COMPLEMENTARY FEEDING PRACTICES IN PAKISTAN

AN IN-DEPTH ANALYSIS OF PDHS 2012-13

NATIONAL INSTITUTE OF POPULATION STUDIES

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AN IN-DEPTH ANALYSIS OF PDHS 2012-13

The study on "Complementary Feeding Practices in Pakistan: An In-depth Analysis of the Pakistan Demographic & Health Survey (PDHS) 2012-13" is carried out by National Institute of Population Studies with the financial and technical support of DFID and UNICEF. The purpose of the study was to provide status of optimal consumption patterns and child feeding practices in breastfed and non-breastfed children. It has assessed the association between complementary feeding practices and demographic, socio-economic and health indicators of children age 6-23 months and their mothers. The technical experts have provided suggestions/ recommendations to the policy makers to design a formative qualitative research.

NIPS was established in 1986 and currently working under the umbrella of the Ministry of National Health Services, Regulation and Coordination. The Institute has played a key role in studying the dynamics of parameters pertaining to health and population for providing technical support to design action oriented Population Welfare Programmes. It has generated reliable demographic indices and provided policy guidelines for planners and administrators of Health, Planning and Development Divisions and regional Population Welfare Programmes. The studies carried out by NIPS provide an insight for the programme administrators and help in identifying major issues to be addressed. National Institute of Population Studies has been recognized nationally and internationally for reliability and high quality of its research, training and human resource development, monitoring and evaluation in the areas of health, population and development. One of its mandates is to provide population projections, authentic data and analytical inputs for planning and policy formulation and studies on socio-economic dimensions of population growth and development.

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FOREWORD

The study on Complementary Feeding Practices in Pakistan is carried out by National Institute of Population Studies. The specific objectives of the study were to provide status of optimal consumption patterns and child feeding practices in breastfed and non-breastfed children. The current study assesses the association between complementary feeding practices and demographic, socio-economic and health indicators of children age 6-23 months and their mothers. In addition, the study will provide suggestions/recommendations to UNICEF for designing the questionnaires for the Formative Qualitative Assessment on Infant and Young Child Feeding Practices.

Using PDHS data a nationally representative sample of ever married women aged 15-49, a sub-sample of 2,855 children aged 6–23 months and their mothers was extracted for secondary data analysis. Information provided on food group intake, consumption of the seven food groups, macronutrients, micronutrients and complementary feeding practices by mothers or caregivers was used in the present analysis.

This report consists of seven (7) chapters including review of literature, defining input and outcome variables, methodology used for analysis, consumption of food, complementary feeding practices and association with demographic, socio economic and health indicators. The task was completed in a professionally conducive environment. I hope findings and recommendation will be helpful to understand the current situation of Complementary Feeding Practices in Pakistan and could be used as benchmark for the development of programme interventions.

I am confident that the information available in the report would provide input to the managers for designing the upcoming National Nutrition Survey in Pakistan. This study will help to design quality nutrition programs including food fortification programmes that address the major bottlenecks to optimal child feeding and to design a behavior change campaign that can be tailored provincially and regionally.

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I wish to express my gratitude to the authors of this report, Ms. Azra Aziz, Dr. Aysha Sheraz, Mr. Sajawal Mukhtar, Mr. Zafar Zahir, Ms. Rabia Zafar and Ms. Mehar Nisha. My special thanks to Muhammad Ali Raza, data Analyst, for analyzing the data, generating required tables and formatting the report. I would also like to thank Dr. G.M. Arif for providing valuable comments on the draft report. I thank all researchers and colleagues for fruitful discussion and input during the preparation of this study who worked very hard to complete the study. I also appreciate the NIPS support staff for facilitating the work.

Dr. Mukhtar Ahmad
Executive Director
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NUTRITION WING OF MINISTRY OF NATIONAL HEALTH SERVICES REGULATIONS & COORDINATION

Appropriate feeding practices are essential for the nutritional status, growth, development and survival of infants and young children. Infants should be exclusively breastfed for the first six months of life, and thereafter should receive nutritionally adequate and safe complementary foods, while breastfeeding should continue up to at least two years. The strong persistent bonding between mother and child provided by breastfeeding encourages optimal psychosocial development. It is recommended that babies should receive complementary foods (CF) from six months of age because they require adequate nutritious foods in addition to breast milk. Locally available and affordable foods that enrich the baby's diet with additional calories and micronutrients should be offered – soft or mashed – in small quantities, several times a day. These complementary foods should gradually increase in amount and frequency as the baby grows.

The study on Complementary Feeding Practices in Pakistan was carried out utilizing data of Pakistan Demographic and Health Survey (PDHS) 2012-13 conducted by National Institute of Population Studies (NIPS) with the generous support of DFID & UNICEF. The purpose of the study was to assess the food consumption and complementary feeding (CF) patterns by socio-economic and health characteristics of mothers and children of age 6-23 months. The study analyses the CF practices in Pakistan using micro-data set of Pakistan Demographic and Health Survey (PDHS) 2012-13. The PDHS 2012-13 was representative at the national level as well as for the provinces.

The study gives direct and indirect relationship of complementary feeding with different malnutrition indicators and also preferences of mothers and families about food types used as complementary food. The analysis also clarifies some of the important behavior patterns regarding male and female child, families belonging to different wealth quintiles, and with different levels of education. It also identifies some of the wide-ranging actions that can be taken to improve legislation, policies and standards to protect optimum infant and young child feeding practices, and develop BCC strategies for health care providers and communities to promote and support the nutritional needs of infants and young children.

The role and contribution of National Institute of Population Studies (NIPS), Dr. Mukhtar Ahmad and his team, in conducting this in-depth analysis of complementary feeding indicators from PDHS 2012-13, is highly appreciated. I would like to concede the hard work put in by UNICEF team Ms. Melanie Galvin, Dr. Wisal Khan, Dr. Saba Shuja and Ms. Sumra Kureishy and also my whole team of Nutrition Wing of MoNHSR&C especially Dr. Khawaja Masuood Ahmed, for their devoted work and inputs, review and finalization of the document.

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ACRONYMS

CF	Complementary Feeding
MMF	Minimum Meal Frequency
MDD	Minimum Dietary Diversity
MAD	Minimum Acceptable Diet
KAP	Knowledge, Attitudes and Practices
BCC	Behavior Change Communications
DFID	(UK's) Department for International Development
ANC	Antenatal Care
PNC	Post Natal Care
BMI	Body Mass Index
WHO	World Health Organization
MoNHSR&C	Ministry of National Health Service Regulation and Coordination
NIPS	National Institute of Population Studies
UNICEF	United Nations International Children's Emergency Fund
PDHS	Pakistan Demographic & Health Survey
NNS	National Nutrition Survey
NSWP	Nutrition Survey of West Pakistan
MNS	Micronutrient Nutrition Survey
IYCF	Infant and Young Child Feeding
NNS	National Nutrition Survey
KP	Khyber Pakhtunkhaw
GB	Gilgit Baltistan
ICT	Islamabad Capital Territory
WQ	Wealth Quintile
BMI	Body Mass Index
IFPRI	International Food Policy Research Institute

DEFINITIONS

Bivariate Analysis	Studying whether a relationship exists between two variables
Multivariate Analysis	Studying whether two or more variables are correlated with a specific outcome

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EXECUTIVE SUMMARY

The study on Complementary Feeding Practices in Pakistan was carried out utilizing data of Pakistan Demographic and Health Survey (PDHS) 2012-13 conducted by National Institute of Population Studies (NIPS). The purpose of the study was to assess the food consumption and complementary feeding (CF) patterns by socio-economic and health characteristics of mothers and children of age 6-23 months. Complementary feeding is referred to the process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast milk.

In other words the transition from exclusive breastfeeding to solid and semi-solid foods – referred to as complementary feeding – typically covers the period from 6 - 23 months of age. CF mainly consists of Minimum Dietary Diversity (MDD), Minimum Meal Frequency (MMF) and Minimum Acceptable Diet (MAD).

The objectives of the study were to:

- Explore the status of optimal consumption patterns and child feeding practices, with reference to breastfed and non-breastfed children 6-23 months of age;
- Determine the association of socio-demographic characteristics between food consumption and CF practices among children 6-23 months of age;
- Find out the association between food consumption patterns, CF practices and health nutritional status among children 6-23 months of age; and
- Draw recommendations for formative qualitative research and for policymakers and planners.

The study analyzes the CF practices in Pakistan using a micro-data set of Pakistan Demographic and Health Survey (PDHS) 2012-13. Total of 2855 children aged 6–23 months and their mothers were extracted for data analysis. Data was available on the youngest child's dietary intake within 24 hours preceding the interview. This information on dietary intake of young children was collected from mothers or caregivers on a recall basis. Information was also provided on food group intake, consumption of the seven food groups, macronutrients, micronutrients and CF practices by mothers or caregivers, which was used in the present analysis. The PDHS 2012-13 was representative at the national level as well as for provinces. Although it is difficult to establish the representativeness of the sampled children drawn for this study, they are sufficient in number (2855) for the analysis.

The bivariate analysis was carried out to observe the association of consumption patterns of seven food groups with selected demographic, socio-economic and health indicators and their breastfeeding status. Multivariate logistic regression analysis was applied to examine the relationship of three CF related outcome variables (minimum dietary diversity, minimum meal frequency and minimum acceptable diet) with demographic, social and health indicators.

The findings showed that consumption of grains, roots and tubers was highest while the consumption of legumes and nuts was lowest among the children of aged 6-23 months. The consumption of the WHO recommended seven food groups was slightly higher among male children as compared to female children. Children of younger mothers received less food from any recommended seven food groups as compared to children of older mothers. Educated mothers were found to be better caregivers to their children as compared to uneducated mothers.

Mothers who have given birth to up to 2 children gave multiple foods as compared to mothers who had given birth to six or more children. Mother's involvement in the decision-making process regarding major household purchases was significantly associated with food consumption. Consumption of grain, roots and tubers, dairy products, eggs, and fruits and vegetables were found to be relatively higher among children whose parents made joint decisions or/and mothers took sole decisions regarding major household purchases. Children of non-working mothers were more likely to have a better diet consisting of the seven food groups than the children of working mothers.

A significant association was found between seven food group consumption and exposure to media. The children of mothers who were exposed to media were identified as having higher proportion of seven food groups as compared to children of mothers having no exposure to media. Another finding is that consumption of seven food groups increased as the wealth quintiles increases. Children who belonged to the richest wealth quintile received more diversified food than children from other wealth quintiles. A strong association is found between residence and seven food group consumption. Children living in urban areas received a better diet by receiving a higher percentage of dairy products, grains, roots & tubers, other fruits and vegetables, eggs, and meat as compared to the children from rural areas.

It is also observed that the consumption of majority of the food groups slightly decreases as the birth order of the child increases. Children whose mothers received continuum of care were more likely to be fed a diet according to the recommended seven food groups as compared to children whose mothers did not receive continuum of care.

Interestingly, approximately half of the sampled children (45%) consumed foods rich in vitamin A. Consumption of foods rich in vitamin A and iron was higher among children of educated parents than children of uneducated parents. Consumption of foods rich in vitamin A and iron was higher among children who lived in households with two people per room and had access to improved sanitation. Children of mothers who made household decisions on major purchases solely were more likely to have vitamin A and iron rich foods. Over half (52%) the children whose mothers made decisions solely consumed vitamin A rich foods, while 40 percent consumed iron rich foods than mothers who shared the decision-making process. A significant association was found between consumption of vitamin A, iron and exposure to media. Furthermore, children belonging to rich households consumed more vitamin A and iron rich foods as compared to poor households. Consumption of foods rich in vitamin A was higher among urban children (53%) as compared to the children living in rural areas (41%).

Approximately 70 percent of the children who had mothers aged 19 or older consumed iron rich foods compared to only 23 percent children who had mothers aged 15-18 years.

Overall, 83 percent of children consumed food rich in carbohydrates, 33 percent consumed food rich in carbohydrates and high quality proteins, 5.8 percent consumed foods rich in carbohydrates and low quality proteins and 43 percent consumed foods rich in carbohydrates and vitamin A. As per the report, there was not much difference among gender and breastfed and non-breastfed children in the consumption of these nutrients.

About 22 percent of children received MDD, 63 percent received MMF and 15 percent received MAD. Analysis showed that children aged 18-23 months, from richer households, living in urban areas, with both parents educated and whose mothers received continuum of care had the highest percentages of MDD, MMF and MAD.

The results show that gender preferences have not been observed significantly in CF practices among children. As the age of the child increased, there was an increase in the proportion of children receiving all three CF indicators. Involvement in the decision-making process on household purchases was significantly associated with MDD and MAD.

A significant association was found between CF indicators and exposure to media. Children who had mothers with media exposure were more likely to achieve MDD, MMF and MAD as compared to children of mothers with no access to media. Economic condition (wealth index) of a household was a very important determinant for CF practices. The data revealed that as the wealth quintile of the household increased, the feeding practice improved from 9 percent to 26 percent. The combined effect of maternal and child health services was analyzed under the umbrella of continuum of care, children whose mothers received continuum of care were more likely to be fed according to MDD, MMF and MAD compared to children of mothers who did not receive continuum of care.

Stunted children received less MAD as compared to non-stunted children. A low proportion of wasted children received MDD (11%) and MAD (17%) whereas significant proportion of children received MMF (66%). Overall, underweight children did not receive a proper diet in accordance with the MDD, MMF and MAD. Only 9 percent of underweight children were reported to have received MAD as compared to 18 percent of children who were not underweight.

A statistically significant association was found between children's age and CF practice. The likelihood of children receiving MAD, MDD and MMF increases as the age increases. Older children were 2-3 times more likely to get recommended level of complementary food than younger children. There is a strong association between maternal age and MDD of children. Children with mothers aged 19-34 years are 2.3 times more likely to attain MDD than children of younger mothers (15-18 years).

If the household decision maker was solely the husband, children were least likely to receive MAD as compared to children living in households where decisions were made jointly. The highest likelihood of receiving MAD was among children living in households where women are the sole decision makers as compared to children from households where the decision was taken by someone else. Mothers who were exposed to media such as magazines, television and radio were more likely to give their children MAD and MDD than the mothers with no exposure to media.

The wealth status of the household shows a significant positive association with MAD, MDD and MMF. For MDD, the odd ratios increase significantly as the wealth status of the sampled household increases, suggesting a positive contribution of household wealth in affecting minimum dietary diversity level for their children.

The findings of this study would help to build basic structure for the formative research and broaden the range of effective interventions and programmatic approaches to improve CF. Further research is recommended in the following priority areas:

- Tracking infant and young child feeding practices from birth to 24 months of age to effectively link feeding practices and individual growth patterns
- Assess the energy and nutrient requirements of children living in vulnerable circumstances, such as wasted, stunted and low birth-weight
- Identify strategies for sustaining breastfeeding once complementary foods are initiated in children
- Identify a context specific communication strategy to be implemented in all community sectors, especially service providers. Service providers are respected and trusted by community members, which can facilitate the transfer of knowledge within the community.
- Determine the impact of improved responsive feeding on child growth and developmental outcomes.
- Identify alternative approaches for demand-creation of affordable and effective food products available locally.

1

INTRODUCTION

Few challenges facing the global community today match the scale of malnutrition, a condition that directly affects one in three people. Improved nutrition is vital for progress especially in health, education and poverty reduction. According to WHO statistics, there were 5.9 million deaths in children under 5 years of age and malnutrition contributed directly or indirectly to more than 45 percent of child deaths (Global Nutrition Report 2016). Hence, the need arises for highlighting the severity of the issue and the actions to eliminate malnutrition in children.

According to WHO standards, infants should be exclusively breastfed for the first six months of life. This standard was formulated based on the recommendations of a WHO Expert Consultation held in March 2001. Children who are not breastfed appropriately have repeated infections, grow slowly, and are almost six times more likely to die by one month of age than children who receive at least some breast milk (WHO, 2010). The Innocenti Declaration (WHO, 1990) recommends that children should continue to be breastfed while receiving appropriate and adequate complementary foods for up to two years of age or beyond. After six months of age, breast milk continues to be an important source of nutrition and immunological protection for the child, when provided along with appropriate and adequate complementary food. The continued bonding between mother and child provided by breastfeeding encourages optimal psychosocial development. It is recommended that newborns should receive complementary foods (CF) from six months of age because they require other nutritious foods in addition to breast milk. Locally available and affordable foods that enrich the baby's diet with additional calories and micronutrients should be offered – soft or mashed – in small quantities, several times a day. These complementary foods should gradually increase in amount and frequency as the baby grows. CF should consist of at least four food groups. These four food groups should come from the following seven categories: grains, roots, and tubers; legumes and nuts; dairy products (milk, yogurt, cheese); flesh foods (meat, fish, poultry, and liver/organ meat); eggs; vitamin A-rich fruits and vegetables; and other fruits and vegetables. By consuming foods from at least four food groups, the likelihood increases of infants consuming at least one animal source food and at least one fruit or vegetable along with a staple food (grains, roots, or tubers) (WHO, 2008).

The exact intake recommended by WHO states that: 'Energy needs are approximately 600 kcal/day at 6-8 months, 700 kcal/day at 9-11 months and 900 kcal/day at 12-24 months of age' (WHO, 2004). Adequate nutrition is essential in early childhood to ensure healthy growth and development (Liu et al., 2012). However, research indicates that there is a sharp increase in malnutrition during the first two years of life at the start period of CF practices, which begins around or prior to six months. Poor feeding practices can adversely impact the health and nutritional status of children, which in turn has direct consequences on their mental and physical development. The duration and intensity of breastfeeding also affects a mother's period of postpartum infertility and, hence, the length of the birth interval and fertility levels.

In developing countries, child growth often declines with the introduction of complementary foods around the age of 6 months and continues to decline up to 18 months. These growth deficits are accompanied by delayed development and increased morbidity and mortality. The main causes are nutritionally inadequate and contaminated complementary foods that typically consist of a cereal-based porridge, with little vegetables and no animal products. This diet is bulky, has low nutrient density and a high content of anti-nutrients. Studies have shown that plant-based complementary foods by themselves are insufficient to meet certain micronutrient requirements (WHO, 1998). Therefore, it has been recommended that children consume meat, poultry, fish, and eggs daily or as often as possible. Fruits and vegetables rich in vitamin A should be consumed daily to achieve the proven health benefits associated with vitamin A (Allen and Gillespie, 2001). For children, their diets should include an adequate fat content, because fat provides essential fatty acids, facilitates absorption of fat-soluble vitamins (such as vitamin A), and enhances dietary energy density.

In 2002, WHO and UNICEF jointly devised the Global Strategy for Infant and Young Child Feeding (WHO and UNICEF, 2003) to bring into the spotlight the impact of feeding practices on the nutritional status, growth, development, health and therefore, the very survival of infants and young children. The aim, from the outset, was to move towards formulating a sound approach to alleviate the tragic burden

borne by the world's children – 50 to 70 percent of the burden of diarrheal disease, measles, malaria and lower respiratory infections in childhood are attributable to under-nutrition – and to contribute to a lasting reduction in poverty and deprivation (WHO, 2003).

Appropriate Infant and Young Child Feeding (IYCF) practices also play an important role in the nutritional status of children. Guidelines have been established for IYCF practices among children aged 0-23 months (PAHO/WHO, 2003; WHO, 2005; WHO, 2008). Research has reported that minimum dietary diversity may be reported separately for breastfed and non-breastfed children. However, diversity scores for breastfed and non-breastfed children cannot be directly compared, because breast milk is not counted in any of the recommended food groups. These minimum feeding frequencies are based on the energy needs estimated from age-specific total daily energy requirements. Infants with low breast milk intake would need to be fed more frequently. However, overly frequent feeding may lead to displacement of breast milk (PAHO/WHO, 2003). Thus, appropriate nutrition and minimum dietary diversity are important factors in CF practices.

Despite gains in economic development and increased farm yields, the patterns of high child malnutrition are continuing countrywide. An in-depth analysis is required to assess why so many children are malnourished if food availability is not a problem. Having a better understanding of the CF process, we are assuming one could better understand the influence of feeding practices on malnutrition.

1.1 OBJECTIVES OF THE STUDY

Poor CF practices have been widely documented in Pakistan, despite the implementation of several governmental and non-governmental strategies and programs aimed at improving IYCF practices. Inappropriate CF practices have led to the increase risk of wasting, underweight and stunting in children. However, there is limited scientific data on CF practices and the effects these practices have on the nutritional status of children aged 6-23 months. Historically, Pakistan has collected data on socioeconomic, health and demographic issues through household surveys, but information on child feeding practices is missing in these surveys. It is, thus, difficult to analyze the trends in nutritional status with respect to complementary feeding practices in young children over time. In order to develop well-informed and well-designed policies, it is essential that improvements be made in the availability and quality of data. However, the literature gap in child nutrition was partially filled by the NNS 1987, NNS 2001 and NNS 2011. Other smaller national surveys, such as Pakistan Socioeconomic Surveys (PSES) 2001, Pakistan Rural Household Survey (PRHS) 2001 and Pakistan Panel Household Survey (PPHS) 2010, have also gathered data on anthropometric measurements to determine the nutritional status of children (Arif. et al 2014). Nevertheless, there still remains a lack of in-depth research on CF practices with reference to appropriate nutrition and socio-demographic and economic factors. The Pakistan Demographic and Health Survey (PDHS) 2012-13 is a rich data source to carry out this in-depth analysis. The present study aims to use the PDHS micro-data to fill the research gaps in CF practices, with following specific objectives:

- To explore the status of optimal consumption patterns and child feeding practices, with reference to breastfed and non-breastfed children 6-23 months of age;
- To determine the association of socio-demographic characteristics between food consumption and CF practices among children 6-23 months of age;
- To find out the association between food consumption patterns, CF practices and health nutritional status among children 6-23 month of age;
- To draw recommendations for formative qualitative research and for policymakers and planners.

1.2 LITERATURE REVIEW

This part of the chapter provides a review of existing literature on significant features, differentials and associated factors of CF behaviors. The review summarizes findings on socio-economic factors associated

with child's consumption patterns and CF status at global, regional and national level. This is particularly important to theory building in the area of CF and to enhance one's understanding of nutritional and health status of children in Pakistan, particularly with regard to food availability, affordability and security.

1.2.1 Global Perspective

Malnutrition remains a global concern, affecting highly vulnerable populations in several regions of the world. Global Nutrition Report, 2016 identified the presence of malnutrition based on disaggregating data of more than 50 fragile countries. In 2014, globally, 23.8 percent of children were stunted, 7.5 percent were wasted, and 39 percent were ever breastfed within 6 months of age. The prevalence of Anemia in 2011 was 29% for non-pregnant and 38 percent for pregnant women aged 15-49 years. The rates of stunting (10%) and wasting (36%) in fragile countries are higher as compared to stunting (8%) and wasting (26%) in non-fragile countries (IFPRI 2016). Globally, Pakistan stands at 125th for child stunting (45%) out of 132 countries, 107th for child wasting out of 130 countries, 180th out of 185 countries for prevalence of anemia in women of reproductive age and 69th out of 190 countries for exclusive breastfeeding rate (IFPRI 2016).

In Mongolia, most children consumed less than two food groups out of the recommended seven groups; this is below the WHO recommendations for MDD (Lander et al., 2010; WHO, 2008). Likewise, complementary food diversification was low and limited to cereals among young children in Burkina Faso (Sawadogo et al., 2010). Porridge, the main complementary food, was made up of only cereal and water in 22 percent to 71 percent of the cases. Despite the fact that dietary diversity increased as the infants grew, the WHO recommendation of consuming a minimum of four food groups was achieved by less than 50 percent of the children (Sawadogo et al., 2010). Romulus-Nieuwelink (2011) identified that even though complementary food intake in Brazilian infants included several nutritious foods such as vegetables, fruits and potatoes, a large number of infants also consumed less healthy foods such as biscuits, cookies and sweets. In Brazil and Burkina Faso, a minimum CF frequency of 2-3 meals per day was common among breastfed infants aged 8-9 months (Romulus-Nieuwelink et al., 2011; Sawadogo et al., 2010).

A secondary analysis of demographic health surveys conducted in Kenya, Uganda and Tanzania revealed that the child's age, breastfeeding status, maternal education, employment status and working status, household wealth index, prenatal care visits, receiving vitamin A supplements, using modern contraceptives and meal frequencies were significantly associated with adequate complementary food diversity in at least one of the three countries (Gewa, Leslie 2015). In Southern Ethiopia, Kassa and his colleagues (2016) concluded that in children aged 6-23 months who are receiving low appropriate CF, maternal illiteracy and families of a larger size were factors associated with inappropriate feeding practices; hence highlighting the need for nutritional counseling on child feeding practices. Moreover, in Ghana, statistically significant positive associations were observed between higher child dietary diversity score (DDS), older child age, and greater women's empowerment (Amugsi, Mittelmark, and Oduro, 2015). In Malawi, stunting was prevalent in children who had stopped breastfeeding and their predominant food source was maize (Hotz & Gibson, 2001).

Global Nutrition report 2016 shows that women's power and status, education and age important factors of malnutrition: mothers age 18 or under are more likely to have stunted children and children are less likely to be stunted if their mother has secondary education.

1.2.2 Regional Perspective

Among children of Asian descent, more female children as compared to male children were stunted in lower socioeconomic households than higher socioeconomic households (Wamani et al., 2004). On the other hand, country like Sri Lanka, gender did not appear to influence nutritional status of children (Aturupane et al., 2011; Bourne, 2009). When comparing the rates of stunting and wasting the SAARC region, Pakistan (10.5) is ranked lowest for stunting, with a better ranking for wasting than Nepal (11.3 percent), Bangladesh (14.3 percent), India (15.1 percent) and Sri Lanka (21.4 percent) (See table A3.2 &A3.3 of Global Nutrition Report, 2016). An Indonesian study reported that feeding practices are not optimal among children above 6 months of age (Blaney, Februhartanty, and Sukotjo, 2015). Dietary diversity, consumption of iron-rich foods, active feeding and hygiene practices were among the non-optimal feeding practices. Consequently, recommended dietary allowances or adequate intakes were not achieved for several micronutrients. Non-working and educated

Iranian mothers were more likely to feed their children the recommended minimum meal frequency (Olang et al., 2012). Ma and his colleagues identified breastfeeding and bottle feeding; feeding frequency and food diversification as being significantly associated with stunting, especially among Chinese children 12-36 months old (Ma et al., 2012). A multivariate analysis of CF practices of young Nepalese children aged 6–23 months indicated that children living in poor households having working mothers or mothers with primary or no education were significantly less likely to be given complementary foods that met the recommended dietary diversity, minimum meal frequency and minimum acceptable diet (Saaka et al., 2015). Presence of knowledge gaps among mothers, mothers-in-law and husbands were found, which resulted in suboptimal infant and young child feeding practices in Nepal (Locks L.M. et al., 2015). These knowledge gaps have a particular impact on the duration of exclusive breastfeeding and dietary diversity of complementary foods. On the other hand, mothers who knew the importance of enriching complementary foods were likely to feed their children a minimum acceptable diet. Children who had episodes of diarrhea were less likely to consume vitamin A rich foods and to achieve minimum dietary diversity. Lack of a minimum acceptable diet was a significant predictor of nutritional status in children based on wasting.

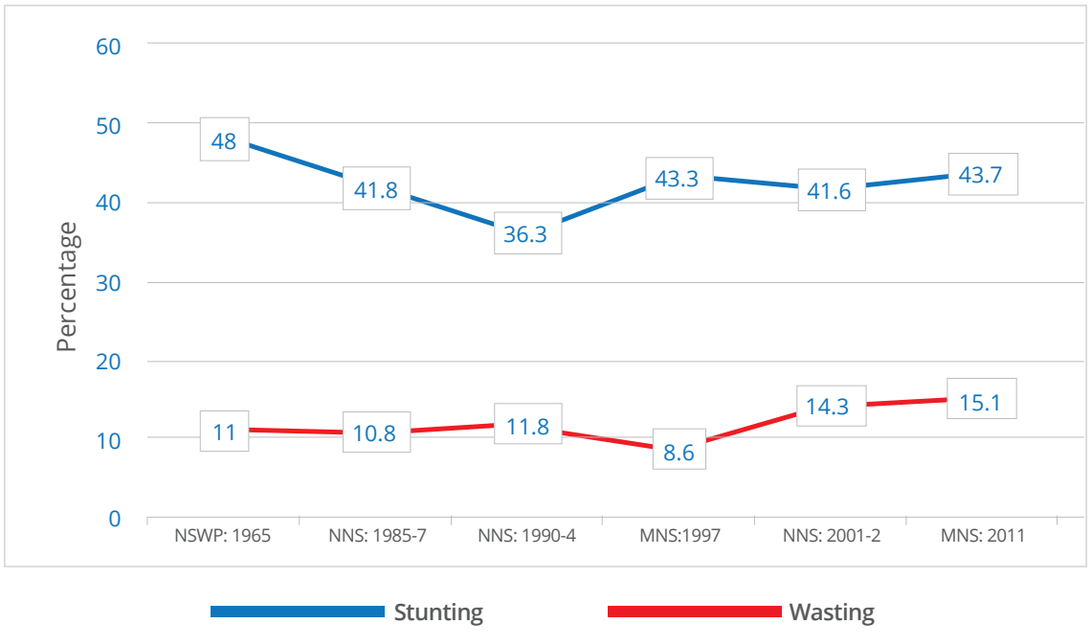
Suboptimal IYCF practices reported in India identified low rates of exclusive breastfeeding, early introduction of nutrient-poor gruels and delay in introduction of adequate complementary foods. Trial for Improved Practices (TIPs) illustrated that mothers are willing to adopt new feeding practices and can increase the amount of energy and essential micronutrients (vitamin A, iron, zinc and carotene) in CFs (Anwar F et al., 2012).

1.2.3 National Perspective

The most common public health problems in Pakistan are widespread child malnutrition, high infant mortality and low literacy. Child malnutrition is considered as a key risk factor for morbidity and mortality, contributing to more than half the child deaths worldwide (Cheah et al., 2010; Arif et al., 2012). The risk of malnutrition (stunting and wasting) among primary school-aged children increased as the age of the child increased, irrespective of gender (Khan and Azid, 2011). The data revealed that half of the world's malnourished women and children are found in just three countries: Bangladesh, India and Pakistan. There was little change observed over the last decade in core childhood nutrition indicators. In Pakistan, children below five years of age have extremely poor nutritional status, with 44 percent being stunted, 15 percent being wasted, and 31.5 percent being underweight. The presence of malnutrition was more prevalent in rural areas than in urban areas. The Pakistan Demographic Health Survey (PDHS 2012-13) reported that 45 percent of children below five years of age were stunted, 11 percent were wasted and 30 percent were underweight. A reduction in child malnutrition can only be achieved if families adequately care for their children, including their nutritional needs. Thus, there is need for effective interventions to support children's nutritional wellbeing and to translate knowledge into action.

Figure 1.1 illustrates the prevalence and trends of stunting (height-for-age), and wasting (weight-for-height) at a national level. The data points are collected from different surveys like National Nutrition Survey (NNS), Micronutrient Nutrition Survey (MNS), and Nutrition Survey of West Pakistan (NSWP). There is a high prevalence of stunting in Pakistan and little improvement was observed from last six decades.

Figure 1.1: The prevalence and trends of stunting in children aged 59-0 months at the national level



1.3 SITUATION OF FOOD AVAILABILITY AND INSECURITY

Pakistan is predominately an agricultural country. Over the past 60 years, the total cultivated area has only increased by 40 percent, while the population has quadrupled and urban expansion has increased over sevenfold, causing considerable population pressure on managing food security in Pakistan (Ahmad and Farooq, 2010).

Periodically, strong interventions are implemented by the government, which support procurement and distribution of food crops for low prices of wheat flour and offer subsidies for fertilizers. The Integrated Food Security Phase Classification (IPC) analysis conducted in March-June 2015 showed 29 out of 148 districts as highly food insecure and requiring immediate attention in Pakistan (Government of Pakistan, 2016). Among those districts identified as highly food insecure are Tharparkar in Sindh; Chaghi and Dera Bugti in Baluchistan; Torghar in KP, Frontier Region Dera Ismail Khan, Frontier Region Tank, Frontier Region Kohat and Orkazai in FATA, and North and South Waziristan. The trend in availability of essential food items is assessed through food balance sheets every year. The Planning Commission's Study conducted in 2016 reported high levels of food insecurity and malnutrition (Government of Pakistan, 2016).

A majority of households were unable to afford a nutritionally adequate diet; however, financially secure households still consumed a nutritionally inadequate diet because of a lack of awareness about a balanced diet. The diet quality was poor in both urban and rural children, with the state of child health being significantly worse in rural areas. Analysis revealed that poor diet quality is due to a combination of low affordability of nutritious foods, universal food preferences and feeding behaviors. The nutritious food is available in most markets across Pakistan, whereas affordability and personal food preferences limit household access and consumption of nutritious foods. This was observed across all strata of society. The study suggests that to better address the nutrition needs of the country, there is a need for appropriate advocacy, strategy development, programme design and implementation (Government of Pakistan, 2016).

2

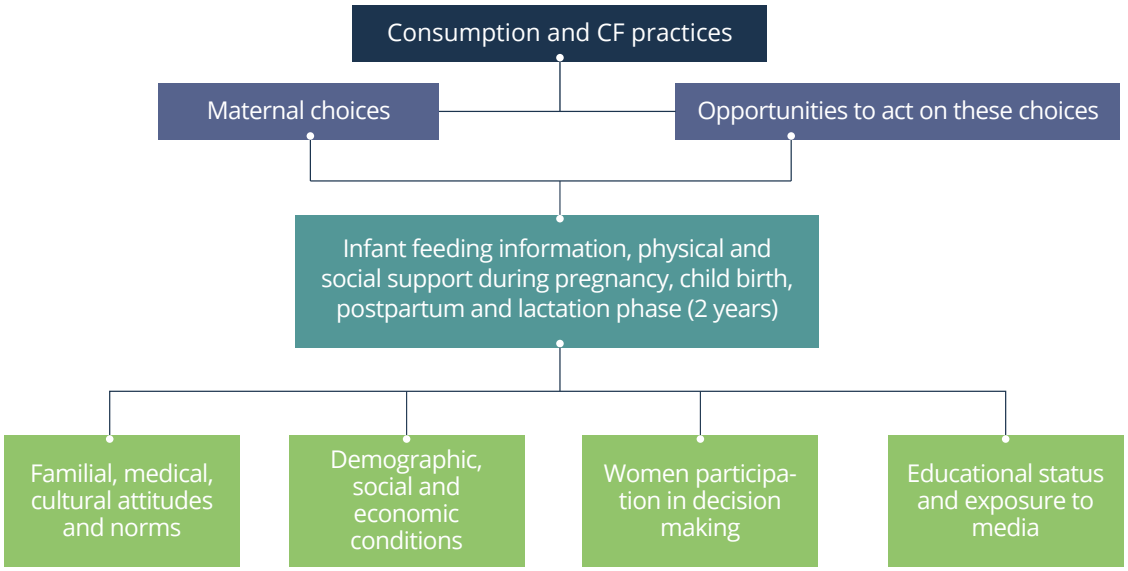
RESEARCH METHODS

In order to have a better understanding of the consumption patterns and CF practicess, this chapter first discusses the conceptual framework used for the analysis; then develops an analytical strategy to achieve the study objectives, outlined in the previous chapter. A brief description of the main data source used for the analysis of consumption patterns and CF practicess is given in this chapter. Limitations of data used for the study and a brief discription of the sample characteristics are also given in this chapter.

