.8	63.7	27.4	652
Blue Nile	9.9	34.9	54.9	30.0	762
North Kordofan	14.0	57.4	87.0	49.1	1 196
South Kordofan	5.7	24.9	69.9	27.3	601
West Kordofan	2.3	17.1	70.9	25.6	996
North Darfur	0.5	18.8	77.7	27.0	1 645
West Darfur	1.0	10.9	31.5	12.1	633
South Darfur	0.0	10.4	61.4	21.2	1 609
Central Darfur	1.4	13.6	30.5	13.9	230
East Darfur	0.0	13.2	70.7	24.8	697
Sudan	4.3	31.5	69.0	31.5	17 661

Inter-State variation in FGM/C prevalence are statistically significant at the 5% level for each age group and for all girls.

III. INTERGENERATIONAL TRANSMISSION OF FGM/C FROM MOTHERS TO DAUGHTERS

A daughters' risk of being circumcised is believed to be associated with her mothers' background characteristics and personal experience with FGM/C. In countries like Sudan, transmission of the practice is almost exclusively channelled through women, especially the mothers, grand-mothers and aunts (Waging Peace, 2015).

Given that the girl's risk of undergoing an FGM/C is strongly linked to their age as demonstrated in the preceding sections, the analysis of the association between girls' FGM/C status and their mothers' characteristics, will be disaggregated by girls' 5-year age group.

The most powerful association of a girl's risk of being circumcised is between the mother's own FGM/C status and her daughter's.

3.1 Variation in FGM/C prevalence among girls by some of their mothers' background characteristics

The mothers' characteristics considered here are: generation (age), education, household wealth, marital status and age at first marriage. Table 9 shows that girls' FGM/C status varies significantly according to their mothers' characteristics. However, mothers' age and education are most discriminant than other variables.

Mother's generation (age): the older the mother, the higher the prevalence of FGM/C among daughters. It varies from 4.2 percent among girls whose mothers are 15-19 years old, up to 48.9 percent among girls whose mothers are between 40 to 49 years of age. This was expected since daughters of women in the old age groups had already been circumcised because they are older than daughters of younger mothers who will be circumcised in the future. The same relationship is observed among daughters in the age groups 5-9 years and 10-14 years, but for girls aged 0-4 years, differences in their FGM/C prevalence by their mothers' age are slight.

Mother's education: Mother's education is negatively associated with circumcision of their daughters. The most the mothers are educated, the lowest the levels of FGM/C among their daughters. The prevalence of FGM/C is more than twice higher among daughters whose mothers have no education (33.6 percent) than among those whose mothers have a higher level of education (15.2 percent). This pattern holds no matter the age group of the daughter, but is more marked among the younger ages.

This means that more educated mothers tend to circumcise their daughters less and those who do it, perform it at a later age as compared to less educated mothers.

Wealth: relationships between wealth and FGM/C status is not linear. The differences in overall observed and adjusted prevalence by wealth are slight, except for daughters whose mothers live in the second wealthiest households, who have the highest prevalence.

Mothers' marital status: FGM/C prevalence is higher among daughters of formerly married women (37.6 percent) than of currently married women (31.3 percent). However that difference exists only among girls aged 0-4 years while the reverse is observed for older girls.

Mothers' age at first marriage: the prevalence of FGM/C among daughters is negatively associated with the age at mothers' first marriage. Women who got married at a younger age are more likely to circumcise their daughter. However, differences are slight. The prevalence of FGM/C among daughters decreases from 31.3 percent if the mothers entered their first union before age 14 years, down to 27.2 percent if the mothers got married at age 25 years or later. That association is observed for each age group of daughters but is more marked among the 0-4 year old. This means, as with education, that women who married at a later age are less likely to circumcise their daughter at any given age and when they do it, they tend to do it less frequently when the daughter is less than 5 years of age.

Table 9. FGM/C prevalence in 2014 among girls aged 0-14 years by their mothers' age, education, marital status and age at first marriage (Sudan MICS 2014)

Mother's characteristics	Adjusted FGM/C prevalence among girls aged 0-14 years	Observed FGM/C prevalence among girls aged 0-14 years	Observed FGM/C prevalence among girls by their 5 year age group			Number of girls aged 0-14 years
			0-4	5-9	10-14	
Total	66.3	31.5	4.3	31.5	69.0	17 661
Age group (years)	(*)	(*)	(ns)	(*)	(*)	
15-19	---	4.2	4.0	13.1	---	262
20-29	59.8	17.8	4.6	28.3	64.7	5 105
30-39	64.9	32.9	3.9	29.9	67.8	8 480
40-49	70.9	48.9	4.8	39.2	71.8	3 814
Education	(*)	(*)	(*)	(*)	(*)	
None	63.3	33.6	5.7	32.1	67.0	7 952
Primary	76.5	32.7	4.1	34.0	76.3	6 028
Secondary	61.3	28.6	3.2	27.3	65.3	2 763
Higher	50.3	15.2	0.3	19.1	50.7	919
Household wealth	(*)	(*)	(*)	(*)	(*)	
Poorest	69.6	30.2	4.3	26.0	70.9	4 029
Second	64.9	30.3	5.3	29.2	68.9	3 617
Middle	59.7	31.5	6.9	33.9	62.8	3 684
Fourth	74.7	35.6	2.7	37.7	77.4	3 418
Richest	64.1	30.3	1.5	31.6	64.5	2 913
Marital status		(*)	(ns)	(ns)	(ns)	
Currently married	---	31.3	4.3	31.5	69.2	16 990
Formerly married	---	37.6	5.5	30.9	65.2	672
Age at first marriage	(*)	(*)	(*)	(ns)	(*)	
<=14	67.9	34.9	5.5	31.6	72.6	3 354
15-17	66.5	32.7	5.0	32.8	68.4	6 029
18-24	66.6	29.9	3.7	30.5	69.6	6 650
>=25	61.3	27.2	2.5	30.3	60.6	1 628

(*): Variation in FGM/C prevalence are statistically significant at the 5% level.

[a] This is only for the 12,755 women currently or formerly married

3.2 Variation in FGM/C prevalence among girls by their mothers' characteristics related to FGM/C

This section analyses if and how different mothers' characteristics related to FGM/C are associated with their daughters' status: FGM/C status, cutting age, type of circumcision performer, re-circumcision status, attitude towards FGM/C and use of the word *Saleema* to name uncircumcised girls (as a proxy to exposure to the *Saleema* C4D Initiative).

Table 10 shows that all variables related to the mothers' personal experience with FGM/C are significantly associated with their daughters FGM/C status.

FGM/C status: The most powerful association is between the mother's own FGM/C status and her daughter's. The observed prevalence of FGM/C among girls is 34.6 percent if the mothers are cut compared to 2.3 percent if the mothers are not. This gap is even wider among daughters aged 10-14 years: 75.8 percent vs 5.1 percent.

Cutting age: The second most discriminant variable on the daughters' FGM/C status is the cutting age of the mothers. Women circumcised before age 5 and women who cannot recall their cutting age are most likely to circumcise their daughters. FGM/C prevalence among daughters is as high as 47.8 percent if the mothers were cut before age 5, compared to 26 percent to 27 percent if the mothers were cut at age 10 and upward. This pattern does not vary according to girls' age group.

Circumcision performer: Women circumcised by traditional circumcisers or by those who are undetermined are more likely to circumcise their daughters than mothers who underwent the procedure by trained midwives or other health professionals. For instance, the adjusted prevalence is 77.7 percent if the mother was cut by a traditional circumciser, as opposed to 63.7 percent if she was cut by a health professional other than trained midwives.

Re-circumcision: mother's re-circumcision increases the risk of a daughter to be circumcised, irrespective of daughters' age. The overall observed prevalence among daughters is 32.4 percent if the mother is not re-circumcised and 41.5 percent if she is re-circumcised.

Mothers' attitude towards the FGM/C practice: The mothers' characteristics are significantly associated with their daughters' likelihood to be cut. Daughters of mothers favouring the abandonment of the FGM/C practice are less likely to be circumcised (24.7 percent) than daughters whose mothers think FGM/C is a practice that should be continued (38.0 percent). The direction of the relation is maintained across all daughters' 5 years groups.

Use of the Saleema word to name uncircumcised girls: Last but not least, daughters of women who adopt the word *"Saleema"* to name uncircumcised girls, tend to be less subjected to genital mutilation than girls of women using other expressions: 23.0 percent of the first group are cut compared to 32.5 percent of the latter. This difference holds irrespective of daughters' age group.

Table 10. FGM/C prevalence in 2014 among girls aged 0-14 years by their mothers' experience with FGM/C (Sudan MICS 2014)

Mother's experience with FGM/C	Adjusted FGM/C prevalence among girls aged 0-14 years	Observed FGM/C prevalence among girls aged 0-14 years	Observed FGM/C prevalence among girls by their 5-year age group			Number of girls aged 0-14 years
			0-4	5-9	10-14	
Total	66.3	31.5	4.3	31.5	69.0	17 661
FGM/C Status	(*)	(*)	(*)	(*)	(*)	
Not circumcised	4.3	2.3	0.3	2.4	5.1	1 680
Circumcised	74.1	34.6	4.7	34.4	75.8	15 982
Cutting age	(*)	(*)	(*)	(*)	(*)	
0-4 years	79.0	47.8	14.7	57.9	79.9	1 459
5-9 years	73.6	32.9	2.7	31.8	75.2	9 859
10-14 years	70.8	26.2	1.6	21.1	70.9	1 766
15 +	61.2	27.4	6.1	36.3	58.5	84
Undetermined	75.5	39.4	8.7	39.2	79.3	2 814
Circumcision performer	(*)	(*)	(*)	(*)	(*)	
Traditional circumciser	77.7	39.2	6.0	37.1	78.6	6 143
Trained midwife	71.5	30.6	3.6	31.0	73.6	8 659
Other health professional	63.7	33.4	3.1	36.4	66.5	367
Undetermined	77.2	43.0	9.6	48.5	78.8	812
Re-circumcision status of circumcised women	(*)	(*)	(*)	(*)	(*)	
Not re-circumcised	71.3	32.4	4.0	31.3	73.6	12 165
Re-circumcised	82.9	41.5	7.1	44.2	82.6	3 817
Attitude towards the FGM/C practice	(*)	(*)	(*)	(*)	(*)	
Should be continued	83.7	38.0	6.5	38.3	82.4	8 665
Should be discontinued	51.3	24.7	1.9	23.6	55.5	7 918
Undetermined	65.2	30.0	4.3	32.3	68.6	1 078
Name uncircumcised girl 'Saleema'	(*)	(*)	(*)	(*)	(*)	
No	68.3	32.5	4.6	32.5	70.9	15 860
Yes	50.1	23.0	2.1	22.2	52.8	1 802

(*): Variation in FGM/C prevalence are statistically significant at the 5% level.

3.3 Factors associated with daughters' circumcision: a multivariate analysis

The previous sections examined the bivariate association between daughters' FGM/C status, some of their own characteristics as well as some of their mothers' characteristics. The association found that between a daughter's FGM/C status and a given characteristic may be hidden or enhanced by the effect of another variable not controlled for.

In this section, we conduct a multivariate analysis to ascertain the net impact of each of these independent variables on the likelihood of a daughter to be cut. To take into account the censorship effect due to not all girls completing their exposure to the risk of circumcision, we resort to survival analysis techniques. We ran two Cox semi-parametric regression models.

The first model is run on daughters of all women and includes the following predictive variables[10]:

- Mothers' background characteristics: State, area of residence, generation (age), education, household wealth, marital status and age at first marriage
- Mothers' characteristics related to FGM/C: FGM/C status attitude towards FGM/C and use of the word *Saleema* to name uncircumcised girls[11].

The second model is run on daughters from circumcised mothers and includes the following predictive variables:

- Mothers' background characteristics: State, area of residence, generation (age), education, household wealth, marital status and age at first marriage
- Mothers' characteristics related to FGM/C: cutting age, type of circumcision performer, attitude towards FGM/C and use of the word *Saleema* to name uncircumcised girls[12].

The second model allows to ascertain the impact of the variables "Cutting age" and "Type of circumcision performer" that are relevant for circumcised mothers only, the reason for which is the model is restricted to daughters from circumcised mothers.

Table 11 presents the findings of the first model and Table 13, the findings of the second model. Variables that have no significant impact at the 5 percent level are dropped from the tables.

Table 11 also shows that Mother's age, Household wealth, Marital status and Use of the *Saleema* Word are not significantly associated with daughters' likelihood of being circumcised. In contrast, the mother's state of residence, area of residence, education, age at first marriage, FGM/C status and rejection of FGM/C are significantly associated with the risk of their daughters being circumcised.

The main finding is that the mother's own FGM/C status is by far the most powerful predictive variable of her daughter's likelihood to be circumcised, all other factors controlled. Indeed the risk for a girl to be circumcised too, is 24 times higher if her mother is circumcised than if she is not, confirming the intergenerational transmission of the practice.

The second most powerful predictor of girls' likelihood to be circumcised is state of residence. The reference is Central Darfur, which has the lowest FGM/C prevalence among girls. The risk in all states except West and South Darfur is significantly different from that of Central Darfur. The risk is highest in Red Sea where a girl is 8.5 times more likely to be cut than if she lived in Central Darfur. It is followed by Kassala (6.9 times more), River Nile (5.7 times more), North Kordofan (5.1 times more) and Northern (4.5 times more). The 5 Darfur States are the safest place in the country for girls to escape FGM/C.