2.1 CONCEPTUAL FRAMEWORK

This study adopts the UNICEF Conceptual Framework of Malnutrition (UNICEF, 2009a) to analyze the factors that can influence consumption patterns and CF practices among Pakistani children aged 6-23 months. Figure 2.1 presents the framework, showing that the immediate determinants of consumption patterns and CF practices are maternal choices and opportunities available to the mothers to act on these choices in order to have an access to complementary foods to be consumed by their young children. The framework shows that these choices are influenced by socio-demographic intermediate factors including infant feeding information, and physical and social support to mothers during pregnancy, child birth, postpartum and lactation phase. The consumption and CF practices are influenced indirectly by household socio-economic conditions, familial, medical attitudes and norms, women empowerment and their educational status and exposure to media through intermediate factors as shown in Figure 2.1. In short, the conceptual framework presented in this figure envisions that consumption patterns and CF practices among young children are the direct result of maternal choices which are influenced by other demographic, socio-economic and health related factors.

Figure 2.1: Conceptual Framework



2.2 DATA SOURCE

The National Institute of Population Studies (NIPS) conducted the 2012-13 PDHS under global Demographic and Health Survey (DHS) program. The standard DHS questionnaire for women of reproductive age (15-49 years) was used in the PDHS survey after making culturally appropriate modifications. The total PDHS sample was 14569 ever-married women aged 15-49 years. A subsample of 2855 children aged 6–23 months and their mothers was extracted for secondary data analysis.

Data was available on the youngest child's dietary intake within 24 hours preceding the interview. This information on dietary intake of young children was collected from mothers or caregivers on a recall basis. Information was also provided on food groups intake, consumption of the seven food groups, macronutrients, micronutrients and CF practices by mothers or caregivers, which was used in the present analysis.

The PDHS 2012-13 was representative at the national level as well as for provinces. Although it is difficult to establish the representativeness of the sampled children drawn for this study, they are sufficient in number (2855) for the analysis.

2.3 ANALYTICAL STRATEGY

The unit of analysis is children aged 6-23 months. As noted above, information on their dietary intake was collected in the PDHS from their mothers or caregivers 24 hours preceding the survey. The analysis has focused on the consumption patterns and CF practices among the sampled young children, as reported in the PDHS. Consumption patterns were determined based on the seven food groups, micronutrients (foods rich in vitamin A and iron), and macronutrients (carbohydrates, carbohydrates and high-quality proteins, carbohydrates and vitamin A, carbohydrates and low-quality proteins). The three variables used to analyze CF practices are: (i) minimum dietary diversity; (ii) minimum meal frequency; and (iii) minimum acceptable diet.

a) **Minimum Dietary Diversity (MDD):** Seven food groups are used for the construction of MDD variable including: (i) Grains, roots and tubers, (ii) Legumes and nuts, (iii) Dairy products (milk, yogurt and cheese), (iv) Flesh foods (meat, fish, poultry and liver/organ meats), (v) Eggs, (vi) Vitamin-A rich fruits and vegetables, (vii) Other fruits and vegetables. Intake of MDD is considered satisfactory for this study if a sampled child aged 6–23 received foods from four or more food groups in 24 hours preceding the survey.

b) **Minimum Meal Frequency (MMF):** For the MMF, breastfed and non-breastfed children are treated separately. For breastfed children, minimum meal frequency consisted of receiving solid or semisolid food at least twice a day for infants aged 6-8 months and at least 3 times a day for children age 9-23 months. For non-breastfed children aged 6-23 months, minimum meal frequency for receiving solid or semisolid food or milk feeds was at least 4 times a day. 'Meals' included meals as well as snacks (other than trivial amounts). Intake of the MMF is considered satisfactory, if a sampled child was fed the minimum recommended number of times per day according to their age and breastfeeding status.

c) **Minimum Acceptable Diet (MAD):** For breastfed children aged 6-23 months, the minimum acceptable diet (MAD) was defined as children receiving both minimum dietary diversity and minimum meal frequency. Non-breastfed children age 6-23 months were considered to be fed with a minimum acceptable diet (MAD) if they received other milk or milk products at least twice a day, received the minimum meal frequency, and received solid or semisolid foods from at least 4 food groups not including the milk or milk products food group. Intake of MAD is considered satisfactory for this study if a sampled child aged 6 to 23 months received both minimum dietary diversity and minimum meal frequency according to their age and breastfeeding status.

Both bivariate and multivariate analyses are carried out to achieve the objectives of this study. Demographic and socio-economic differentials in consumption patterns are explored in bivariate fashion while the association between CF practices (MDD, MMF and MAD) and demographic, health and socio-economic factors is examined through multivariate analyses.

Considering both the objectives of the study and conceptual framework, a wide range of independent variables is made part of the analysis. Health variables includes birth order of child, birth interval, birth at health facility, mother and child continuum of care, received Vitamin A dose postpartum, took Iron tablets during last pregnancy, mother's BMI, child fully immunized, diarrhea, treatment for diarrhea, size at birth (mother's perception), child received vitamin A, and nutritional status of the sampled child – stunted, wasted and underweight. The socio-demographic variables used in the analysis are: gender of child, age of child, age of mother, birth order of child, parental education, no of children ever born, number of person per

room, type of family, access to improve source of drinking water, access to improve source of sanitation, handwashing (both soap and water available), women decision on household purchases, women working status, exposure to media, wealth index, residence, region and divisions.

2.4 MULTIVARIATE ANALYSIS

Multivariate logistic regression technique was applied to examine the association between health and socio-demographic variables and CF related outcome variables – MDD, MMF and MAD. Logistic regression was used since all three outcome variables concerning CF practices are binary. In the regression analyses, the variable MDD was coded "1" if children aged 6 to 23 months consumed four or more food groups and"0" if they did not consume four or more food groups. The variable MMF was coded "1" if child was fed the minimum recommended number of times per day according to their age and breastfeeding status and "0" if they were not fed the minimum recommended number of times per day. MAD was coded "1" if children aged 6 to 23 months received both minimum dietary diversity and minimum meal frequency according to their age and breastfeeding status and "0" if they did not receive minimum dietary diversity and minimum meal frequency.

The Logistic Regression is mathematically defined as:

$$l_n p/1\text{-}p = \alpha + \Sigma\beta_i X_i + \mu_i$$

Where **p** is the probability of CF in life,

α is the intercept,

βi are the estimated regression coefficients,

Xi, are the characteristics of women, and

μi is the error term.

Two models for each outcome variable were developed at the multivariate level. The first model examines the relationship between CF practices (MDD, MMF and MAD) and health behavior factors; the second model examines the effect of demographic and socio-economic variables adjusting for mother and child's health behavior factors on CF practices. The independent variables used for the this study are presented in Annex A, with operational definitions. Statistical significance was set at 5 percent level of significance.

2.5 LIMITATIONS OF THE STUDY

The following are a few limitations of the study:

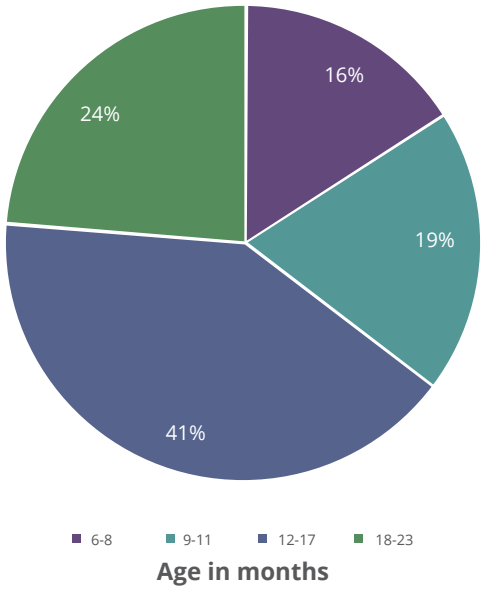
- The data is analyzed from a cross-sectional study and therefore, does not reveal whether the CF practices varied over time.
- Consumption patterns and CF outcomes are based on self-reporting, which is a potential source of measurement bias where mothers may recall incorrectly.
- During data analysis, the "continuum of health care utilization of women" variable was used to assess CF practices. However, since the visits are not separated based on ANC and PNC, misclassifications may occur leading to overestimation or underestimation of the association between health service visits and CF indicators.
- Community variables like availability of schools, health services in the vicinity of respondent were not analyzed in 2012-13 PDHS. Therefore, the community effect could not be observed in the study.
- Multivariate analysis could not be performed for provinces of lower administrative levels due to a small number of observations.
- There was a lack of data on income and food purchases to assess its impact on CF patterns; however, wealth index was used as a proxy indicator.

- Data on male perceptions and CF practices were not collected in 2012-13 PDHS. Therefore, important information regarding males could not be analyzed in the study.

2.6 DEMOGRAPHIC AND SOCIO-ECONOMIC PROFILE OF RESPONDENTS

Figure 2.2 shows the distribution of sampled children by age; 16 percent of children were aged 6-8 months, 19 percent were 9-11 months old, 41 percent were 12-17 months and 24 percent were 18-23 months old. In the sample 51 percent were boys and 49 percent were girls; an ideal gender distribution for the analysis. Majority of children (37 percent) were identified as second-born or third-born. The total sample of children aged 6-23 months was 2855, of which 70 percent were living in rural areas and 30 percent were living in urban areas. Additionally, in terms of residential areas, 56 percent of children were living in Punjab, 21 percent in Sindh, 16 percent in KP, 5 percent in Balochistan, 0.4 percent in Islamabad and 0.8 percent in Gilgit-Baltistan (See Table B.1).

Figure 2.2: Distribution of children by age (months)



Furthermore, 39 percent of children had educated parents (both mother and father are educated). About 28 percent of children were identified as having only an educated father and 6 percent had only an educated mother. A total of 26 percent of children had parents with no education. Eighty six percent of children had access to improved sources of drinking water, whereas 47 percent of children had access to improved sanitation. About 52 percent of children were living in an environment where their mothers practiced handwashing.

Household population density was measured based on the number of persons living in a room. Data revealed that 47 percent of children were living in households with 3-4 persons per room and 45 percent of children lived in households with 5 and more persons per room. Majority of the children were living as part of a joint (40%) or extended families (26%) rather than in nuclear families (33%). Household economic status has a direct impact on CF practice. The wealth index indicated that more than one-fifth of the sampled children belonged to the poorest households (21%), followed by middle-income households (20%) and the richest households (16%).

One-fifth (22%) of children had mothers who were currently working, with 9 percent being engaged in agriculture related work. More than half (54%) of the mothers had no media exposure. Only 5 percent of mothers made decisions alone about major household purchases, while more than one-third (35%) made joint decisions with their husbands regarding major household purchases (Table B.2).

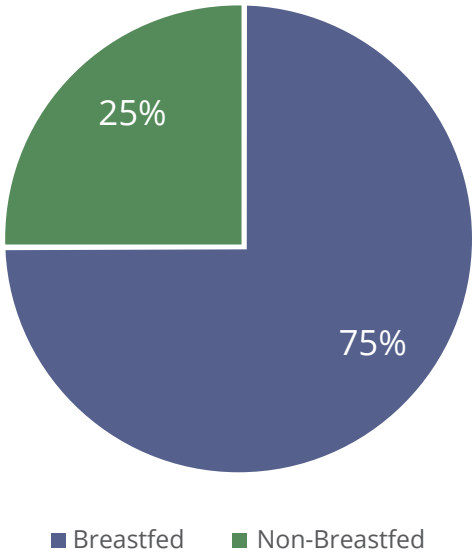
More than half (53 percent) of the mothers of sampled children gave birth at a health facility and 14 percent of mothers consumed vitamin A supplements after the delivery of their last child. Only 18 percent of mothers received continuum of care (all four ANC visits, delivery by skilled birth attendant and received PNC within forty days after delivery). Among mothers of children aged 6-23 months, more than four-fifth (83 percent) of the women had a BMI greater than or equal to 18.5 kg/m^2.

More than two-fifth (42 percent) of children were stunted, while 18 percent were wasted. About one-third (33 percent) of the children were low birth weight (< 2.5 kg).

As presented in Figure 2.3, a higher proportion of the children (6 to 23 months) were breastfed (75 percent), while only 25 percent were not breastfed.

More than half (56 percent) of the children were not fully immunized. On the other hand, 71 percent of the children had received a vitamin A dose. Nearly three-fifth (57 percent) of the children suffered with fever or cough and 34 percent had diarrhea 12 days prior to the survey. However, a larger percentage of children (93 percent) received treatment for diarrhea. Based on maternal reporting, 74 percent of children were average birth sized, 21 percent were small sized and only 5 percent were large birth sized.

Figure 2.3: Distribution of children by breastfeeding status



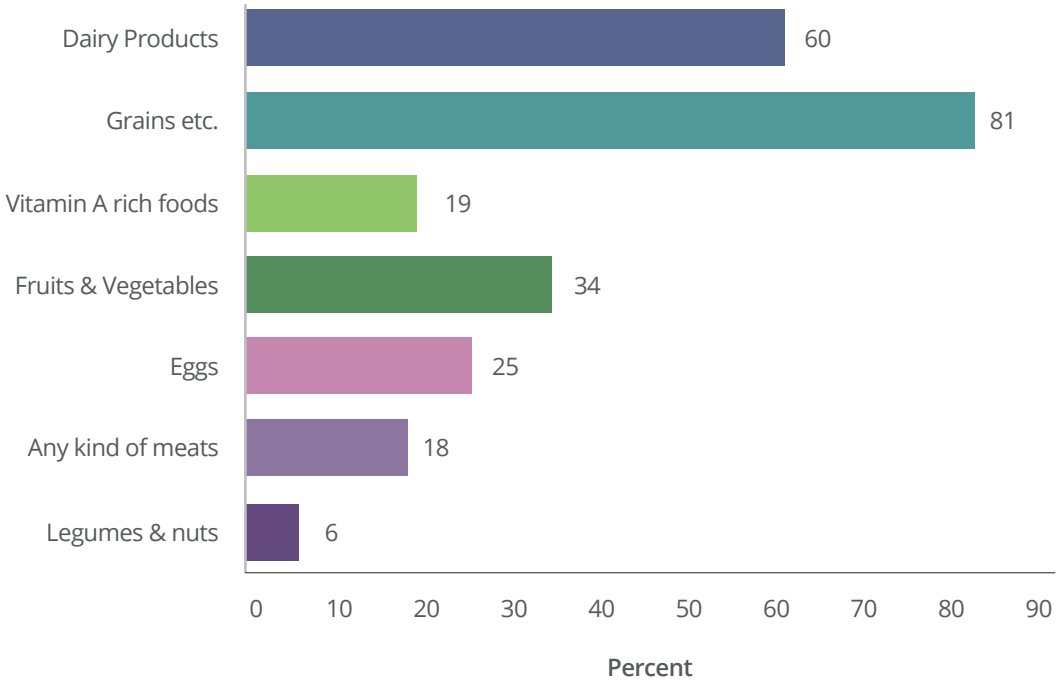
3

CONSUMPTION OF RECOMMENDED FOOD GROUPS

Initiation of complementary feeding including semi solid and solid foods in addition to the mother's feed is recommended to be started at the age of 6 months and the amount of food gradually need to be increased during 6 to 23 months the period of transition to start the regular diet. This period is critical because poor and imbalanced dietary practices lead to malnutrition. This chapter presents with the consumption of WHO recommended seven food groups by the children during the day or night preceding the survey. The data was analyzed at bivariate level to observe the association of consumption patterns with selected demographic, socio-economic and health indicators and their breastfeeding status. Findings are presented in Annex Tables B.3 to B.8. Table B.3 illustrates the proportion of children who consumed any type of food from seven food groups according to their demographic and socio-economic characteristics and Table B.4 presents these findings according to the mother and child heath indicators. The subsequent tables show findings according to the children's breastfeeding status.

Figure 3.1 shows the food consumption according to the WHO recommended seven food groups in children aged 6-23 months. In Pakistan consumption of grains, roots and tubers was found highest (81%) while the consumption of legumes and nuts was lowest (6%) among the children of aged 6-23 months (Figure 3.1). Similar consumption pattern was observed among breastfed and non-breastfed children. However non-breastfed children had a more diversed diet as compared to breastfed children (Table B.5 & B.7).

Figure 3.1: Consumption of recommended food groups



The demographic and socio-economic profile of children and their mothers showed that consumption of food from seven food groups was slightly higher among male children as compared to female children. Similar patterns were observed among breastfed and non-breastfed children (Table B.5 & B.7). The proportion of children increased with the age of child and mother. Children of younger mothers received less food from any food group as compared to children of older mothers. Similar pattern of consumption was observed among breastfed children while non-breastfed children of younger mothers received more food from seven groups than the older mothers.

Figure 3.2: Consumption of recommended food groups by age of child

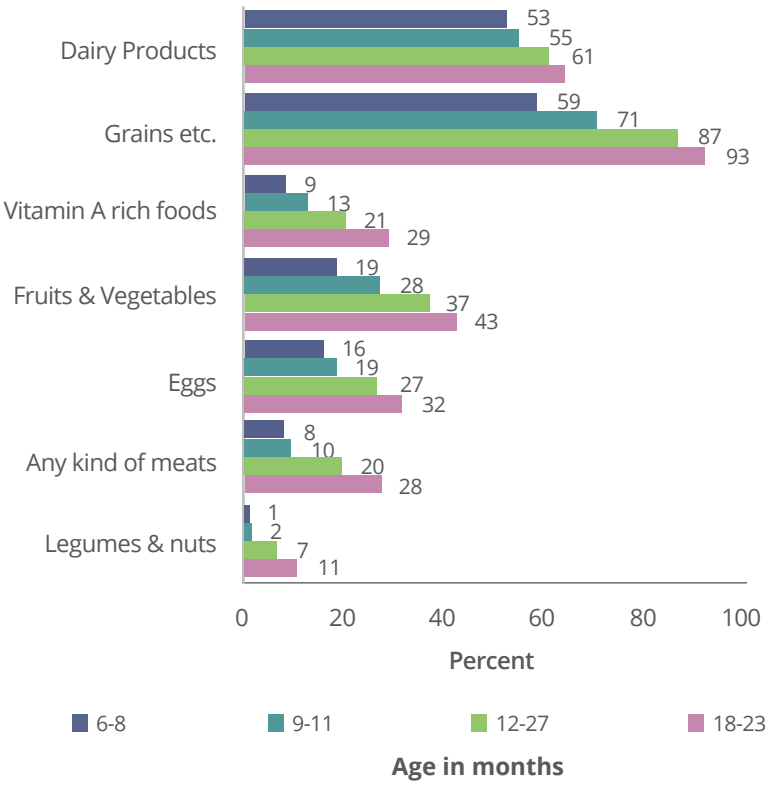
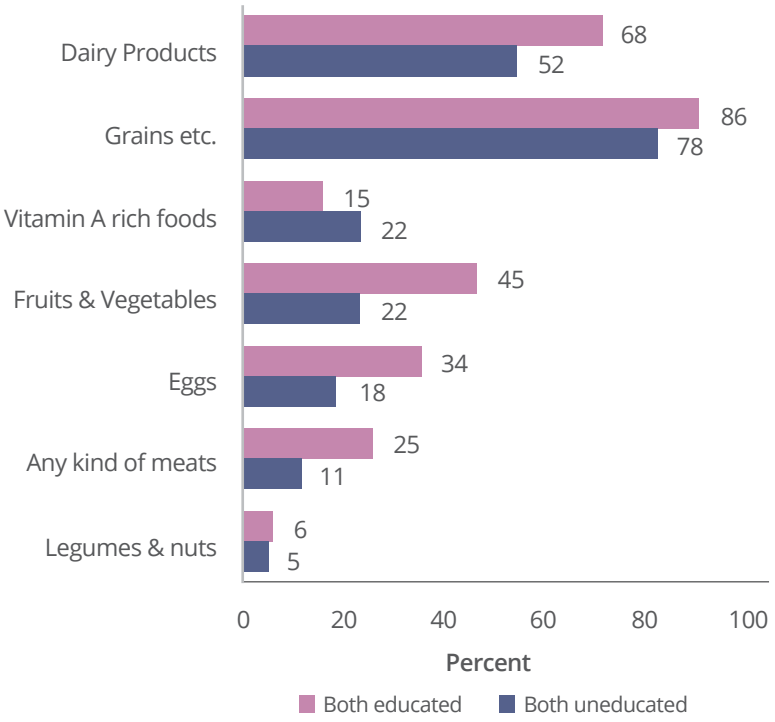


Figure 3.3: Consumption of recommended food groups by parental education



Education plays a vital role in the healthy upbringing of the children. Table B.3 and Figure 3.3 shows that consumption of food groups was highest among children whose parents were educated except legumes and nuts which were more consumed by children of educated fathers. It was also found that breastfed and non-breastfed children of educated parents received diet from majority of the food groups as compared to children of uneducated parents (Table B.5 and B.7).

Data shows that mothers who have given birth to upto 2 children gave more diverse food as compared to mothers given birth to six and more children. Small variations were observed in the consumption of food from seven food groups by number of persons living per room and type of family. Moreover, children belonging to households with access to improved source of drinking water, improved sanitation and have soap and water for handwashing were fed with higher amounts of foods from most of the food groups. Table B.5 and B.7 depict the same pattern of food consumption among breastfed and non-breastfed children.

Mother's involvement in the decision-making process regarding major household purchases was associated with food consumption. Consumption of grain, roots and tubers (83%), dairy products (65%), eggs (29%) and fruits and vegetables (34%) were found to be relatively higher among children whose parents made joint decisions and whose mothers took sole decisions regarding major household purchases (Table B.3). Alternatively, consumption of vitamin A rich fruits (25%), meat (24%) and legumes and nuts (8%) was more commonly observed among children, whose mothers had the sole decision making power regarding household purchases as compared to mothers who shared decision making powers or had no decision-making powers. Similar patterns were observed among breastfed children while food consumption was found better among non-breastfed children whose mothers took sole decisions regarding household purchases (Table B.5 & B.7). Overall, children of non-working mothers were more likely to have better diet consisting of seven food groups than the children of working mothers. Children of mothers working in non-agriculture sector took more diverse diet than mothers working in the agricultural sector except the vitamin A rich foods which were more commonly ate by children of mothers working in agriculture sector.

A significant association was found between food consumption and exposure to media. The children of mothers who were exposed to media (watched television, listened to radio or read the newspaper daily or at least once a week) were identified as having higher proportion of foods as compared to children of mothers having no exposure to media (Figure 3.4). Consumption of all food groups was relatively higher among non-breastfed children of mothers having media exposure as compared to breastfed children (Table B.5 & B.7).

The results indicate that consumption of seven food groups increased with wealth quintiles. Children belonged to richest wealth quintile received most diverse food than the children from lower wealth quintiles (Figure 3.5). Residence has a strong association with food consumption. Children living in urban areas received better diet by receiving a higher percentage of dairy products, grains, roots & tubers, other fruits and vegetables, eggs, and meat as compared to the children from rural areas. On the other hand, rural children consumed more of vitamin A rich foods and legumes and nuts. This may be because of their easy availability in rural setup. A similar pattern was observed among breastfed and non-breastfed children (Table B.5 & B.7).

Figure 3.4: Consumption of recommended food groups by mother's exposure to media

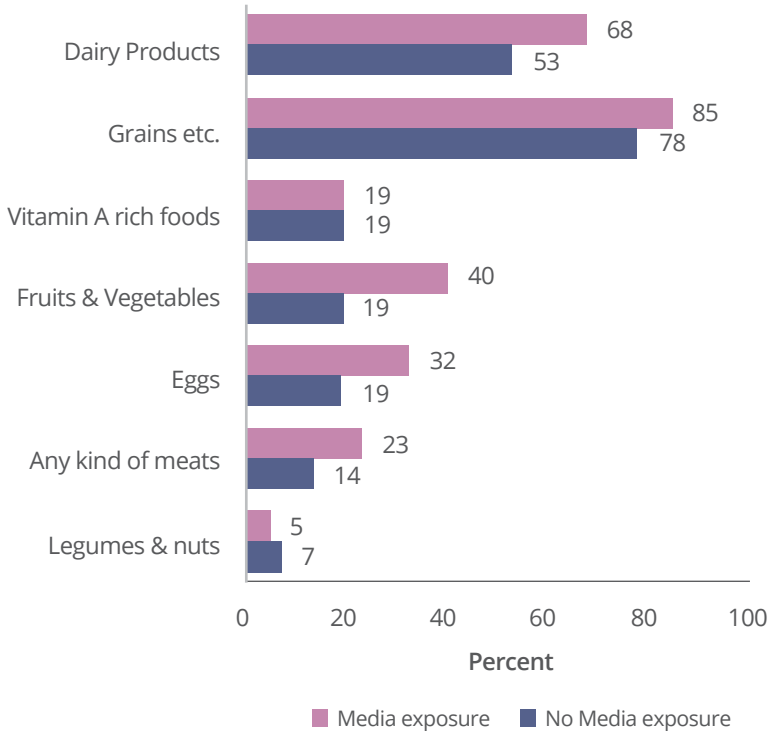


Figure 3.5: Consumption of recommended food groups by wealth index

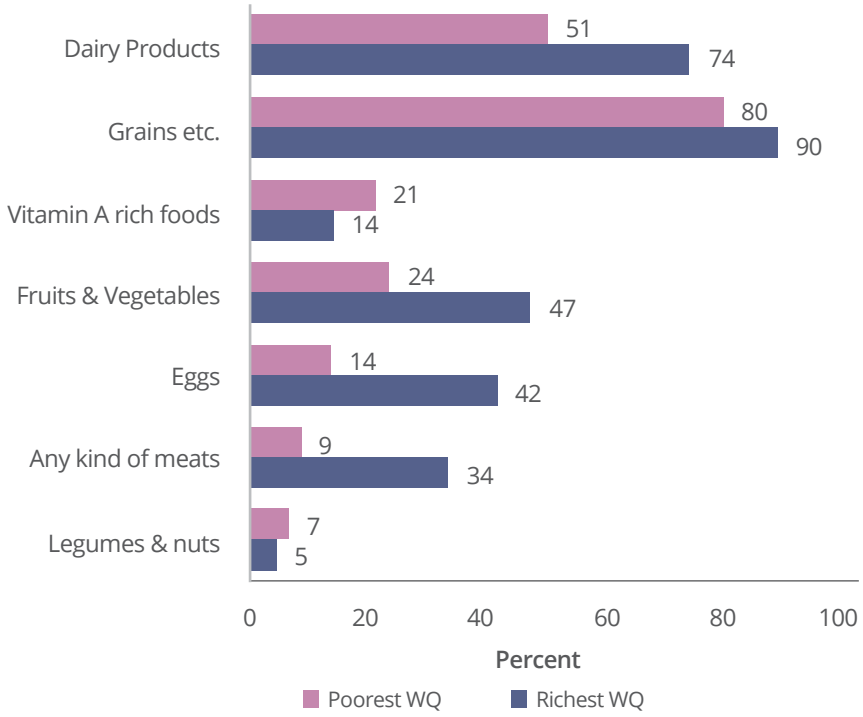
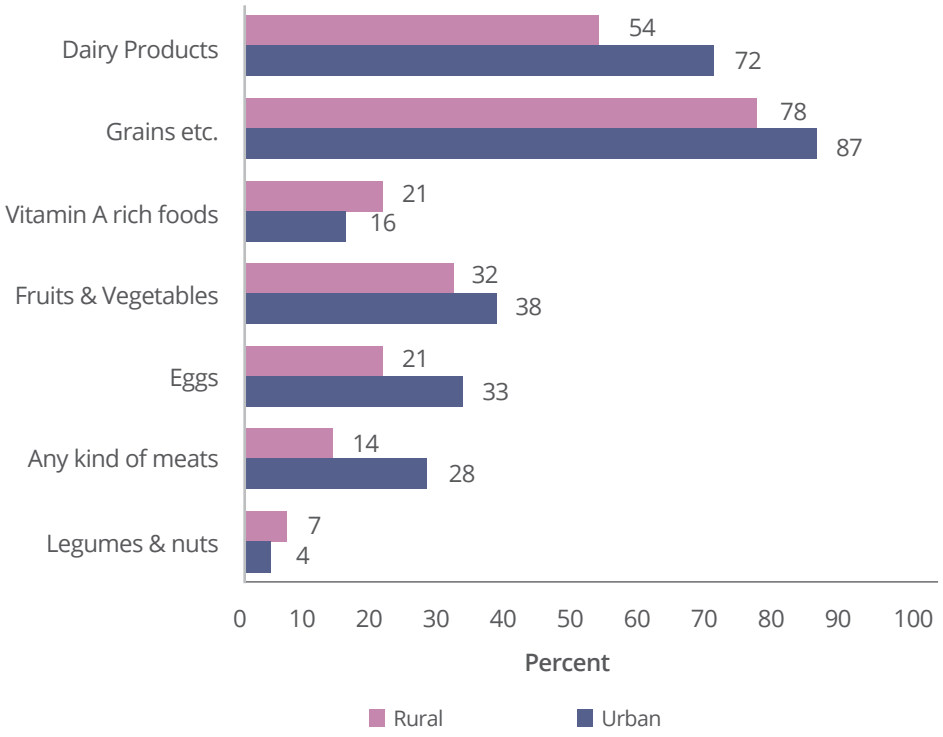


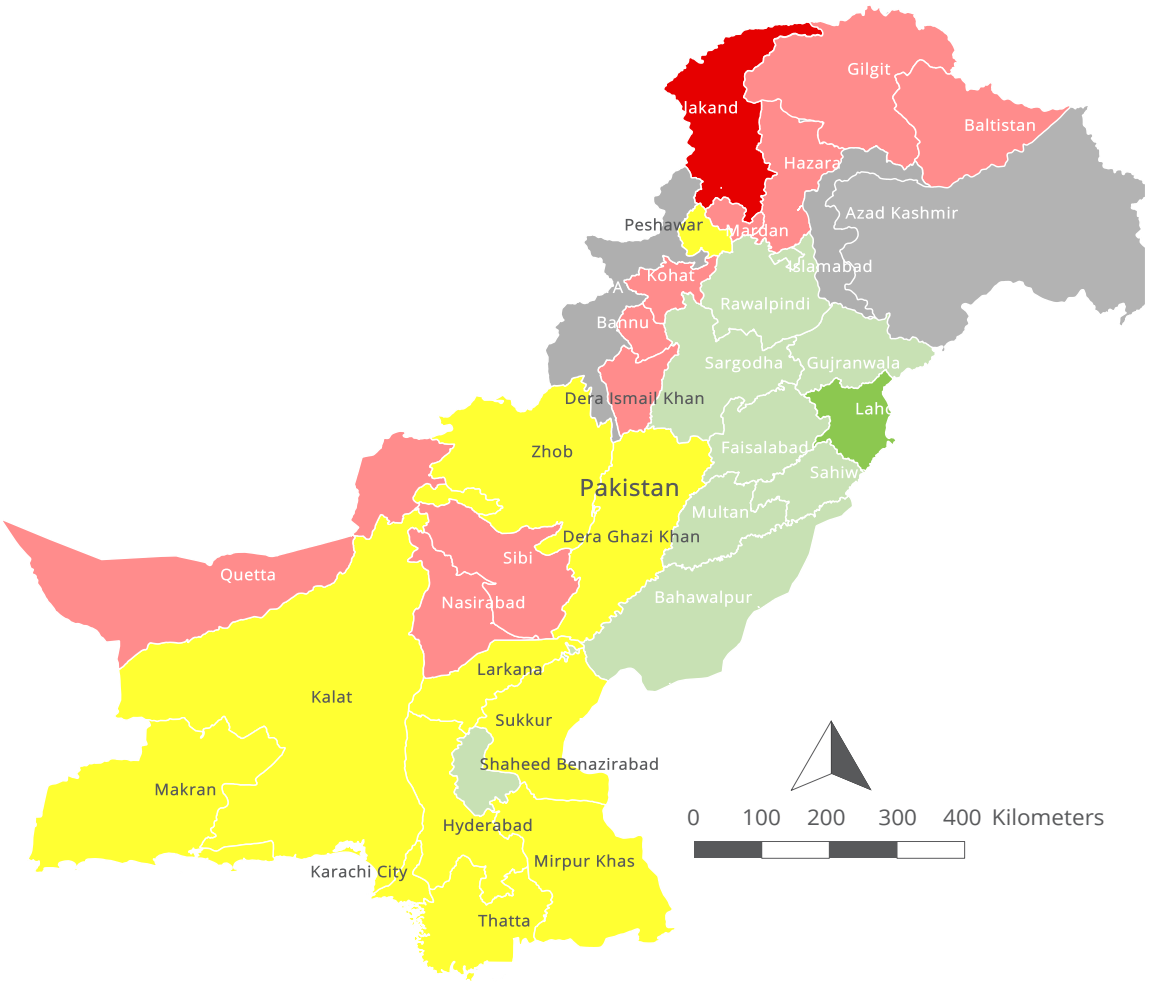
Figure 3.6: Consumption of recommended food groups by area of residence



There are slight variations in food consumption patterns among children from all regions of Pakistan. Overall, majority of children across all regions were predominately fed grains, roots and tubers. Children in Punjab (71%) and Islamabad (74%) consumed dairy products more than any other region, whereas, in KP and GB consumption of dairy products by children was the lowest (30%). The consumption of vitamin A rich fruits was more prevalent in KP (37%), and consumption of other fruits and vegetables and eggs was highest in ICT Islamabad (55% & 44% respectively). Consumption of any type of meat and legumes and nuts was highest in GB (36% & 14% respectively).

Among all administrative divisions of Pakistan, a large proportion of children consumed grains, roots and tubers, and dairy products with no significant variation in pattern based on administrative divisions. As far as the consumption of other food groups are concerned large variations were observed in their consumption among children belonging to different divisions of the country. In Punjab consumption of other fruits and vegetables, eggs, and legumes and nuts was highest among children residing in Rawalpindi division (59%, 46% & 14% respectively). Any type of meat and vitamin A rich foods were commonly received by the children belong to Sargodha division. In Sindh consumption of vitamin A rich foods was found higher (39%) among children living in Larkana division. Other fruits and vegetables, eggs, and meat were commonly consumed by children belong to Karachi division (35%, 34% & 36% respectively), while legumes and nuts were received more by children from Banbhore division. In KP province; consumption of vitamin A rich food was highest (47%) among children belonging to Mardan division, while other fruits and vegetables, eggs, and legumes and nuts were common in Kohat division. Meat was more likely to be received by the children living in Peshawar division. In Baluchistan consumption of food was found better among children of Makran division and in GB it was higher in Gilgit division as compared to other divisions of their respective provinces. On the base of bivariate analysis classification maps are developed to highlight the consumption of each food group at divisional level (See Map 3.1 to 3.7).

Map 3.1: Percent of children 6-23 months who consumed dairy products* in Pakistan



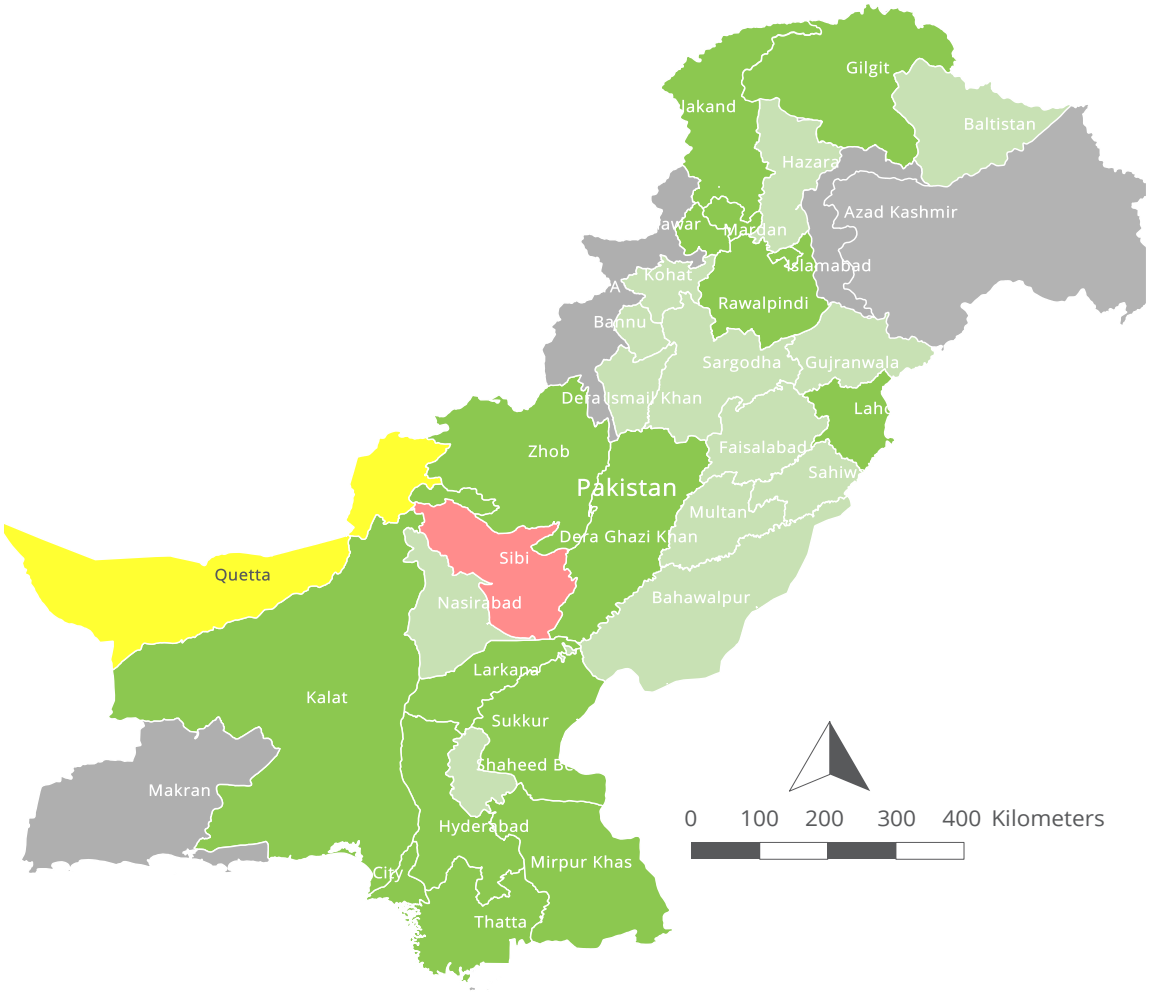
* Yogurt, cheese, infant formula milk, etc.

Legend Percentage

0.0 - 19.9	40.0 - 59.9	80.0 - 100.0
20.0 - 39.9	60.0 - 79.9	No Data

Source: Pakistan Demographic and Health Survey (PDHS) 2012-13

Map 3.2: Percent of children 6-23 months who consumed grains, roots and tubers in Pakistan

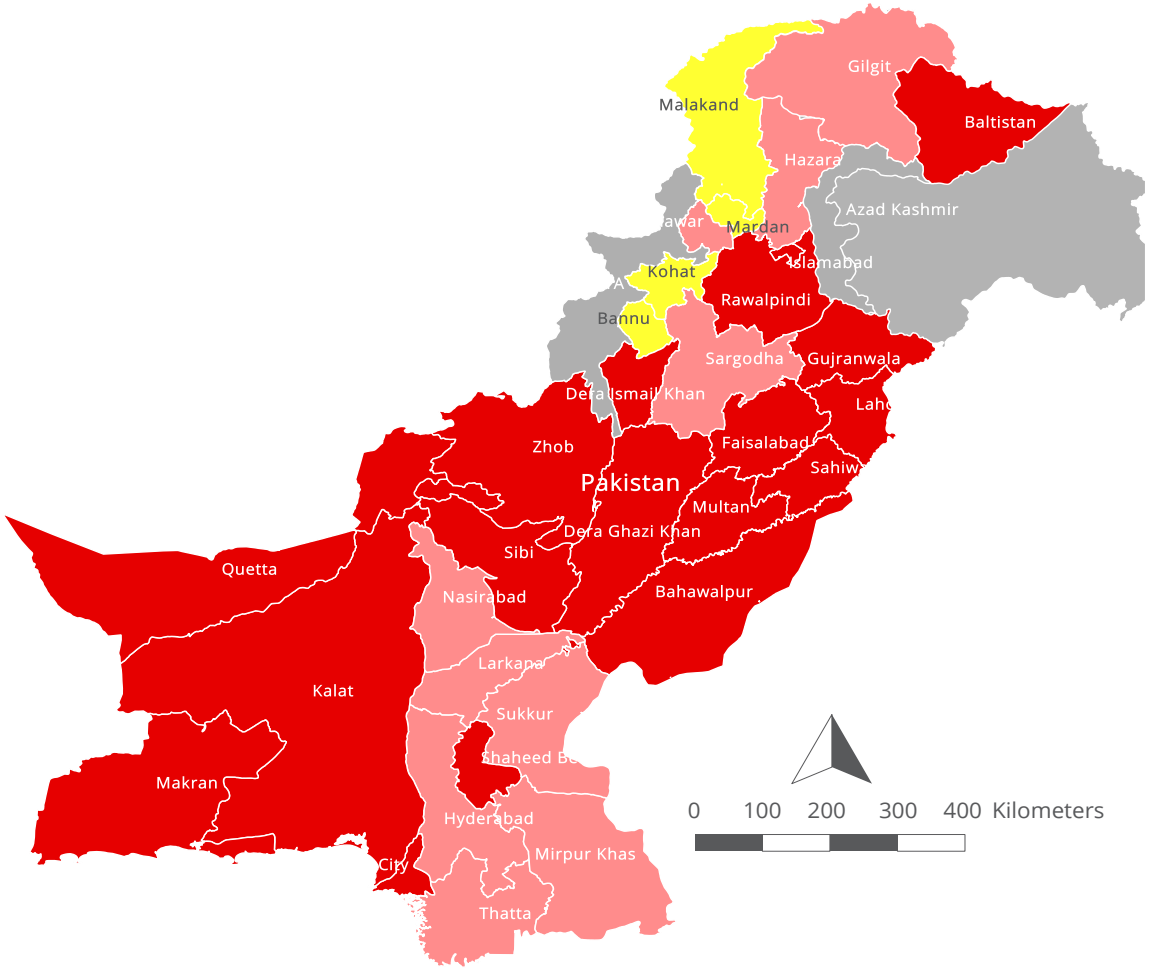


Legend Percentage

0.0 - 19.9	40.0 - 59.9	80.0 - 100.0
20.0 - 39.9	60.0 - 79.9	No Data

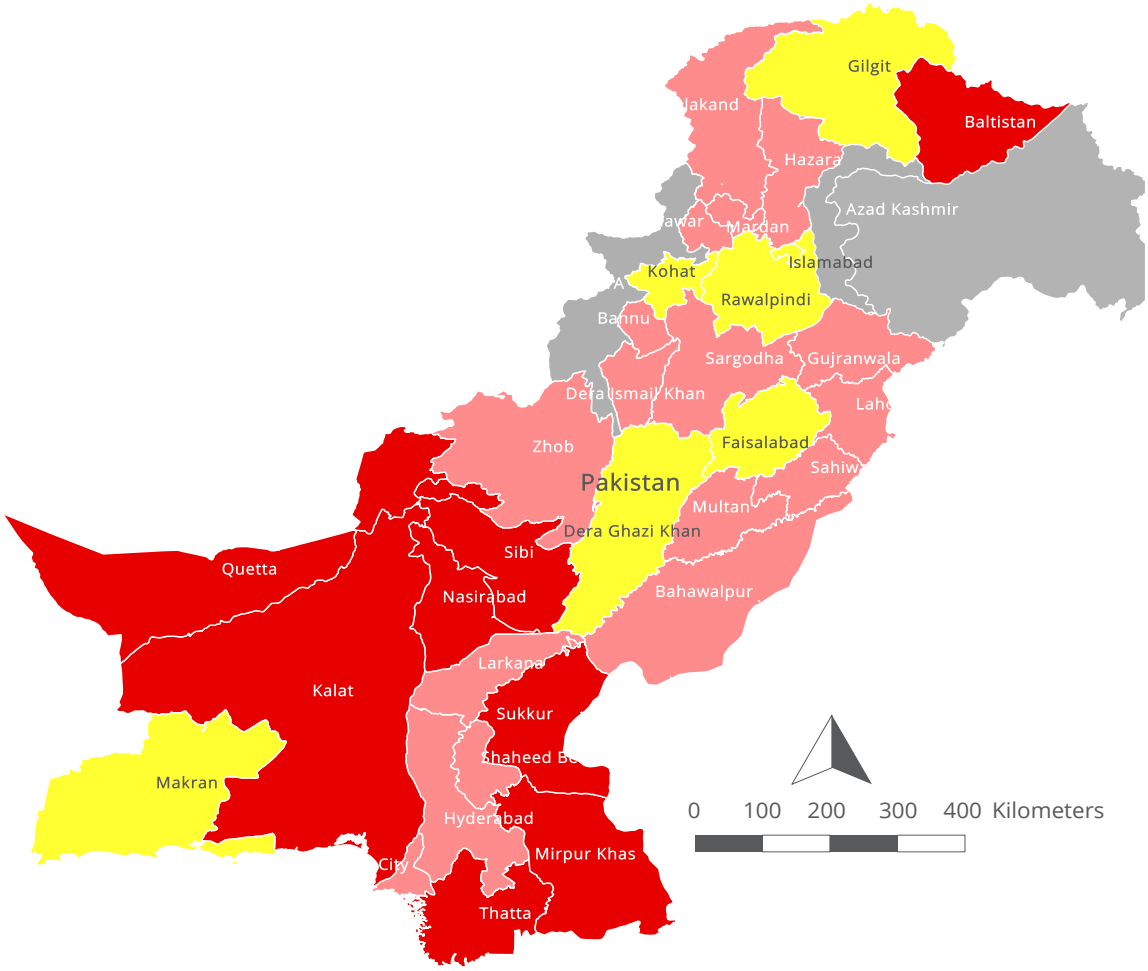
Source: Pakistan Demographic and Health Survey (PDHS) 2012-13

Map 3.3: Percent of children 6-23 months who consumed vitamin A rich fruits and vegetables* in Pakistan



* pumpkin, carrot, dark green leafy vegetables, mangoes, papaya, etc.

Map 3.4: Percent of children 6-23 months who consumed fruits and vegetables in Pakistan (other than vitamin A rich fruits and vegetables)

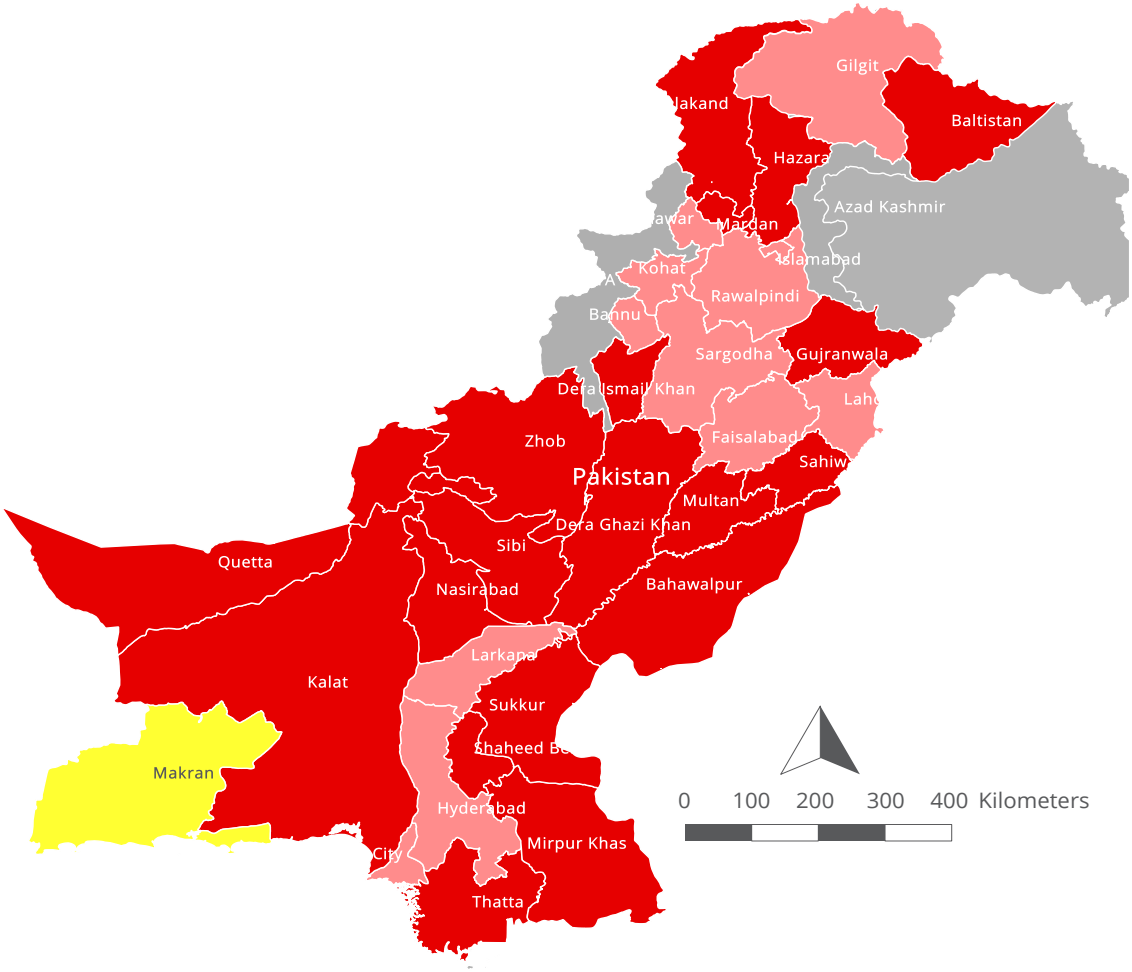


Legend Percentage

0.0 - 19.9	40.0 - 59.9	80.0 - 100.0
20.0 - 39.9	60.0 - 79.9	No Data

Source: Pakistan Demographic and Health Survey (PDHS) 2012-13

Map 3.5: Percent of children 6-23 months who consumed meat products* in Pakistan



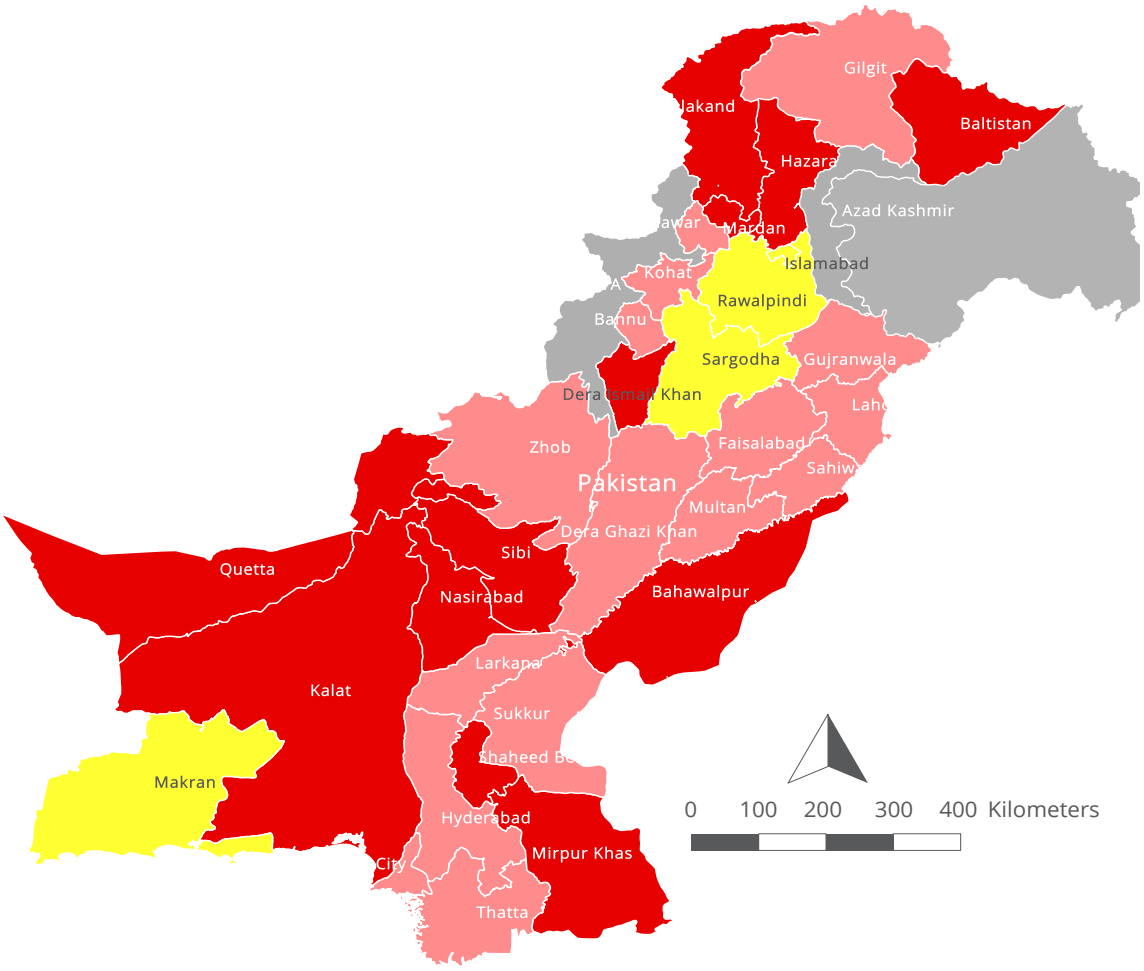
* Beef, lamb, fish, organ meats, etc.

Legend Percentage

- 0.0 - 19.9
- 20.0 - 39.9
- 40.0 - 59.9
- 60.0 - 79.9
- 80.0 - 100.0
- No Data

Source: Pakistan Demographic and Health Survey (PDHS) 2012-13

Map 3.6: Percent of children 6-23 months who consumed eggs in Pakistan

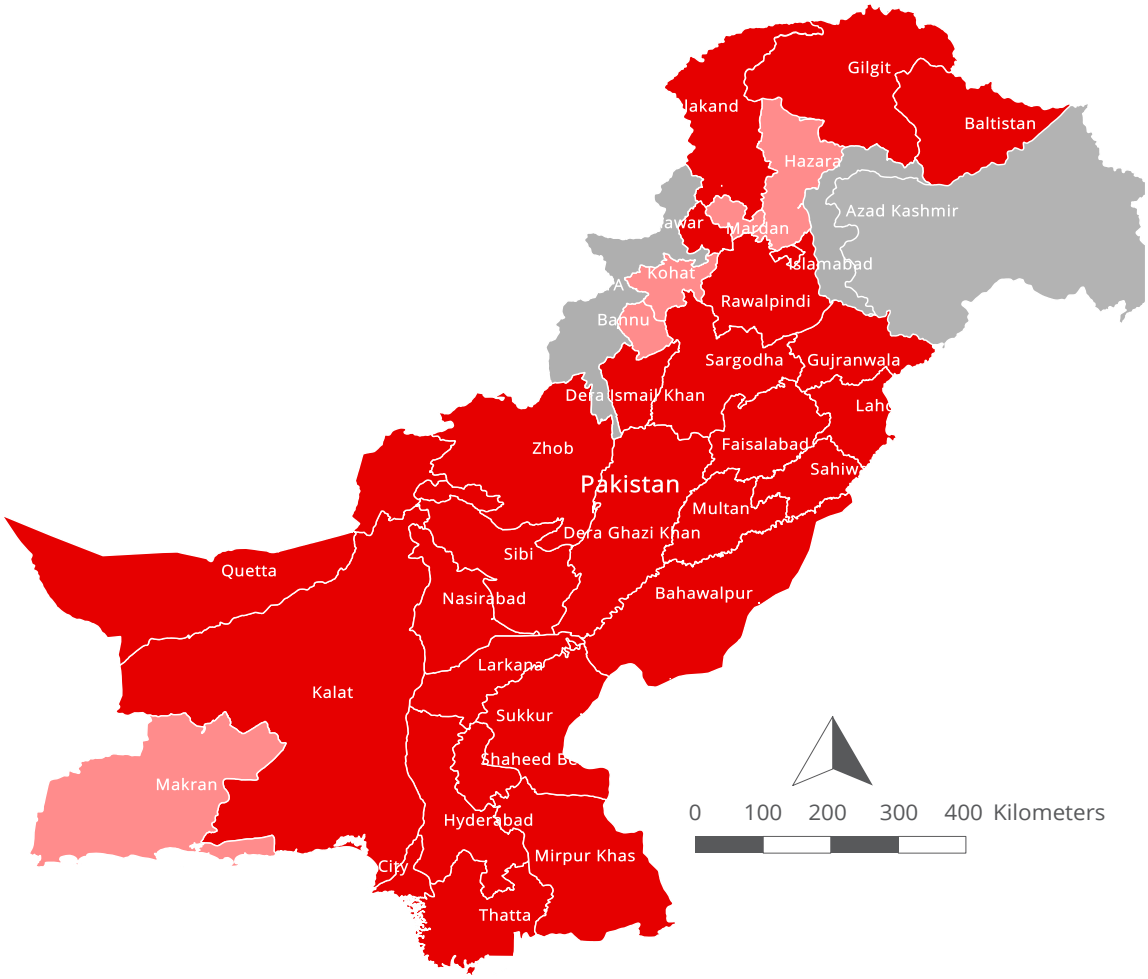


Legend Percentage

0.0 - 19.9	40.0 - 59.9	80.0 - 100.0
20.0 - 39.9	60.0 - 79.9	No Data

Source: Pakistan Demographic and Health Survey (PDHS) 2012-13

Map 3.7: Percent of children 6-23 months who consumed legumes and nuts in Pakistan



Legend Percentage

0.0 - 19.9	40.0 - 59.9	80.0 - 100.0
20.0 - 39.9	60.0 - 79.9	No Data

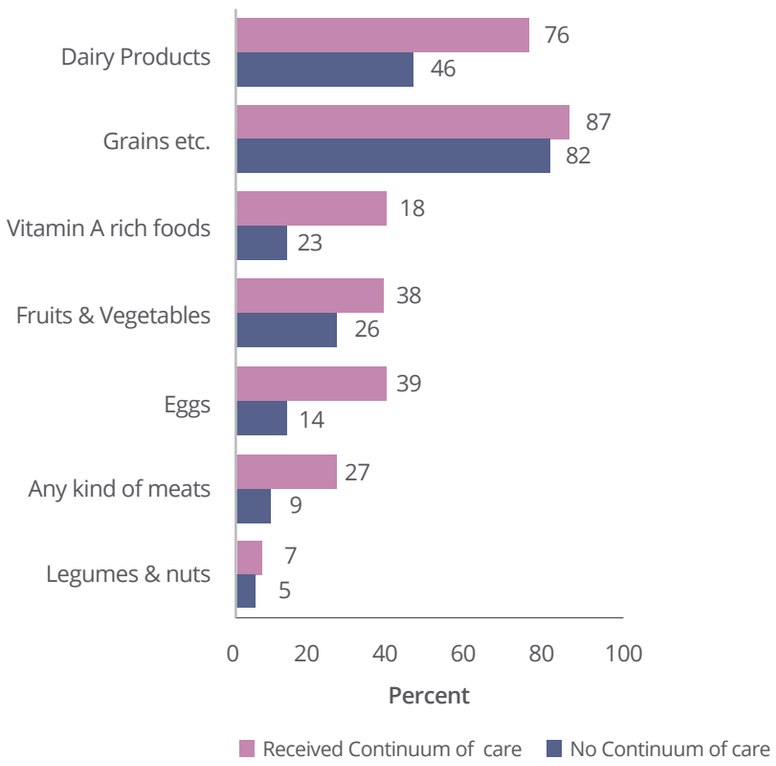
Source: Pakistan Demographic and Health Survey (PDHS) 2012-13

Table B.4 analyzes the consumption of seven food groups' vis-à-vis mother and child health Indicators. It was observed that the consumption of majority of the food groups was highest among children who were the first born with no previous birth by the mother. There was higher consumption of food groups among children born with a birth interval of < 24 months as compared to children with a birth interval of ≥ 24 months. This finding is not consistent with global evidence; it will be further explored in the formative qualitative research on complementary feeding.

Generally, mothers who have better access to health services, respond to health information messages and receive counseling at health service centers on appropriate food consumption etc. In Pakistan, children whose mothers gave birth at health facilities received more diverse diet consisting of all seven food groups. Overall, children who were born at health facilities attained variety of foods as compared to the children who were not born at health facilities. However, consumption of vitamin A rich fruits and vegetables was slightly lower (18%) among children who were born at a facility than children whose mothers did not give birth at health facilities (21%). Similar trends were found among breastfed and non-breastfed children. However non-breastfed children who were born at a health facility received more food from seven food groups than breastfed children (Table B.6 & B.8).

In this study, combined effect of mother and child health services was analyzed under the umbrella of continuum of care which included four or more ANC visits by mother during pregnancy, birth assisted by skilled birth attendant and PNC received at any time during the 6 weeks after delivery by mother and child. Children whose mothers received continuum of care were more likely to be fed a diet according to the seven food groups as compared to children whose mothers who did not receive continuum of care (Figure 3.7). Among breastfed and non-breastfed children of mothers who received continuum of care, noticeable variations were observed in consumption of food from seven food groups. It was observed that intake of non-breastfed children was better than breastfed children.

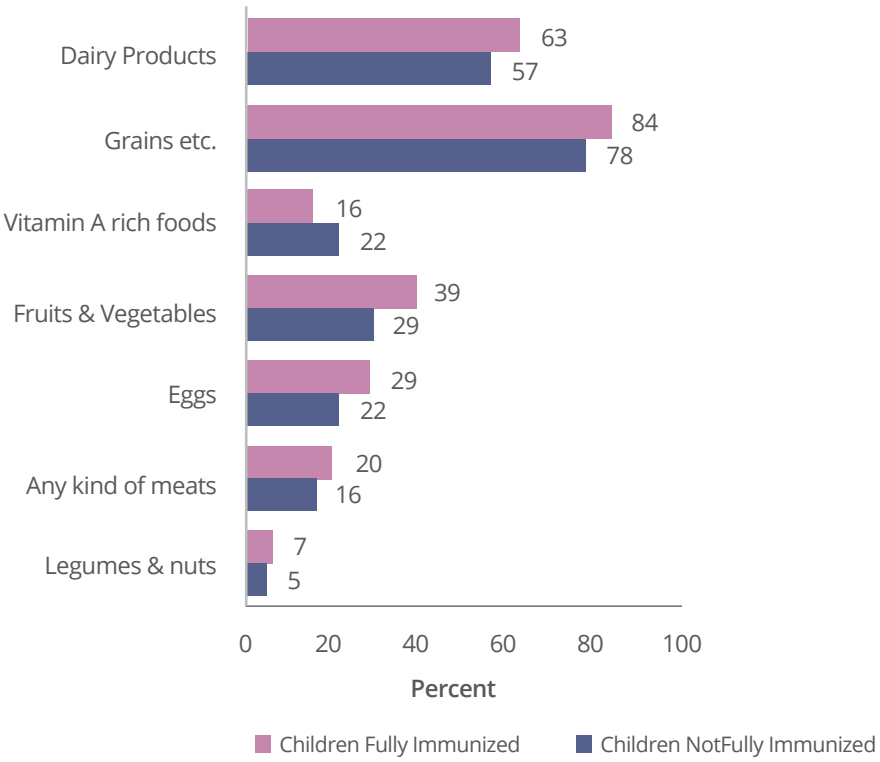
Figure 3.7: Consumption of recommended food groups by continuum of care



A higher proportion of children whose mothers took iron tablets during pregnancy received a better diet as compared to children whose mothers did not take iron tablets. Among mothers who took iron tablets, 84 percent of children consumed grains, roots and tubers, followed by dairy products (62%), other fruits and vegetables (43%), eggs (35%) and less than 27 percent consumed other food groups as compared to children whose mothers did not take iron tablets. Same pattern of consumption was found among breastfed and non-breastfed children whose mothers received iron tablets during last pregnancy.

The maternal nutritional status was assessed using BMI. Children whose mothers had a BMI more than or equal to 18. 5kg/m2 consumed more grains, roots and tubers (81%), eggs (28%) and meat (20%) as compared to children of mothers who had a BMI below 18.5 kg/m2. On the other hand, children with mothers who had a BMI less than 18.5 kg/m2 consumed more dairy products (60%), vitamin A rich foods (19%) and other fruits and vegetables (37%). Legumes and nuts had the lowest consumption among children across all maternal BMI groups.

Figure 3.8: Consumption of recommended food groups by immunization status



Full vaccination coverage in Pakistan has been gradually improving over the past two decades, with an increase from 35 percent in 1990-91 to 54 percent in 2012-13 (NIPS ICF, international 2013). Among immunized children consumption pattern was higher as compared to non-immunized children (Figure 3.8). With regard to breastfed and non-breastfed children, the consumption pattern exhibited better eating habits in immunized children as compared to non-immunized children (Table B.6 & B.8).

In the 2012-13 PDHS, information on diarrhea was gathered and if the child had diarrhea, the mother was asked about feeding practices during diarrhea. The results showed that children suffering from diarrhea were given slightly less food as compared to children not suffering from diarrhea. However, children who were suffering from diarrhea were given more vitamin A rich fruits (20%) and meat (19%) as compared to children not suffering from diarrhea (19% & 17% respectively). Similar findings were exhibited for food consumption among breastfed and non-breastfed children who were treated for diarrhea; they consumed a significantly higher amount of most of the food groups as compared to children who were not treated for diarrhea. However, the children who were not given diarrhea treatment were given more vitamin A rich fruits

(21%) as compared to children who were treated for diarrhea (20%). The results showed a similar pattern of food consumption among breastfed and non-breastfed children (Table B.6 & B.8).

Information on birthweight or size at birth is important for the design and implementation of public health programs aimed at reducing neonatal and infant mortality. This is particularly true in societies such as Pakistan, where babies are often delivered at home and not weighed at birth. Results from the study showed that large and average sized children were given more diverse food as compared to small sized children (Table B.4). Information on breastfed children depicted a similar pattern; average sized children were given more grains and tubers (81 %), eggs (26%), vitamin A rich food (20%) and meat (17%), while large sized children were given more dairy products (60%) (Table B.6). Among non-breastfed children large sized children showed better dietary habits (Table B.8).

Vitamin A is an essential micronutrient for the immune system that plays an important role in maintaining the epithelial tissue in the body. Severe vitamin A deficiency (VAD) can cause eye damage (ICF, international, NIPS 2013). Children who had received vitamin A supplements showed higher consumption of all the seven food groups as compared to children who did not receive vitamin A supplements.

Small differences were found in the consumption of grains, roots and tubers, vitamin A rich food and legumes and nuts among stunted and non-stunted children. However, there was a difference in the consumption of other food groups with reference to stunting; children not stunted consumed more dairy products (60%), other fruits and vegetables (40%), eggs (31%) and meat (20%) as compared to stunted children (55%, 31%, 23% and 17% respectively). There were variations in consumption of seven food groups among wasted and not wasted children.

Similarly, underweight children were given more grains, dairy products and eggs. Consumption of other food groups was higher among not underweight children than underweight children. Among breastfed and non-breastfed children grains, roots and tubers and dairy products were consumed more by underweight children as compared to their counterparts.

4

CONSUMPTION OF FOOD RICH IN NUTRIENTS

This chapter presents the findings of the in-depth analysis in consumption of food rich in nutrients by the sampled children aged 6-23 months, controlling their breast feeding status. The nutrients included in the analysis are vitamin A, iron, carbohydrates and proteins. The consumption of these nutrients is correlated in this chapter with different demographic and socio-economic factors or characteristics of children, their parents particularly mothers, and households. Some factors related to health of children are also part of the analysis. Results are presented in Annex Tables B.9 to B.12 which show the proportion (%) of children who received a particular food rich nutrient by their breastfeeding status. To understand the statistical significance of association between food rich intake and a particular demographic or socio-economic factor, the value of chi-square is also shown in these tables for each subset or panel.