Additional characteristics of the mothers associated with increased risk of being cut are: rural residence, lack of education, early marriage and favouring FGM/C continuation. It is noticeable that

[10] Girls age matters in the risk of being cut, but the Cox regression takes this into account in the calculation of the risk so that it is not needed to add age as a predictive variable in the model.
[11] Re-circumcision status is not included to avoid to restrict the analysis to only circumcised women
[12] Re-circumcision status is not included to avoid to restrict the analysis to only circumcised women

the mother's attitude towards the FGM/C practice is not as powerful as might be expected. The girl's risk of being cut is just 47 percent higher if the mother does not reject FGM/C than if she rejects it. This confirms how ingrained the FGM/C practice is into the Sudanese culture and how the decision to circumcise a girl is beyond her sole mother's control, as supported by the literature. Even education plays a strong role, since mothers with no formal education are twice likely to circumcise their daughters than mothers with the highest level of education.

The mother's use of the word *Saleema* is not significantly associated with her daughter's likelihood to be circumcised. This fact is another indication that changes in mother's attitude towards FGM/C (in this case changes in her language) is not enough to overcome the powerful cultural norms and social mechanism that drive the FGM/C practice in Sudan. It is just a first, but certainly important, step in the long path leading to freeing Sudan from FGM/C. Another possible explanation is, as argued by the theory of diffusion of innovations (Rogers, 2003), that the number of adopters of the word *Saleema* has not yet reached its critical mass. This is crucial in self-sustaining its diffusion into the society enough to create a new social norm favourable to the FGM/C abandonment. In fact, in the case of FGM/C in Sudan, social norm matters more than isolated individual opinion on the issue to create a social transformation.

Table 11. Findings of the Cox semi-parametric regression of daughters' likelihood of being circumcised (Sudan MICS 2014)

Variables and modalities	Haz. Ratio	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
State						
Northern	4.90	0.661	11.79	0.000	3.764	6.384
River Nile	5.74	0.787	12.75	0.000	4.390	7.512
Red Sea	8.48	1.201	15.10	0.000	6.429	11.198
Kassala	6.92	0.968	13.82	0.000	5.259	9.100
Gadarif	3.10	0.399	8.78	0.000	2.407	3.988
Khartoum	3.84	0.521	9.93	0.000	2.946	5.014
Gezira	3.24	0.437	8.73	0.000	2.490	4.222
White Nile	4.95	0.625	12.67	0.000	3.866	6.340
Sinnar	3.06	0.398	8.59	0.000	2.370	3.947
Blue Nile	4.24	0.568	10.79	0.000	3.263	5.516
North Kordofan	5.14	0.653	12.87	0.000	4.005	6.593
South Kordofan	2.60	0.346	7.18	0.000	2.003	3.373
West Kordofan	1.74	0.230	4.22	0.000	1.347	2.259
North Darfur	1.92	0.241	5.21	0.000	1.502	2.456
West Darfur	1.34	0.203	1.94	0.052	0.997	1.805
South Darfur	1.34	0.173	2.28	0.023	1.042	1.727
Central Darfur (Reference)	1.00		0.000			
East Darfur	1.38	0.172	2.59	0.010	1.081	1.761
Area of residence						
Urban (Reference)	1.00		0.00			
Rural	1.40	0.069	6.82	0.000	1.270	1.539
Mother's education						
None	1.98	0.247	5.44	0.000	1.546	2.526
Primary	1.70	0.205	4.43	0.000	1.346	2.157
Secondary	1.36	0.164	2.57	0.010	1.076	1.725
Higher (Reference)	1.00		0.00			
Mother's age at first marriage						
<=14 (Reference)	1.00		0.00			
15-17	1.00	0.047	0.07	0.945	0.916	1.099
18-24	0.88	0.042	-2.68	0.007	0.800	0.966
>=25	0.76	0.061	-3.43	0.001	0.650	0.889
Mother's FGM/C status						
Not cut (Reference)	1.00		0.00			
Cut	23.96	4.139	18.39	0.000	17.076	33.612
Mother favours abandonment of FGM/C						
Yes (Reference)	1.00		0.00			
No	1.47	0.059	9.73	0.000	1.362	1.592

No. of subjects = 16 113 Number of obs = 16 059

No. of failures = 5 358

Time at risk = 89 020 Wald chi2(35) = 1 680.79

Log pseudo likelihood = -45 701.26 Prob>chi2 = 0.0000

Table 12 presents the findings of the Cox regression model restricted to girls whose mothers are circumcised. When the prediction is restricted to mothers that are circumcised, it becomes possible to ascertain the impact of some of the mother's FGM/C characteristics on the risk of her daughter to be circumcised. Mother's age and marital status are deleted from the table since they do not have a significant impact.

As hypothesised, a mother's FGM/C characteristic (cutting age, type of circumciser and re-circumcision status) are significantly associated with the likelihood that their daughters be cut. The later in age the mother was circumcised, the less likely the daughter is to be circumcised. It is possible that late circumcision creates more vivid memories, if the victim is old enough to recall the traumatic experience created by the procedure. Such memories in turn will prevent a mother from repeating the practice on her daughters. Being born to a mother cut by a traditional circumciser and re-circumcised, increase respectively by 15 percent the risk of a daughter being circumcised.

Table 12. Findings of the Cox semi-parametric regression of the likelihood of being circumcised of daughters' of circumcised mothers (Sudan MICS 2014)

Variables and modalities	Haz. Ratio	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Mother's age at circumcision						
0-4 years	1.00		0.00			
5-9 years	0.74	0.048	-4.65	0.000	0.652	0.840
10 years & +	0.58	0.050	-6.24	0.000	0.492	0.691
Undetermined	0.72	0.051	-4.60	0.000	0.628	0.829
Type of circumciser						
Traditional circumciser	1.00		0.00			
Health professional	0.84	0.037	-4.02	0.000	0.769	0.914
Undetermined	1.09	0.084	1.09	0.276	0.935	1.267
Mother's re-circumcision status						
No	1.00		0.00			
Yes	1.15	0.046	3.44	0.001	1.061	1.241
State						
Northern	5.21	0.735	11.71	0.000	3.954	6.873
River Nile	5.98	0.855	12.51	0.000	4.521	7.917
Red Sea	8.05	1.184	14.16	0.000	6.029	10.736
Kassala	6.67	0.960	13.18	0.000	5.027	8.840
Gadarif	2.94	0.399	7.98	0.000	2.259	3.840
Khartoum	4.17	0.591	10.08	0.000	3.158	5.503
Gezira	3.47	0.492	8.78	0.000	2.629	4.583
White Nile	4.94	0.650	12.15	0.000	3.819	6.394
Sinnar	3.09	0.421	8.29	0.000	2.368	4.039
Blue Nile	4.40	0.611	10.66	0.000	3.351	5.777
North Kordofan	5.42	0.712	12.86	0.000	4.186	7.006
South Kordofan	2.61	0.362	6.94	0.000	1.993	3.430
West Kordofan	1.83	0.250	4.42	0.000	1.400	2.392
North Darfur	2.17	0.281	5.96	0.000	1.680	2.793
West Darfur	1.47	0.230	2.45	0.014	1.080	1.995
South Darfur	1.51	0.201	3.10	0.002	1.163	1.960
Central Darfur (Reference)	1.00		0.00			
East Darfur	1.54	0.199	3.34	0.001	1.195	1.983

Variables and modalities	Haz. Ratio	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Area of residence						
Urban	1.00		0.00			
Rural	1.40	0.070	6.84	0.000	1.275	1.549
Mother's education						
None	1.00		0.00			
Primary	0.89	0.039	-2.70	0.007	0.816	0.968
Secondary	0.71	0.047	-5.20	0.000	0.622	0.806
Higher	0.54	0.067	-4.95	0.000	0.420	0.687
Household wealth						
Poorest	1.00		0.00			
Second	0.95	0.051	-0.95	0.344	0.857	1.055
Middle	1.02	0.067	0.26	0.798	0.893	1.158
Fourth	1.18	0.092	2.15	0.032	1.015	1.377
Richest	0.99	0.089	-0.06	0.955	0.836	1.185
Mother's age at first marriage	1.00		0.00			
<=14						
15-17	0.99	0.047	-0.11	0.911	0.907	1.091
18-24	0.90	0.043	-2.28	0.023	0.816	0.985
>=25	0.76	0.064	-3.28	0.001	0.641	0.894
Mother's favours abandonment of FGM/C						
Yes	1.00		0.00			
No	1.46	0.059	9.35	0.000	1.350	1.583

No. of subjects = 14 581 Number of obs = 14221

No. of failures = 5 358

Time at risk = 78 536 Wald chi2(35) = 1523.69

Log pseudo likelihood = -44 102.51 Prob>chi2 = 0.0000

PART IV.

CHANGES IN FGM/C PRACTICE OVER TIME AND ASSOCIATION BETWEEN CIRCUMCISION AND MARRIAGE, CHILDBEARING AND EDUCATION

INTRODUCTION

This section of the report examines whether or not changes in FGM/C prevalence among both women and girls are taking place, and if yes, what is the magnitude and differentials. It also investigates FGM/C association with the likelihood of marriage among women and if it bares consequences on childbearing.

I. CHANGES IN FGM/C PREVALENCE AMONG WOMEN AND GIRLS OVER TIME

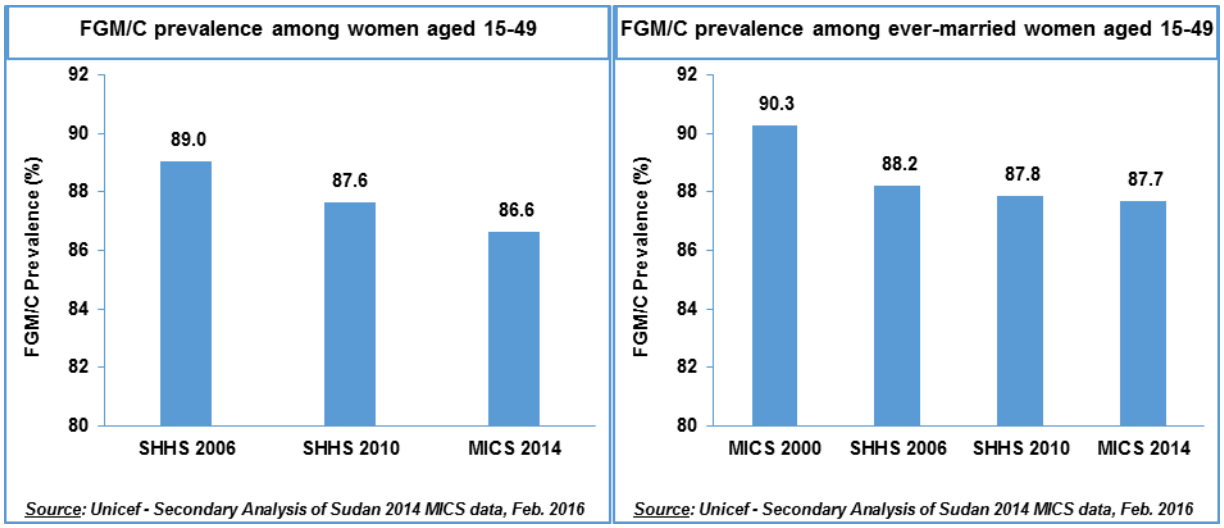
To track the changes in FGM/C prevalence over time, we must first compare its overall predominance among women aged 15-49 using the SHHSs and the MICSs. Then, we compare the level of the practice among different generations of women using the 2014 MICS data only. Changes are examined at the national level (using both approaches) and at the State level using the 2014 MICS based approach. The administrative set-up in Sudan has changed significantly between 2000 and 2014, making it meaningless to compare the states across the four surveys, or even across the two latest ones, the 2010 SHHS and the 2014 MICS.

1.1 Changes in the FGM/C prevalence among women at the national level and by State

Using the SHHSs and the MICSs, it is possible to compare the FGM/C prevalence of ever-married women aged 15-49 years during the period 2000-2014, and the FGM/C prevalence of all women aged 15-49 years, irrespective of their marital status, during the period 2006-2014.

Figure 27 reveals a slight, but continuous decline in the overall practice of FGM/C in Sudan over the past few years. Among ever-married women aged 15-49 years, FGM/C prevalence has declined by 8.8 percent in the last 14 years, from 90.3 percent in 2000 down to 87.7 percent in 2014. The major part of the decline actually took place between 2000 and 2006, followed by relative stability between 2006 and 2014. Among women aged 15-49 years, the prevalence has decreased from 89.0 percent in 2006 down to 86.6 percent in 2014, corresponding to drop of 2.7 percent in 8 years.