4.1 CONSUMPTION OF FOODS RICH IN VITAMIN A AND IRON

Overall, approximately half of the sampled children (45%) consumed foods rich in vitamin A during the reference period whereas the corresponding proportion of children who received foods rich in iron is 35 percent. The consumption of these two nutrients, i.e. vitamin A and iron, appears to be higher among non-breastfed children than among breastfed children. However, there is no statistically significant association between gender of the sampled children and consumption of foods rich in nutrients, showing that gender is not in general a differentiating factor in consumption of nutrients. However, the proportion of children consuming vitamin A and iron rich food increased with the age of the child and mother.

Consumption of foods rich in vitamin A and iron was higher among children of educated parents (52% and 46% respectively) than the children of uneducated parents (37% and 23% respectively). When the number of children ever born was more than 6, children were less likely to have consumed foods rich in vitamin A. Lower the number of children ever born, greater the consumption of foods rich in vitamin A.

Consumption of foods rich in vitamin A and iron is higher among children who lived in households having two persons per room, access to improved sanitation and where members practiced handwashing. However much difference is not observed in the consumption of foods rich in vitamin A and iron among children belonging to nuclear, joint and extended families.

A significant association was found between mother's involvement in the decision making process on household purchases and the consumption of vitamin A and iron rich foods. Children of mothers who solely made household decisions on major purchases were more likely to have vitamin A and iron rich foods. Over half (52%) of the children whose mothers solely made decisions, consumed vitamin A rich foods and 40 percent consumed iron rich foods than mothers who shared the decision making process. A similar pattern was observed among breastfed and non-breastfed children.

A significant association was observed between maternal working status by occupational sector and consumption of a diet rich in vitamin A and iron. Children of mothers working in agriculture and non-agriculture sector consumed a lower amount of diet rich in vitamin A and iron as compared to children of mothers who were not working. Children who had mothers working in the non-agriculture sector consumed a higher amount of vitamin A (40%) and iron rich diet (30%) as compared to the children of mothers working in the agricultural sector (29% and 19% respectively).

Figure 4.1: Consumption of foods rich in vitamin A

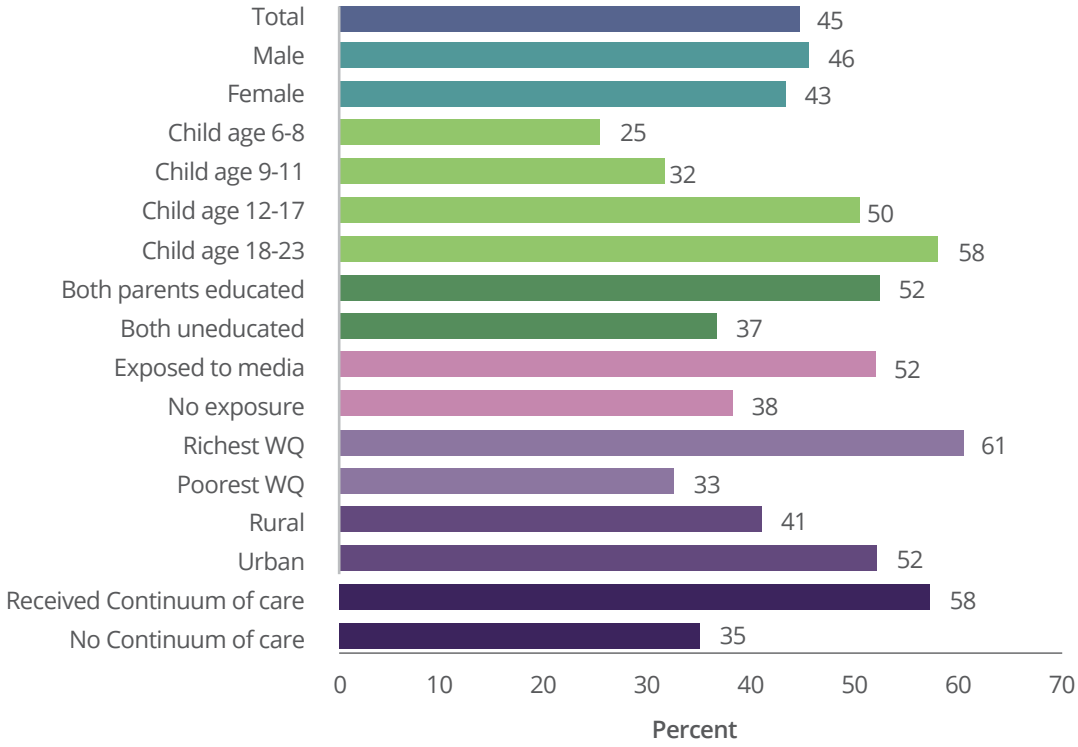
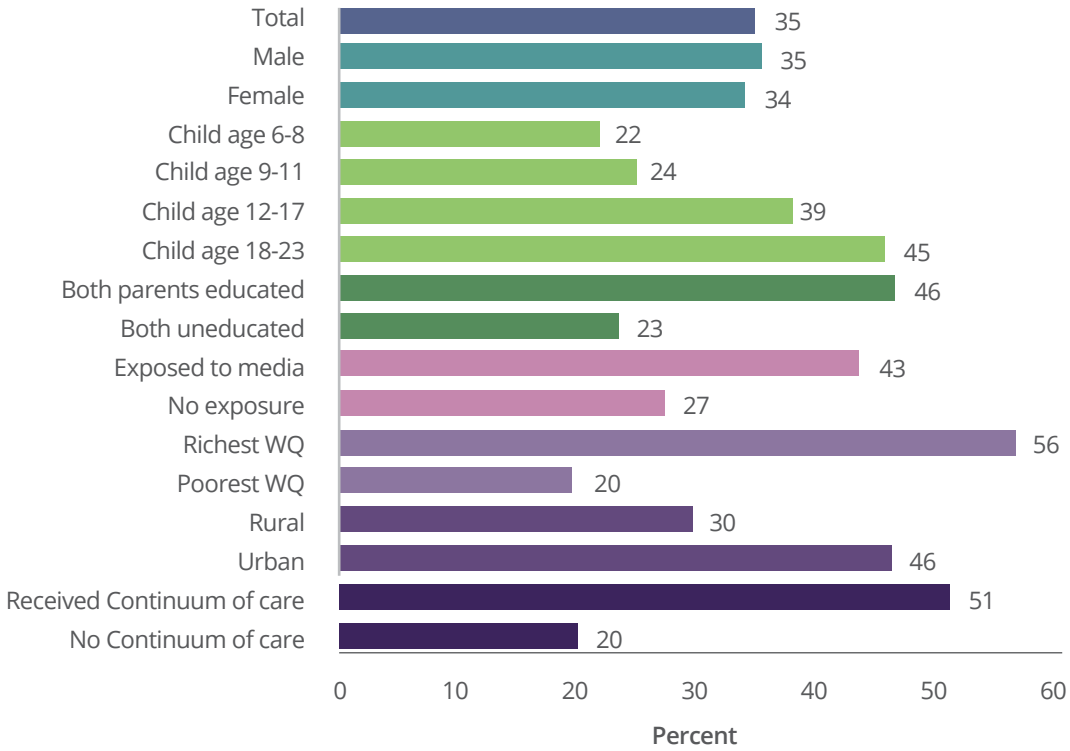


Figure 4.2: Consumption of foods rich in iron



A significant association was found between consumption of vitamin A, iron and exposure to media. Children of mothers having media exposure were more likely to be fed a vitamin A and iron rich diet as compared to children of mothers having no access to media. Approximately, 52 percent of children with mothers exposed to media received vitamin A rich food and 43 percent were fed iron rich foods. A similar pattern was observed among breastfed and non-breastfed children. Furthermore, children belonging to rich households consumed more vitamin A and iron rich foods as compared to poor households. Consumption of foods rich in vitamin A was higher among urban children (53%) as compared to the children living in rural areas (41%).

There were substantial differences in the proportion of children who consumed vitamin A and iron rich foods across geographical regions. Children residing in Islamabad were more likely to consume foods rich in vitamin A and iron (64% and 59% respectively), while children in Balochistan (26% and 18% respectively) were the least likely to consume foods rich in vitamin A and iron. The consumption of foods rich in vitamin A was greater across all divisions as compared to the consumption of foods rich in iron. Rawalpindi, Sargodha, Faisalabad and Lahore in Punjab; Karachi, Thatta and Hyderabad in Sind; Peshawar and Kohat in KP and Makran and Zhob in Balochistan appear to be better in provision of foods rich in vitamin A and iron to children aged 6-23 months as compared to other Division in the same province.

Approximately 70 percent of the children who had mothers aged 19 or older consumed iron rich foods than the children who had mothers aged 15-18 years (23%). There were substantial differences identified among breastfed and non-breastfed children receiving foods rich in vitamin A across all administrative divisions. Age of child, age of mother, birth order, residence, regions and divisions were highly correlated and revealed significant association with consumption of foods rich in vitamin A.

Table B.10 shows that consumption of foods rich in vitamin A and iron was lowest among children who were born sixth or higher in the birth order (6+). Similarly, first-born child consumed more foods rich in vitamin A and iron as compared to other children with higher birth orders. At the national level, children whose mothers gave birth at health facilities were more likely to have better consumption of vitamin A and iron rich food. Children whose mothers received continuum of care were more likely to be fed vitamin A and iron rich foods as compared to children whose mothers did not receive continuum of care.

The findings show that children whose mothers received vitamin A dose after delivery consumed more vitamin A and iron rich foods as compared to other children. The proportion for vitamin A rich foods and iron rich foods were higher among non-breastfed children than breastfed children. A significant association was found between intake of iron tablets by mothers and consumption of vitamin A and iron rich foods. Consumption of vitamin A and iron rich foods was found higher among non-breastfed children whose mothers took iron tablets during their last pregnancy than breastfed children whose mothers took iron tablets. Consumption of foods rich in vitamin A and iron was higher among mothers with BMI greater than 18.5 as compared to children whose mothers had a BMI below 18.5.

There was a significant association between consumption of foods rich in vitamin A and iron with immunization status. More immunized children received diet rich in vitamin A and iron than non-immunized children. The findings revealed that consumption of vitamin A rich foods was only 48 percent by immunized children as compared to 42 percent by non-immunized children, while 40 percent of immunized children received foods rich in iron as compared to 30 percent of the non-immunized children. Results showed that consumption of foods rich in vitamin A by children who had diarrhea treatment was 46 percent as compared to 24 percent of children who did not have diarrhea treatment. One third (36%) of children who had diarrhea treatment received foods rich in iron and only 9 percent of children who did not have diarrhea treatment received foods rich in iron.

There was a significant association between consumption of foods rich in vitamin A and iron and size at birth. A total of 45 percent of large sized children received vitamin A rich foods as compared to 47 percent of medium sized children and one third (36%) of small sized children. Furthermore, 37 percent of large sized children, and 36 percent of medium sized children were given foods rich in iron, but only 27 percent of small sized children were given iron rich foods.

Consumption of foods rich in vitamin A and iron was lower in stunted, wasted and underweight children aged 6-23 months. Consumption of vitamin A rich foods for stunted children was 40 percent and 50 percent for not

stunted children, whereas 30 percent of stunted children consumed foods rich in iron and 42 percent of not stunted children consumed foods rich in iron. Consumption of foods rich in vitamin A by children who were wasted was 31 percent as compared to 49 percent in children who were not wasted. More than 22 percent of wasted children received foods rich in iron as compared to 40 percent of children who were not wasted. Consumption of foods rich in vitamin A was 36 percent in underweight children as compared to 50 percent of children who were not underweight. Twenty-seven percent of underweight children received foods rich in iron as compared to 42 percent of children who were not underweight.

4.2 CONSUMPTION OF FOODS RICH IN NUTRIENTS (CARBOHYDRATES, HIGH & LOW QUALITY PROTEIN AND VITAMIN A)

Table B.11 depicts the patterns of food consumption pertaining to carbohydrates, quality of proteins and vitamin A in children according to demographic and socio-economic characteristics.

Overall, 83 percent children consumed food rich in carbohydrates, 33 percent consumed food rich in carbohydrates and high quality proteins, 5.8 percent consumed foods rich in carbohydrates and low quality proteins and 43 percent consumed foods rich in carbohydrates and vitamin A. There is not much difference among breastfed and non-breastfed children in the consumption of these nutrients. About 84 percent of male children received foods rich in carbohydrates as compared to 81 percent of female children. Age of children is found associated with the consumption of foods rich in these nutrients. Similarly, mother's age had a positive significant impact on consumption of foods rich in carbohydrates, including high-quality protein and vitamin A.

Regardless of breastfeeding status, carbohydrate rich foods were consumed more in children whose parents were educated or only whose mothers were educated. Consumption of carbohydrates rich foods, high quality and low quality proteins was higher among children living in less crowded households and those who lived in extended families. Consumption of foods rich in carbohydrates was low in children belonging to households with access to improved source of drinking water. However, consumption of these foods was higher among children from households with access to improved source of sanitation and where handwashing was practiced.

The consumption of carbohydrate rich foods among children whose mothers made decisions on major household purchases independently was little higher than mothers who shared the decision making process or had no decision making powers. Mothers with sole decision making of household purchases were more likely to give a diet rich in carbohydrates with high quality proteins, low quality proteins and vitamin A rich foods to their children as compared to mothers who shared the decision making process or had no decision making powers. The consumption of carbohydrates with high quality proteins and carbohydrates with low quality proteins was higher (73% and 13% respectively) in non-breastfed children than breastfed children (32% and 6% respectively).

Consumption of foods rich in carbohydrates was relatively high among children of mothers working in non-agriculture sector (83%) and non-working mothers (83%) than mothers working in agriculture sector (75%). Non-working mothers were more likely (36%) to give carbohydrates and high quality proteins to their children than the mothers working in the non-agriculture sector (28%) and mothers working in the agriculture sector (17%). Non-breastfed children consumed more macronutrients than breastfed children.

Overall, intake of carbohydrates rich food was high among children of mothers exposed to media (87%) than children of mothers with no media exposure (79%). The proportion of non-breastfed children was higher than breastfed children. Among mothers with media exposure, 42 percent of children received carbohydrates with high quality proteins, less than five percent of children consumed carbohydrates with low quality proteins and almost half (51%) of the children had foods rich in carbohydrates and vitamin A as compared to mother with no media exposure.

Children from rich households had a better consumption of carbohydrate rich foods as compared to children from poor households. A higher proportion of children living in urban areas (89%) were more likely to consume foods rich in carbohydrate. Area of residence had a significant impact on the quality of carbohydrates consumed by children. Five out of every ten urban children and 4 out of every ten rural children were likely to consume food rich in carbohydrates and vitamin A.

Figure 4.3: Consumption of foods rich in carbohydrates

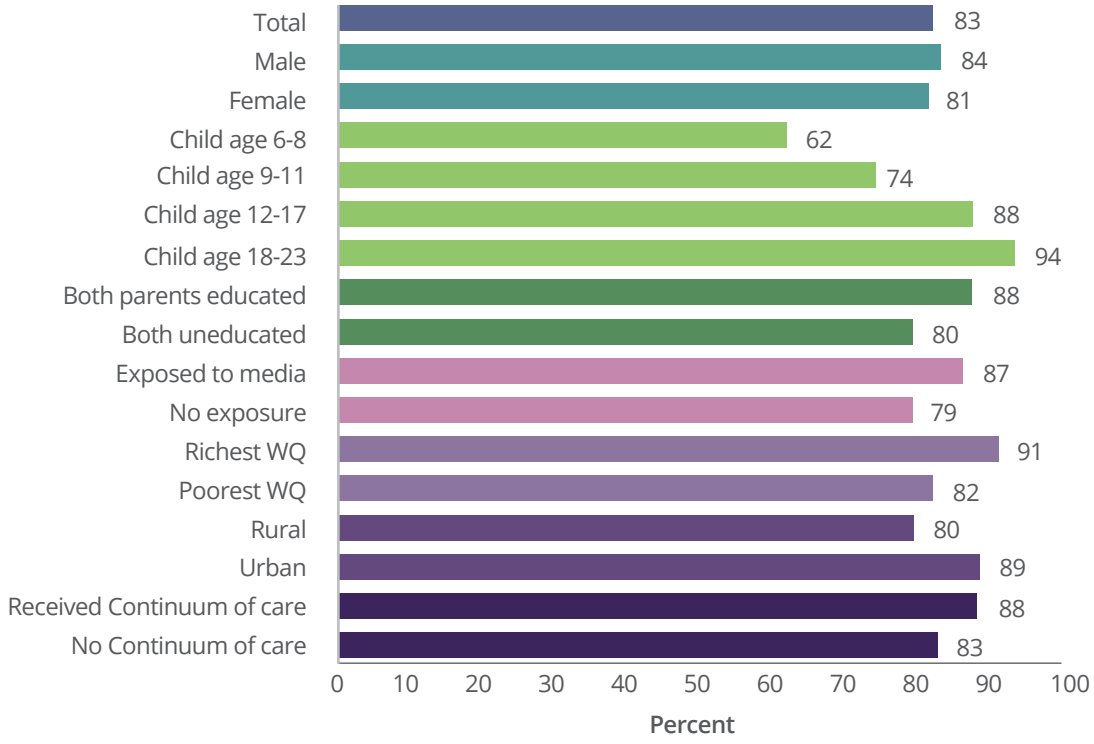


Figure 4.4: Consumption of foods rich in carbohydrates and high-quality proteins

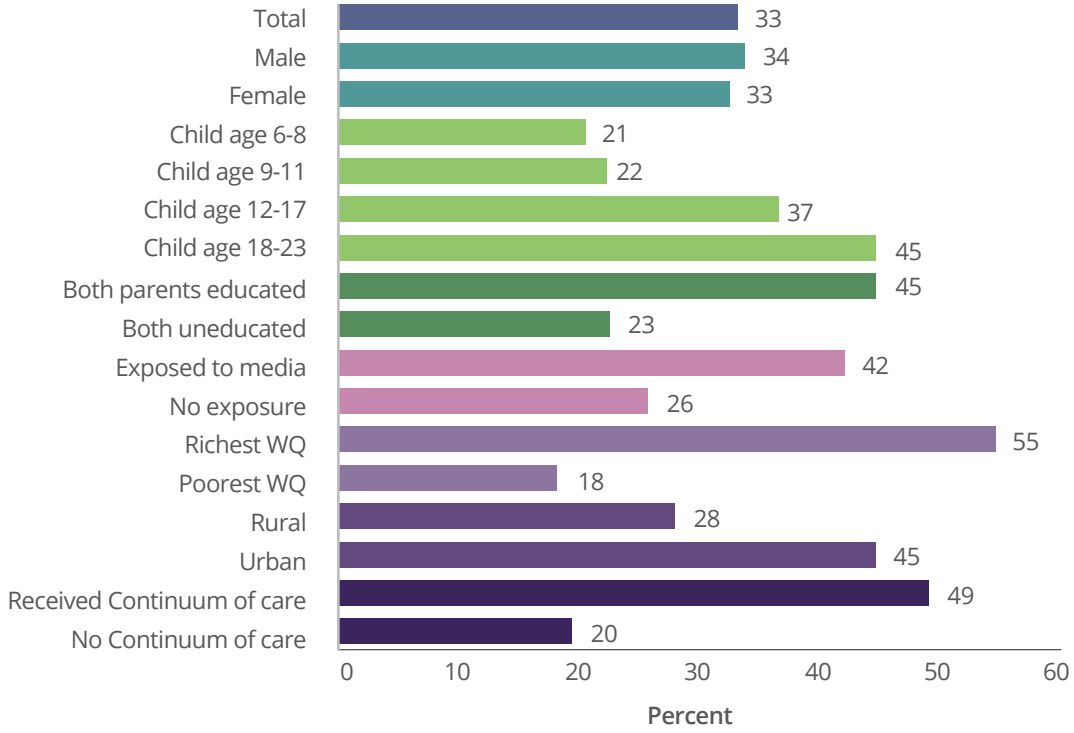


Figure 4.5: Consumption of foods rich in carbohydrates and low-quality proteins

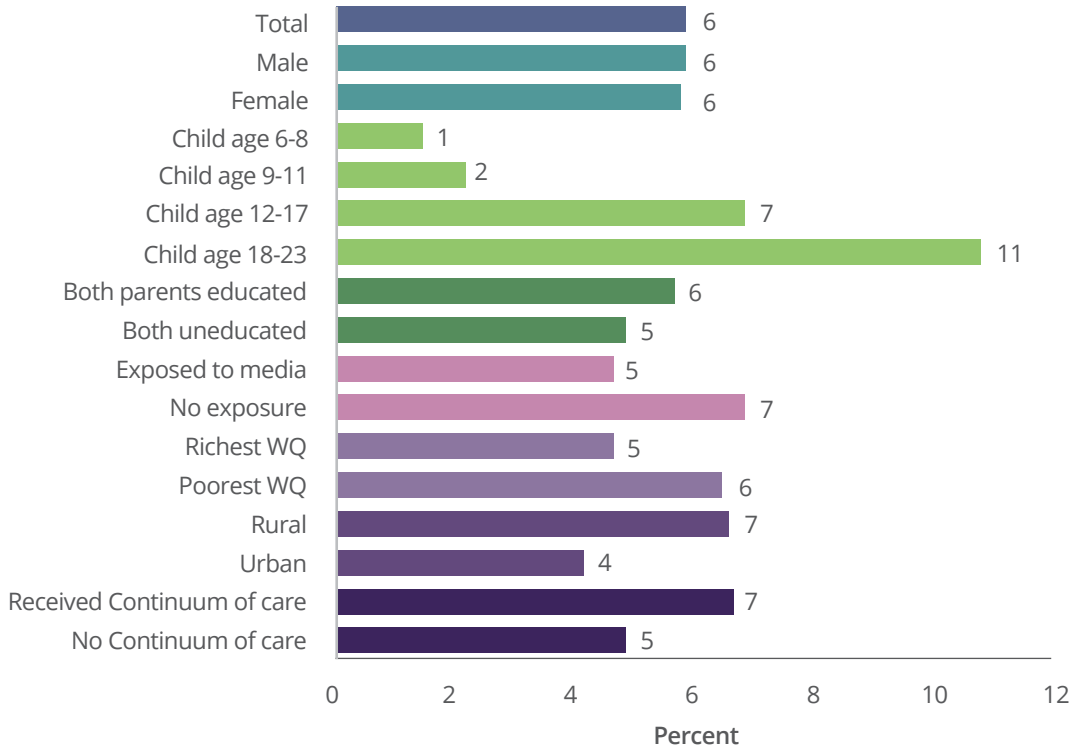
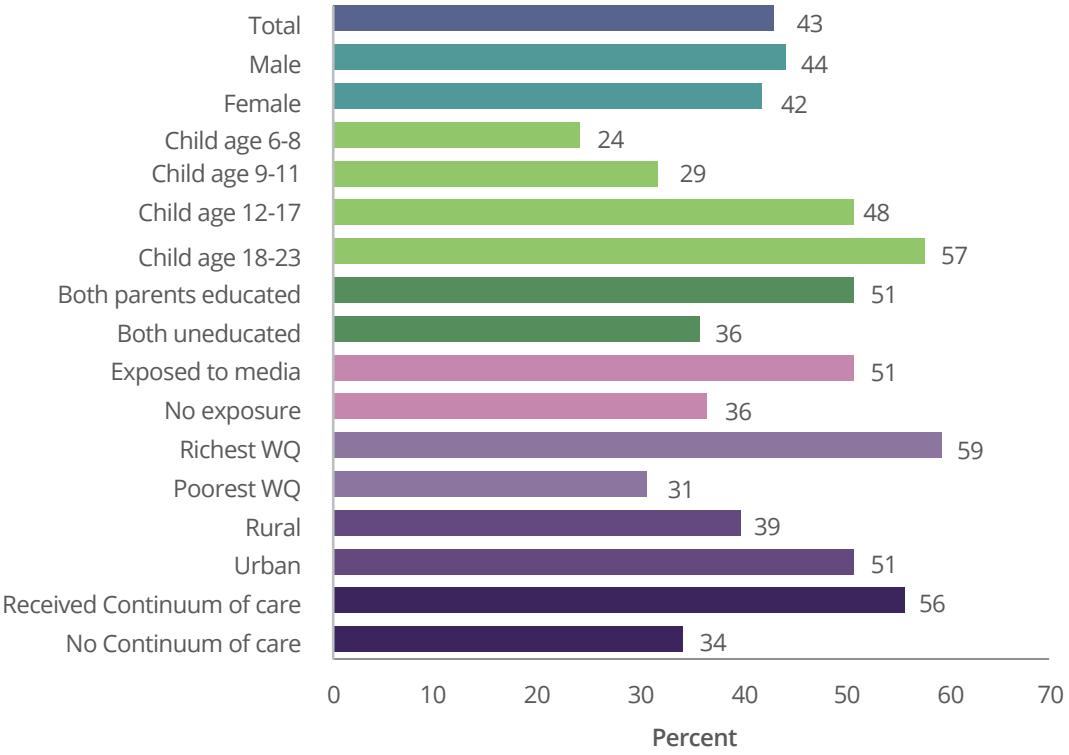


Figure 4.6: Consumption of foods rich in carbohydrates and vitamin A



There are substantial differences in the proportion of children receiving foods rich in carbohydrate including vitamin A and protein across geographical regions. Children in Sindh were the most likely (89 percent) and children in Balochistan (74%) were the least likely to receive foods rich in carbohydrates. There was a significant association between region and quality of food consumption in children. The proportion of children consuming foods rich in carbohydrates with low quality proteins was highest in GB (14%), followed by KP (12%), ICT (9%), Balochistan (5%), Sindh (5%) and Punjab (4%). A slight variation in the consumption of foods rich in carbohydrate was observed across administrative divisions. In 18 divisions, almost 80-90 percent of children were most likely to consume foods rich in carbohydrate. However, children living in Quetta (47%) and Sibi (39%) were less likely to consume food rich in carbohydrate.

Table B.12 gives the proportion of consumption of foods rich in carbohydrates, proteins and vitamin A among children aged 6-23 months according to health characteristics of mothers and children. The consumption of foods rich in carbohydrate, including high quality protein and vitamin A decreased with increasing birth order among children. However, the association was not found to be statistically significant. Consumption was also found higher among children of mothers who gave birth at health facilities. Eighty five percent children who were born at a health facility consumed carbohydrates rich food during day or night as compared to children who were not born at health facilities (80%). Eighty eight percent children whose mothers received continuum of care obtained carbohydrates rich foods than children whose mothers did not receive continuum of care (83%).

A significant association was found between children whose mothers took a vitamin A dose after the delivery and consumption of foods rich in carbohydrates (87%). It is interesting to know that almost all non-breastfed children of mothers who obtained the vitamin A dose in postpartum period had carbohydrates rich foods (98%). The results also showed that intake of carbohydrates with high quality proteins, low quality proteins and with vitamin A rich diet was higher among children of mothers who received a dose of vitamin A in the postpartum period. Consumption of carbohydrates with high quality and low-quality proteins and vitamin A rich foods was higher in non-breastfed children.

Consumption of carbohydrates is higher (86%) among children whose mothers took iron tablets during pregnancy than children whose mothers did not take iron tables (79%). Intake of carbohydrates with high quality protein, low quality protein and vitamin A rich diet was higher among children whose mothers took iron tables during their last pregnancy. Findings for breastfed and non-breastfed children suggested that consumption of carbohydrates with high quality and low-quality proteins and vitamin A was higher for non-breastfed children.

Slightly higher number of children with mothers who had a BMI of greater than 18.5 kg/m^2 consumed foods rich in carbohydrates (83%), as compared to children whose mothers have BMI of lesser than 18.5 kg/m^2 (81%). Additionally, 44 percent of children with mothers who had a higher BMI than 18.5 kg/m^2 consumed foods rich in carbohydrates and vitamin A as compared to 34 percent children whose mothers had a BMI less than 18.5 kg/m^2. However, only 6 percent of the children with mothers who had a BMI greater than 18.5 kg/m^2 consumed foods rich in carbohydrates and low-quality proteins as compared to 9 percent of children with mothers who had BMI less than 18.5 kg/m^2.

Consumption of foods rich in carbohydrates, high-quality and low-quality proteins and vitamin A was higher among immunized children than those not immunized. A similar pattern was found for breastfed and non-breastfed children with regard to immunization status.

There was no significant association between consumption of foods rich in nutrients and diarrhea status and treatment for diarrhea. The results revealed that 81 percent of children who had diarrhea consumed foods rich in carbohydrates as compared to 83 percent who did not have diarrhea. One third (32%) of children with diarrhea consumed foods rich in carbohydrates and high-quality proteins as compared to 34 percent of children with no diarrhea. Results revealed that 82 percent children who have had diarrhea treatment consumed foods rich in carbohydrates as compared to 76 percent who did not get diarrhea treatment. More children (34%) who had diarrhea treatment consumed foods rich in carbohydrates and high-quality proteins and 9 percent of children who had no diarrhea treatment consumed foods rich in carbohydrates and high-quality proteins.

Results showed that the similar proportion of stunted and under-weight children (83%) consumed food rich

in carbohydrates, which was little lower than consumption of wasted children (88%). However, 27 percent of stunted children and 41 percent of not stunted children consumed foods rich in carbohydrates and high-quality proteins. One third (36%) of stunted children consumed foods rich in carbohydrates and vitamin A as compared to 48 percent of not stunted children. More stunted children (7%) consumed foods rich in carbohydrates and low-quality proteins as compared to 6 percent of children who were not stunted.

Fewer children (89%) who were wasted consumed foods rich in carbohydrates as compared to 82 percent of children who were not wasted. However, one fifth (21%) of children who were wasted were given foods rich in carbohydrates and high-quality proteins and 38 percent in children who were not wasted children. Nearly one third (30%) of wasted children consumed foods rich in carbohydrates and vitamin A as compared to 46 percent of children who were not wasted. Nearly 6 percent of children consumed foods rich in carbohydrates and low-quality proteins regardless of their wasting status.

Much difference has not been seen in consumption of carbohydrates among under-weight and those who were not under-weight children (Table B.12). Additionally, there were less underweight children (23%) who consumed foods rich in carbohydrates and high-quality proteins as compared to 41 percent of children who were not underweight. It is reported that 33 percent of underweight children consumed foods rich in carbohydrates and vitamin A as compared to 49 percent who were not underweight. Overall, a significant association was found between consumption of foods rich in carbohydrates and high-quality proteins, foods rich in carbohydrates and low-quality proteins and foods rich in carbohydrates and vitamin A and underweight children.

5

COMPLEMENTARY FEEDING PRACTICES

The first two years of a child's life is considered as a critical window for optimal growth and development. In this period, a child transitions from exclusive breastfeeding to CF and needs an appropriate, safe, diverse, nutritious diet with frequent feeding. During this period, the caregiver or mother should be knowledgeable about the appropriate dietary diversity and meal frequency for children. This chapter presents the results of complementary feeding practices analyzed using three variables namely minimum dietary diversity, minimum meal frequency, and minimum acceptable diet, shows in Table B13 and B14. Overall, 22 percent children received MDD, 63 percent received MMF and 15 percent received MAD. Data shows that to some extent boys were provided more MDD than girls, regardless of breastfeeding status. Similarly, more girls were provided with MMF as compared to boys. Child sex was not a significant factor contributing towards CF practices, since both girls and boys received nearly equal MAD. Analysis shows that children of age 18-23 months, from richer households, urban, with both parents educated and those whose mothers received continuum of care have obtained highest percentages of MDD, MMF and MAD.

Table B.13 shows that gender preferences have not been observed significantly in CF practices among children. As the age of the child increased, there was an increase in the proportion of children receiving all three CF indicators. The MMF was given to 74 percent of children 18-23 months of age, 64 percent to aged 12-17 months, 48 to 9-11 months, and 59 percent to children aged 6-8 months. MDD was provided to 35 percent of children aged 18-23 months, 24 percent to 12-17 months, 12 percent to 9-11 months, and 13 percent of children aged 6-8 months. MAD was provided to 22 percent of children 18-23 months of age, 15 percent to aged 12-17 months, 8 percent to aged 9-11 months, and 11 percent to 6-8 months. There was a statistically significant association between age of child and CF practices in Pakistan.

Mothers' age does not show a consistent relationship with all three indicators. However, non-breastfed children seem to receive higher proportion of all three indicators. Among breastfed children, both parents educated had a positive association with CF practice (MDD, MMF and MAD) as compared to other categories of parental education. In the case of non-breastfed children, the mother's education showed a higher proportion for MDD and MMF, whereas MAD had a slight higher proportion when the father was educated.

Household population density was measured based on the number of persons per room. Overall, the percentage of CF indicators was higher in households with a smaller number of persons per room. The data revealed that children living in an extended family had a relatively higher percentage in all three CF indicators as compared to the children living in a nuclear family. An important indicator of CF practices was the quality of water used by household. The data revealed little variation in MDD, MMF, and MAD with reference to improved source of water and non-improved sources for breastfed children. Likewise, non-breastfed children who had access to safe water had higher MDD and MMF. Handwashing with soap and water also showed a positive impact on CF practices. The data revealed that the proportion of CF was higher among women who washed their hands with soap. A similar impact of handwashing was observed for breastfed and non-breastfed children.

Involvement in the decision making process on household purchases was significantly associated with MDD and MAD. MDD (24%) and MAD (18%) were found higher among children whose mothers made sole decisions, while MMF was higher among children whose fathers made decisions about the major purchases (65%). Mother's occupational status was significantly associated with CF. Mothers working in the non-agriculture sector gave a more diverse diet to their children (18%) than mothers working in the agricultural sector (11%). A higher proportion (61%) of children who had mothers working in the agricultural sector met the MMF, while MAD was attained by majority of the children (12%) who had mothers working in the non-agricultural sector.

A significant association was found between CF indicators and exposure to media. Children who had mothers with media exposure were more likely to achieve MDD, MMF and MAD as compared to children of mothers with no access to media. Breastfed children who had mothers with media exposure were more likely to meet MAD (22%) than non-breastfed children (13%) of mothers with no media exposure. Economic condition (wealth index) of a household was a very important determinant for CF practices. The data revealed that as the wealth quintile of the household increased, the feeding practice improved from 9 percent to 26 percent.

CF practices among urban areas (20%) were significantly better as compared to rural areas (12%). Regionally, Islamabad (27%) was identified as having the highest proportion of children receiving MAD. At the Divisional level, MAD was highest in Makran (56%) and lowest in D.I. Khan (13%). On the base of bivariate analysis

classification maps are developed to highlight the consumption of each CF indicators at divisional level (See Map 5.1 to 5.3). Table B.14 shows a statistically significant association identified between MDD as well as MMF and birth order of the child. The percentages were higher for non-breastfed children as compared to breastfed children in all birth order groups.

Children whose mothers gave birth at a health facility were more likely to have received MDD, MMF and MAD. Over one-fourth (27%) of children who were born at a health facility attained MDD, two-third (66%) met MMF and nearly one- fifth (18%) met MAD. The combined effect of maternal and child health services was analyzed under the umbrella of continuum of care, children whose mothers received continuum of care were more likely to be fed according to MDD, MMF and MAD compared to children of mothers who did not receive continuum of care. MDD and MMF were met by higher percentage of non-breastfed children whose mothers received continuum of care, while MAD was better among breastfed children.

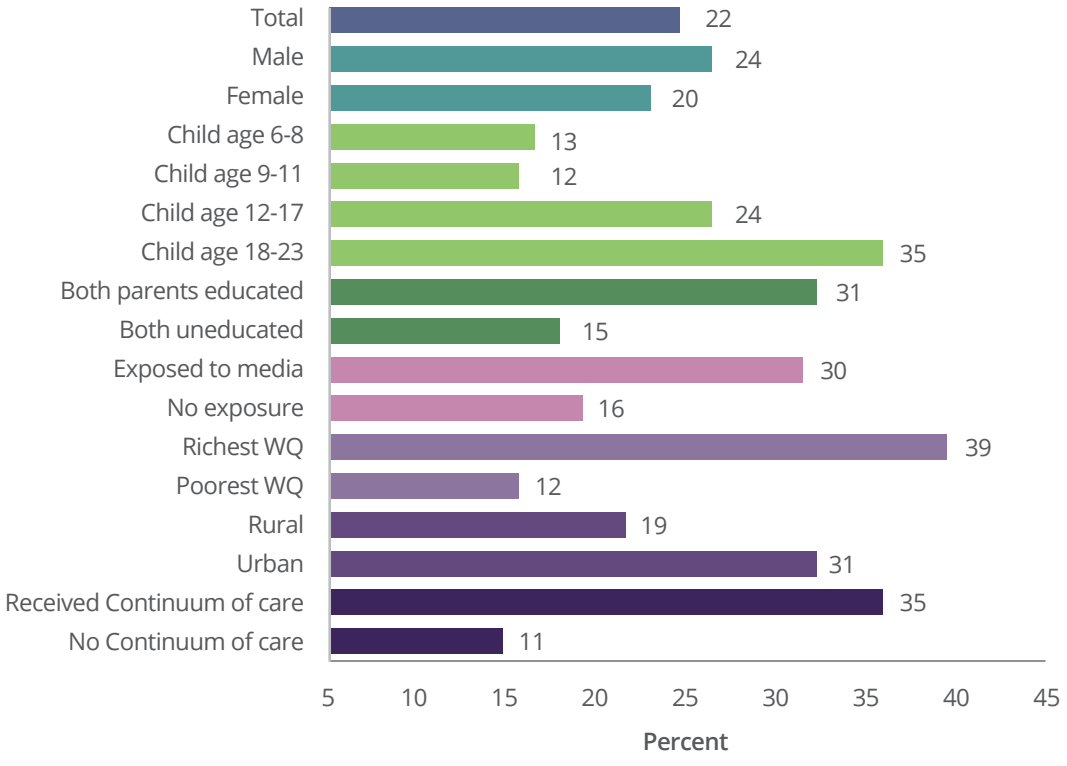
Mother who received vitamin A dose attained 27 percent MAD as compared to 13 percent mothers who did not receive vitamin A dose. A higher proportion of children whose mothers took iron tablets during pregnancy met MDD (29%), MMF (69%) and MAD (19%) as compared to the children whose mothers did not take the iron tablets. Children whose mothers had a BMI more than or equal to 18.5 kg/m2 were more likely to have better MAD (14%) than the children born to mothers with a BMI less than 18.5 kg/m2. The significant association was found between immunized children and all CF indicators.

A significant association was found between CF indicators and treatment of diarrhea. Children given treatment of diarrhea were more likely to received MDD, MMF and MAD as compared to children given no treatment. Children receiving diarrhea treatment and breastfed children were nearly two times more likely to meet MAD (16%) than non-breastfed children (12%) in the last 24 hours preceding the survey.

More children whose mothers received vitamin A after delivery achieved MDD (34%), MMF (73%) and MAD (27%) as compared to children whose mothers did not receive vitamin A. MAD was two times (30%) higher among breastfed children than non-breastfed children (16%) of mothers who received vitamin A.

Stunted children received less MAD (11%) as compared to not stunted children (17%). A low proportion of children (16%) who were wasted received MDD and only 11 percent met MAD, while MMF was met by 66 percent of children. Overall, underweight children did not receive a proper diet in accordance with the MDD,

Figure 5.1: Percent achieving Minimum Dietary Diversity



MMF and MAD. Only 9 percent of underweight children were reported to have received MAD as compared to 18 percent of children who were not underweight. Similar pattern was observed for MMF (61%) and MDD (16%) as compared to the children who were not underweight.

Figure 5.2: Percent achieving Minimum Meal Frequency

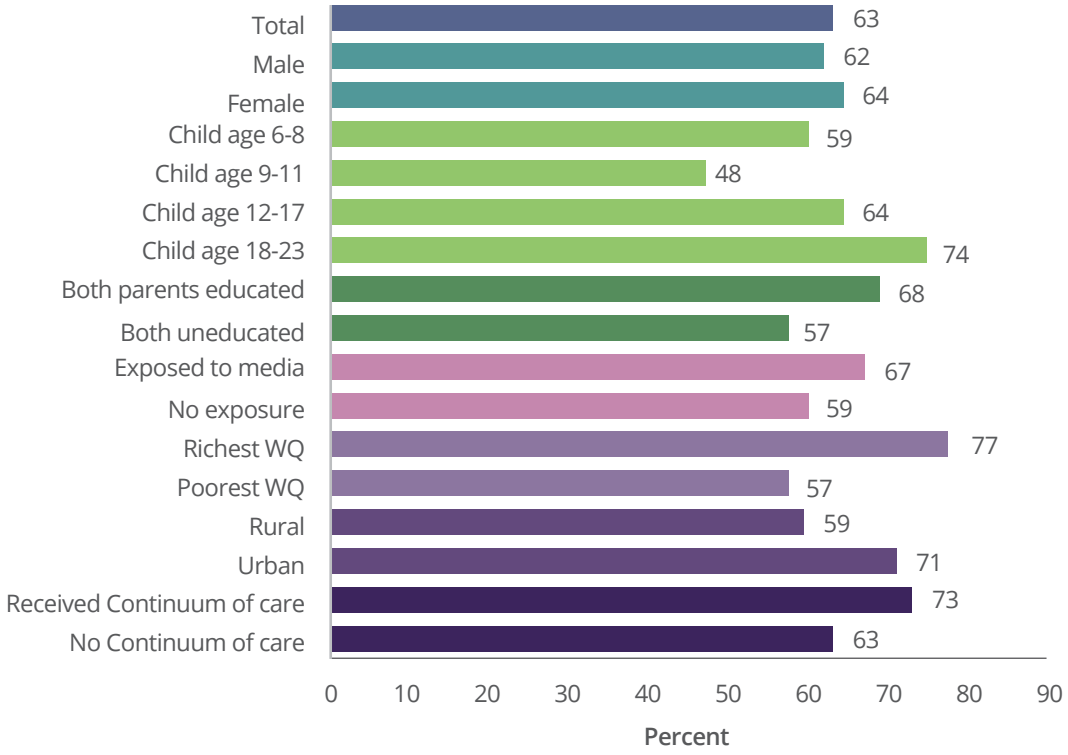
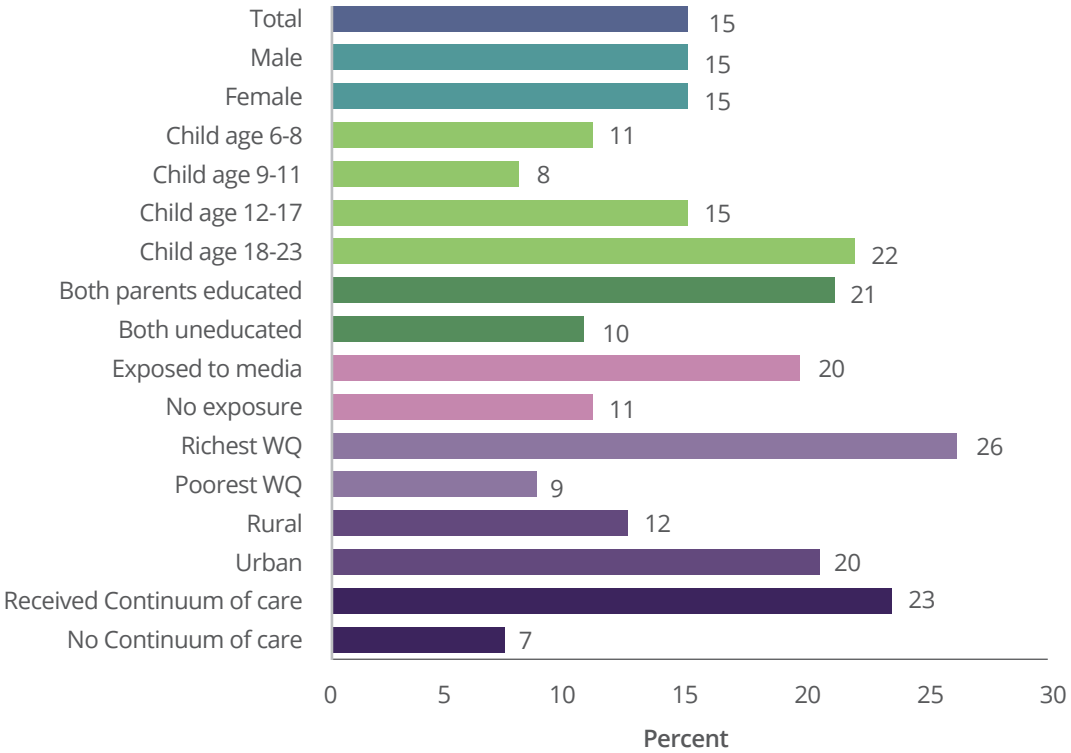
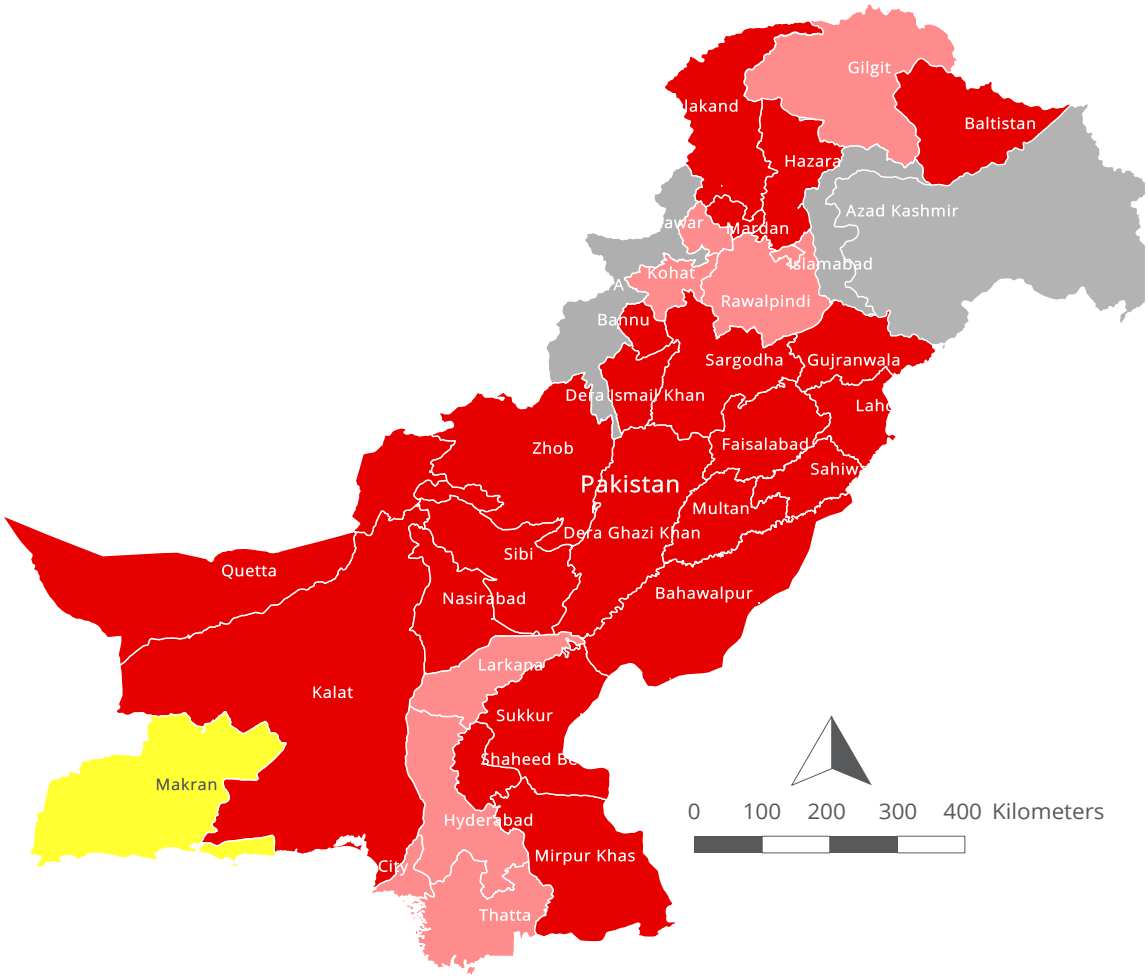


Figure 5.3: Percent achieving Minimum Acceptable Diet



Map 5.1: Percent of Minimum Acceptable Diet among children 6-23 months in Pakistan

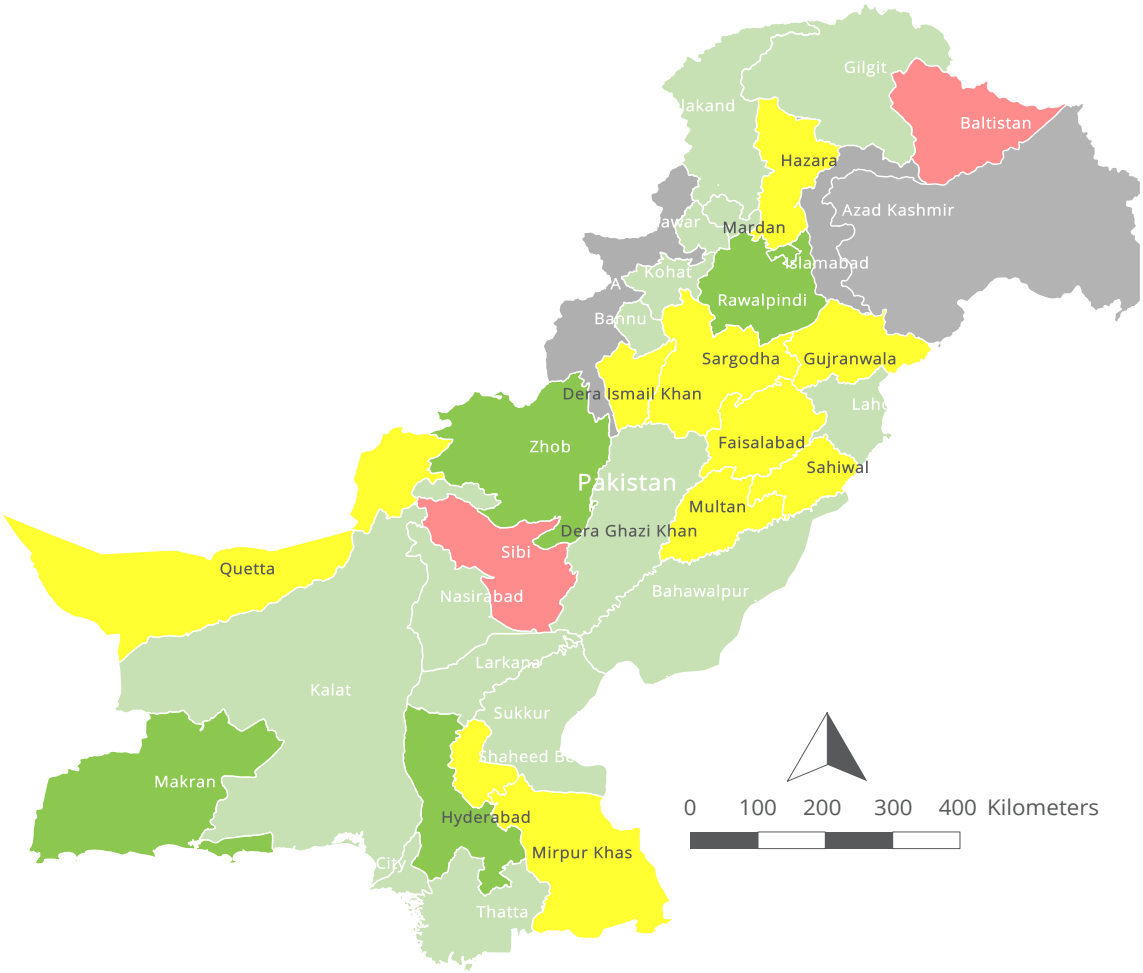


Legend Percentage

0.0 - 19.9	40.0 - 59.9	80.0 - 100.0
20.0 - 39.9	60.0 - 79.9	No Data

Source: Pakistan Demographic and Health Survey (PDHS) 2012-13

Map 5.2: Percent of Minimum Meal Frequency among children 6-23 months in Pakistan

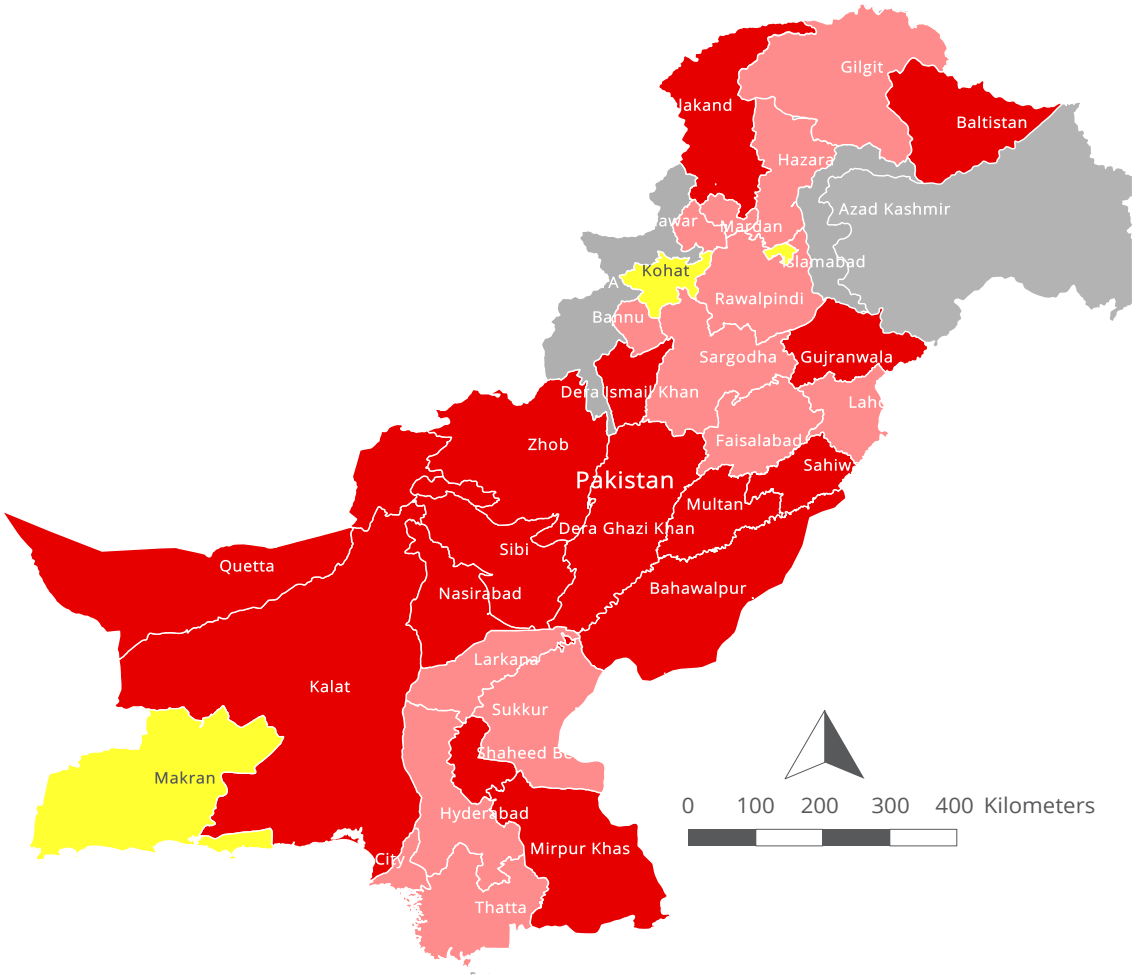


Legend Percentage

0.0 - 19.9	40.0 - 59.9	80.0 - 100.0
20.0 - 39.9	60.0 - 79.9	No Data

Source: Pakistan Demographic and Health Survey (PDHS) 2012-13

Map 5.3: Percentof Minimum Dietary Diversity among children 6-23 months in Pakistan



Legend Percentage

0.0 - 19.9	40.0 - 59.9	80.0 - 100.0
20.0 - 39.9	60.0 - 79.9	No Data

Source: Pakistan Demographic and Health Survey (PDHS) 2012-13

6

FACTORS AFFECTING COMPLEMENTARY FEEDING

This chapter presents the findings of multivariate analyses carried out to assess the association between CF practices and health and demographic factors. As outlined in chapter 2, three equations of CF practices have been estimated; MDD, MMF and MAD. Since in all these models, the dependent variables are binary, logistic regression technique is applied and results are presented in odd ratios. For each CF practices results of two models are shown in Tables C.1 to C.3, where the model 1 includes only demographic variables while both demographic and health variables are entered into model 2. Important factors that are likely to have an association with CF practices have been discussed in this chapter.

6.1 GENDER

Gender of the child did not exhibit a statistically significant association with MAD and MMF. It, however, has shown a significant association with MDD (model 1), suggesting that male children were more likely to attain MDD as compared to female children.

6.2 AGE OF CHILDREN

A statistically significant association was found between children's age and CF practices: MAD, MDD and MMF. The likelihood of children receiving MAD, MDD and MMF increases as the age group increases. Older children were 2-3 times more likely to get satisfactory level of complementary food than younger children. For example, the likelihood of children receiving MDD increased as the child's age increased from 9-11 months (OR 1.922) to 12-17 months (OR 3.987) and 18-23 months (OR 6.341) in model 2 of Table C.1 which includes both health and demographic factors. This association also holds when only demographic variables are entered in model 1. The relationship between age and other two CF practices, MMF and MAD, is also highly significant. This findings indicate that as the child's age increases the mothers adopts better feeding practices, which lead to an improvement in CF.

6.3 AGE OF MOTHER

There is a strong association between maternal age and MDD of children. Children with mothers aged 19-34 years are 2.3 times more likely to attain MDD than children of younger mothers (15-18 years). This likelihood for children of mothers 35 years or older is also high with the odd ratios of 2.141.

6.4 PARENTAL EDUCATIONAL ATTAINMENT

There was a statistically significant association between both parents being uneducated and MAD provided to children. Children whose parents had no education are less likely to receive MAD as compare to the children belonging to households with an overall higher level of education (both parents educated).

6.5 PARTICIPATION IN DECISION MAKING

If the household decision maker was solely the husband, children were least likely to receive MAD as compared to children living in households where decisions were made jointly. The highest likelihood of receiving MAD was among children living in households where women are the sole decision makers as compared to children from households where the decision made by someone else. Therefore, it is concluded that female participation in decision makers has a positive effect on the level of MAD being received by children.

A positive impact on MDD was observed in households where decisions were taken jointly; households where decisions are made jointly have the highest likelihood of children receiving MDD.

6.6 EXPOSURE TO MEDIA

Exposure to media had a significant impact on MAD and MDD of the children. There was no significant association between maternal exposure to media and MMF of children. Mothers who were exposed to media such as magazines, television and radio were more likely to give their children MAD than the mothers with no exposure to media. Mothers with exposure to media were more also likely to give their children MDD

as compared to the mothers who were less exposed to media or had no exposure.

6.7 WEALTH INDEX

The wealth status of the household shows a significant positive association with MAD, MDD and MMF. For MDD, the odd ratios increase significantly as the wealth status of the household increases, suggesting a positive contribution of household wealth in affecting minimum dietary diversity level for their children. Almost a similar association is found between the wealth index and MMF. Therefore, the findings suggest that children belonging to better-off households are in general more likely to meet CF practices (MAD, MDD and MMF) as compare to the poorest household.

6.8 REGION

Children living in Gilgit-Baltistan are about 3 times and in Islamabad about 2 times more likely to receive MAD as compared to Punjab. Children of Balochistan are 8 times less likely to receive MAD with reference to their counterparts in Punjab. Similar results were found across regions in relation to MDD. Children from Balochistan are least likely to receive satisfactory level of MDD, while children from Gilgit-Baltistan are two times more likely to receive MDD as compared to children in Punjab. Children residing in Islamabad were twice as likely to attain MMF as compared to children from Punjab (see figure 6.1 to 6.3).

6.9 CONTINUUM OF CARE UTILIZATION

A significant negative association is found between inadequate continuum of care utilization and MDD and MMF. If children and their mothers have not received all four components of health care then there are less chances that children are receiving MDD (OR 0.42) and MMF (OR 0.67) as compared to children and mothers who have received continuum of care.

MMF results revealed that when mothers and children received continuum of care, they were significantly more likely to fulfill their child's MMF requirements as compared to mothers and children who failed to receive all four components of maternal and child health care.

Figure 6.1: Distribution of Minimum dietary diversity across region among children 6-23 months in Pakistan

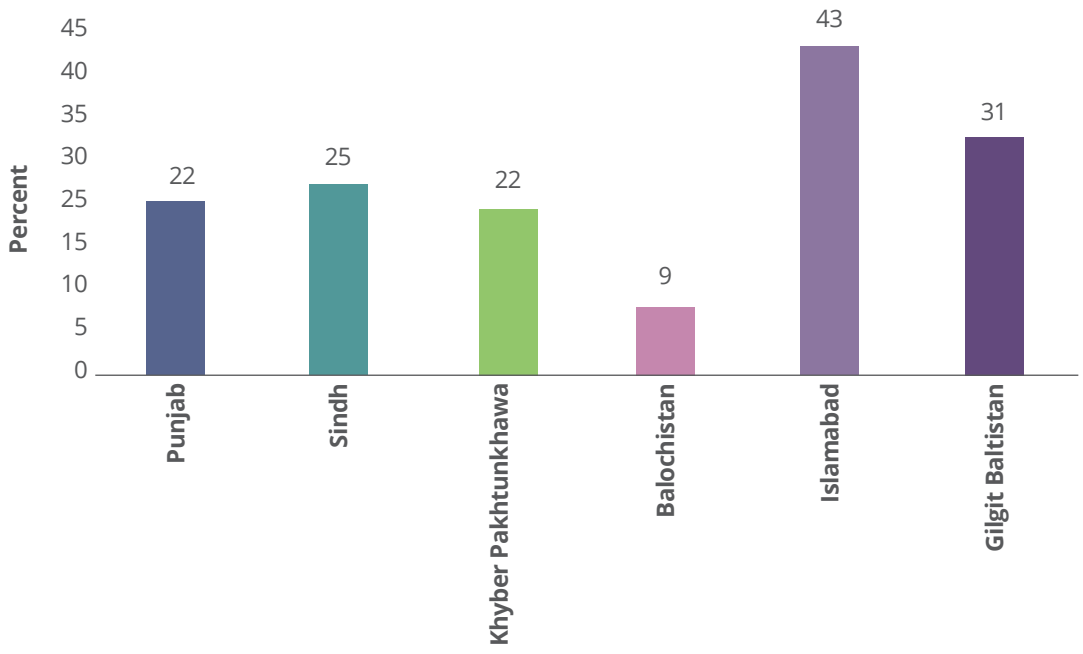


Figure 6.2: Distribution of Minimum meal frequency across region among children 6-23 months in Pakistan

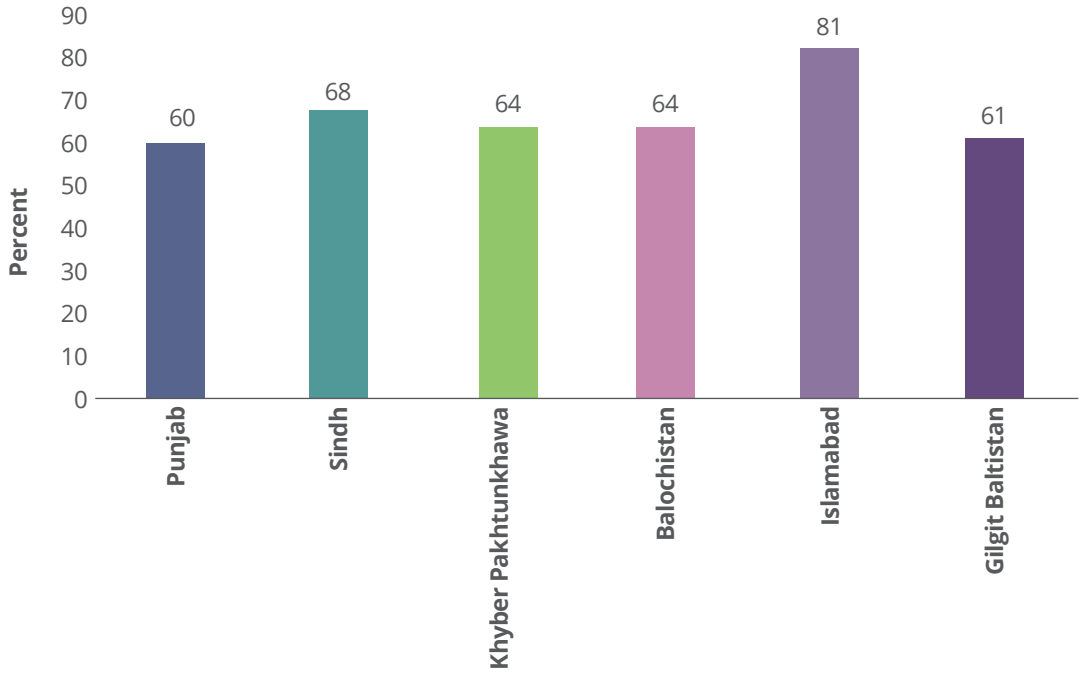
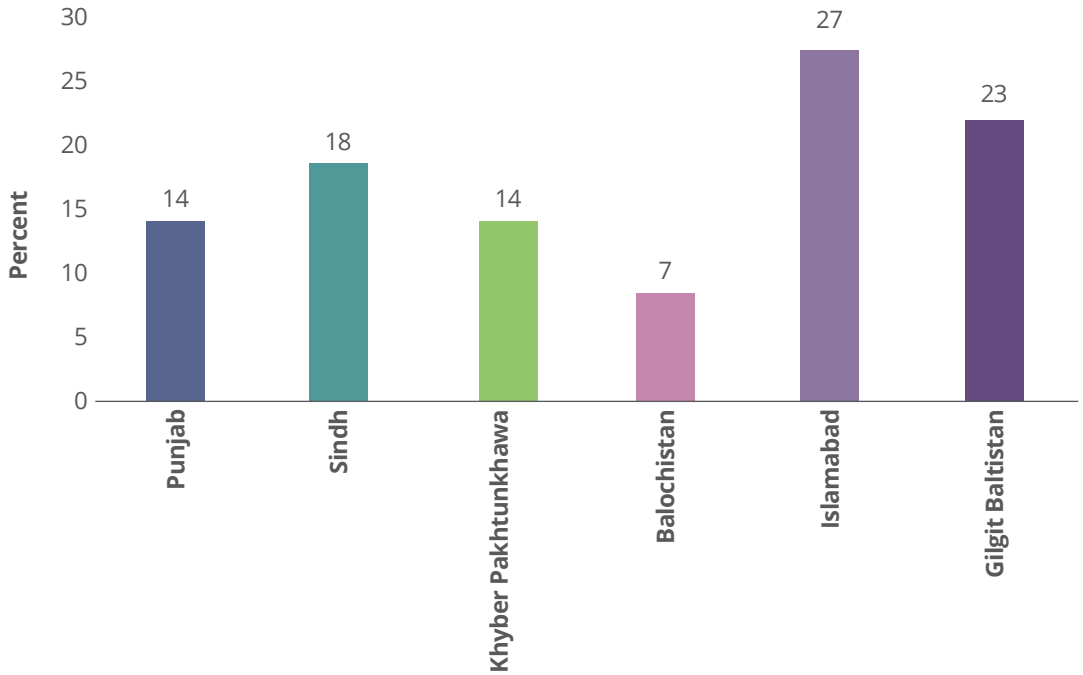


Figure 6.3: Distribution of Minimum acceptable diet across region among children 6-23 months in Pakistan



7

CONCLUSIONS AND RECOMMENDATIONS

An in-depth analysis was conducted to assess the consumption patterns and CF practices for children aged 6-23 months born to mothers aged 15-49 years in the PDHS 2012-13. Overall, 13588 mothers were interviewed from different socio-economic backgrounds. These women had a total of 2855 children aged 6-23 months. The main purpose of this study was to assess the food consumption and patterns of CF practices (MAD, MMF, MAD) with maternal and child demographic, socio-economic factors and health and nutrition status.

In bivariate analysis overall, the first child was better served with all seven recommended food groups as compared to children in successive birth orders. Consumption of food items from grains, roots & tubers and dairy products was higher in cases where both parents were educated or if mother was educated. The food consumption of seven food groups improved when the household members had access to improved source of drinking water. Similarly, a positive impact was observed in the case of treated drinking water. Likewise, access to improved sanitation within the household played a positive role in the consumption of all food groups. Mother's age had a positive and significant impact on consumption of food rich in carbohydrates including protein and vitamin A.