Figure 27. Evolution of the FGM/C prevalence among ever-married women aged 15-49 years between 2000 and 2014 (Sudan 2000 MICS, 2006 SHHS, 2010 SHHS and 2014 MICS)

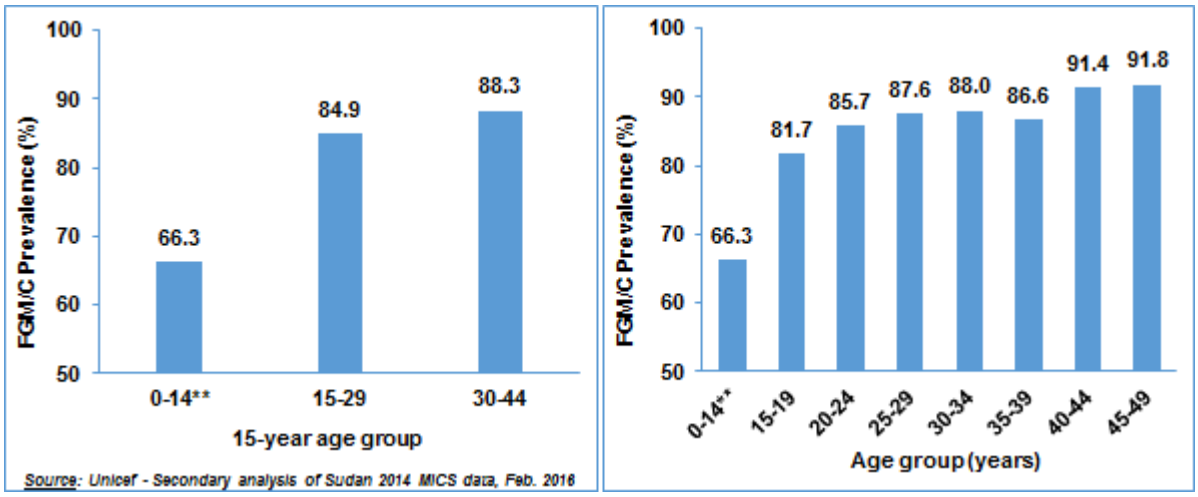


Another way to examine changes in FGM/C prevalence consists of looking at the differences between diverse age groups using a single survey. Women of the different age groups belong to various generations and were exposed to the risk of undergoing FGM/C (mainly during the ages of 0-14 years) at different periods of time. The observed dissimilarities among them partly reflect changes taking place in the FGM/C practice over time.

Figure 28 shows that FGM/C prevalence is associated with age: the older the women, the higher the rate amid them. Among the younger generation (0-14 years), the level is 66.3 percent compared to 88.3 percent among the 30-34 year olds and 91.8 percent among the 45-49 year old. This corresponds to: a 25 percent decrease in the FGM/C prevalence between the generations aged 0-14 years and 30-34; and a 21 percent decrease between the generations aged 0-14 years and 15-29 years.

This important downtrend gives a clear indication that the FGM/C practice is being abandoned in Sudan, though not clearly perceivable in the trends of the national prevalence.

Figure 28. FGM/C prevalence among women aged 0 to 49 years by 15-year age group (left) and 5-year age group (right)* (Sudan 2014 MICS)



(*): The Variation in FGM/C prevalence across the age groups is statistically significant at the .05 level (Chi-square statistic)
(**): For age group 0-14 years the adjusted prevalence is used rather than the observed one

Table 13 presents the FGM/C prevalence in 2014, in the age groups 0-14 years, 15-29 years and 30-44 years, and the percent decrease between the age groups by state. The percent decreases allow us to classify the state according to the magnitude of the decline of the FGM/C practice and to identify which period witnessed the most important decline. The findings reveal that:

- Overall, FGM/C has decreased by 24.9 percent between the generations aged 0-14 years and 30-49 years.
- The changes mainly took place recently since the percent decrease is far higher between the two youngest generations (21.8 percent) than between the two oldest generation (3.9 percent).
- In Few States, the timing and the nature of the changes is quite different from the general pattern described in the above 2 bullets. On the one hand, Central Darfur, Khartoum and in a less extent Gezira, where a substantial decrease occurred between the two oldest generations (thus changes started earlier in those states). On the other hand, West Kordofan witnessed an important increase in FGM/C prevalence (-13.5 percent) between the two oldest generations, as well as Blue Nile (-3.9 percent) and West Darfur (-0.9 percent). This means that the FGM/C practice was being adopted by individuals in the states that normally did not practice it, or that important flows of migrants from states where the practice is well-established settled in those locations.

Table 13. FGM/C prevalence in 2014 among three 15-year age groups of girls and women and percent decrease in FGM/C prevalence between the age group by State (Sudan MICS 2014)

State	FGM/C prevalence (%) among 15-year age group:			Percent decrease in FGM/C prevalence between age group:		
	[0-14 years*]	[15-29 years]	[30-44 years]	[0-14] and [15-29]	[15-29] and [30-44]	[0-14] and [30-44]
Northern	81.4	95.7	99.0	15.0	3.3	17.8
River Nile	79.9	94.7	98.8	15.6	4.2	19.1
Red Sea	73.9	86.3	91.4	14.3	5.6	19.1
Kassala	67.3	76.3	80.2	11.8	4.9	16.1
Gadarif	61.2	76.9	79.9	20.4	3.7	23.4
Khartoum	60.6	82.4	92.8	26.4	11.2	34.7
Gezira	70.1	84.0	90.7	16.5	7.4	22.7
White Nile	83.4	92.7	94.8	10.1	2.3	12.1
Sinnar	58.9	83.5	83.8	29.5	0.4	29.8
Blue Nile	52.8	68.4	65.8	22.8	-3.9	19.8
North Kordofan	82.8	97.0	99.0	14.7	2.0	16.4
South Kordofan	63.1	87.1	91.0	27.6	4.3	30.7
West Kordofan	73.2	84.6	74.5	13.5	-13.5	1.8
North Darfur	80.8	97.5	97.7	17.1	0.2	17.2
West Darfur	27.8	60.6	60.0	54.1	-0.9	53.7
South Darfur	57.1	87.7	88.0	34.9	0.4	35.1
Central Darfur	32.8	40.9	52.2	19.9	21.6	37.2
East Darfur	72.5	97.6	97.2	25.7	-0.5	25.3
Sudan	66.3	84.9	88.3	21.8	3.9	24.9

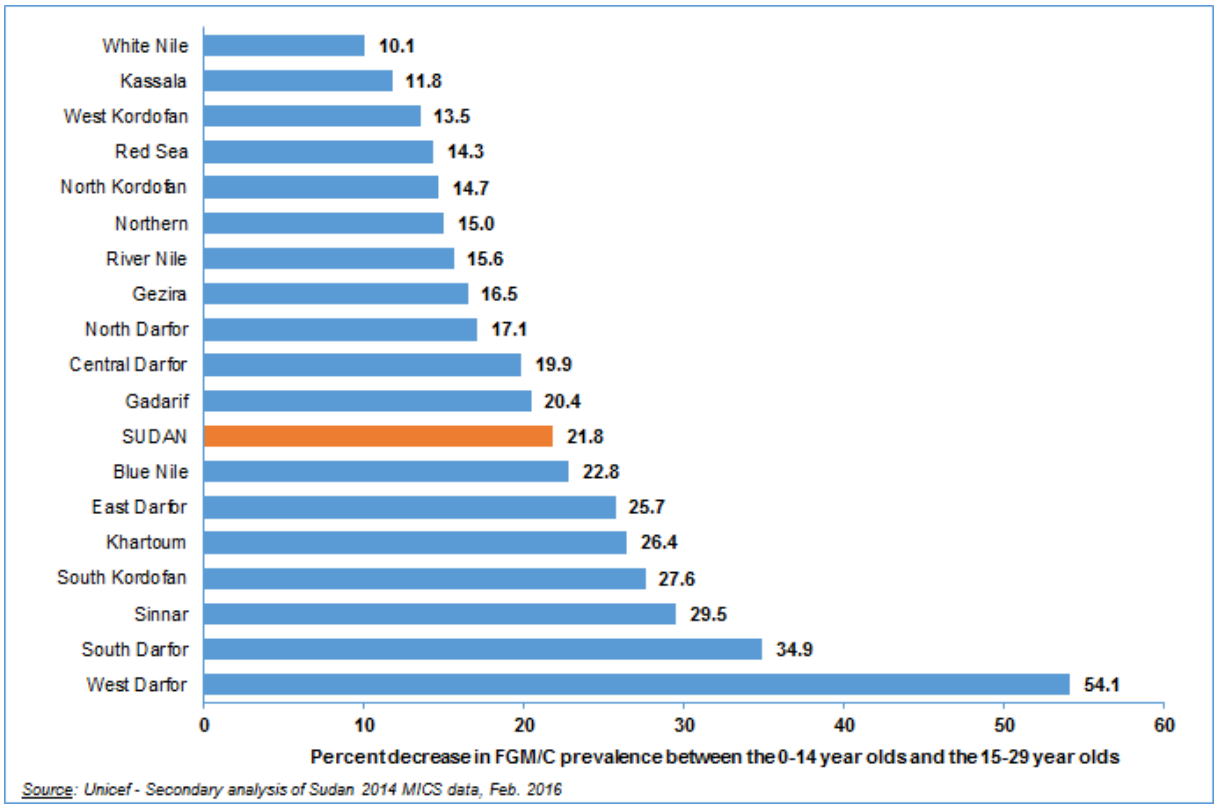
(*): For age group 0-14 years the adjusted prevalence is used rather than the observed one

Figure 29 compares the percent decrease in FGM/C prevalence among girls aged 0-14 years and among women aged 15-29 years, while Figure 30 compares girls to women aged 30-44 years. Both figures show striking differences across states in the magnitude of the decrease in FGM/C prevalence.

Figure 29 shows that the national FGM/C prevalence has decreased by 21.8 percent between the generation born in 2000-2014 and the one born in 1985-1999. Variations in the decrease across states are huge: from 10.1 percent in White Nile to 34.9 percent in South Darfur. West Darfur stands out with a decrease of 54.1 percent between the two generations. In half of the states, the percent decrease is between 10 percent and 20 percent: White Nile, Kassala, West Kordofan, Red Sea, North Kordofan, Northern, River Nile, Gezira, North Darfur, Central Darfur and Gadarif. In the other half, it varies from 23 percent to 35 percent with the noticeable exception of West Darfur.

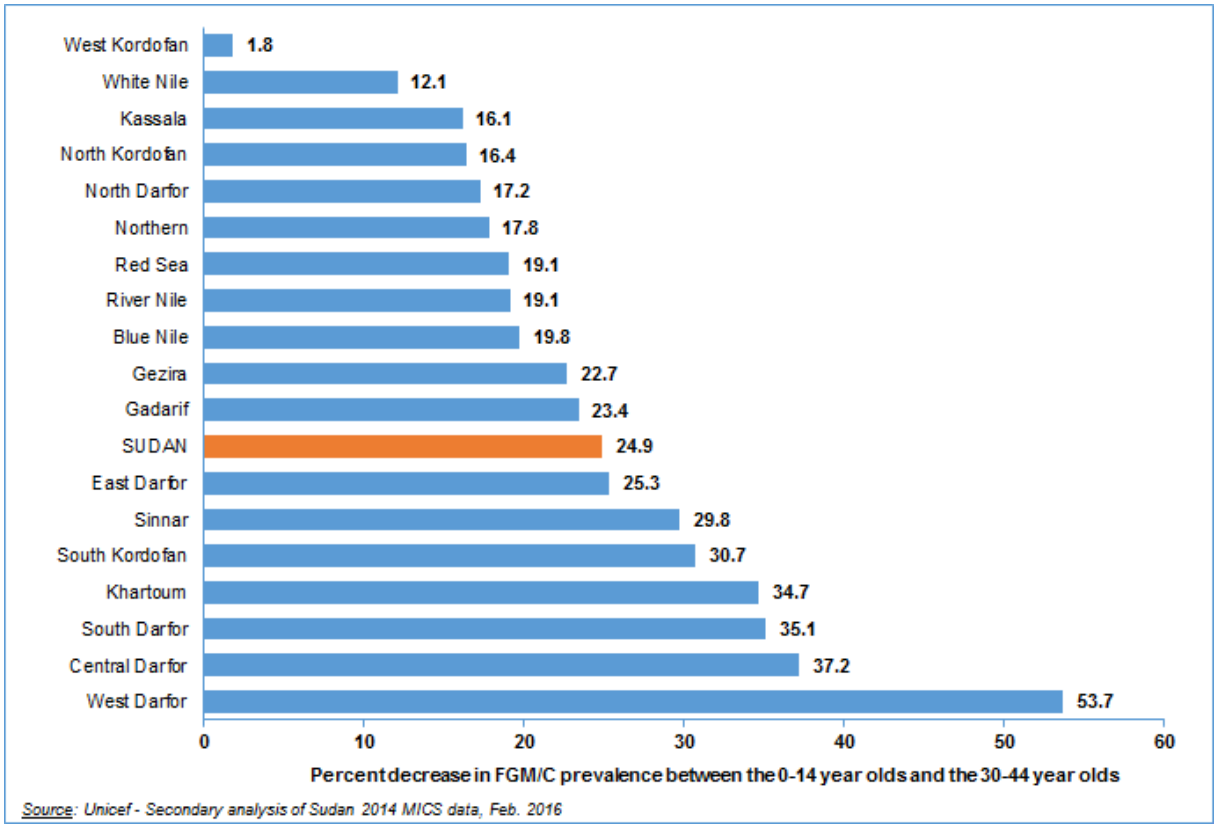
Figure 30 that compares the decrease between the generation born in 2000-2014 and the one born in 1970-1984, showing the same pattern as Figure 29 except that West Kordofan has a very low percent decrease (1.8 percent).

Figure 29. Percent decrease in FGM/C prevalence between girls aged 0-14 years and women aged 15-29 years by State (Sudan 2014 MICS)



Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

Figure 30. Percent decrease in FGM/C prevalence between girls aged 0-14 years and women aged 30-44 years by State (Sudan 2014 MICS)



Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

1.2 Long term trend and elimination of FGM/C in Sudan

The goal of the current anti-FGM/C interventions in Sudan is the elimination of the practice from the country in the new generation. The availability of FGM/C prevalence among three consecutive 15-year generations (0-14 year old, 15-29 year old and 30-44 year old) provides past trends in circumcision, namely from the period 1970-1984 to the most recent period 2000-2014.

These past trends can be modelled using a 2-order polynomial equation that best fit the data, based on the R-square value (See Figure 31):

$$y = -7.6x^2 + 19.4x + 76.5$$

Where:

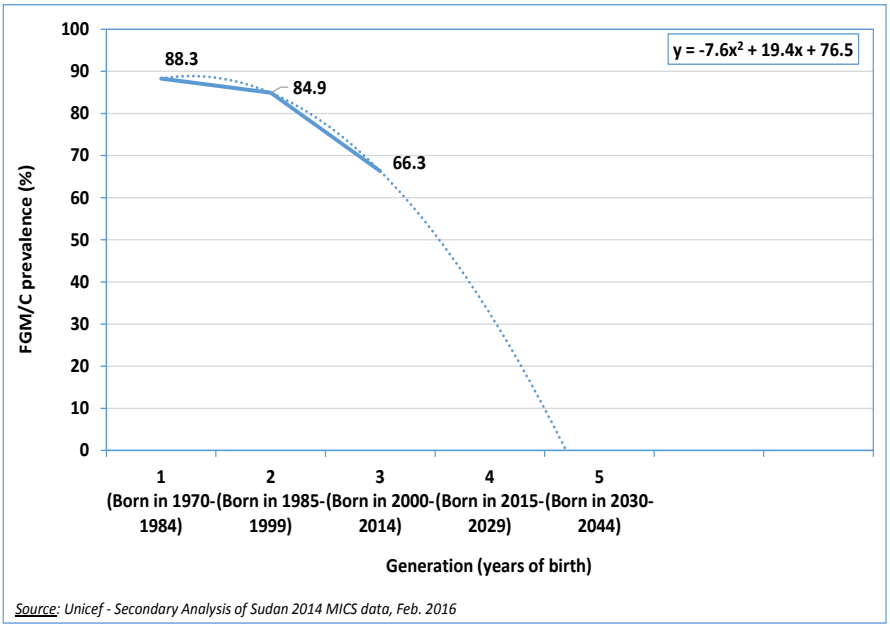
y is the FGM/C prevalence among the 15-year generation

x the number of the 15-year generation, 1 being the older generation and 3 the youngest one.

Using this equation and based on the assumption that future trends in FGM/C will follow the same pattern as in the past, it is possible to forecast the level of the practice for the upcoming years. More interesting, is the possibility of estimating the number of years to reach an FGM/C prevalence of 0.0 percent, or of any other value among girls aged 0-14 years by solving the equation for y equals that particular value.

The findings are presented in Figure 31. It shows that the FGM/C prevalence will decrease sharply to yield 0.0% (y=0) for x=4.696. This means that FGM/C prevalence will be 0.0% for the first time among girls born 26 years and a half after the 2014 MICS. In other words FGM/C could be eliminated among girls born after year 2040.

Figure 31. Past and forecasted trends in FGM/C prevalence by generation (Sudan 2014 MICS)



Source: Unicef - Secondary Analysis of Sudan 2014 MICS data, Feb. 2016

The figure also shows that 9.5 years after the 2014 MICS survey, the FGM/C will fall below 50 percent among the new-born girls, which is after year 2023. It will be less than 10 percent among girls born 37.5 years after the 2014 MICS, which is after year 2038.

1.3 Changes in FGM/C prevalence among girls aged 0-14 between 2006 and 2014

Bearing in mind the limitations in the comparability of the FGM/C data among girls between the SHHSs and the MICSs, Figure 32 shows a clear sustained decrease in the FGM/C prevalence among girls aged 0-14 years between 2006 (42.6 percent) and 2014 (31.5 percent). Over the covered 8 years, the rate has decreased by 26.0 percent. The decline occurred in all age groups but more significantly among the under-five: 61.7 percent decrease as compared to 22.9 percent among the 5-9 and 9.3 percent among the 10-14.

Figure 32. Evolution of the prevalence of FGM/C among girls aged 0-14 between 2006 and 2014 by 5-year age group (Sudan 2014 MICS)

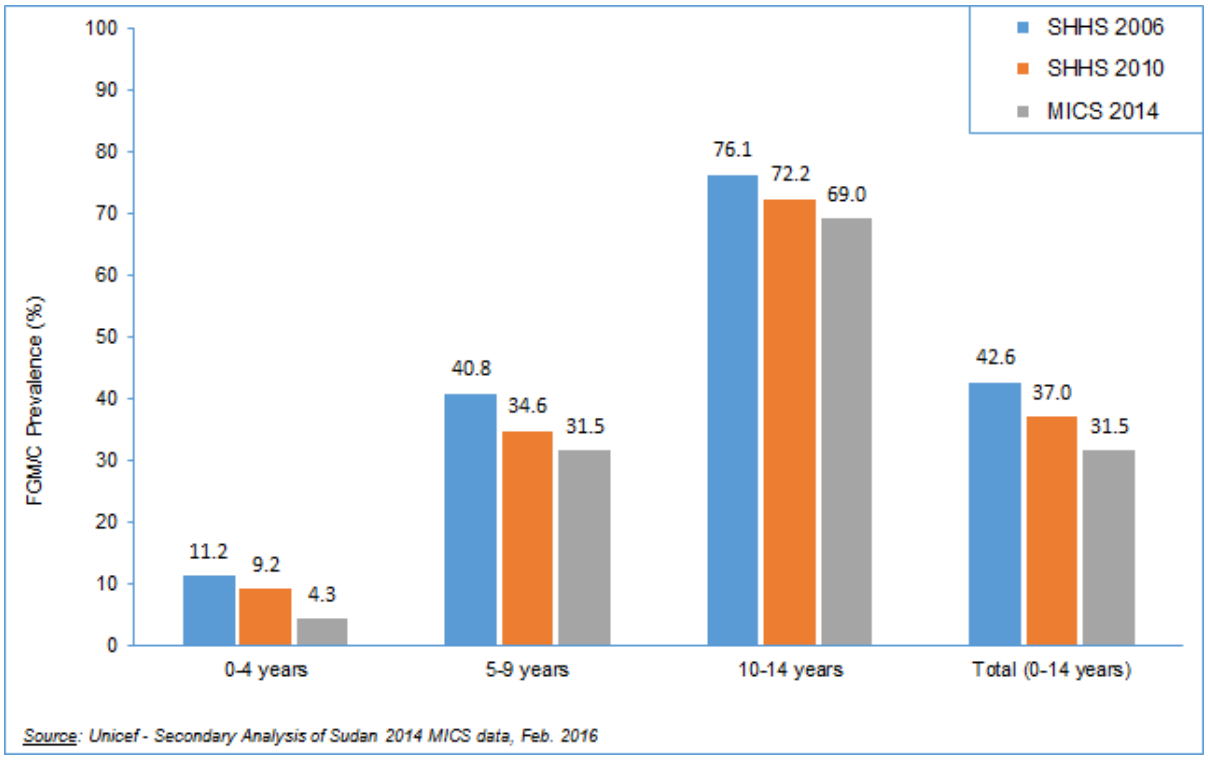
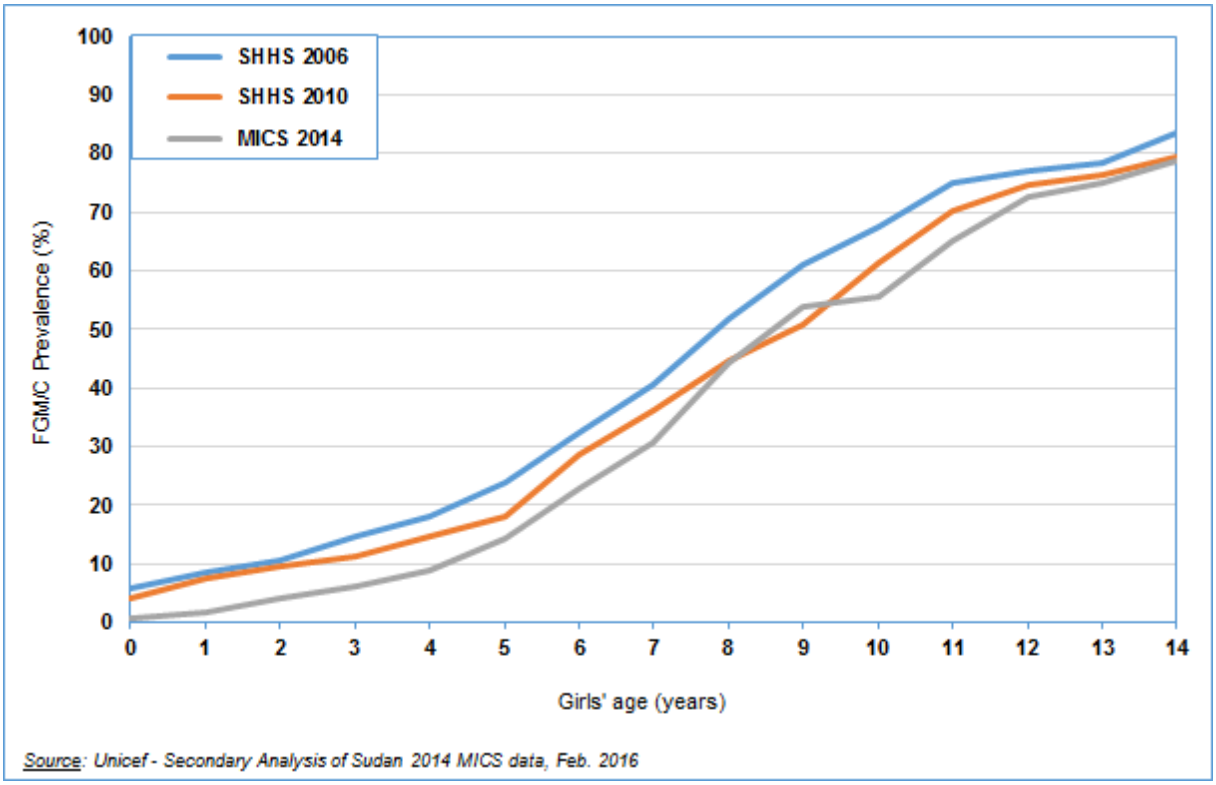


Figure 33 looks at the differences in FGM/C predominance among girls by single year of age across the three latest surveys. It reveals that the prevalence has declined throughout the period 2006-2014 at all ages except for ages 8 and 9 years. The drop in FGM/C is more marked during the period 2010-2014 among the under-fives. In the preceding period (2006-2010), the drop was more significant between the ages 7 to 10 years.

Figure 33. Evolution of the prevalence of FGM/C among girls aged 0-14 between 2006 and 2014 by age (Sudan 2014 MICS)



Source: Unicef - Secondary Analysis of Sudan 2014 MICS data, Feb. 2016

II. ASSOCIATION BETWEEN FGM/C AND MARRIAGE AND EDUCATION

Undergoing FGM/C has a potential impact on various aspects of girls and women's lives. In this chapter we will focus on two aspects: timing of marriage and achievement of a high level of education.

One of the backing ideas behind the FGM/C practice is that not undergoing the procedure reduces a woman's chance of getting married. We will test this hypothesis using simple bivariate analysis with statistical tests and resorting to survival analysis, by producing a life table to ascertain if FGM/C status is associated with early or delayed marriage. We will also discuss the relationship between FGM/C and education.

It would be very interesting to analysis the relationship between FGM/C and reproductive health outcomes, since it is well documented in the literature that female circumcision has immediate and long-term consequences on girl's and women's health. One of the long-term consequences of the practice on women's reproductive health is complications during childbirth that may require a caesarean section, an episiotomy and an extended hospital stay. This is especially true among women who received the worst type of FGM/C, infibulation (UNFPA, 2015). Unfortunately, the nature and quality of the 2014 MICS data do not allow for such an analysis. For instance, performing multivariate analysis requires to first elaborate a theoretical framework and the availability of a huge number of variables to be controlled for. Though relevant in a programmatic perspective, such an analysis goes beyond the scope of the present work.

2.1 FGM/C and marriage

The percentage of never married women is higher among those aged 15-49 years not circumcised (35.8 percent) than among circumcised individuals (29.5 percent). The difference is statistically significant at the 5 percent level, implying that for a woman, being circumcised is beneficial in increasing her chance to find a husband. However, both groups of women have very different background characteristics that account for the difference in the prevalence of marriage that goes beyond their sole FGM/C status. For instance, circumcised women are significantly older, far better educated and wealthier than not circumcised women.

To more accurately ascertain whether or not a woman's chance of getting married depends on her FGM/C status, we compare the cumulative probabilities of getting married by age of circumcised and not circumcised women. We then test if the difference between the two set of probabilities is statistically significant.