Younger mothers of whom majority were unemployed had fewer children to cater for and thus a lower workload compared to older women. This contributed to younger mothers offering better quality care to their children. Mother's and child's age had a significant association with CF practices.

Both parents being educated had a positive association with all three indicators of CF practices (MDD, MMF, MAD). Present analysis revealed that as the wealth quintile of the household increased the three indicators of CF practices improved for breastfed children of age 6-23 months. In case of non-breastfed children, much better CF practices were observed for higher wealth quintile. It was also found that mother's status variables and utilization of maternal health services variables were significantly associated with the consumption of micronutrients and macronutrients among children 6-23 months of age. Place of residence had a statistically significant association with CF practices of children in Pakistan. Regional variation in complementary food was quite visible.

Several selected factors, such as mother's education, working status, media exposure and decision making about major household purchases, continuum of care, child immunization status and size at birth were significantly associated with three indicators (MDD, MMF, MAD) of CF.

Multivariate analysis provided the net effect and important insight into the impact of certain factors on CF practices. Media exposure within the household was thought to have a major effect on CF practices. Significant results were observed between the household decision maker (women, men or both) and CF practices. Continuum of care for women and children, showed a strong and significant association with CF practices. There was a significant association between the treatment of water and CF practices. Children belonging to households which did not have access to treated water were less likely to receive MAD as compared to children from households with access to treated water. Access to improved source of sanitation, another related factor, had a significant association with the MAD being given to children.

7.1 RECOMMENDATIONS

The findings from the in-depth analysis helped to build a basic structure for the formative research and broaden the range of effective interventions and programmatic approaches to improve CF in Pakistan. Further research is needed in the following priority areas:

- Tracking infant and young child feeding practices from birth to 23 months of age to effectively link feeding practices and individual growth patterns
- Assess the energy and nutrient requirements of children living in vulnerable circumstances, such as wasted, stunted and low birth-weight

- Identify strategies for sustaining breastfeeding once complementary foods are initiated in children
- Identify a context specific communication strategy to be implemented in all community sectors, including service providers.
- Determine the impact of improved responsive feeding on child growth and developmental outcomes.

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Annex A
Operational Definitions

ANNEX A – OPERATIONAL DEFINITIONS

Independent Variables	
Dairy products food group	1 if child 6-23 months, in a day or night preceding the survey received any dairy products (infant formula, tinned, powdered or fresh milk, yogurt, and cheese), 0 otherwise.
Grains, roots, and tubers food group	1 if child 6-23 months, in a day or night preceding the survey received any grains, roots, and tubers (cerelac, bread, noodles, potatoes, and cassava, or other tubers), 0 otherwise.
Vitamin A rich fruits and vegetables food group	1 if child 6-23 months, in a day or night preceding the survey received any Vitamin A rich fruits and vegetables, (pumpkin, carrots, squash, dark green leafy vegetables, and mangoes, papayas, other vitamin A fruits), 0 otherwise.
Eggs food group	1 if child 6-23 months, in a day or night preceding the survey received eggs, 0 otherwise.
Flash/meat products food group	1 if child 6-23 months, in a day or night preceding the survey received any flash/meat products (beef, lamb, chicken, liver, heart, other organs, and fish or shellfish), 0 otherwise.
Legumes and nuts food group	1 if child 6-23 months, in a day or night preceding the survey received any legumes and nuts (food made from beans, peas, lentils, nuts), 0 otherwise.
Other fruits and vegetables food group	1 if child 6-23 months, in a day or night preceding the survey received any other fruits and vegetables, 0 otherwise.
Vitamin A rich food	1 if child 6-23 months, in a day or night preceding the survey received any vitamin A rich food, it includes Vitamin A rich fruits and vegetables (pumpkin, carrots, squash, dark green leafy vegetables, and mangoes, papayas, other vitamin A fruits), eggs, and flash/meat products (beef, lamb, chicken, liver, heart, other organs, and fish or shellfish), 0 otherwise.
Food rich in iron	1 if child 6-23 months, in a day or night preceding the survey received any food rich in iron, it includes eggs, and flash/meat products (beef, lamb, chicken, liver, heart, other organs, and fish or shellfish), 0 otherwise.
Foods rich in carbohydrates	1 if child 6-23 months, in a day or night preceding the survey received any rich food in carbohydrates, it includes grains, roots, and tubers (cerelac, bread, noodles, potatoes, and cassava, or other tubers), yogurt, and cheese, 0 otherwise.
Foods rich in carbohydrates and high-quality proteins	1 if child 6-23 months, in a day or night preceding the survey received both rich food in carbohydrates (it includes grains, roots, and tubers (cerelac, bread, noodles, potatoes, and cassava, or other tubers), yogurt, and cheese), and food having high-quality proteins (it includes eggs, and flash/meat products (beef, lamb, chicken, liver, heart, other organs, and fish or shellfish)), 0 otherwise.

Independent Variables	
Foods rich in carbohydrates and low-quality proteins	1 if child 6-23 months, in a day or night preceding the survey received both rich food in carbohydrates (it includes grains, roots, and tubers (cerelac, bread, noodles, potatoes, and cassava, or other tubers), yogurt, and cheese), and food having low-quality proteins (it includes legumes and nuts (food made from beans, peas, lentils, nuts)), 0 otherwise.
Foods rich in carbohydrates and vitamin A	1 if child 6-23 months, in a day or night preceding the survey received both rich food in carbohydrates (it includes grains, roots, and tubers (cerelac, bread, noodles, potatoes, and cassava, or other tubers), yogurt, and cheese), and vitamin A rich food (it includes Vitamin A rich fruits and vegetables (pumpkin, carrots, squash, dark green leafy vegetables, and mangoes, papayas, other vitamin A fruits), eggs, and flash/meat products (beef, lamb, chicken, liver, heart, other organs, and fish or shellfish)), 0 otherwise.
Minimum Dietary Diversity	1 if child aged 6 to 23 months received four or more groups of food, 0 otherwise
Minimum Meal Frequency	1 if child aged 6 to 23 months fed the minimum recommended number of times per day according to their age and breastfeeding status. For breastfed children minimum meal frequency is receiving solid or semisolid food at least twice a day for infants age 6-8 months and at least 3 times a day for children age 9-23 months. For non-breastfed children age 6-23 months, minimum meal frequency is receiving solid or semisolid food or milk feeds at least 4 times a day. 0 otherwise.
Minimum Acceptable Diet	1 if child aged 6 to 23 months fed with the minimum standards of minimum dietary diversity, and minimum meal frequency; according to their breastfeeding status. For breastfed children age 6-23 months are consider to be fed with a minimum standard of 2 infant and young child feeding practices if they received the minimum meal frequency, and at least 4 food groups including the milk or milk products food group. For non-breastfed children age 6-23 months are considered to be fed with a minimum standard of 3 infant and young child feeding practices if they receive other milk or milk products at least twice a day, receive the minimum meal frequency, and receive solid or semisolid foods from at least 4 food groups not including the milk or milk products food group, 0 otherwise.
Dependent Variables	
Socio-Economic factors	
Child's sex	1 if male, 0 if female
Age of child	0 = 6-8, 1 = 9-11, 2 = 12-17, 3 = 18-23
Age of mother	0 if mother's age is 15-18, 1 for 19-34, 2 for 35 and above.
Parental education	0 = both educated, 1 = mother education, 2 = father education, 3 = both uneducated
Number of children ever born	0 if number of child ever born is up to 2, 1 for 3 to 5, 2 for 6 and above.

Independent Variables	
Number of persons/per-room	0 if one person per room, 1 if two persons per room, 2 if three to four persons per room, 3 if five or more persons per room.
Type of family	0 if household is nuclear, 1 for joint family system.
Access to improved source of sanitation	1 if household have improved source of sanitation (it includes flush to piped sewer system, flush to septic tank, ventilated improved pit latrine (VIP), pit latrine with slab) and the facility does not shared with other household.
Hand washing both soap and water available	1 if both soap and water is available for hand washing, 0 otherwise.
Decision on large household purchases	0 if taken by someone else, 1 if taken by husband, 2 If taken by husband and wife jointly, 3 if taken by wife.
Exposure to media	1 if women have any exposure to mass media, 0 otherwise.
Wealth index	0 = poorest, 1 = poorer, 2 = middle, 3 = richer, 4 = richest
Residence	0 if urban, 1 if rural
Region	0 for Punjab, 1 = Sindh, 2 = Khyber Pakhtunkhwa, 3 = Balochistan, 4 =Islamabad, 5 = Gilgit Baltistan.

[5]The following types of water supply for drinking are considered improved: piped water into dwelling, plot or yard; public tap/standpipe; borehole/tube well; protected dug well; protected spring; rainwater collection and bottled water (if a secondary available source is also improved) and have to available less than 30-minute walk from home. It does not include: unprotected well, unprotected spring, water provided by carts with small tanks/ drums, tanker truck-provided water and bottled water (if secondary source is not an improved source or if there is no information on the secondary source) or surface water taken directly from rivers, ponds, streams, lakes, dams, or irrigation channels. Definitions and a detailed description of these facilities can be found at the website of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation at http://www.wssinfo.org/definitions-methods/watsan-categories/

[6]Exposure to media as measured by, how often the women have been listening to radio, reading newspaper, and watching television. The PDHS 2012-13 had categorized this question into four categories; not at all, occasionally, at least once a week, and daily. The current study considered any exposure to media if the women listen radio or watch television or reed newspaper at least once a week or daily, otherwise it categorized that women has no exposure to mass media.

Divisions	0 = Bahawalpur, 1 = Dera Ghazi Khan, 2 = Faisalabad, 3 = Gujranwala, 4 = Lahore, 5 = Multan, 6 = Rawalpindi, 7 = Sahiwal, 8 = Sargodha, 9 = Banbhore/Thatta, 10 = Hyderabad, 11 = Karachi, 12 = Larkana, 13 = Mirpur Khas, 14 = Shaheed Benazirabad, 15 = Sukkur, 16 = Bannu, 17 = Dera Ismail Khan, 18 = Hazara, 19 = Kohat, 20 = Malakand, 21 = Mardan, 22 = Peshawar, 23 = Kalat, 24 = Makran, 25 = Nasirabad, 26 = Quetta, 27 = Sibi, 28 = Zhob, 29 = Baltistan, 30 = Gilgit
Mother's working status by occupation	0 if mother is working in agriculture sector, 1 if working in non-agriculture sector, 2 if not working.
Health Factors	
Birth order of child	0 = 1st birth order, 1 = 2/3, 2 = 4/5, 3 = 6+
Birth interval	0 = no previous birth, 1 = < 24 months, 2 = ≥ 24 months
Birth at health facility	1 if birth take place at health facility, 0 otherwise.
Mother and child continuum of care index	1 if women received all three components namely at least 4 ANC visits, safe delivery, postnatal care checkup, and checkup of new born within 2 days, 0 otherwise.
Received vitamin A dose postpartum	1 if women received vitamin A postpartum, 0 otherwise.
Took Iron tablets during last pregnancy	1 if women received Iron tablets and syrup during pregnancy, 0 otherwise.
Mother's body mass index	1 if BMI is >=18.5, 0 otherwise.
Child has diarrhea	1 if child has diarrhea, 0 otherwise.
Treatment of diarrhea	1 if child has diarrhea and received any treatment, 0 otherwise.
Child received vitamin A	1 if child aged 6 to 23 months received a vitamin A supplement in last 6 months, 0 otherwise.
Stunting (height-for-age -2SD)	1 if child's z-score for height-for-age is less than -2 SD from its reference, 0 otherwise.
Wasting (weight-for-height -2SD)	1 if child's z-score for weight-for-height is less than -2 SD from its reference, 0 otherwise.
Underweight (weight-for-age -2SD)	1 if child's z-score for weight-for-age is less than -2 SD from its reference, 0 otherwise.

Annex B
Bivariate Analysis Tables

ANNEX B – BIVARIATE ANALYSIS TABLES

Table B.1 Distribution of Demographic and Socioeconomic Characteristics among children age 6 – 23 months in Pakistan

Demographic and Socioeconomic characteristics	Percent	Number
Child's sex		
Male	51.0	1,455
Female	49.0	1,400
Age of child (in months)		
6 – 8	15.9	455
9 – 11	19.4	554
12 – 17	40.9	1,167
18 – 23	23.8	679
Age of mother		
15-18	1.9	55
19-34	83.6	2,387
≥ 35	14.5	413
Parental education		
Both educated	39.1	1,117
Mother educated	6.4	182
Father educated	28.4	812
Both uneducated	26.1	745
Number of children ever born		
Upto 2	44.3	1,265
03 – 05	38.9	1,111
06+	16.8	479
Number of person/per-room		
1	1.0	29
2	6.7	191
3 – 4	47.3	1,350
5+	45.0	1,285
Type of family		
Nuclear	33.3	951
Joint	40.1	1,145
Extended	26.6	759
Access to improved source of drinking water		
Yes	86.0	2,455
No	14.0	400
Access to improved source of sanitation		
Yes	47.1	1,345
No	52.9	1,510
Hand washing Both soup and water available		
Yes	51.7	1,475
No	48.3	1,380
Decision on HH purchases		
Someone else	29.6	844
Husband alone	30.2	863
Husband and wife jointly	35.3	1,008
Wife alone	4.9	140
Working status by occupation		
Agriculture	8.6	247
Non-agriculture	12.8	364
Not working	78.6	2,245

Table B.1 Distribution of Demographic and Socioeconomic Characteristics among children age 6 – 23 months in Pakistan		
Demographic and Socioeconomic characteristics	**Percent**	**Number**
Exposure to media		
Media exposure	45.7	1,304
No media exposure	54.3	1,551
Wealth index		
Poorest	21.1	603
Poorer	22.3	637
Middle	20.0	571
Richer	20.8	593
Richest	15.8	451
Residence		
Rural	69.5	1,983
Urban	30.6	872
Region		
Punjab	56.4	1,609
Sindh	21.4	612
Khyber Pakhtunkhwa	16.3	467
Balochistan	4.6	131
ICT Islamabad	0.4	12
Gilgit Baltistan	0.8	23
Division		
Bahawalpur	6.3	180
Dera Ghazi Khan	7.2	207
Faisalabad	7.1	203
Gujranwala	6.2	176
Lahore	12.2	349
Multan	5.2	147
Rawalpindi	3.8	108
Sahiwal	4.4	127
Sargodha	4.0	113
Banbhore/ Thatta	1.9	55
Hyderabad	4.0	115
Karachi	4.9	140
Larkana	3.0	86
Mirpur Khas	3.4	96
Shaheed Benazirabad	1.7	48
Sukkur	2.5	72
Bannu	1.0	27
Dera Ismail Khan	1.5	42
Hazara	2.4	69
Kohat	0.9	26
Malakand	5.3	152
Mardan	1.8	51
Peshawar	3.5	99
Kalat	2.1	60
Makran	0.2	7
Nasirabad	0.7	20
Quetta	1.0	29
Sibi	0.1	3
Zhob	0.5	13
Baltistan	0.2	6
Gilgit	0.6	18
Total	**100.0**	**2,855**

Table B.2 Distribution of Health Characteristics among children 6 – 23 months in Pakistan		
Health characteristics	**Percent**	**Number**
Birth order of child		
1	24.3	693
2 – 3	37.2	1,062
4 – 5	21.8	622
6+	16.8	479
Birth interval		
No previous birth	24.6	703
<24 months	24.4	698
>= 24 months	50.9	1,454
Birth at health facility		
Yes	52.9	1,509
No	47.1	1,346
Mother and child Continuum of care		
All	17.8	508
At least 2	42.1	1,202
At least 1	16.7	477
None	23.4	669
Received Vitamin A dose postpartum		
Yes	13.9	397
No	86.1	2,458
Took Iron tablets during last pregnancy		
Yes	45.7	1,303
No	54.4	1,552
Mother's BMI[1]		
≥ 18.5	82.7	822
<18.5	17.3	172
Child fully immunized		
Yes	44.1	1,260
No	55.9	1,595
Diarrhea		
Yes	34.3	979
No	65.7	1,877
Treatment for Diarrhea		
Yes	92.6	906
No	7.4	72
No Diarrhea reported	65.7	1,877
Size at birth (mother's perception)		
Large	5.0	142
Average	74.2	2,118
Small	20.8	595
Child received vitamin A		
Yes	70.9	2,025
No	29.1	830
Stunted[1]		
Yes	42.0	362
No	58.0	501
Wasted[1]		
Yes	17.5	151
No	82.5	712
Underweight[1]		
Yes	33.1	286
No	66.9	578
Total	**100.0**	**2,855**

1 Those observations are excluded from analysis, who's data on mother and child anthropometric failure is missing.

Table B.3: Consumption according to World Health Organization Recommended Food Groups among children 6-23 months, in the day or night preceding the interview by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	ALL CHILDREN AGE 6-23 MONTHS																			
All	**5.9**	**49.3**	**7.1**	**7.1**	**59.5**	**15.3**	**72.3**	**41.4**	**80.9**	**5.6**	**13.5**	**1.7**	**19.3**	**33.7**	**24.9**	**15.4**	**1.1**	**2.5**	**17.9**	**6.0**
Child's sex																				
Male	7.3	49.4	6.6	7.4	60.5	19.1	72.3	39.1	82.1	5.9	13.7	1.9	20.6	34.5	26.0	15.4	0.6	3.0	17.7	6.1
Female	4.5	49.2	7.6	6.7	58.4	11.3	72.3	43.9	79.7	5.2	13.2	1.4	18.0	32.9	23.7	15.5	1.7	2.1	18.1	5.9
Age of child (in months)																				
6 – 8	8.1	40.3	2.7	8.1	52.9	22.9	45.3	24.5	59.0	4.5	4.6	0.7	8.9	18.8	16.1	6.8	0.7	1.0	8.2	1.4
9 – 11	9.0	42.9	5.5	7.3	55.1	19.2	61.3	29.5	71.7	5.0	6.8	1.8	13.0	27.6	18.9	9.0	0.8	0.4	9.7	1.8
12 – 17	4.2	52.0	7.1	7.1	61.3	14.2	79.6	46.1	87.0	6.0	14.9	1.4	20.6	37.3	27.1	16.2	1.3	3.7	19.9	6.9
18 – 23	5.0	55.9	11.3	6.1	64.4	8.9	86.8	54.5	92.6	5.9	22.5	2.6	29.1	42.7	31.9	25.0	1.4	3.4	27.6	10.8
Age of mother																				
15-18	11.7	30.3	11.4	7.1	52.3	16.9	59.0	45.4	66.4	3.6	12.9	1.7	16.7	32.5	9.4	15.7	1.8	4.4	17.5	4.6
19-34	6.2	49.1	7.1	7.3	59.4	15.3	72.7	41.0	81.2	5.7	12.8	1.8	18.9	35.2	25.0	16.1	1.0	2.1	18.0	6.3
≥ 35	3.7	53.0	6.7	5.5	61.2	15.1	71.4	43.7	81.2	4.8	17.5	1.1	21.6	25.4	25.9	11.3	2.1	5.2	17.2	4.1
Parental education																				
Both educated	8.5	55.0	9.8	8.7	67.5	24.0	74.8	43.7	86.3	6.2	8.8	1.6	15.3	44.5	33.7	21.5	1.5	3.0	24.7	5.8
Mother educated	10.4	54.7	9.6	14.6	68.2	20.9	70.8	34.7	81.8	5.9	11.1	6.1	21.5	33.5	32.0	18.9	3.0	0.0	20.7	4.4
Father educated	3.9	45.9	5.9	4.2	53.5	10.2	68.7	40.0	75.6	6.2	16.1	1.2	21.7	29.6	17.6	11.7	0.9	2.8	14.2	7.5
Both uneducated	3.1	43.2	3.7	5.9	51.9	6.4	72.8	41.2	78.3	3.8	18.1	1.2	22.1	22.2	17.8	9.4	0.4	2.2	11.0	4.9
Number of children ever born																				
Upto 2	8.2	50.0	7.0	8.0	62.1	19.6	72.5	42.0	81.7	5.7	12.4	1.9	19.1	37.7	27.3	18.1	1.4	2.0	20.1	5.8
03 – 05	4.6	46.1	8.1	7.7	55.8	12.3	70.8	42.2	80.1	5.4	12.2	1.7	17.6	33.1	24.9	15.1	0.4	3.8	18.0	6.9
06+	2.9	54.8	5.0	3.2	61.2	10.6	75.1	38.1	80.8	5.6	19.0	0.9	23.8	24.7	18.6	9.1	2.3	1.2	11.6	4.3
Number of person/per-room																				
1	7.7	58.6	8.6	8.9	67.1	23.2	60.5	26.5	77.0	12.2	8.7	7.9	27.8	12.6	40.4	12.9	2.4	18.2	31.0	9.2
2	10.5	51.7	12.6	10.1	66.2	20.6	79.0	42.6	83.6	4.4	12.3	1.9	17.8	41.5	36.3	23.2	1.0	0.8	24.0	3.8
3 – 4	6.4	50.9	7.9	6.8	60.6	17.3	73.0	43.6	82.5	6.0	13.0	1.5	19.2	38.0	27.2	17.7	1.3	2.3	20.4	6.2
5+	4.7	47.1	5.4	6.8	57.2	12.2	70.8	39.3	78.9	5.2	14.2	1.7	19.4	28.6	20.3	11.9	1.0	2.7	14.1	6.0
Type of family																				
Nuclear	5.0	51.7	7.3	7.5	60.6	10.3	73.9	40.9	81.0	5.3	14.5	1.2	19.9	31.0	25.1	12.7	1.0	3.5	16.4	5.4
Joint	6.2	48.3	6.7	5.8	58.3	16.5	69.7	42.5	79.9	5.9	12.8	1.5	18.6	32.9	23.1	14.9	0.7	1.8	17.0	6.2
Extended	6.7	47.8	7.6	8.3	59.9	19.7	74.1	40.5	82.3	5.3	13.2	2.4	19.6	38.5	27.3	19.5	2.0	2.4	21.2	6.4
Access to improved source of drinking water																				
Yes	6.1	51.6	7.1	7.1	61.7	15.7	71.1	40.7	80.5	5.1	11.9	1.6	17.5	35.2	25.5	16.1	1.1	2.2	18.1	5.5
No	4.6	34.9	7.3	6.9	46.1	13.0	79.6	46.2	83.5	8.2	23.0	2.0	30.6	25.0	21.1	11.3	1.3	4.9	16.4	8.9
Access to improved source of sanitation																				

Table B.3: Consumption according to World Health Organization Recommended Food Groups among children 6-23 months, in the day or night preceding the interview by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	ALL CHILDREN AGE 6-23 MONTHS																			
Yes	9.7	52.4	8.9	8.8	65.6	21.2	72.2	42.2	83.4	6.2	10.2	2.2	16.8	37.8	29.7	20.3	1.4	3.0	23.5	6.0
No	2.6	46.6	5.5	5.5	54.1	10.0	72.4	40.7	78.7	5.0	16.4	1.2	21.5	30.1	20.5	11.0	0.9	2.2	12.9	5.9
Handwashing both soap and water available																				
Yes	8.4	54.5	7.2	8.1	66.0	18.8	73.3	43.8	83.5	5.9	10.6	2.2	17.4	36.4	30.5	18.3	1.2	2.7	20.8	4.7
No	3.3	43.7	7.0	6.0	52.6	11.6	71.2	39.0	78.1	5.2	16.5	1.0	21.3	30.9	18.8	12.3	1.1	2.4	14.8	7.3
Decision on HH purchases																				
Someone else	6.4	47.1	7.4	7.0	57.9	18.8	68.2	41.4	79.0	7.0	12.6	1.4	20.0	36.1	25.7	17.2	1.3	2.0	19.7	5.9
Husband alone	5.1	46.2	8.1	6.3	56.2	12.3	73.6	42.4	80.6	5.7	16.1	1.1	20.9	31.9	19.1	14.1	0.7	2.3	15.4	6.9
Husband and wife jointly	6.3	54.2	6.2	7.5	64.6	15.4	73.7	40.0	82.5	3.9	12.1	1.8	16.6	34.1	28.6	14.3	1.3	3.1	17.7	5.0
Wife alone	5.0	46.0	6.4	9.5	52.4	11.3	78.3	46.5	82.9	8.2	12.5	5.6	24.5	28.2	28.3	20.4	1.7	3.4	24.2	7.6
Working status by occupation																				
Agriculture	0.2	49.6	7.7	4.2	56.1	4.8	69.6	42.6	73.2	2.6	15.5	0.9	18.1	22.9	10.3	10.1	1.9	1.6	13.0	2.4
Non-agriculture	4.2	49.6	8.8	9.8	61.3	11.2	74.6	37.9	80.8	3.4	13.3	1.4	16.1	31.2	20.5	14.3	0.5	2.8	16.1	5.1
Not working	6.8	49.2	6.8	6.9	59.6	17.1	72.2	41.9	81.8	6.2	13.3	1.8	20.0	35.3	27.2	16.2	1.2	2.6	18.7	6.5
Exposure to media																				
Media exposure	8.5	54.2	8.9	9.9	67.5	22.8	73.5	43.6	84.8	6.2	12.1	2.6	19.4	40.2	32.3	20.2	1.2	3.1	22.9	4.8
No media exposure	3.8	45.1	5.6	4.7	52.8	8.9	71.2	39.7	77.6	5.0	14.6	0.9	19.2	28.3	18.6	11.4	1.1	2.1	13.7	6.9
Wealth index																				
Poorest	1.1	42.3	6.8	4.1	50.5	5.6	76.3	40.6	80.4	3.3	18.3	1.0	21.3	23.6	13.9	6.4	1.0	1.8	8.8	6.8
Poorer	2.6	46.3	3.5	3.3	51.6	6.2	69.7	36.7	74.4	6.2	16.5	0.3	21.9	27.9	18.6	9.0	1.0	1.6	10.7	6.2
Middle	5.3	47.7	6.6	7.9	57.3	13.8	69.7	40.4	78.9	5.4	13.3	1.4	19.2	34.7	23.9	14.6	0.6	4.6	18.0	5.8
Richer	6.1	56.9	8.2	10.2	68.0	22.1	70.9	47.7	83.9	6.4	10.3	3.7	18.7	39.0	30.7	21.3	1.3	1.4	22.8	6.0
Richest	17.6	55.0	11.9	11.1	74.4	33.8	75.5	42.5	89.5	6.8	7.0	2.1	14.0	47.4	42.0	29.9	2.0	3.7	33.6	4.7
Residence																				
Rural	2.7	47.5	5.9	4.4	54.2	11.3	70.7	40.9	78.1	5.4	15.5	1.1	20.9	31.8	21.1	11.3	1.2	2.3	13.5	6.7
Urban	13.2	53.4	9.8	13.1	71.5	24.3	75.8	42.7	87.2	5.9	8.8	2.8	15.6	38.2	33.4	24.7	0.9	3.1	27.9	4.2
Region																				
Punjab	4.8	62.2	8.4	6.9	70.6	12.5	70.9	34.6	79.3	3.6	7.0	1.7	12.0	37.5	28.1	14.0	1.3	2.2	16.6	4.5
Sindh	9.5	43.1	5.6	5.5	55.8	23.1	77.4	53.2	87.8	5.7	21.8	1.7	26.1	27.0	24.7	17.7	0.6	3.8	20.6	4.6
Khyber Pakhtunkhwa	4.5	19.7	3.5	10.0	30.3	14.1	71.7	52.8	79.8	12.8	25.8	1.2	37.0	32.6	17.3	18.8	1.4	2.2	20.6	12.4
Balochistan	6.4	30.3	12.4	6.1	48.4	16.1	65.6	29.5	71.7	3.4	8.8	1.8	12.5	19.2	11.4	5.6	1.0	2.8	8.5	5.5
ICT Islamabad	28.6	46.6	9.9	17.5	74.2	34.5	72.7	45.8	84.4	6.8	7.5	4.4	17.5	55.2	43.9	26.4	3.5	1.1	29.2	8.9
Gilgit Baltistan	5.6	24.5	1.2	2.1	30.3	11.3	79.0	41.3	83.4	2.5	23.8	2.5	28.2	44.9	23.0	33.0	0.8	0.5	33.5	14.2
Division																				
Bahawalpur	5.0	62.3	7.5	3.0	69.1	10.1	71.9	19.7	78.5	1.3	6.9	0.0	8.2	31.2	7.4	10.4	0.0	1.0	11.5	3.2

Table B.3: Consumption according to World Health Organization Recommended Food Groups among children 6-23 months, in the day or night preceding the interview by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
ALL CHILDREN AGE 6-23 MONTHS																				
Dera Ghazi Khan	1.7	52.6	3.8	0.9	58.1	6.2	80.3	27.6	83.9	0.0	2.0	1.0	3.0	44.3	21.6	10.4	0.0	0.0	10.4	5.3
Faisalabad	2.6	63.4	15.7	6.0	72.5	17.1	62.9	31.2	73.9	7.6	8.6	1.6	16.8	40.3	37.6	17.3	2.9	1.5	20.0	4.4
Gujranwala	6.3	59.7	7.9	4.7	68.2	12.5	61.8	42.2	78.1	4.0	5.9	0.0	9.2	36.4	21.9	10.5	2.5	2.5	14.2	6.4
Lahore	7.3	69.4	11.5	14.0	82.8	12.4	81.6	39.1	87.0	5.4	5.2	3.6	14.1	35.7	30.3	20.0	0.0	3.0	23.0	1.8
Multan	3.6	61.4	6.2	0.0	67.6	17.9	61.9	27.3	68.6	2.7	0.0	1.5	4.2	30.0	24.6	7.3	1.1	1.5	8.8	5.5
Rawalpindi	13.3	62.9	5.0	11.3	72.5	24.8	60.1	55.9	82.3	7.3	10.3	2.1	18.6	59.4	46.3	17.9	3.3	6.2	23.1	13.7
Sahiwal	1.8	67.5	5.7	2.8	67.5	4.3	70.8	37.7	72.6	0.0	11.3	1.8	13.1	32.1	32.0	3.8	2.0	1.0	6.9	2.8
Sargodha	0.6	53.2	5.4	16.2	63.8	10.2	70.0	38.0	78.2	2.3	21.9	2.7	26.9	32.7	42.1	23.8	2.3	4.5	28.0	2.7
Banbhore/ Thatta	6.7	44.1	0.0	5.2	51.2	20.8	90.0	66.3	91.9	8.1	28.5	1.9	33.3	15.9	22.0	18.8	0.0	2.9	18.8	14.7
Hyderabad	2.5	38.6	5.2	8.1	50.2	20.1	83.7	68.9	89.1	9.9	28.6	1.9	33.2	32.0	27.0	18.9	0.5	3.9	22.5	10.1
Karachi	21.1	32.9	6.6	13.5	59.6	42.1	68.7	42.2	89.1	1.7	9.3	0.0	11.0	35.4	33.7	33.6	0.8	2.6	36.0	3.1
Larkana	7.4	54.3	2.6	0.0	59.8	12.0	90.8	59.9	92.1	3.2	37.6	0.0	39.1	30.2	29.4	14.9	0.0	7.2	20.6	0.0
Mirpur Khas	6.8	43.5	12.8	1.7	52.3	16.2	68.1	49.5	80.6	8.9	15.3	4.6	22.4	19.4	13.5	6.1	1.1	2.3	8.5	2.2
Shaheed Benazirabad	11.6	57.0	2.6	0.0	65.8	22.5	64.9	19.8	74.5	0.0	18.1	0.0	18.1	26.6	9.5	3.7	0.0	2.1	5.8	0.0
Sukkur	5.0	45.7	4.8	1.2	53.7	15.4	79.3	58.6	93.4	7.8	22.4	3.7	33.1	17.6	25.0	12.3	1.1	5.4	15.0	2.9
Bannu	3.4	14.5	7.9	10.6	28.7	13.5	68.6	54.1	78.1	12.5	31.7	3.4	43.6	39.6	22.2	19.2	0.0	3.0	22.2	25.1
Dera Ismail Khan	0.0	28.9	5.2	10.3	34.0	18.9	40.3	37.7	63.1	10.2	2.1	2.1	14.4	26.2	7.9	10.7	0.0	4.7	10.7	0.5
Hazara	10.3	26.8	0.4	9.9	35.4	25.3	69.1	48.3	75.9	16.8	13.1	0.0	28.6	28.6	18.1	14.1	2.9	1.4	16.9	21.1
Kohat	8.8	12.0	5.2	19.0	30.0	12.2	65.0	52.7	76.0	23.8	27.3	2.8	43.9	56.1	31.9	26.5	5.5	2.8	34.7	28.4
Malakand	1.2	13.9	1.9	4.0	19.9	5.1	80.8	51.9	83.9	12.4	34.5	0.7	45.8	23.8	7.1	12.6	0.0	0.7	12.8	3.3
Mardan	1.1	12.0	5.4	6.2	21.9	15.4	75.8	65.2	83.4	14.1	40.5	1.3	46.5	39.4	18.7	13.7	1.2	2.0	16.2	20.3
Peshawar	8.2	26.9	4.5	18.5	46.3	18.1	73.7	57.1	83.0	8.5	21.8	1.5	30.5	39.8	30.6	35.7	2.7	3.9	37.3	13.7
Kalat	0.2	44.9	14.1	10.3	59.7	14.2	78.6	24.7	81.1	1.6	11.2	1.5	13.1	16.0	4.4	7.1	0.0	0.0	7.1	7.4
Makran	8.7	6.6	37.2	3.3	51.0	13.0	93.5	79.4	100.0	1.9	4.4	0.0	6.3	53.4	54.1	20.0	1.6	38.9	54.4	27.2
Nasirabad	8.8	18.4	6.3	4.4	34.8	10.9	60.4	34.4	70.2	8.4	11.7	4.5	20.3	18.3	6.6	1.8	4.1	4.1	5.9	1.9
Quetta	12.9	22.0	4.6	2.5	39.2	12.1	40.6	21.5	45.4	4.2	4.1	1.7	9.9	12.0	8.9	4.7	0.0	0.4	5.0	1.6
Sibi	30.2	5.5	4.9	0.0	35.6	28.5	35.3	29.8	39.0	3.4	0.0	0.0	3.4	5.4	3.3	1.6	0.0	0.0	1.6	0.0
Zhob	9.4	18.3	20.1	0.8	40.1	40.3	62.9	36.5	83.3	2.7	7.7	0.0	9.6	36.7	36.1	0.0	3.0	1.8	4.8	1.2
Baltistan	8.1	31.4	2.5	0.8	37.2	3.4	64.4	28.6	66.9	3.4	5.6	10.0	16.8	12.4	10.9	17.7	3.3	2.2	19.9	5.6
Gilgit	4.9	22.3	0.7	2.5	28.2	13.8	83.5	45.3	88.5	2.3	29.4	0.1	31.7	54.9	26.8	37.8	0.0	0.0	37.8	16.9

Table B.4: Analyzes the consumption of seven food group' vis-a-vis mother and child health Indicators. It was observed that the consumption of majority of the food groups was highest among children who were the first born with no previous birth by the mother. There was higher consumption of food groups among children born with a birth interval of < 24 months as compared to children with a birth interval of ≥ 24months. This finding is not consistent with global evidence; it will be further explored in the formative qualitative research on complementary feeding.