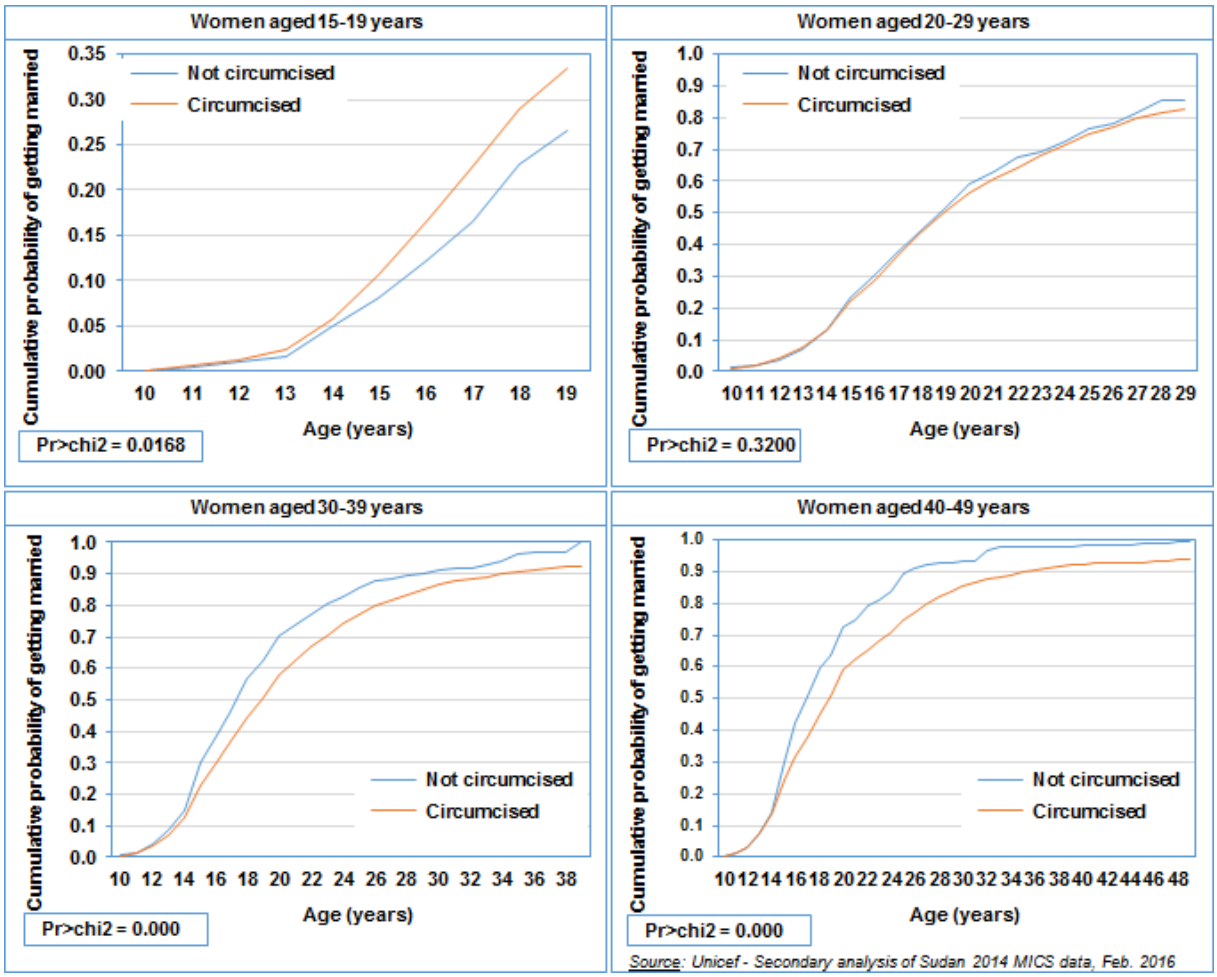
To do so, we use survival analysis techniques to compute the probabilities based on the Kaplan-Meier failure estimates and used the Wald chi square for the test of significance. We run the analysis separately for each of the four generations of women aged 15-19 years, 20-29 years, 30-39 years and 40-49 years. This cautious method allows for the control of other factors influencing the calendar of marriage given that determinants of union formation varies over time and that women of the same generations are subject to more or less the same conditions.

The findings presented in Figure 34 reveal that:

- FGM/C is significantly associated with the calendar of first marriage for all generations of women but the 20-29-year olds
- The magnitude and the direction of the relationships vary by women's generation: among teenagers, being circumcised significantly increases the likelihood of getting married while the contrary is observed for the older generations aged 30-39 years and 40-49 years, and no association was found among the generation aged 20-29 years.
- The relationships between FGM/C status and the likelihood of getting married grows stronger as age increases among the three generations of women for which association is significant.

In conclusion, the findings **confirm** the hypothesis that being circumcised is associated with increased risk of early/child marriage (since cut teenagers are more likely to get married than not cut ones). However, the findings **contradict** the cultural belief that being not cut hampers a woman's chance to find a husband (indeed the findings show the opposite for women aged 30-49 and found no relationships among the 20-29-year old).

Figure 34. Cumulative probability of getting married by age among four generations of women aged 15-49 years based on the Kaplan-Meier failure estimates (Sudan 2014 MICS)



Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

2.2 FGM/C and education

According to the literature, FGM/C has an impact on school attendance and on women achieving a high level of education. The trauma associated with FGM/C can lead to school dropout and poor performance at school. As for level of education attainment, a recent study conducted in Sierra-Leone found that FGM/C status has a small but significant relationship with women's and girls' educational achievement (UNICEF, 2012).

In the context of Sudan, FGM/C is generally performed at an early age, before school enrolment. Girls rarely dropped out from school to be circumcised. The mean age at circumcision among women aged 15-49 years is 6.9 years.

Regarding the level of educational attainment, Table 14 tests if among women aged 20-49 years, absence of circumcision is significantly associated with increased likelihood of achieving a secondary or high level of education, after controlling for age, area of residence and state, known as having a powerful impact on education. Education has become more commonplace in Sudan nowadays than in the past, so that younger generations are more likely to be educated than older ones, independently of FGM/C.

As for area of residence, the availability of more high schools in town and the widespread culture of enrolling children in cities, increase the likelihood of urban dwellers to achieve a secondary or high level of education compared to women in rural areas, irrespective of their FGM/C status. The same applies to state.

Table 14 shows that at the national level, circumcised women are significantly more likely to be better educated than not circumcised women, and this is true in urban as well as in rural areas and across all age groups. However, the situation varies significantly by state. In two states (North Kordofan and River Nile) uncircumcised women are slightly better educated than circumcised ones and in two other states (Kassala and Central Darfur) there is virtually no difference.

Based on the findings above, it is not clear whether or not FGM/C is negatively associated with education in Sudan, as found elsewhere and supported by the literature. This ambivalent relationship between education and FGM/C was already found when examining the variation in FGM prevalence by women's background characteristics.

Table 14. Percentage of women aged 20-29 years who have a secondary or high level of education according to their FGM/C status by area of residence, State, age group (Sudan 2014 MICS)

Variables	FGM/C Status		Number of women
	Uncircumcised	Circumcised	
Total	14.0	35.2	14 594
Age group (years) (*)			
20-29	21.3	39.1	6 522
30-39	8.3	31.8	5 099
40-49	3.6	32.4	2 972
Area of residence (*)			
Urban	33.7	56.1	4 811
Rural	4.4	24.9	9 783
State (*)			
Northern	45.9	60.9	376
River Nile	59.5	57.1	579
Red Sea	24.4	36.9	420
Kassala	16.6	17.5	600
Gadarif	1.9	20.7	715
Khartoum	54.5	63.3	2 239
Gezira	10.8	44.0	2 495
White Nile	8.7	34.8	724
Sinnar	1.2	27.1	574
Blue Nile	1.6	19.4	562
North Kordofan	24.9	19.4	924
South Kordofan	10.0	20.7	414
West Kordofan	4.2	17.8	796
North Darfur	13.0	19.8	1 052
West Darfur	6.0	22.8	430
South Darfur	9.9	21.3	1 057
Central Darfur	9.9	10.3	209
East Darfur	14.3	18.1	428

PART V.

ASSOCIATION BETWEEN THE SALEEMA C4D INITIATIVE AND FGM/C PRACTICE AND BELIEFS

INTRODUCTION

The *Saleema* communication for development initiative (*Saleema*/C4D) was officially launched in 2010[13] by the National Council for Child Welfare, with the objective of changing "*the empirical and normative expectations of people about FGM/C by promoting wide usage of new positive terminology to describe the natural bodies and social status of girls and women-A dominant strategy*".

The Initiative is implemented throughout the country and promotes, among others, the use of the word *Saleema* to name uncircumcised girls. "*Saleema is inspired and named after the Arabic word that means whole, healthy in body and mind, unharmed, intact, pristine, in a God-given condition and perfect*" (quoting the *Saleema* website[14]).

The evaluation of the impact of the *Saleema* C4D Initiative on FGM/C beliefs and practices using the 2014 MICS data is quite challenging. The only question asked by the survey about the Initiative is "What do you name a girl who is not circumcised?" with one of the possible answers being "*Saleema*". However, it is uncertain that this single question allows a proper identification of women exposed to the *Saleema* campaign, nor their responsiveness to the *Saleema* message. A woman may well be aware of the *Saleema* Initiative and keeps on using the words "Not circumcised" or "Not sanitized/unclean (Ma mutahara)" to refer to an uncircumcised girl.

Bearing this in mind, this section attempts to evaluate the association between the *Saleema* initiative and FGM/C beliefs and practices by comparing the attitudes towards FGM/C of the women who use the *Saleema* word to name uncut girls, with the ones of women who do not. It also compares FGM/C prevalence among daughters by their mothers' use or not of the word *Saleema*. Since it is not clear whether or not women's attitudes towards FGM/C and their daughter's circumcision are anterior to their exposure to the *Saleema* campaign, any association found will not automatically imply a causal relationship.

I. USE OF THE SALEEMA WORD

This chapter examines the prevalence of the use of the word *Saleema* among women and its variation by some of their characteristics.

1.1 Use of the Saleema word and variation by area of residence and State

At the national level, one in seven women (14.2 percent) uses the word *Saleema* to name girls who are not circumcised. The use of the word is more widespread among urban women (22.9 percent) than among rural ones (9.8 percent). But the most striking differences appear by state as shown in Table 15 and Figure 35. See comments below.

[13] Preparatory phase started in 2008.

[14] http://www.saleema.net/what_is_saleema.php (last accessed: March 24th, 2016).

Table 15. Percentage distribution of women aged 15-49 years who ever heard about FGM/C by the way they name an uncircumcised girl by area of residence and State (Sudan 2014 MICS)

Area of residence and State	Way women name an uncircumcised girl						Number of women
	Saleema	Not Circumcised	Not Motahara	Other	Missing	Total	
Sudan	14.2	3.4	44.0	38.2	0.2	100.0	17 620
Area of residence (*)							
Urban	22.9	4.5	38.8	33.6	0.1	100.0	5 856
Rural	9.8	2.9	46.7	40.5	0.2	100.0	11 764
States (*)							
Northern	16.7	2.7	47.1	33.5	0.0	100.0	454
River Nile	19.5	3.4	38.0	39.1	0.0	100.0	694
Red Sea	16.6	9.2	63.0	11.0	0.2	100.0	447
Kassala	19.4	6.3	69.9	4.1	0.4	100.0	721
Gadarif	17.6	2.1	56.0	24.2	0.2	100.0	818
Khartoum	21.3	2.8	37.4	38.5	0.0	100.0	2 779
Gezira	10.5	6.2	69.4	13.9	0.0	100.0	3 086
White Nile	12.4	5.1	17.5	65.0	0.0	100.0	875
Sinnar	8.7	2.8	61.5	26.8	0.1	100.0	675
Blue Nile	35.5	4.9	42.8	16.8	0.0	100.0	683
North Kordofan	9.3	0.8	27.6	61.3	0.9	100.0	1 165
South Kordofan	13.0	3.4	40.6	42.7	0.2	100.0	506
West Kordofan	5.9	0.8	56.5	36.3	0.4	100.0	826
North Darfur	7.3	0.9	11.4	80.3	0.1	100.0	1 305
West Darfur	14.1	0.4	40.1	45.0	0.4	100.0	535
South Darfur	13.0	2.6	34.9	49.5	0.1	100.0	1 326
Central Darfur	7.7	5.0	40.6	46.0	0.8	100.0	194
East Darfur	4.4	1.2	18.2	76.0	0.2	100.0	531

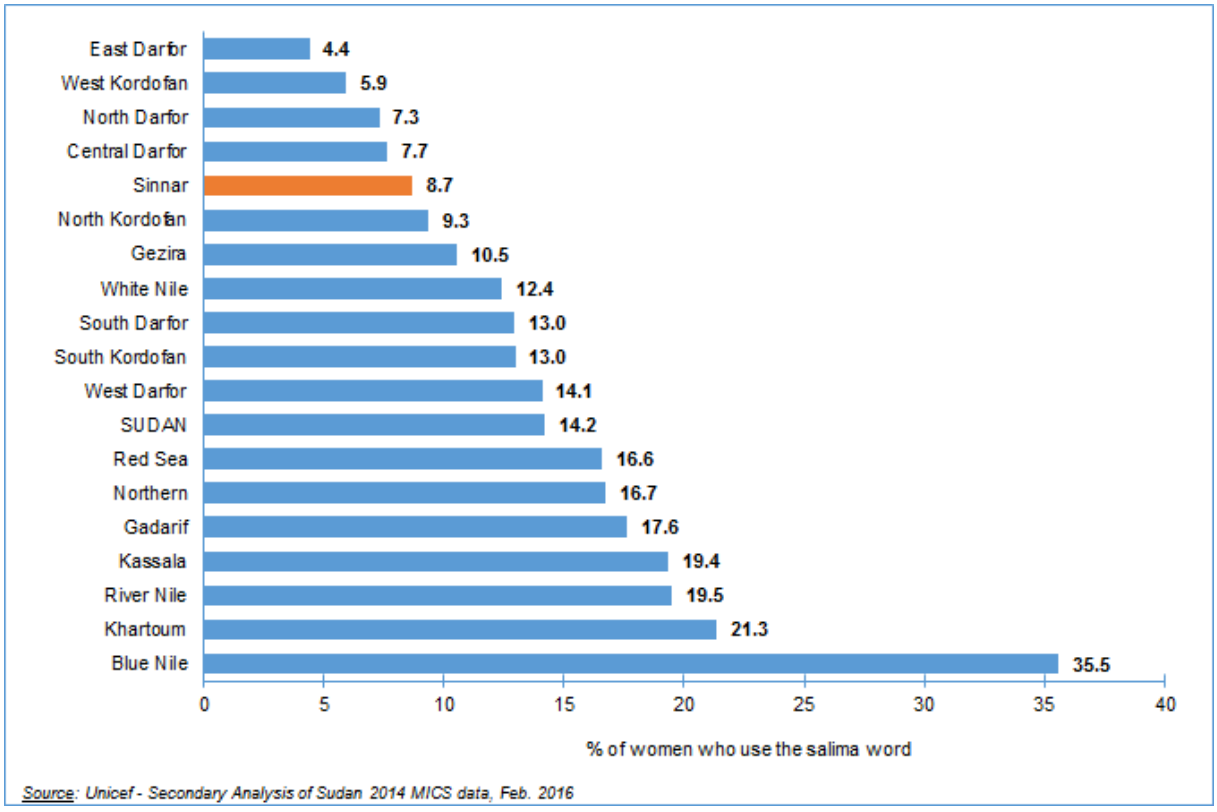
(*) : Differences are statistically significant at the 5% level.

The *Saleema* word is far more used by women in Blue Nile (35.5 percent) than in other states, where the percentage varies from 4.4 percent in East Darfur and 21.3 percent in Khartoum (Figure 34). It is used by one fifth of women in three States (Khartoum, River Nile and Kassala), less than 10 percent in five States (East, North and Darfur and West and North Kordofan) and by 10.5 percent to 17.6 percent in the remaining States.

The use of *Saleema* is expected to be higher when there are focused programmes and use of mass media. East Darfur was of the least and latest reached out to - a reason for the low prevalence of the use of the word.

The use of "Saleema" is expected to be higher when there are focused programmes and use of mass media.

Figure 35. Percentage of women aged 15-49 years who ever heard about FGM/C who use the word Saleema to name an uncircumcised girl by State (Sudan 2014 MICS)



Source: Unicef - Secondary Analysis of Sudan 2014 MICS data, Feb. 2016

1.2 Variation in the use of the Saleema word by some of the women's characteristics

The way women name an uncircumcised girl is significantly associated with all their characteristics selected here: Age, Education, Marital status, Household wealth and FGM/C status (Table 16). The *Saleema* word is most used by young, never married, better educated, wealthier and uncircumcised women.

The use of the word increases with age. For instance, 17.6 percent of the 15-19-year olds use the word vs. 12.1 percent of the 40-49-year olds. It also increases regularly from 6.4 percent among women with no formal education up to 33.4 percent among women with the highest level of education, and from 5.4 percent among women living in the poorest households to up to 25.8 percent among their counterparts in the wealthiest households. By marital status, single women are twice more likely to use the word than currently married ones (20.4 percent vs. 11.3 percent). Last but not least, women who have undergone FGM/C use the word *Saleema* less than uncircumcised ones (13.1 percent vs. 24.1 percent).

Table 16. Percentage distribution of women aged 15-49 years who ever heard about FGM/C by the way they name an uncircumcised girl by some of their characteristics (Sudan 2014 MICS)

Area of residence and State	Way women name an uncircumcised girl						Number of women
	Saleema	Not Circumcised	Not Motahara	Other	Missing	Total	
Sudan	14.2	3.4	44.0	38.2	0.2	100.0	17 620
Age group (years) (*)							
15-19	17.6	3.5	44.5	34.3	0.1	100.0	3 571
20-29	14.3	3.6	42.8	39.1	0.2	100.0	6 284
30-39	12.8	3.1	44.5	39.4	0.1	100.0	4 886
40-49	12.1	3.4	45.3	39.0	0.2	100.0	2 880
Education (*)							
None	6.4	1.7	47.9	43.7	0.3	100.0	5 399
Primary	9.5	2.4	46.1	41.7	0.2	100.0	5 939
Secondary	21.6	5.7	40.4	32.2	0.1	100.0	4 328
Higher	33.4	6.2	35.1	25.3	0.0	100.0	1 954
Marital status (*)							
Never married	20.4	4.6	42.2	32.7	0.2	100.0	5 359
Currently married	11.3	2.8	45.1	40.6	0.2	100.0	11 399
Formerly married	14.0	3.9	40.8	41.2	0.1	100.0	862
Household wealth (*)							
Poorest	5.4	0.7	34.7	59.0	0.2	100.0	3 112
Second	8.1	1.4	43.3	46.8	0.4	100.0	3 130
Middle	12.9	3.1	45.9	37.9	0.2	100.0	3 473
Fourth	14.8	5.1	52.6	27.3	0.1	100.0	3 678
Richest	25.8	5.6	42.4	26.2	0.0	100.0	4 226
FGM/C Status (*)							
Not circumcised	24.1	2.3	48.5	24.8	0.3	100.0	1 767
Circumcised	13.1	3.5	43.5	39.7	0.1	100.0	15 853

(*): Differences are statistically significant at the 5% level.

II. USE OF THE SALEEMA WORD AND FGM/C BELIEFS AND PRACTICE

This chapter investigates if women's attitudes towards FGM/C vary significantly according to their use or not of the *Saleema* word, and if circumcision of daughters is associated with the use of *Saleema* by their mothers.

2.1 Use of the Saleema word and attitude towards FGM/C

Table 17 clearly shows that women using the word *Saleema* to name uncircumcised girls are more open to the idea of abandoning FGM/C than women using other words. While 88.6 percent of women using the *Saleema* word favour discontinuation of FGM/C practice, only 62.4 percent of women using the expression "not circumcised" and less than 50 percent of women using other words/expressions feel the same.

Table 17. Percentage distribution of women aged 15-49 years who ever heard about FGM/C by their attitude towards continuation of the FGM/C practice according to whether they use the word Saleema to name an uncircumcised girl or not (Sudan 2014 MICS)

Attitude towards the FGM/C practice	Way women name an uncircumcised girl					
	Saleema	Not Circumcised	Not Motahara	Other	Missing	Total
Continued	9.5	32.9	44.3	49.6	15.9	40.9
Discontinued	88.6	62.4	48.6	43.6	11.8	52.8
Undetermined	1.9	4.7	7.1	6.8	72.2	6.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	2 500	602	7 759	6 730	29	17 620

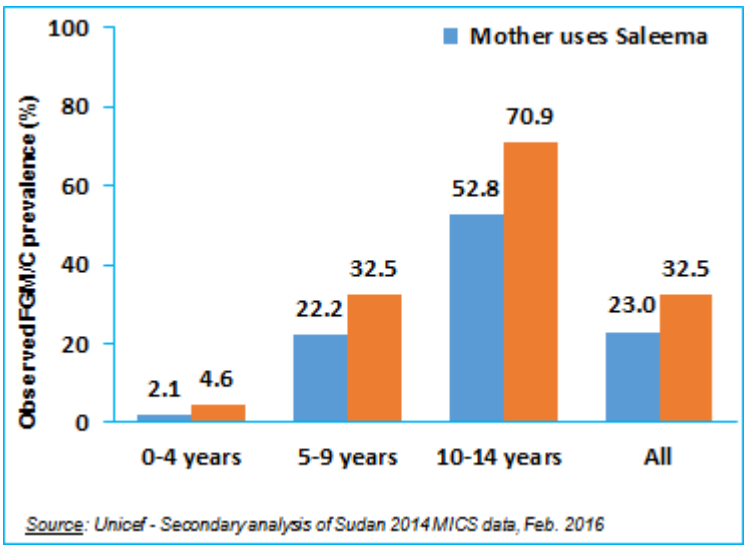
Differences are statistically significant at the 5% level.

2.2 Use of the Saleema word and FGM/C practice

As for the relationship between the use of the *Saleema* word and FGM/C practice, Figure 36 shows that FGM/C prevalence is 30 percent higher among girls whose mothers do not use the *Saleema* word (32.5 percent) than girls whose mothers use it (23.0 percent). This holds irrespective of the daughters' age group.

However, this is in no way proof of a causal relationship because the circumcision may have been performed well before the mothers started using the word *Saleema*.

Figure 36. Observed FGM/C prevalence in 2014 among girls aged 0-14 years by age group according to whether their mothers use the word Saleema to name an uncircumcised girl or not (Sudan 2014 MICS)



Differences are statistically significant at the 5% level.

In conclusion, what emerges from the above tentative evaluation is that, if the use of the word is a marker of the responsiveness to the *Saleema* campaign then, one can determine that the campaign is at its first stage in reaching out to its audience. According to the theories of social change and innovation, change is diffused through a group by first being adopted by the vanguards who typically belong to the elite and have the most modern characteristics. In the case of Sudan, these women are the young, single, well educated, and living in wealthier households.

At the national level, one in seven women (14.2 percent) uses the word Saleema to name girls who are not circumcised

PART VI.

CHILD MARRIAGE

INTRODUCTION

Child marriage is defined here as marriage before age 18. Child marriage is widely practiced in many countries, including Sudan. According to UNICEF (2013) worldwide, more than 700 million women alive were married before age 18, more than a third of them before age 15. Yet child marriage is a violation of human rights, especially in terms of right to 'free and full' consent to a marriage embodied in the Universal Declaration of Human Rights. Child marriage also has several negative consequences on girls' development and health. This includes school dropout, unbalanced gender relationships within the couple due to young girls often married to older men, and early childbearing with its risks on child and maternal health. This part analyses the current prevalence of child marriage and its associated factors.

I. CURRENT PREVALENCE OF CHILD MARRIAGE

Three indicators are used to measure child marriage among women aged 15-49 years:

- The percentage married before age 15 years among the 15-49-year old
- The percentage married before age 18 years among the 20-49 years (teenagers are excluded because they have not completed their exposure to the risk of getting married before age 18 years)
- The percentage married among the teenagers (aged 15-19 years)

We will first look at the mean and median ages at first marriage among the age group 25-49 years by 5-year age group to see if it has evolved significantly over time. We exclude the 15-25 year-olds because the majority of them are still exposed to the risk of being married, so that the median and mean are not directly comparable to the one of older women.

1.1 Mean and median ages at first marriage among women aged 25-49 years

Women's calendar of first marriage seems not to have changed a lot over time in Sudan. Though the differences in the mean age by generation are statistically significant, it is too slight. It varies from a maximum of 20.4 years among the 40-44-year olds to 18.1 years among the 25-29-year olds (Table 18).

Table 18. Mean and median ages at first marriage among women aged 20-49 years by age group (Sudan MICS 2014)

Current 5-year age group	Age at first marriage (year)				Number of women
	Minimum	Maximum	Mean	Median	
	10	29	18.1	18.0	2729
30-34	10	34	19.0	18.0	2 263
35-39	10	39	19.8	19.0	2 325
40-44	10	43	20.4	19.0	1 510
45-49	10	48	20.0	18.0	1 260
Total	10	48	19.3	18.0	10 088

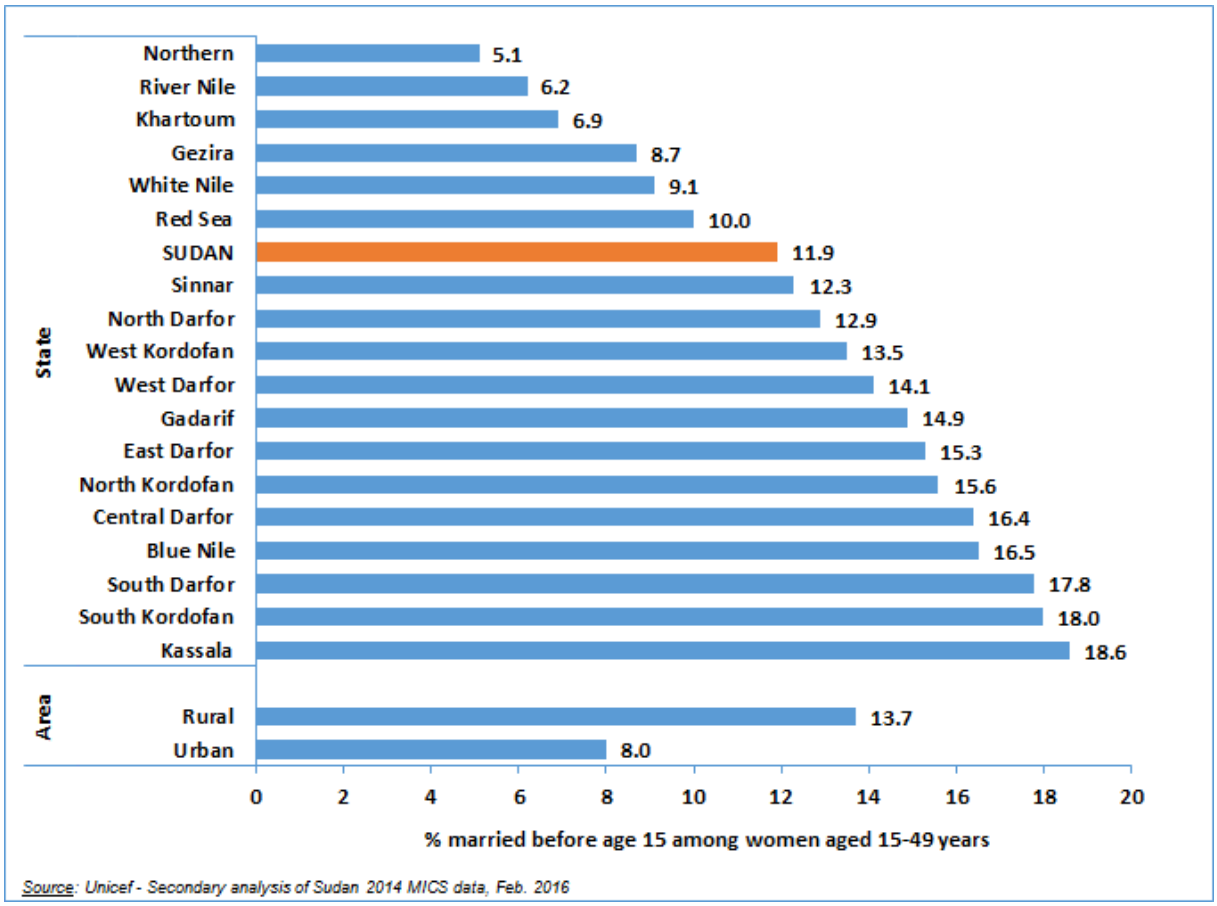
The between groups differences in the mean age are statistically significant at the 5% level.