Health characteristics	Dairy products					Grains, roots, &tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	ALL CHILDREN AGE 6-23 MONTHS																			
All	**5.9**	**49.3**	**7.1**	**7.1**	**59.5**	**15.3**	**72.3**	**41.4**	**80.9**	**5.6**	**13.5**	**1.7**	**19.3**	**33.7**	**24.9**	**15.4**	**1.1**	**2.5**	**17.9**	**6.0**
Birth order of child																				
1	9.2	49.4	5.8	7.8	61.7	19.5	74.1	42.2	83.5	6.1	13.3	1.8	20.2	39.4	26.4	19.1	0.9	2.3	21.1	4.7
2 – 3	6.0	50.1	8.4	7.7	60.8	17.8	70.6	43.3	80.5	5.3	12.6	2.0	18.5	36.0	27.4	17.4	1.4	2.2	19.7	6.0
4 – 5	4.5	43.6	8.2	8.2	53.5	9.8	70.9	40.0	78.8	5.5	10.9	1.5	16.2	30.6	23.7	12.7	0.1	4.4	16.0	8.8
6+	2.9	54.9	5.0	3.2	61.2	10.6	75.2	38.2	80.8	5.6	19.1	0.8	23.8	24.6	18.6	9.1	2.3	1.2	11.7	4.3
Birth interval																				
No previous birth	9.1	49.9	5.7	7.9	62.0	19.2	74.3	42.7	83.7	6.0	13.1	1.8	19.9	39.3	26.5	19.6	0.9	2.4	21.7	4.9
<24 months	5.4	51.0	8.5	8.3	61.3	14.0	72.6	39.3	80.8	4.3	10.9	2.3	16.2	35.9	25.2	12.1	0.6	2.7	14.4	5.9
>= 24 months	4.6	48.2	7.2	6.1	57.4	14.0	71.1	41.9	79.6	6.0	14.8	1.3	20.5	30.0	23.9	15.0	1.5	2.5	17.7	6.5
Birth at health facility																				
Yes	8.8	51.2	8.2	8.5	63.6	20.9	72.4	42.5	83.2	6.1	11.4	1.9	17.6	37.5	29.7	20.2	1.2	3.4	23.2	6.7
No	2.6	47.2	5.9	5.4	55.0	9.0	72.2	40.3	78.3	5.0	15.8	1.4	21.2	29.6	19.5	10.0	1.1	1.5	11.9	5.2
Mother and child Continuum of care																				
All	13.6	60.8	8.9	14.9	76.1	29.4	69.9	44.2	86.9	6.8	9.1	3.4	17.6	38.4	39.2	23.8	1.7	3.7	26.5	6.6
At least 2	5.5	48.6	7.6	5.4	58.9	15.6	73.2	40.3	80.4	5.1	12.1	1.6	17.1	36.6	27.3	16.8	1.0	3.3	20.1	6.5
At least 1	3.7	52.3	7.4	6.3	61.8	8.4	69.4	34.3	74.9	4.2	16.8	0.7	21.2	32.0	19.3	13.2	1.0	1.7	15.1	5.5
None	2.4	39.8	4.5	4.6	46.3	8.8	74.5	46.6	81.6	6.4	16.9	1.1	23.2	26.3	13.7	8.1	1.1	1.0	9.4	4.9
Received Vitamin A dose postpartum																				
Yes	9.1	47.1	10.1	11.4	61.7	24.6	73.6	49.9	85.9	7.4	17.8	4.3	26.3	43.3	35.2	22.3	2.2	3.0	26.0	10.4
No	5.4	49.7	6.6	6.4	59.1	13.8	72.1	40.1	80.1	5.3	12.8	1.2	18.2	32.2	23.2	14.3	1.0	2.5	16.6	5.3
Took Iron tablets during last pregnancy																				
Yes	9.1	48.9	8.4	10.0	62.9	21.2	73.9	44.1	84.4	6.3	12.0	1.9	18.4	38.9	29.7	20.1	1.2	3.6	23.3	6.6
No	3.3	49.6	6.1	4.6	56.7	10.3	70.9	39.2	78.0	5.0	14.7	1.5	20.0	29.4	20.8	11.4	1.1	1.7	13.3	5.5
Mother's BMI																				
≥ 18.5	6.1	47.3	6.0	5.9	56.0	16.2	72.2	42.2	81.0	5.1	12.2	1.5	17.3	34.4	28.2	17.3	1.2	2.6	19.9	5.8
<18.5	3.9	47.7	17.1	3.7	60.0	13.2	72.5	36.8	78.3	1.3	16.9	0.8	18.5	37.4	18.8	7.2	1.4	1.1	9.7	8.6
Child fully immunized																				
Yes	7.7	53.0	8.5	8.2	63.2	20.0	75.0	40.4	84.1	5.8	9.5	2.3	16.0	39.2	28.9	17.2	1.2	3.0	20.2	6.8
No	4.5	46.4	6.0	6.2	56.6	11.6	70.1	42.3	78.4	5.4	16.6	1.1	21.9	29.4	21.7	14.0	1.1	2.2	16.1	5.3

Table B.4: Analyzes the consumption of seven food group' vis-a-vis mother and child health Indicators. It was observed that the consumption of majority of the food groups was highest among children who were the first born with no previous birth by the mother. There was higher consumption of food groups among children born with a birth interval of < 24 months as compared to children with a birth interval of ≥ 24months. This finding is not consistent with global evidence; it will be further explored in the formative qualitative research on complementary feeding.

Health characteristics	Dairy products					Grains, roots, &tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	ALL CHILDREN AGE 6-23 MONTHS																			
Diarrhea																				
Yes	5.7	49.0	8.2	6.8	58.9	14.6	70.1	40.9	79.1	4.9	14.5	1.9	20.0	32.6	22.1	17.1	0.6	3.3	19.4	5.9
No	6.0	49.5	6.5	7.2	59.8	15.6	73.4	41.7	81.9	5.9	12.9	1.5	18.9	34.3	26.3	14.5	1.4	2.2	17.1	6.0
Treatment for Diarrhea																				
Yes	6.2	49.0	8.6	7.3	59.4	15.4	70.0	41.6	79.5	5.3	14.0	2.0	19.9	33.5	23.4	18.2	0.7	3.6	20.6	6.2
No	0.1	49.0	3.7	0.0	52.6	5.0	71.7	32.4	74.5	0.0	20.8	0.0	20.8	22.1	4.7	4.2	0.0	0.0	4.2	2.3
No Diarrhea reported	6.0	49.5	6.5	7.2	59.8	15.6	73.4	41.7	81.9	5.9	12.9	1.5	18.9	34.3	26.3	14.5	1.4	2.2	17.1	6.0
Size at birth (mother's perception)																				
Large	4.8	63.3	9.5	6.7	70.1	19.5	65.6	39.1	77.9	6.7	7.4	0.0	13.2	45.2	27.3	14.6	0.0	2.3	16.9	5.4
Average	6.0	49.1	6.8	7.4	59.5	16.2	74.4	42.7	83.2	5.5	14.6	1.8	20.6	34.0	26.9	15.8	1.3	2.4	18.4	6.0
Small	5.7	46.8	7.8	6.0	56.9	11.1	66.3	37.5	73.5	5.5	10.9	1.4	16.0	30.2	17.0	14.1	0.9	3.0	16.2	6.1
Child received vitamin A																				
Yes	5.3	50.5	7.1	7.1	60.2	13.9	74.1	44.0	82.2	6.3	13.9	1.8	20.4	34.4	25.2	15.3	1.2	2.2	17.8	6.2
No	7.3	46.3	7.1	6.9	57.7	18.7	67.8	35.2	77.7	3.9	12.4	1.4	16.7	32.2	24.2	15.6	1.1	3.4	18.2	5.4
Stunted																				
Yes	4.3	48.0	6.3	4.4	54.7	13.0	75.3	39.6	81.2	3.1	13.4	2.0	17.3	31.1	23.2	14.9	0.9	2.6	17.0	6.7
No	6.0	51.7	9.0	6.4	60.4	16.7	70.3	42.6	81.1	5.6	12.7	0.9	17.9	39.8	31.4	17.3	1.7	2.1	20.3	6.2
Wasted																				
Yes	6.3	56.0	6.8	7.3	63.4	11.0	78.2	33.7	86.6	6.1	13.4	1.4	20.2	29.9	15.5	5.6	3.4	2.3	11.3	6.0
No	5.1	48.9	8.1	5.2	56.8	16.1	71.1	42.9	80.0	4.2	12.9	1.4	17.1	37.5	30.6	18.5	0.9	2.3	20.5	6.5
Underweight																				
Yes	6.5	52.5	5.9	3.7	59.1	12.5	76.2	38.3	82.8	3.8	11.3	1.0	15.6	31.5	20.0	9.2	2.1	1.2	12.6	5.7
No	4.7	49.0	8.9	6.5	57.4	16.5	70.5	42.8	80.3	4.9	13.8	1.6	18.6	38.4	31.9	19.7	1.0	2.9	22.0	6.7

Table B.5: Consumption according to World Health Organization Recommended Food Groups among breastfed children 6-23 months, in the day or night preceding the interview by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods.				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	BREASTFEEDING CHILDREN																			
All	**3.6**	**41.4**	**6.0**	**6.6**	**51.2**	**15.5**	**69.7**	**40.9**	**78.4**	**5.5**	**13.0**	**1.6**	**18.8**	**31.5**	**23.9**	**14.1**	**0.8**	**2.4**	**16.2**	**5.6**
Child's sex																				
Male	4.3	43.2	5.6	6.5	53.2	18.9	71.1	38.6	80.3	5.9	13.7	1.6	20.3	32.5	25.2	13.1	0.3	3.4	15.6	5.4
Female	2.8	39.4	6.4	6.6	49.0	11.9	68.3	43.4	76.4	5.0	12.3	1.7	17.2	30.4	22.4	15.1	1.4	1.2	16.8	5.8
Age of child (in months)																				
6 – 8	5.6	35.3	3.2	6.7	45.3	22.4	45.8	25.5	59.3	5.2	4.7	0.9	9.7	17.5	17.0	7.4	0.0	1.2	8.2	1.4
9 – 11	5.8	36.4	5.3	6.8	48.3	18.9	58.3	28.8	69.3	3.5	6.3	2.2	11.4	25.8	17.1	8.2	1.0	0.2	8.8	1.5
12 – 17	2.2	44.3	6.5	6.5	53.5	13.7	78.3	47.2	85.3	6.7	16.2	1.6	22.5	36.0	27.2	16.0	1.1	3.3	19.4	7.2
18 – 23	2.2	46.5	8.1	6.1	54.7	9.4	86.5	55.1	91.6	5.4	21.3	1.8	27.8	41.1	30.7	22.6	0.9	3.8	25.1	10.5
Age of mother																				
15-18	7.3	25.6	7.3	8.7	45.7	18.4	51.2	36.6	57.9	4.3	10.5	2.0	15.2	27.4	2.6	9.6	2.3	0.0	11.9	5.6
19-34	3.5	40.7	6.1	6.5	50.3	16.1	70.0	40.7	78.8	5.6	12.4	1.8	18.6	33.1	24.0	14.7	0.7	1.9	16.3	5.9
≥ 35	3.4	47.2	5.2	6.3	57.0	12.2	71.0	42.3	79.3	5.0	16.9	0.8	21.0	23.1	25.9	10.8	1.1	5.5	16.1	3.9
Parental education																				
Both educated	4.7	44.9	9.0	8.0	56.9	24.9	72.1	42.7	84.2	6.5	7.8	2.0	15.2	42.5	33.9	20.9	1.0	2.5	23.1	5.4
Mother educated	8.7	42.1	6.9	13.8	59.4	26.3	63.6	32.8	76.8	7.4	11.4	2.7	20.1	29.9	30.1	13.0	2.6	0.0	15.6	3.0
Father educated	3.1	38.6	5.0	4.1	46.5	9.8	66.2	39.9	73.3	5.2	16.3	1.3	21.0	28.4	16.2	10.6	0.7	2.4	13.0	7.0
Both uneducated	1.5	39.6	2.8	5.8	46.7	6.9	71.7	41.3	76.6	4.0	16.7	1.3	21.2	20.5	17.4	8.9	0.4	2.6	10.6	4.8
Number of children ever born																				
Upto 2	5.2	40.6	6.2	7.8	52.4	21.4	69.4	41.1	79.1	6.1	11.3	2.3	18.8	35.4	25.9	16.5	1.3	1.9	18.4	4.8
03 – 05	2.5	39.1	7.2	6.6	48.4	11.8	68.3	41.2	77.7	4.9	11.7	1.2	16.4	31.0	23.1	13.7	0.2	3.2	16.1	6.9
06+	2.3	49.0	2.6	3.3	54.9	10.0	74.2	39.7	78.6	5.4	20.5	1.0	24.8	23.1	20.8	8.9	1.4	1.5	11.1	4.2
Number of person/per-room																				
1	1.6	61.0	10.5	11.0	63.6	22.9	68.2	27.9	79.7	10.0	9.2	9.8	27.8	11.1	47.4	14.3	2.9	22.4	36.7	9.3
2	4.3	46.5	15.1	10.0	57.8	21.3	77.3	45.2	81.9	5.3	13.5	2.2	20.5	44.6	36.2	22.3	0.1	1.1	22.4	3.3
3 – 4	3.5	40.7	6.8	5.9	49.8	18.4	69.4	43.4	79.8	6.2	12.3	1.7	19.1	34.7	25.6	16.5	1.2	2.6	19.2	5.2
5+	3.6	40.9	4.0	6.6	51.3	12.0	69.1	38.4	76.7	4.8	13.7	1.3	18.2	27.4	20.2	10.8	0.5	1.9	12.2	6.1
Type of family																				
Nuclear	2.7	44.4	5.0	6.8	52.5	10.0	71.1	41.4	77.7	5.2	14.6	1.5	20.2	27.9	24.9	11.1	0.7	3.1	14.3	5.4
Joint	4.4	40.0	5.7	5.2	49.5	16.7	67.1	41.3	78.3	5.9	12.5	1.9	18.8	31.2	22.2	14.1	1.0	1.7	16.3	5.8
Extended	3.5	39.6	7.6	8.3	52.1	21.0	72.1	39.6	79.6	5.3	11.7	1.5	17.2	36.6	25.1	17.9	0.8	2.4	18.6	5.4
Access to improved source of drinking water																				
Yes	3.6	43.7	6.0	6.7	53.2	16.0	68.4	40.2	78.0	5.0	11.3	1.6	16.8	32.7	24.4	14.7	0.9	1.9	16.4	5.0
No	3.3	28.1	6.1	5.9	39.8	12.6	77.5	44.7	81.0	8.2	22.8	1.9	30.6	24.7	21.0	10.2	0.7	5.2	15.1	8.8

Table B.5: Consumption according to World Health Organization Recommended Food Groups among breastfed children 6-23 months, in the day or night preceding the interview by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods.				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	BREASTFEEDING CHILDREN																			
Access to improved source of sanitation																				
Yes	6.2	43.7	8.2	7.5	56.6	21.8	68.7	42.3	80.9	6.1	9.8	2.1	16.2	36.4	27.4	18.9	0.7	2.7	21.2	5.9
No	1.4	39.5	4.2	5.8	46.6	10.3	70.6	39.8	76.4	4.9	15.7	1.3	21.0	27.5	21.0	10.1	0.9	2.1	12.1	5.3
Hand washing both soap and water available																				
Yes	4.7	46.7	6.6	7.7	57.3	19.8	70.2	43.4	81.0	6.2	9.2	2.3	16.5	34.8	30.2	16.5	0.8	2.8	18.8	4.1
No	2.5	36.3	5.4	5.4	45.2	11.4	69.3	38.5	75.9	4.8	16.6	1.0	21.1	28.3	17.8	11.7	0.8	2.0	13.7	7.0
Decision on HH purchases																				
Someone else	3.6	39.6	7.0	6.8	49.4	19.7	66.8	41.0	77.6	7.7	12.0	1.8	20.6	33.5	23.8	16.1	1.2	1.7	18.5	5.5
Husband alone	3.5	38.2	6.7	5.2	48.4	12.2	71.3	44.4	78.8	5.2	15.7	1.2	20.2	29.8	20.5	13.8	0.4	2.9	15.3	7.3
Husband and wife jointly	3.8	44.9	4.4	7.2	55.0	16.0	70.2	37.8	78.6	3.7	11.5	1.9	16.0	32.1	27.5	12.4	0.8	2.4	14.8	4.1
Wife alone	2.2	46.2	6.7	8.4	52.0	7.1	74.6	40.7	79.7	5.8	13.2	1.4	19.9	25.6	19.8	14.3	1.4	3.4	17.6	6.3
Working status by occupation																				
Agriculture	0.2	46.1	6.6	3.0	52.0	2.4	69.3	41.9	71.4	3.2	15.4	1.2	18.6	23.8	10.4	11.3	1.3	1.9	13.9	2.9
Non-agriculture	2.2	41.4	5.2	9.1	53.0	11.4	71.9	37.9	76.7	3.3	13.2	1.0	15.1	28.9	18.0	12.2	0.2	1.8	12.6	5.3
Not working	4.2	40.8	6.0	6.6	50.8	17.8	69.4	41.3	79.6	6.1	12.7	1.8	19.5	32.9	26.5	14.7	0.9	2.5	17.1	5.9
Exposure to media																				
Media exposure	5.3	46.1	7.7	9.5	59.2	23.5	70.5	42.5	83.1	5.6	10.8	2.8	18.0	37.5	31.2	18.7	0.9	2.9	20.8	4.0
No media exposure	2.2	37.7	4.7	4.2	44.9	9.3	69.2	39.6	74.8	5.4	14.8	0.7	19.5	26.8	18.2	10.5	0.8	1.9	12.6	6.8
Wealth index																				
Poorest	1.3	39.0	5.5	3.7	47.1	5.1	75.1	41.3	78.9	3.4	17.4	1.0	20.8	23.0	14.6	6.5	1.1	2.0	9.3	6.4
Poorer	1.3	37.4	3.1	3.3	42.3	6.5	67.8	36.2	71.7	6.5	17.1	0.2	22.6	26.7	19.6	8.3	0.5	1.5	9.6	5.9
Middle	3.8	39.8	4.4	7.8	49.4	15.4	66.7	41.4	76.9	4.6	13.7	1.1	18.4	31.2	21.4	13.6	0.3	2.8	15.6	5.7
Richer	4.0	47.8	7.1	10.0	59.3	23.9	67.1	45.6	80.7	6.1	7.1	3.7	15.3	37.7	30.3	20.7	0.1	1.8	22.1	5.5
Richest	10.6	45.7	12.7	10.2	64.6	37.8	72.1	40.8	88.5	7.7	5.7	3.2	14.7	46.3	42.0	28.4	2.6	4.6	32.4	3.6
Residence																				
Rural	1.5	40.5	5.0	4.4	46.8	11.7	68.4	40.3	75.9	5.4	14.8	1.1	20.2	30.2	20.9	10.7	0.9	2.2	12.5	6.4
Urban	9.0	43.8	8.6	12.3	62.6	25.7	73.4	42.4	85.1	5.7	8.4	3.1	15.4	35.0	31.7	23.0	0.7	3.0	25.9	3.3
Region																				
Punjab	2.4	53.2	7.6	6.5	61.6	13.3	67.4	33.3	75.8	3.5	6.1	1.8	11.0	35.3	26.9	11.9	0.8	2.0	14.1	4.2
Sindh	6.5	38.6	3.9	4.8	50.0	22.0	77.0	53.8	86.5	5.7	21.6	1.9	26.2	26.3	25.2	17.5	0.3	3.7	20.0	4.5
Khyber Pakhtunkhwa	2.7	14.0	2.9	9.3	24.1	13.2	69.2	50.6	78.0	12.3	24.6	1.0	35.4	29.5	15.7	17.3	1.4	1.5	18.4	10.7
Balochistan	4.1	25.8	10.7	6.5	41.6	16.4	61.6	28.4	68.7	2.7	5.1	1.1	8.5	17.5	11.4	6.0	1.2	3.5	9.7	6.1
ICT Islamabad	22.4	38.0	8.1	11.9	60.7	36.4	71.4	41.3	83.6	4.9	9.0	4.2	16.8	52.4	43.9	27.5	1.9	0.9	28.5	10.2
Gilgit Baltistan	3.8	25.1	1.2	2.6	29.9	13.6	75.9	38.8	81.2	3.1	23.3	2.2	28.6	41.9	21.2	27.0	0.9	0.6	27.7	9.1
Division																				

Table B.5: Consumption according to World Health Organization Recommended Food Groups among breastfed children 6-23 months, in the day or night preceding the interview by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods.				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	BREASTFEEDING CHILDREN																			
Bahawalpur	7.5	47.9	7.0	2.7	58.3	8.3	71.8	17.1	75.0	2.0	6.5	0.0	8.4	24.9	6.2	7.8	0.0	1.5	9.3	2.5
Dera Ghazi Khan	0.9	43.5	4.8	1.2	49.2	6.5	78.9	27.5	83.3	0.0	0.9	1.2	2.2	40.2	17.4	6.9	0.0	0.0	6.9	5.4
Faisalabad	0.0	51.0	12.1	5.9	61.9	19.8	56.1	29.5	69.0	9.2	9.9	2.3	19.9	37.7	37.9	14.9	3.0	0.8	17.5	3.9
Gujranwala	2.6	48.8	5.0	3.1	53.5	14.6	59.0	38.7	74.8	1.7	1.8	0.0	3.5	35.1	14.2	7.1	0.0	1.9	9.0	7.5
Lahore	1.5	65.6	10.3	13.0	77.9	13.8	77.2	33.7	82.7	4.0	4.4	3.0	11.4	33.8	31.5	18.6	0.0	2.3	20.8	1.2
Multan	2.6	55.4	4.6	0.0	59.5	19.7	56.3	23.8	64.0	1.8	0.0	0.0	1.8	29.9	23.4	3.0	1.5	2.1	5.1	7.4
Rawalpindi	9.7	52.0	5.5	8.2	65.4	23.7	57.8	67.8	80.7	10.1	8.1	3.0	19.7	59.1	44.0	16.4	1.3	5.3	20.3	9.1
Sahiwal	0.0	53.6	8.2	4.0	53.6	5.1	67.1	39.5	68.5	0.0	12.0	2.6	14.5	31.4	34.5	4.0	2.9	1.5	8.3	4.0
Sargodha	0.0	52.1	7.0	18.4	63.3	10.2	65.6	39.9	75.2	3.0	19.0	3.5	25.6	30.0	41.3	25.9	0.0	5.9	29.2	1.0
Banbhore/ Thatta	3.7	43.3	0.0	6.6	51.1	20.7	87.2	65.8	89.5	10.4	26.5	2.4	32.7	14.4	19.6	20.4	0.0	3.7	20.4	11.7
Hyderabad	1.7	35.5	4.1	6.8	46.4	21.9	85.1	70.9	91.4	9.2	26.8	2.1	32.0	30.1	27.7	16.7	0.6	3.4	20.7	11.0
Karachi	13.7	26.0	1.8	12.4	48.7	43.0	68.0	42.4	88.0	2.3	8.8	0.0	11.1	33.0	32.8	37.4	0.0	1.9	37.9	1.9
Larkana	5.5	52.7	0.3	0.0	57.9	12.0	89.5	60.0	91.0	3.6	35.8	0.0	37.5	30.8	32.7	16.1	0.0	7.3	21.6	0.0
Mirpur Khas	7.0	37.9	10.2	1.0	46.7	12.6	65.0	48.9	77.1	7.3	14.5	4.2	21.6	20.4	13.5	5.3	0.0	1.5	6.8	2.6
Shaheed Benazirabad	8.3	51.8	3.0	0.0	60.0	17.1	67.2	20.8	72.4	0.0	21.2	0.0	21.2	31.1	11.1	4.3	0.0	2.5	6.8	0.0
Sukkur	4.0	35.4	6.5	1.6	44.4	15.8	78.4	57.3	91.2	6.2	23.4	4.9	33.6	15.5	29.5	10.1	1.5	6.7	13.1	3.9
Bannu	5.1	11.6	1.6	5.8	22.8	6.0	57.7	55.8	72.0	9.2	31.5	5.1	44.9	34.9	23.3	23.8	0.0	0.0	23.8	22.6
Dera Ismail Khan	0.0	20.8	6.0	11.9	26.6	20.8	42.2	39.8	67.9	8.7	2.4	2.4	13.5	26.2	9.1	11.9	0.0	5.4	11.9	0.6
Hazara	8.2	20.0	0.6	5.8	30.7	27.2	64.7	39.8	74.3	17.6	13.9	0.0	29.7	29.1	11.5	14.5	3.4	0.0	16.5	19.1
Kohat	4.8	10.8	5.2	15.2	24.6	4.9	61.9	55.0	69.4	28.4	32.8	0.0	47.8	56.3	39.9	23.1	3.7	0.0	26.8	23.1
Malakand	0.6	11.8	0.7	3.9	16.3	5.1	79.5	51.2	82.5	12.6	32.5	0.8	44.6	20.9	7.2	10.1	0.0	0.9	10.3	3.5
Mardan	0.6	7.4	6.5	7.5	18.7	13.4	72.4	64.8	81.6	11.8	39.5	0.0	43.5	41.9	18.5	15.8	0.7	2.4	18.2	20.3
Peshawar	4.3	15.7	4.4	20.3	36.1	18.7	69.9	51.8	79.0	7.1	15.9	1.1	23.4	31.7	27.3	32.4	3.4	1.9	34.2	11.6
Kalat	0.3	40.6	11.7	12.1	55.6	15.6	75.9	25.3	79.2	1.8	6.8	0.3	8.8	14.4	4.5	7.7	0.0	0.0	7.7	8.4
Makran	7.4	5.0	37.4	1.8	48.4	13.7	93.1	80.2	100.0	0.0	4.6	0.0	4.6	54.6	55.3	19.4	0.0	37.5	53.9	27.0
Nasirabad	5.2	10.0	6.8	5.5	27.5	7.3	56.9	30.7	65.7	7.9	8.4	5.6	19.2	18.0	5.6	2.2	5.2	5.2	7.4	2.4
Quetta	6.2	19.2	2.0	1.0	26.4	9.8	33.0	18.4	39.4	2.6	2.4	0.5	5.5	9.7	9.2	4.9	0.0	0.5	5.4	2.1
Sibi	25.1	1.9	3.6	0.0	28.7	27.5	37.2	33.0	37.2	1.9	0.0	0.0	1.9	3.6	3.6	1.7	0.0	0.0	1.7	0.0
Zhob	6.7	21.0	16.5	1.0	36.5	45.2	57.4	26.6	80.2	1.0	1.0	0.0	1.0	27.2	28.8	0.0	3.8	2.2	6.0	0.0
Baltistan	1.7	32.2	2.6	1.0	33.9	4.0	63.9	26.3	66.9	4.1	3.6	8.7	16.4	8.5	9.5	16.0	3.5	2.6	18.6	6.6
Gilgit	4.5	22.9	0.8	3.1	28.6	16.6	79.8	42.7	85.8	2.8	29.7	0.2	32.5	52.5	25.0	30.6	0.0	0.0	30.6	9.9

Table B.6: Consumption according to World Health Organization Recommended Food Groups among breastfed children 6-23 months, in the day or night preceding the interview by Health characteristics

Health characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	BREASTFEEDING CHILDREN																			
All	**3.6**	**41.4**	**6.0**	**6.6**	**51.2**	**15.5**	**69.7**	**40.9**	**78.4**	**5.5**	**13.0**	**1.6**	**18.8**	**31.5**	**23.9**	**14.1**	**0.8**	**2.4**	**16.2**	**5.6**
Birth order of child																				
1	5.2	38.3	4.5	8.5	50.5	21.7	70.5	41.0	80.3	6.7	12.0	2.0	19.7	35.1	22.6	16.9	0.6	1.6	18.0	4.2
2 – 3	3.9	42.6	8.0	6.3	52.7	17.8	68.6	42.7	78.6	4.9	11.7	1.9	17.6	36.9	26.5	15.9	1.2	2.6	18.3	4.6
4 – 5	2.5	36.9	6.8	7.4	46.8	10.1	67.5	38.9	76.3	5.4	10.7	1.4	15.8	25.8	23.3	12.3	0.1	3.3	14.9	9.3
6+	2.3	49.0	2.6	3.3	54.9	10.0	74.2	39.7	78.6	5.4	20.5	1.0	24.8	23.1	20.8	8.9	1.4	1.5	11.1	4.2
Birth interval																				
No previous birth	5.2	38.3	4.4	8.6	50.4	21.6	70.7	41.2	80.4	6.7	12.0	1.9	19.6	34.9	22.4	17.0	0.5	1.8	18.2	4.2
<24 months	2.6	43.8	6.6	6.7	52.6	14.3	70.5	42.5	79.2	4.6	11.6	2.9	17.7	34.9	26.0	12.6	0.8	2.0	14.7	5.7
>= 24 months	3.4	41.6	6.3	5.6	50.8	13.5	69.0	40.0	77.3	5.4	14.1	0.9	19.0	28.5	23.5	13.5	1.0	2.8	16.1	6.1
Birth at health facility																				
Yes	5.6	41.7	6.5	7.7	53.7	22.5	70.1	42.4	81.5	5.7	11.0	2.2	17.2	36.2	28.2	19.0	1.3	3.2	21.9	5.7
No	1.4	41.1	5.4	5.3	48.5	8.2	69.3	39.3	75.3	5.2	15.1	1.0	20.5	26.6	19.3	9.0	0.3	1.5	10.3	5.5
Mother and child Continuum of care																				
All	7.9	50.7	6.3	12.6	66.6	32.0	68.2	47.8	86.6	7.4	10.0	5.1	20.5	37.7	38.6	23.7	1.9	3.7	25.9	4.7
At least 2	3.8	42.3	6.9	5.8	52.1	16.9	69.8	38.7	77.9	5.2	10.7	1.0	15.6	34.8	26.6	15.0	1.0	3.2	18.2	6.1
At least 1	2.3	45.3	6.6	6.1	54.4	8.2	68.0	34.6	71.9	2.3	17.2	0.7	19.8	32.1	18.5	13.1	0.3	1.6	14.5	5.3
None	1.4	30.9	3.7	4.4	37.3	7.8	71.8	45.2	79.1	7.1	16.1	1.2	23.2	20.9	13.3	6.9	0.3	0.5	7.6	5.4
Received Vitamin A dose postpartum																				
Yes	7.7	38.6	9.4	11.4	55.6	26.3	70.5	46.3	82.0	7.3	14.7	5.6	24.9	43.7	34.3	21.7	2.4	3.1	25.7	9.1
No	2.9	41.8	5.4	5.8	50.4	13.8	69.6	40.0	77.8	5.2	12.7	1.0	17.8	29.5	22.2	12.8	0.6	2.2	14.7	5.0
Took Iron tablets during last pregnancy																				
Yes	5.9	40.3	7.1	9.1	54.3	22.9	71.1	44.4	82.1	6.3	11.6	2.1	18.5	36.1	28.0	17.9	1.2	3.3	20.7	5.6
No	1.6	42.3	5.1	4.4	48.5	9.3	68.6	37.9	75.4	4.8	14.2	1.2	19.1	27.6	20.4	10.8	0.6	1.6	12.4	5.6
Mother's BMI																				
≥ 18.5	3.2	38.6	5.1	5.5	45.9	16.4	68.7	42.5	77.9	5.0	12.9	0.7	17.0	32.9	27.5	16.1	0.7	3.0	18.8	5.5
<18.5	3.5	44.4	16.4	3.0	58.4	12.9	70.3	34.6	76.2	1.5	17.4	0.9	19.1	37.9	17.0	4.1	1.6	0.8	6.6	7.5
Child fully immunized																				
Yes	4.9	43.7	6.8	7.0	54.1	21.0	71.0	39.3	81.0	5.6	9.3	2.0	15.7	36.5	26.6	13.9	0.6	2.2	15.8	6.1
No	2.6	39.7	5.4	6.2	49.1	11.6	68.9	42.0	76.6	5.4	15.7	1.3	21.1	28.0	21.9	14.1	1.0	2.5	16.5	5.2
Diarrhea																				
Yes	2.8	42.0	7.0	5.9	51.0	14.5	67.1	41.3	76.6	4.4	14.8	2.4	20.2	30.2	21.7	15.0	0.8	2.3	16.7	5.5
No	4.0	41.1	5.5	6.9	51.3	16.1	71.1	40.7	79.4	6.1	12.1	1.2	18.1	32.2	25.0	13.5	0.9	2.4	15.9	5.6
Treatment for Diarrhea																				

Table B.6: Consumption according to World Health Organization Recommended Food Groups among breastfed children 6-23 months, in the day or night preceding the interview by Health characteristics