1.2 Prevalence of marriage before age 15 years

In Sudan, more than one tenth (11.9 percent) of women aged 15-49 years were married before 15 years of age. The practice is slightly more common in rural than in urban areas and varies considerably across the states, from a minimum of 5.1 percent in Northern to a maximum of 18.6 percent in Kassala.

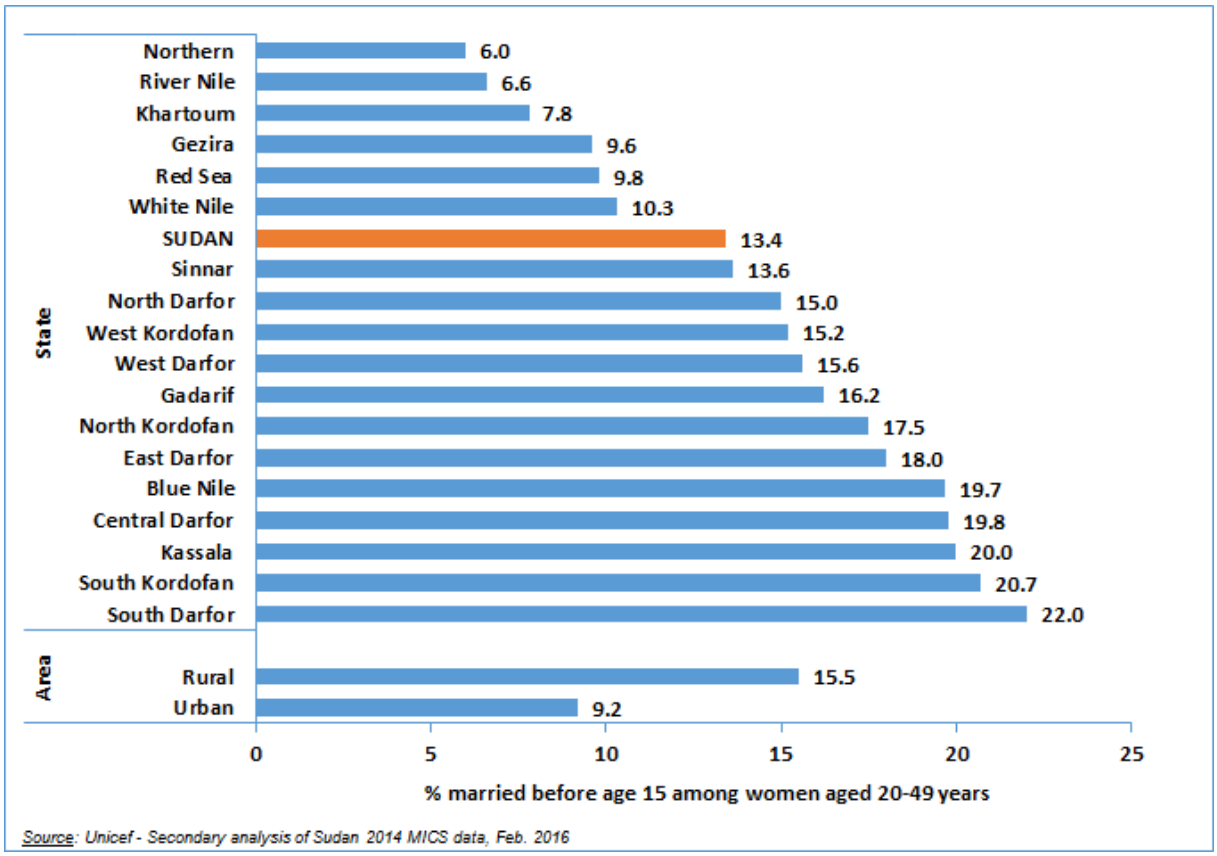
The general pattern is that very early marriage (before age 15 years) is more widespread in the Darfur and Kordofan states than elsewhere (Figure 37 and Figure 38). The same pattern is observed when considering women aged 20-49 years. This similarity of both patterns is an indication that the phenomenon is not recent in the country.

Figure 37. Percentage of women who were married before age 15 years by State and area of residence among women aged 15-49 years (Sudan 2014 MICS)



Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

Figure 38. Percentage of women who were married before age 15 years by State and area of residence among women aged 20-49 (Sudan 2014 MICS)



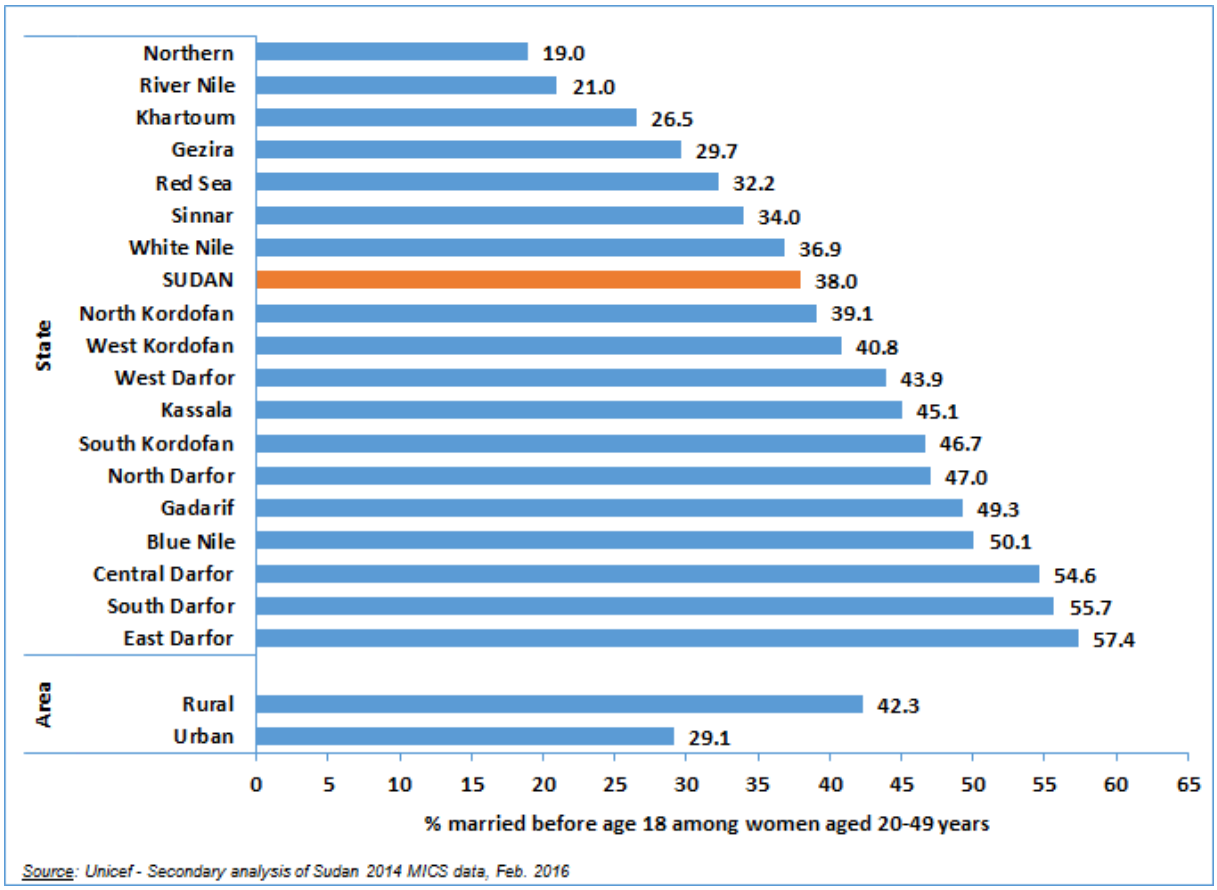
Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

1.3 Prevalence of marriage before age 18 years

Marriage before age 18 is considered child marriage, but it is very common in Sudan, since nearly two fifths of all women aged 20-49 years were already married before their 18th birthday (38.0 percent). Differences by area of residence are significant: 42.3 percent in rural areas compared to 29.1 percent in urban areas (Figure 39). By State, variations are even more marked with the rate of child marriage ranging from 19.0 percent in Northern to 57.4 percent in East Darfur. In half of the states, it is higher than 40 percent and in 5 states, half or more of the women were married before age 18.

As for very early child marriage, it is especially evident in the Darfur and Kordofan states, where the practice is well established.

Figure 39. Percentage of women aged 20-49 who were married before age 18 years by State and area of residence (Sudan 2014 MICS)



Source: Unicef - Secondary analysis of Sudan 2014 MICS data, Feb. 2016

1.4 Percentage of married among the adolescents (aged 15-49 years)

Table 19 presents the variation in percentage of married among adolescents (aged 15-19 years) by area of residence, state, education and household wealth index.

Marriage among adolescent girls is widespread in Sudan. More than one in 5 adolescents (21.2 percent) is or has already been married. It is more common in rural areas (26.0 percent) than in urban areas (11.2 percent). Variations across states are marked, with the prevalence varying from a minimum of 12.0 percent in Khartoum to 33.1 percent in Gadarif. Kassala and Blue Nile, are the two other states with the highest prevalence (30 percent). This indicates that the pattern is then different from the one depicted by the two previous indicators where the Darfur and Kordofan states stood out as more pro-child marriage.

Table 19. Percentage of married among adolescent girls (aged 15-19 years) by area of residence, State, Education and household wealth (Sudan MICS 2014)(*)

Variables	Ever married		
	Percentage married	Number of married adolescents	Total number of adolescents
Total	21.2	785	3 708
Area of residence			
Urban	11.2	137	1 218
Rural	26.0	649	2 491
State			
Northern	13.6	11	81
River Nile	22.3	27	123
Red Sea	23.0	17	74
Kassala	29.8	44	147
Gadarif	33.1	54	164
Khartoum	12.0	70	583
Gezira	21.1	143	681
White Nile	20.8	34	165
Sinnar	19.2	24	124
Blue Nile	29.9	50	167
North Kordofan	27.6	69	249
South Kordofan	20.1	22	112
West Kordofan	19.6	33	168
North Darfur	16.6	44	265
West Darfur	20.5	26	125
South Darfur	23.7	73	306
Central Darfur	22.5	14	63
East Darfur	26.3	30	114
Education			
None	40.5	210	519
Primary	27.6	447	1 621
Secondary	8.8	125	1 409
Higher	2.4	4	160
Wealth index quintile			
Poorest	24.5	154	629
Second	30.1	217	720
Middle	25.5	198	776
Fourth	16.9	127	753
Richest	10.7	89	831

II. PROFILING MARRIED ADOLESCENTS

To ascertain how similar or different the ever-married adolescents are compared to those never-married, this chapter and the one following compare distribution by some of their background characteristics (area of residence, State, level of education and household wealth). Characteristics related to FGM/C are also compared. In no way does the association described here imply causal relationships. The characteristics analysed do not necessary explain child marriage.

For each variable, we will compare the percentage distribution of the ever-married adolescents and the never-married ones. For each modality, we will compute the ratio between the two percentages. For a given modality, the higher the difference between the ratio and 1, the greater the difference is

between the two groups of adolescents vis-à-vis that modality - a ratio of 1 indicating absence of difference adolescents. If the ratio equals 1 for all modalities of a variable, this means that the two groups of adolescents are absolutely identical in terms of distribution by the variable. For each variable, a test of significance is run to further assess the differences between the two groups.

2.1 Urban/Rural and geographical distribution of ever-married adolescents compared to never-married ones

Table 20 compares the percentage distributions of the ever-married and never-married adolescents by area of residence and state. It shows that ever-married adolescents are significantly different from the never-married ones in terms of area of residence and geographical distribution. They are twice less likely to be found in urban areas (17.4 percent of them live in cities) than never-married ones (37.0 percent). In terms of geographical distribution, ever-married adolescents are twice less likely to live in Northern and Khartoum and more likely to reside in Gadarif, Kassala, Blue Nile and North Kordofan, than the ever-married ones.

Table 20. Percentage distribution of ever-married and never-married adolescents by area of residence and State (Sudan MICS 2014)

Area of residence and State	Ever married adolescents (a)	Never-married adolescents (b)	Ratio (c=a/b)
Area of residence (*)			
Urban	17.4	37.0	0.5
Rural	82.6	63.0	1.3
Total	100.0	100.0	1.0
State (*)			
Northern	1.4	2.4	0.6
River Nile	3.5	3.3	1.1
Red Sea	2.2	1.9	1.1
Kassala	5.6	3.5	1.6
Gadarif	6.9	3.7	1.8
Khartoum	8.9	17.5	0.5
Gezira	18.3	18.4	1.0
White Nile	4.4	4.5	1.0
Sinnar	3.0	3.4	0.9
Blue Nile	6.4	4.0	1.6
North Kordofan	8.8	6.2	1.4
South Kordofan	2.9	3.1	0.9
West Kordofan	4.2	4.6	0.9
North Darfur	5.6	7.6	0.7
West Darfur	3.3	3.4	1.0
South Darfur	9.2	8.0	1.2
Central Darfur	1.8	1.7	1.1
East Darfur	3.8	2.9	1.3
Total	100.0	100.0	1.0
Number of adolescents	785	2 923	

(*): The differences are statistically significant at the 5% level

2.2 Level of education and household wealth of ever-married adolescents compared to never-married ones

Marriage during adolescence is significantly associated with low levels of education and less household wealth (Table 21). Ever-married adolescents are 2.5 times more likely to have received no formal education than those never-married. Ever married adolescents are also 1.4 times more likely to have a primary level of education compared to never-married adolescents. Conversely, never-married adolescents are 10 times more likely to reach higher levels of education and 2.5 times more likely to reach a secondary level of education than ever-married adolescents.

Table 21. Percentage distribution of ever-married and never-married adolescents by level of education and household wealth (Sudan MICS 2014)

Level of education and Household wealth	Ever married adolescents (a)	Never-married adolescents (b)	Ratio (c=a/b)
Level of education (*)			
None	26.7	10.6	2.5
Primary	56.9	40.2	1.4
Secondary	15.9	43.9	0.4
Higher	0.5	5.3	0.1
Total	100	100	100
Wealth index quintile (*)			
Poorest	19.7	16.2	1.2
Second	27.6	17.2	1.6
Middle	25.2	19.8	1.3
Fourth	16.2	21.4	0.8
Richest	11.3	25.4	0.4
Total	100.0	100.0	1.0
Number of adolescents	785	2 923	

(*): The differences are statistically significant at the 5% level

III. MARRIAGE AMONG ADOLESCENTS AND FGM/C

This chapter examines the differences in FGM/C practice and attitudes among adolescents depending on their marital status. It completes the profiling of ever-married adolescents, started in the previous chapter.

3.1 Ever-married adolescents' attitude towards FGM/C compared to never-married adolescents

Marriage is significantly associated with attitude towards FGM/C among adolescents (Table 22). Never-married adolescents are twice more likely to call an uncircumcised girl *Saleema* than ever-married ones. They are also more likely to favour abandonment of FGM/C (57.5 percent) than ever-married adolescents (37.7 percent).

Table 22. Percentage distribution of ever-married and never-married adolescents by area of residence and State (Sudan MICS 2014)

FGM/C-related characteristics	Ever married adolescents (a)	Never-married adolescents (b)	Ratio (c=a/b)
Way to name an uncircumcised girl (*)			
Not Circumcised	2.0	3.9	0.5
Saleema	10.1	19.6	0.5
Not Motahara	52.9	42.3	1.3
Other	35.0	34.3	1.0
Should FGM practice be continued or discontinued (*)			
Continued	55.4	34.5	1.6
Discontinued	37.7	57.5	0.7
Missing/DK/Depends	7.0	8.0	0.9

(*): The differences are statistically significant at the 5% level

3.2 Prevalence of FGM/C and re-circumcision among ever-married adolescents compared to never-married ones

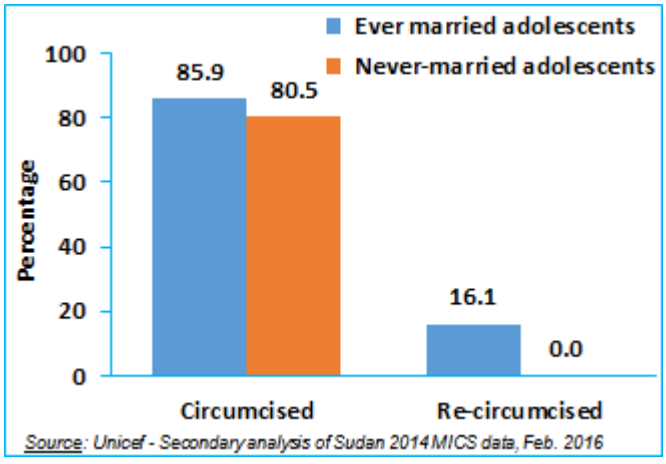
Figure 40 below, reveals that FGM/C prevalence is slightly, but significantly, higher among ever-married adolescents (85.6 percent) than among never-married ones (80.5 percent).

As for re-circumcision of already circumcised adolescents, it is exclusively practiced on those ever-married.

This is to be linked to re-circumcision generally performed after childbirth, on the one hand, and childbearing taking place only within marriage in Sudan, on the other.

In fact, re-circumcision prevalence is 26.7 percent among ever-married adolescents who have previously given birth, compared to 2.7 percent only among ever-married adolescents who never delivered (table not shown).

Figure 40. Prevalence of circumcision and re-circumcision among ever-married and never-married adolescents (Sudan 2014 MICS)



The differences are statistically significant at the 5% level

3.3 Some characteristics of the FGM/C among ever-married adolescents compared to never-married ones

Among circumcised adolescents, the characteristics of the circumcision differ significantly according to marital status (Table 23). The form of circumcision received differs slightly between the two groups but variances in type of performer is more marked.

Ever-married adolescents are twice more likely to have been circumcised by traditional circumciser than never-married ones. Differences in cutting age is more difficult to interpret due to the very high percentage of missing age among ever married adolescents (16.3 percent, twice more than among the never-married ones).

Table 23. Percentage distribution of ever-married and never-married adolescents by area of residence and State (Sudan MICS 2014)

Characteristics of the FGM/C	Ever married adolescents (a)	Never-married adolescents (b)	Ratio (c=a/b)
Flesh removed from the genital area (*)			
Yes	90.3	83.2	1.1
No	6.5	11.2	0.6
Undetermined	3.2	5.6	0.6
Total	100	100	100
Genital area nicked without flesh removing (*)			
Yes	4.3	6.2	0.7
No	93.2	88.5	1.1
Undetermined	2.5	5.3	0.5
Genital area sewn closed (or Sealed) (*)			
Yes	73.8	69.9	1.1
No	22.4	23.8	0.9
Undetermined	3.9	6.3	0.6
Total	100	100	100
Circumcision performer (*)			
Traditional circumciser	29.0	15.0	1.9
Health professional	65.1	82.0	0.8
Undetermined	5.9	3.0	2.0
Total	100	100	100
Cutting age (*)			
0-4 years	12.1	8.8	1.4
5-9 years	60.6	68.1	0.9
10 years & +	11.0	14.8	0.7
Undetermined	16.3	8.4	1.9
Total	100	100	100
Number of circumcised adolescents	609	1 959	

(*): The differences are statistically significant at the 5% level

CONCLUSION

The main objective of this study was to investigate the level, trends and factors associated with FGM/C and child marriage Sudan. It also aimed to examine closely the way FGM/C was measured in Sudan by the four nationwide surveys conducted since 2000: 2 SHHSs and 2 MICSs.

The findings show that FGM/C is widely practiced in Sudan, but exhibits marked variations by state. At the national level, 86.6 percent of women in the reproductive age have undergone a form of FGM/C. Girls are already at risk since 31.5 percent aged 0-14 years are already cut. However, this is an underestimation of what would be the prevalence among that age group after they all reach age 14. We used survival analysis techniques to compute an adjusted prevalence for the 0-14 year olds and found that 66.3 percent of them will end up being circumcised. Though high, this prevalence indicates that FGM/C is actually declining in the Sudanese society.

We calculated that with a prevalence among the younger generation (0-14 years) of 66.3 percent compared to 88.3 percent among the 30-34 year olds, and 91.8 percent among the 45-49 year olds, it corresponds to a 25 percent decrease in the FGM/C between the generations aged 0-14 years and 30-34 years; and a 21 percent decrease in the FGM/C prevalence between the generations aged 0-14 years and 15-29 years.

This important downtrend in predominance gives a clear indication that the FGM/C practice is being abandoned in Sudan, though not clearly perceivable in the trends of the national prevalence. If past trends in FGM/C are maintained, the practice could be eliminated among girls born after 2040, which is in a 26-year timeframe.

The changes mainly took place recently, since the percent decrease is far higher between the two youngest generations (21.8 percent) than between the two oldest generations (3.9 percent). In Few states, the timing and the nature of the changes is quite different from the general pattern described in the above 2 bullets. On the one hand, in Central Darfur, Khartoum and in a less extent Gezira, where a substantial decrease occurred between the two oldest generations (thus changes started earlier in those states). On the other hand, West Kordofan witnessed an important increase in FGM/C prevalence (-13.5 percent) between the two oldest generations, as well as Blue Nile (-3.9 percent) and West Darfur (-0.9 percent). This means that the FGM/C practice was being adopted by individuals in the states that normally did not practice it or that important flows of migrants from states where the practice is well-established settled in those locations. Ethnicity and migration appear to be the most important factors behind the practice, though the MICS did not collect data on neither of both aspects.

The changes did not occur only in terms of prevalence, but also in terms of an increase in the medicalization of the practice, with FGM/C being more frequently performed by trained midwives.

FGM/C is significantly related to reproductive health and marriage and less to women's educational achievement.

The important downtrend in FGM/C predominance gives a clear indication that the harmful practice is being abandoned in Sudan

The decrease in the FGM/C prevalence is encouraging for all stakeholders working against the practice for decades, with major intensification of the interventions in the recent years. In terms of their C4D, our analysis shows that the *Saleema* initiative has reached various and important segments of the Sudanese society. At the national level, 14.2 percent of women use the word *Saleema* to name girls who are not circumcised. The use of the *Saleema* word is more widespread in urban areas where 22.9 percent of women use it as compared to only 9.8 percent in rural areas.

The most striking differences appear by state. The word *Saleema* is far more used in the Blue Nile state (35.5 percent) than in other states, where between 4.4 percent and 21.3 percent use it. In the three states of Khartoum, River Nile and Kassala, one fifth of the women use it. In a further five states, less than 10 percent of women use it (East, North and Darfur, and West and North Kordofan). In the remaining states, the percentage using the word varies from 10.5 percent to 17.6 percent.

Women using the word *Saleema* to name uncircumcised girls are more open to the idea of abandoning FGM/C than women using other words. While 88.6 percent of women using the *Saleema* word favour discontinuation of FGM/C practice, only 62.4 percent of women using the expression “not circumcised” and less than 50 percent of women using other words/expressions, feel the same.

As for the relationship between the use of the word *Saleema* and FGM/C practice, prevalence is 30 percent higher among girls whose mothers do not use the *Saleema* description (32.5 percent) than girls whose mothers use it (23.0 percent). This holds irrespective of the age group of the girls.

Regarding child marriage, it is a widespread practice in Sudan with several negative impacts that need to be urgently addressed as part of the efforts in child protection, and also as a means to promote FGM/C abandonment.

RECOMMENDATIONS

Based on the findings summarized above, we have formulated the following general and specific recommendations toward the stakeholders implementing programmes to end FGM/C in Sudan:

General recommendations

- In terms of interventions: More support should be provided for the continuation and even scaling up of the current interventions to free Sudan from FGM/C in one generation, given the encouraging findings on the downtrend of prevalence.

- In terms of data and evidence-based decision-making: The huge heterogeneity of the states in respect of all FGM/C aspects analysed here call for a preparation of an FGM/C profile for each state based on the current analysis. This should be done as quickly as possible while the 2014 MICS data are still fresh.

Specific recommendations

- Ethnicity and migration should be explicitly taken into account in all strategies to end FGM/C practice in Sudan, starting with the gathering of information on both aspects in future data collection including questions on FGM/C.

- The anti-FGM/C programs should design and implement intensified programs directed at trained midwives in order to rally them all behind the efforts to eliminate FGM/C. The increased medicalization of the practice gives a unique opportunity to reach out to more women with an authorized voice (the health personnel) and to conduct individualized counselling against FGM/C. This is a more efficient way than delivering group messages.

- The anti-FGM/C programs should integrate re-circumcision as a specific focus with explicitly designed interventions since it has received so far less attention than circumcision.

- Efforts to promote education should be considered as an integrated part of the programming against FGM/C. Education proved to be among the rare mothers' acquired characteristics significantly associated with daughter's FGM/C status and that can be impacted by specific interventions.

- Seemingly, the efforts to end child marriage should be viewed as a stand-alone program but also as a means to promote abandonment of FGM/C in Sudan, since girls from mothers who married later are less likely to be circumcised, as the same for education.

- The programmes against FGM/C among girls should equally focus on all parties involved in the decision-making of the cutting and not primarily on mothers. This should start with collecting information on actors involved in the decision-making process in future surveys, as is already implemented with place of delivery.

- The findings of this study should be used to better tailor the sensitization campaigns.

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