Health characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	BREASTFEEDING CHILDREN																			
Yes	3.1	41.6	7.4	6.5	51.2	15.3	66.8	42.2	76.9	4.8	14.4	2.6	20.4	31.4	23.4	16.1	0.9	2.5	18.0	5.8
No	0.0	45.8	2.8	0.0	48.5	5.8	70.7	31.6	73.8	0.0	18.4	0.0	18.4	17.6	3.8	3.4	0.0	0.0	3.4	2.6
No Diarrhea reported	4.0	41.1	5.5	6.9	51.3	16.1	71.1	40.7	79.4	6.1	12.1	1.2	18.1	32.2	25.0	13.5	0.9	2.4	15.9	5.6
Size at birth (mother's perception)																				
Large	4.6	50.8	4.9	8.1	60.1	21.8	52.5	36.0	70.7	7.4	7.3	0.0	13.3	42.2	19.3	14.4	0.0	0.1	14.6	7.3
Average	3.7	41.6	5.7	7.1	51.6	16.4	72.4	42.3	81.2	5.6	14.1	1.8	20.2	31.5	26.3	14.5	1.0	2.7	17.1	5.3
Small	3.0	38.6	7.1	4.2	47.6	10.9	63.3	36.7	69.9	4.6	10.0	1.5	15.0	29.4	16.0	12.2	0.5	1.5	13.1	6.2
Child received vitamin A																				
Yes	3.0	41.8	6.2	6.8	51.5	14.4	71.0	43.8	79.5	6.3	14.0	1.6	20.5	32.0	24.5	14.0	0.8	1.8	15.9	5.8
No	4.9	40.5	5.6	5.9	50.3	18.0	66.7	34.1	75.8	3.6	10.8	1.7	14.9	30.3	22.4	14.2	0.8	3.7	17.0	5.1
Stunted																				
Yes	2.4	43.4	5.6	3.2	49.6	13.2	73.2	38.7	78.5	3.4	14.2	0.0	16.4	31.9	22.2	13.4	0.9	2.9	15.5	6.1
No	4.1	42.6	8.0	6.4	50.7	16.9	66.3	42.4	78.5	5.2	13.0	1.2	18.1	37.5	30.7	15.1	1.0	2.3	18.0	5.6
Wasted																				
Yes	2.7	43.6	3.9	5.7	51.3	9.9	80.1	41.8	87.4	5.9	15.5	1.3	21.7	27.3	15.7	6.7	2.3	2.6	11.6	2.5
No	3.5	42.8	7.6	4.8	50.0	16.3	67.2	40.6	76.7	4.1	13.1	0.5	16.5	36.6	29.2	15.9	0.7	2.6	18.0	6.5
Underweight																				
Yes	4.2	45.6	4.3	2.6	52.0	12.3	74.6	41.5	80.7	3.5	11.9	0.6	15.7	29.5	19.1	9.3	1.5	1.2	12.1	4.1
No	2.9	41.5	8.4	6.3	49.3	16.8	66.5	40.4	77.3	4.9	14.4	0.7	18.2	38.1	31.2	17.0	0.6	3.3	19.5	6.7

Table B.7: Consumption according to World Health Organization Recommended Food Groups among non-breastfed children 6-23 months, in the day or night preceding the interview by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	NON-BREASTFEEDING CHILDREN																			
All	**12.9**	**72.7**	**10.5**	**8.6**	**84.2**	**14.6**	**79.8**	**43.1**	**88.2**	**5.8**	**14.8**	**1.7**	**20.6**	**40.4**	**27.8**	**19.4**	**2.1**	**3.1**	**22.9**	**7.1**
Child's sex																				
Male	16.7	69.1	9.9	10.4	83.8	19.8	76.0	40.7	87.6	6.0	13.6	2.9	21.3	40.9	28.4	22.7	1.3	1.7	24.3	8.3
Female	9.3	76.1	11.0	6.9	84.6	9.7	83.4	45.3	88.9	5.6	15.9	0.6	20.0	39.9	27.3	16.3	2.8	4.4	21.5	6.1
Age of child (in months)																				
6 – 8	21.4	67.1	0.0	15.5	92.8	25.2	42.7	19.3	57.5	0.7	4.0	0.0	4.7	25.2	10.9	3.6	4.6	0.0	8.2	1.6
9 – 11	24.1	73.8	6.5	9.5	87.8	20.9	75.9	32.9	83.2	12.1	8.9	0.0	21.0	36.0	27.5	12.9	0.0	1.1	14.0	3.5
12 – 17	10.1	75.7	9.1	8.9	85.0	15.7	83.6	42.7	92.1	4.2	10.8	0.8	14.7	41.2	26.8	17.1	2.1	4.7	21.7	6.0
18 – 23	9.4	70.7	16.3	6.0	79.7	8.1	87.2	53.7	94.3	6.7	24.2	3.8	31.3	45.2	33.7	28.6	2.2	2.8	31.5	11.2
Age of mother																				
15-18	28.9	48.9	27.5	1.1	78.2	11.3	89.5	80.3	99.8	0.4	22.4	0.4	22.8	52.6	36.0	39.3	0.0	21.8	39.3	0.8
19-34	13.8	73.3	10.0	9.6	85.7	13.0	80.7	41.6	88.2	6.1	13.9	1.7	20.1	41.3	28.0	20.1	1.6	2.6	22.9	7.6
≥ 35	4.9	72.1	11.4	2.9	75.5	25.0	72.8	48.4	87.4	4.2	19.6	2.0	23.8	32.9	26.0	12.8	5.3	3.8	20.9	4.7
Parental education																				
Both educated	17.7	78.8	11.8	10.4	92.7	21.8	81.1	46.2	91.4	5.5	11.3	0.7	15.6	49.3	33.2	23.0	2.6	4.1	28.5	6.7
Mother educated	14.4	83.6	15.7	16.4	88.3	8.6	87.3	39.1	93.4	2.5	10.6	13.9	24.5	41.7	36.3	32.6	3.8	0.0	32.6	7.6
Father educated	6.8	71.6	9.3	4.6	77.9	11.8	77.6	40.4	83.9	9.6	15.3	0.7	24.4	33.8	22.5	15.6	1.9	4.3	18.5	9.3
Both uneducated	9.1	57.0	7.2	6.7	71.9	4.5	76.7	41.0	84.8	3.1	23.2	0.7	25.6	28.4	19.4	11.5	0.5	0.5	12.5	5.4
Number of children ever born																				
Upto 2	15.6	73.0	9.0	8.6	86.0	15.4	80.2	44.2	88.0	4.7	15.2	0.9	19.8	43.5	30.6	22.0	1.6	2.3	24.3	8.1
03 – 05	12.6	72.2	11.6	11.4	83.2	14.3	80.2	46.2	89.0	7.2	14.2	3.6	21.9	41.0	31.5	20.1	1.2	5.8	25.4	6.9
06+	4.8	72.8	12.7	2.8	80.7	12.5	77.9	33.4	87.6	6.3	14.6	0.4	20.9	29.4	11.6	9.9	5.3	0.0	13.4	4.4
Number of person/per-room																				
1	34.4	47.9	0.5	0.0	82.3	24.3	27.0	20.8	65.6	21.3	6.5	0.0	27.8	18.9	10.4	6.5	0.0	0.0	6.5	9.0
2	23.7	62.8	7.5	10.3	84.0	19.2	82.7	37.0	87.2	2.5	9.5	1.2	12.1	35.0	36.3	25.2	3.1	0.2	27.6	4.8
3 – 4	13.2	74.5	10.6	8.9	85.5	14.6	81.1	44.3	88.8	5.4	14.7	0.9	19.5	45.6	30.9	20.4	1.4	1.7	23.0	8.4
5+	9.2	72.8	11.2	7.9	82.2	13.2	78.1	43.1	88.1	6.9	16.3	3.1	24.5	33.6	21.0	16.6	3.0	6.1	22.0	5.7
Type of family																				
Nuclear	12.4	75.2	14.5	10.0	87.1	11.3	82.9	39.5	91.6	5.8	14.1	0.3	19.3	40.8	25.5	18.1	2.1	4.7	23.0	5.3
Joint	11.5	72.7	9.5	7.6	84.4	16.0	77.5	46.0	84.8	6.0	13.5	0.4	18.0	37.8	25.8	17.3	0.1	2.1	19.0	7.2
Extended	15.3	70.1	7.4	8.5	80.8	16.1	79.7	43.0	89.5	5.5	17.3	5.1	25.9	43.6	33.3	23.9	5.0	2.6	28.3	9.1
Access to improved source of drinking water																				
Yes	13.2	74.1	10.3	8.3	85.8	14.6	78.8	42.0	87.6	5.5	13.7	1.6	19.4	42.1	28.6	19.8	1.8	3.0	23.1	6.9

Table B.7: Consumption according to World Health Organization Recommended Food Groups among non-breastfed children 6-23 months, in the day or night preceding the interview by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	NON-BREASTFEEDING CHILDREN																			
No	9.9	62.1	12.1	11.3	71.6	14.3	88.2	52.1	93.3	8.1	23.6	2.3	30.6	26.3	21.6	16.1	4.1	3.7	21.3	9.1
Access to improved source of sanitation																				
Yes	18.5	74.6	10.9	12.1	88.3	19.6	81.0	42.2	89.7	6.2	11.3	2.5	18.2	41.6	35.7	24.0	3.0	3.8	29.3	6.3
No	6.6	70.6	10.0	4.8	79.7	9.0	78.5	44.1	86.6	5.3	18.7	0.8	23.3	39.0	19.1	14.3	1.0	2.3	15.8	8.1
Hand washing both soap and water available																				
Yes	17.3	73.6	8.8	9.1	87.0	16.2	80.9	44.7	89.5	5.0	13.9	2.1	19.6	40.3	31.2	22.7	2.1	2.4	25.6	6.2
No	6.4	71.4	13.0	7.9	80.1	12.2	78.2	40.7	86.4	6.9	16.0	1.1	22.2	40.5	22.8	14.5	2.0	4.0	18.9	8.5
Decision on HH purchases																				
Someone else	15.7	70.9	8.8	7.8	85.2	16.0	72.6	42.8	83.6	4.7	14.5	0.1	18.1	44.6	31.8	20.9	1.5	2.9	23.5	7.2
Husband alone	9.4	69.4	12.1	9.2	78.9	12.6	80.4	36.5	85.7	6.9	17.0	0.9	23.0	37.9	14.9	15.0	1.8	0.6	15.7	5.9
Husband and wife jointly	13.2	79.6	11.0	8.2	90.9	13.6	83.3	46.0	93.0	4.4	13.7	1.4	18.3	39.4	31.9	19.3	2.7	5.2	25.5	7.5
Wife alone	17.1	45.1	4.8	14.0	53.8	29.0	93.7	70.8	96.3	18.3	9.3	23.5	43.6	39.6	64.1	46.0	2.7	3.1	51.7	13.3
Working status by occupation																				
Agriculture	0.2	64.7	12.3	9.5	73.9	15.4	70.6	45.6	80.9	0.0	15.7	0.0	15.7	19.2	9.8	4.7	4.8	0.0	9.5	0.0
Non-agriculture	10.4	75.0	20.1	12.2	87.2	10.3	83.0	37.9	93.5	3.9	13.8	2.6	19.0	38.3	28.4	20.7	1.6	6.0	26.7	4.5
Not working	14.2	73.0	8.9	8.0	84.6	15.2	80.0	43.7	88.0	6.5	14.9	1.7	21.3	42.4	29.2	20.4	1.9	2.9	23.4	8.1
Exposure to media																				
Media exposure	16.6	74.8	12.0	10.8	88.6	21.1	81.3	46.2	89.1	7.5	15.4	2.0	22.9	47.2	35.2	23.9	1.9	3.5	28.3	6.8
No media exposure	9.0	70.5	8.8	6.3	79.7	7.7	78.2	39.8	87.3	3.9	14.2	1.4	18.3	33.2	20.0	14.7	2.3	2.6	17.3	7.5
Wealth index																				
Poorest	0.4	58.6	13.3	6.1	67.6	8.5	81.9	37.5	87.8	2.4	22.5	0.9	23.5	26.9	10.3	5.6	0.0	0.8	6.5	8.5
Poorer	7.3	78.4	4.8	3.2	85.0	5.3	76.6	38.4	84.0	4.9	14.5	0.8	19.4	32.0	14.9	11.3	2.9	2.0	14.7	7.4
Middle	9.9	72.1	13.5	8.2	82.0	8.7	79.2	37.1	85.0	7.8	12.1	2.4	21.6	45.5	31.7	17.6	1.5	10.0	25.5	6.4
Richer	11.0	78.6	10.9	10.7	88.4	18.1	80.0	52.5	91.6	7.2	17.9	3.8	26.7	42.3	31.5	22.6	3.9	0.5	24.6	7.3
Richest	29.5	70.9	10.5	12.7	91.1	27.1	81.4	45.4	91.2	5.3	9.4	0.2	12.7	49.2	42.0	32.6	1.2	2.1	35.6	6.6
Residence																				
Rural	7.0	72.5	9.2	4.6	80.6	10.1	79.1	43.0	86.0	5.4	18.2	1.4	23.7	37.6	21.8	13.6	2.5	2.9	16.9	7.8
Urban	21.8	73.1	12.4	14.7	89.8	21.4	80.9	43.3	91.6	6.3	9.5	2.2	15.9	44.7	37.0	28.3	1.5	3.3	32.1	6.1
Region																				
Punjab	10.6	84.3	10.4	7.9	92.6	10.5	79.6	37.9	87.7	3.9	9.2	1.6	14.5	43.0	31.0	19.0	2.3	2.6	22.5	5.2
Sindh	21.8	61.7	13.0	8.4	80.0	27.7	79.1	50.7	93.2	6.0	22.5	0.9	25.3	29.7	22.3	18.7	1.8	4.1	22.8	5.2
Khyber Pakhtunkhwa	11.2	41.9	5.7	12.9	54.6	17.5	81.6	61.2	86.9	14.8	30.6	2.1	43.1	44.3	23.6	25.0	1.6	5.1	28.9	18.9
Balochistan	13.7	45.1	17.8	4.9	70.6	15.3	78.5	33.2	81.6	5.4	20.6	3.8	25.9	24.6	11.4	4.3	0.4	0.7	4.6	3.4
ICT Islamabad	38.4	60.1	12.7	26.2	95.3	31.3	74.7	52.9	85.5	9.7	5.2	4.8	18.4	59.5	43.8	24.5	6.1	1.4	30.5	6.9

Table B.7: Consumption according to World Health Organization Recommended Food Groups among non-breastfed children 6-23 months, in the day or night preceding the interview by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
	NON-BREASTFEEDING CHILDREN																			
Gilgit Baltistan	13.4	21.6	1.0	0.0	32.2	1.7	92.2	52.5	92.7	0.0	25.7	3.4	26.3	58.0	31.0	59.0	0.4	0.0	59.0	36.3
Division																				
Bahawalpur	0.0	90.3	8.6	3.5	90.3	13.6	72.2	24.7	85.4	0.0	7.8	0.0	7.8	43.5	9.8	15.6	0.0	0.0	15.6	4.6
Dera Ghazi Khan	4.9	90.6	0.0	0.0	95.5	4.9	86.3	28.1	86.3	0.0	6.3	0.0	6.3	61.7	38.9	25.0	0.0	0.0	25.0	4.9
Faisalabad	9.4	95.8	24.9	6.4	100.0	10.0	80.7	35.5	86.7	3.4	5.2	0.0	8.6	47.0	36.8	23.3	2.5	3.4	26.6	5.9
Gujranwala	12.9	78.9	12.8	7.3	94.2	9.0	66.7	48.2	83.9	8.0	13.2	0.0	19.0	38.5	35.4	16.3	6.8	3.6	23.4	4.5
Lahore	19.2	77.4	13.9	16.1	93.1	9.5	90.9	50.5	96.1	8.2	6.7	4.9	19.8	39.8	28.0	22.9	0.0	4.7	27.6	3.1
Multan	6.5	78.7	10.9	0.0	90.9	12.7	78.1	37.1	81.7	5.3	0.0	5.7	11.0	30.1	28.3	19.7	0.0	0.0	19.7	0.0
Rawalpindi	22.8	90.9	3.7	19.2	90.9	27.5	66.1	25.4	86.6	0.0	16.0	0.0	16.0	60.2	52.4	21.8	8.5	8.4	30.3	25.4
Sahiwal	6.0	100.0	0.0	0.0	100.0	2.6	79.6	33.3	82.2	0.0	9.7	0.0	9.7	33.6	26.1	3.5	0.0	0.0	3.5	0.0
Sargodha	2.4	56.5	0.0	8.9	65.4	10.4	84.7	31.7	88.0	0.0	31.4	0.0	31.4	41.3	44.7	16.9	9.8	0.0	23.9	8.1
Banbhore/ Thatta	17.4	46.9	0.0	0.0	51.4	21.1	100.0	68.1	100.0	0.0	35.7	0.0	35.7	21.1	30.3	12.9	0.0	0.0	12.9	25.5
Hyderabad	7.8	59.8	13.0	16.9	76.7	7.4	74.0	55.6	74.0	14.7	41.2	0.0	41.2	45.2	22.3	34.3	0.0	7.1	34.3	3.9
Karachi	39.6	50.1	18.4	16.5	86.9	39.9	70.5	41.6	91.8	0.0	10.6	0.0	10.6	41.3	35.9	24.1	2.7	4.2	31.1	6.2
Larkana	20.4	65.6	18.7	0.0	72.5	11.7	100.0	58.8	100.0	0.0	50.1	0.0	50.1	26.3	6.7	6.7	0.0	6.8	13.5	0.0
Mirpur Khas	5.4	74.0	26.6	5.4	83.0	35.4	84.7	52.5	100.0	17.8	19.8	6.9	26.7	14.4	13.6	10.8	6.9	6.9	17.8	0.0
Shaheed Benazirabad	30.9	87.1	0.0	0.0	100.0	54.7	51.4	14.4	87.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sukkur	7.8	76.1	0.0	0.0	81.2	14.3	82.0	62.6	100.0	12.4	19.3	0.0	31.7	23.6	11.7	18.9	0.0	1.6	20.6	0.0
Bannu	0.0	20.1	20.1	20.1	40.3	28.1	89.9	50.7	89.9	19.1	32.0	0.0	41.1	48.9	20.1	10.1	0.0	9.0	19.1	30.2
Dera Ismail Khan	0.0	82.7	0.0	0.0	82.7	6.4	28.1	24.1	31.4	20.0	0.0	0.0	20.0	26.3	0.0	3.4	0.0	0.0	3.4	0.0
Hazara	15.2	43.2	0.0	20.0	46.6	20.4	79.5	68.6	79.5	15.1	10.9	0.0	26.0	27.3	34.0	13.2	1.4	4.6	17.9	26.1
Kohat	20.0	15.5	5.2	29.6	45.2	32.8	73.7	46.3	94.8	10.6	11.6	10.6	32.8	55.6	9.5	35.9	10.6	10.6	57.1	43.2
Malakand	5.1	28.5	10.0	5.1	44.6	5.1	89.2	57.2	93.5	10.6	48.2	0.0	53.9	43.4	6.6	29.5	0.0	0.0	29.5	1.7
Mardan	3.2	34.7	0.0	0.0	37.8	25.5	92.5	66.9	92.5	25.5	45.3	7.5	61.4	27.1	19.6	3.2	3.5	0.0	6.6	20.4
Peshawar	19.4	59.3	5.1	13.3	75.6	16.3	84.7	72.4	94.6	12.5	39.0	2.6	50.9	63.4	40.0	45.4	0.8	9.4	46.1	19.6
Kalat	0.0	56.6	20.6	5.6	70.7	10.3	86.1	23.3	86.1	1.2	23.3	4.7	24.5	20.3	4.1	5.6	0.0	0.0	5.6	4.7
Makran	31.8	36.4	31.8	31.8	100.0	0.0	100.0	63.6	100.0	36.4	0.0	0.0	36.4	31.8	31.8	31.8	31.8	63.6	63.6	31.8
Nasirabad	23.1	51.4	4.1	0.0	63.2	24.9	73.8	48.5	87.8	10.1	24.5	0.0	24.5	19.4	10.8	0.0	0.0	0.0	0.0	0.0
Quetta	33.1	30.1	12.5	6.9	77.6	19.1	63.3	30.9	63.3	9.0	9.2	5.5	23.0	18.9	8.0	4.0	0.0	0.0	4.0	0.0
Sibi	78.0	39.6	16.3	0.0	100.0	38.3	17.6	0.0	55.9	17.6	0.0	0.0	17.6	22.0	0.0	0.0	0.0	0.0	0.0	0.0
Zhob	20.2	7.6	34.7	0.0	54.9	20.4	85.2	76.8	95.7	9.4	34.7	0.0	44.1	75.4	65.6	0.0	0.0	0.0	0.0	6.3
Baltistan	40.9	27.2	2.2	0.0	54.2	0.0	66.9	40.2	66.9	0.0	16.1	16.8	19.0	32.1	18.3	26.2	2.2	0.0	26.2	0.0
Gilgit	6.4	20.1	0.7	0.0	26.5	2.1	98.6	55.7	99.3	0.0	28.1	0.0	28.1	64.6	34.3	67.3	0.0	0.0	67.3	45.6

Table B.8: Consumption according to World Health Organization Recommended Food Groups among non-breastfed children 6-23 months, in the day or night preceding the interview by Health characteristics

Health characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
NON-BREASTFEEDING CHILDREN																				
All	**12.9**	**72.7**	**10.5**	**8.6**	**84.2**	**14.6**	**79.8**	**43.1**	**88.2**	**5.8**	**14.8**	**1.7**	**20.6**	**40.4**	**27.8**	**19.4**	**2.1**	**3.1**	**22.9**	**7.1**
Birth order of child																				
1	18.0	73.7	8.6	6.3	86.5	14.7	82.0	44.8	90.6	4.7	16.1	1.5	21.3	49.0	34.8	24.0	1.7	3.8	27.9	5.6
2 – 3	11.9	71.2	9.5	11.6	83.9	17.8	76.1	45.0	85.9	6.3	15.1	2.6	21.2	33.3	30.1	21.9	1.8	1.3	23.6	9.8
4 – 5	13.7	74.3	14.5	11.8	84.0	8.3	86.6	45.1	89.9	6.0	11.6	1.7	17.8	52.7	25.5	14.1	0.1	9.2	21.2	6.4
6+	4.8	73.2	12.5	2.8	80.9	12.6	78.0	33.5	87.8	6.3	14.7	0.1	20.7	29.3	11.6	10.0	5.3	0.0	13.5	4.5
Birth interval																				
No previous birth	17.4	74.6	8.3	6.6	87.0	14.2	82.1	45.9	91.0	4.5	15.6	1.4	20.5	48.6	35.2	25.4	1.6	3.7	29.1	6.3
<24 months	14.0	73.1	14.0	12.9	87.5	13.2	79.0	29.6	85.5	3.6	8.9	0.4	11.7	38.9	22.8	10.5	0.1	4.7	13.8	6.5
>= 24 months	9.1	71.3	10.1	7.7	80.6	15.6	78.7	48.4	87.8	7.8	17.4	2.6	25.5	35.4	25.4	20.1	3.5	1.7	23.5	8.1
Birth at health facility																				
Yes	17.1	75.6	12.5	10.6	89.0	16.7	78.2	42.5	87.7	7.1	12.4	1.1	18.6	40.8	33.4	23.4	1.0	4.0	26.6	9.2
No	6.9	68.6	7.6	5.8	77.4	11.5	82.1	43.9	89.0	3.9	18.1	2.5	23.5	39.8	20.0	13.8	3.7	1.8	17.7	4.2
Mother and child Continuum of care																				
All	23.3	78.0	13.4	18.9	92.4	24.9	72.8	38.0	87.5	5.8	7.4	0.4	12.5	39.6	40.3	23.9	1.6	3.6	27.6	10.0
At least 2	11.8	71.4	10.5	3.9	84.0	10.8	85.4	46.0	89.5	4.7	16.9	3.7	22.7	43.4	29.5	23.7	1.1	3.6	27.1	7.9
At least 1	8.6	76.3	10.5	7.1	87.2	9.3	74.2	33.3	85.4	10.6	15.5	0.8	26.1	31.3	22.2	13.4	3.2	1.8	17.4	6.2
None	5.5	66.7	7.0	5.2	73.5	12.1	82.6	50.6	89.0	4.4	19.4	0.6	23.1	42.4	14.8	11.6	3.4	2.5	14.7	3.4
Received Vitamin A dose postpartum																				
Yes	13.4	73.5	12.4	11.7	80.9	19.3	83.1	61.0	98.1	7.6	27.3	0.2	30.5	41.9	38.0	24.3	1.5	2.6	27.1	14.4
No	12.8	72.6	10.2	8.1	84.7	13.8	79.3	40.3	86.7	5.5	12.9	1.9	19.1	40.1	26.3	18.7	2.2	3.1	22.3	6.0
Took Iron tablets during last pregnancy																				
Yes	18.5	74.5	12.2	12.7	88.3	16.4	82.3	43.1	91.3	6.1	13.2	1.2	18.1	47.1	34.7	26.9	1.4	4.4	31.1	9.5
No	8.2	71.3	9.0	5.2	80.8	13.1	77.7	43.1	85.7	5.5	16.1	2.1	22.7	34.7	22.1	13.2	2.7	2.0	16.0	5.2
Mother's BMI																				
≥ 18.5	13.4	69.5	8.3	6.8	81.8	15.8	81.1	41.6	88.7	5.2	10.5	3.4	17.9	38.2	30.1	20.2	2.4	1.4	22.8	6.7
<18.5	6.5	70.4	21.6	8.4	71.0	15.3	87.4	52.5	93.5	0.0	14.0	0.0	14.0	33.3	31.3	28.1	0.0	3.3	31.4	16.3
Child fully immunized																				
Yes	14.4	75.4	12.5	11.0	85.1	17.5	84.8	42.9	91.8	6.2	10.1	2.9	16.8	45.9	34.5	25.0	2.6	4.9	30.8	8.6
No	11.2	69.9	8.3	6.1	83.2	11.5	74.6	43.3	84.5	5.3	19.8	0.4	24.7	34.6	20.8	13.5	1.5	1.1	14.6	5.6
Diarrhea																				
Yes	15.0	71.2	12.2	9.5	84.0	15.0	79.6	39.7	86.9	6.6	13.7	0.4	19.4	40.4	23.2	23.8	0.1	6.6	27.8	7.2
No	11.9	73.5	9.6	8.1	84.3	14.4	79.9	44.7	88.9	5.4	15.3	2.4	21.2	40.4	30.1	17.3	3.0	1.4	20.5	7.1
Treatment for Diarrhea																				
Yes	15.5	71.2	12.3	9.9	84.2	15.6	79.6	39.7	87.2	6.8	12.7	0.4	18.7	39.9	23.7	24.4	0.1	6.8	28.6	7.5
No	1.1	70.7	9.8	0.0	80.5	0.0	78.8	37.6	78.8	0.0	36.5	0.0	36.5	53.1	11.3	9.5	0.0	0.0	9.5	0.0
No Diarrhea reported																				
Size at birth (mother's perception)																				

Table B.8: Consumption according to World Health Organization Recommended Food Groups among non-breastfed children 6-23 months, in the day or night preceding the interview by Health characteristics

Health characteristics	Dairy products					Grains, roots, & tubers				Vitamin A rich foods				Other fruits & vegetables	Eggs	Meat etc.				Legumes and nuts
	Infant formula	Other milk	Yogurt	Cheese etc.	Any	Cerelac etc.	Bread etc.	Potatoes etc.	Any	Pumpkin, carrots etc.	Dark green leafy vegetables etc.	Mangoes, papayas etc.	Any			Beef, lamb etc.	Liver, kidney etc.	Fish etc.	Any	
	A					B				C				D	E	F				G
NON-BREASTFEEDING CHILDREN																				
Large	5.1	84.7	17.4	4.2	87.3	15.6	87.9	44.4	90.3	5.4	7.7	0.0	13.1	50.3	40.9	15.0	0.0	6.0	21.0	2.1
Average	13.6	72.7	10.1	8.3	84.6	15.4	80.8	44.1	89.6	5.2	16.0	2.1	22.0	41.9	29.1	20.0	2.3	1.6	22.6	8.0
Small	13.0	68.9	9.4	10.9	82.0	11.6	74.2	39.5	83.2	7.7	13.1	1.1	18.8	32.4	19.7	19.1	2.0	6.8	24.4	6.0
Child received vitamin A																				
Yes	11.9	75.1	9.8	8.0	84.5	12.4	82.7	44.4	89.7	6.1	13.6	2.2	19.9	40.9	26.9	19.1	2.0	3.4	23.0	7.4
No	15.6	66.0	12.3	10.4	83.4	20.8	71.4	39.2	84.2	4.9	18.0	0.3	22.8	39.0	30.5	20.3	2.2	2.1	22.5	6.4
Stunted																				
Yes	11.3	65.1	9.1	8.5	73.3	12.4	83.3	42.7	90.9	1.9	10.5	9.5	20.5	28.2	26.9	20.5	1.0	1.9	22.4	8.7
No	10.7	74.7	11.4	6.5	84.5	16.4	80.2	43.2	87.8	6.6	11.7	0.1	17.4	45.4	33.2	22.8	3.3	1.4	26.0	7.6
Wasted																				
Yes	15.4	87.0	14.0	11.5	93.7	13.9	73.7	13.3	84.4	6.7	8.0	1.7	16.4	36.3	15.0	2.9	6.1	1.7	10.7	14.8
No	9.8	67.5	9.8	6.2	77.4	15.3	83.1	50.2	90.0	4.5	12.1	3.8	19.0	40.1	34.9	26.6	1.6	1.5	28.1	6.4
Underweight																				
Yes	15.0	78.6	12.0	7.8	86.1	13.1	82.3	25.9	90.9	4.9	9.1	2.3	15.2	39.3	23.6	9.0	4.3	1.2	14.6	11.6
No	9.4	68.6	10.1	7.0	78.6	15.7	80.9	49.3	88.1	5.0	12.1	3.8	19.7	39.4	33.7	26.7	1.8	1.7	28.5	6.7

Table B.9: Consumption of Food Rich in Vitamin A and Iron among breastfed and non-breastfed children 6-23 months by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Among breastfed children 6-23 months, percentage fed:		Number of breastfed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:		Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:		Number of all children 6-23 months
	Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]		Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]		Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]	
All	**42.7**	**33.0**	**2,135**	**49.8**	**39.1**	**720**	**44.5**	**34.6**	**2,855**
Child's sex							**χ=0.358**	**χ=0.235**	
Male	44.5	33.9	1,106	48.9	39.3	349	45.6	35.2	1,455
Female	40.7	32.1	1,029	50.6	38.9	371	43.3	33.9	1,400
Age of child (in months)							**χ=0.000**	**χ=0.000**	
6 – 8	26.5	22.3	383	18.7	17.2	72	25.3	21.5	455
9 – 11	30.2	22.1	458	40.8	30.0	96	32.0	23.5	554
12 – 17	50.7	38.3	880	47.9	39.7	287	50.0	38.6	1,167
18 – 23	54.5	43.9	414	63.6	47.7	264	58.1	45.4	679
Age of mother							**χ=0.044**	**χ=0.003**	
15-18	29.7	14.5	44	58.8	57.7	11	35.6	23.3	55
19-34	42.8	33.5	1,774	49.3	39.1	614	44.5	34.9	2,387
≥ 35	43.9	33.2	318	51.5	37.0	95	45.7	34.0	413
Parental education							**χ=0.000**	**χ=0.000**	
Both educated	51.8	46.2	786	54.1	46.6	331	52.4	46.3	1,117
Mother educated	47.8	38.1	127	51.7	50.6	55	49.0	41.9	182
Father educated	36.7	25.2	632	50.5	33.7	180	39.8	27.1	812
Both uneducated	35.9	22.8	591	39.1	25.1	154	36.6	23.3	745
Number of children ever born							**χ=0.007**	**χ=0.000**	
Upto 2	44.5	36.1	898	52.9	42.0	367	46.9	37.8	1,265
03 – 05	41.5	32.5	875	52.2	44.5	236	43.8	35.1	1,111
06+	41.1	26.7	363	35.1	18.8	117	39.6	24.8	479
Number of person/per-room							**χ=0.000**	**χ=0.000**	
1	59.5	50.8	24	32.1	10.8	6	54.3	43.2	29
2	58.4	49.4	130	59.9	52.3	61	58.9	50.3	191
3 – 4	45.8	37.0	944	50.7	42.3	406	47.2	38.6	1,350
5+	37.5	26.9	1,038	46.2	31.1	247	39.2	27.7	1,285
Type of family							**χ=0.796**	**χ=0.340**	
Nuclear	43.0	31.8	727	49.4	39.4	224	44.5	33.6	951
Joint	41.7	32.5	854	45.7	35.2	291	42.7	33.2	1,145
Extended	43.8	35.5	554	56.0	44.3	205	47.1	37.9	759
Access to improved source of drinking water							**χ=0.273**	**χ=0.000**	
Yes	42.0	33.8	1,815	49.1	39.5	641	43.8	35.3	2,455
No	46.8	28.4	320	55.3	35.6	79	48.5	29.8	400

Table B.9: Consumption of Food Rich in Vitamin A and Iron among breastfed and non-breastfed children 6-23 months by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Among breastfed children 6-23 months, percentage fed:		Number of breastfed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:		Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:		Number of all children 6-23 months
	Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]		Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]		Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]	
Access to improved source of sanitation							**χ=0.061**	**χ=0.000**	
Yes	45.2	38.9	966	56.1	48.8	378	48.3	41.7	1,345
No	40.6	28.2	1,169	42.8	28.4	341	41.1	28.2	1,510
Hand washing both soap and water available							**χ=0.000**	**χ=0.000**	
Yes	47.3	40.2	1,046	52.1	42.3	429	48.7	40.8	1,475
No	38.2	26.1	1,089	46.4	34.3	291	40.0	27.8	1,380
Decision on HH purchases							**χ=0.202**	**χ=0.004**	
Someone else	42.9	34.0	644	49.9	42.6	200	44.5	36.0	844
Husband alone	42.3	31.2	641	42.2	25.0	222	42.3	29.6	863
Husband and wife jointly	42.3	33.9	737	53.5	44.8	271	45.3	36.8	1,008
Wife alone	46.3	32.5	113	74.9	72.6	27	51.8	40.2	140
Working status by occupation							**χ=0.000**	**χ=0.000**	
Agriculture	29.5	19.3	200	25.2	14.6	46	28.7	18.5	247
Non-agriculture	34.8	26.0	275	55.7	40.5	89	39.9	29.5	364
Not working	45.6	35.8	1,660	50.8	40.8	585	47.0	37.1	2,245
Exposure to media							**χ=0.000**	**χ=0.000**	
Media exposure	49.7	41.9	936	57.8	46.9	369	52.0	43.3	1,304
No media exposure	37.2	26.1	1,200	41.4	30.9	351	38.2	27.2	1,551
Wealth index							**χ=0.000**	**χ=0.000**	
Poorest	32.4	20.1	502	33.4	16.3	101	32.6	19.5	603
Poorer	39.8	24.8	499	38.7	26.8	138	39.5	25.3	637
Middle	41.4	32.1	433	54.4	43.8	139	44.6	34.9	571
Richer	47.5	43.5	417	54.4	41.8	176	49.5	43.0	593
Richest	60.8	56.3	284	60.2	56.1	167	60.6	56.2	451
Residence							**χ=0.000**	**χ=0.000**	
Rural	40.0	29.0	1,548	44.4	31.4	435	41.0	29.5	1,983
Urban	49.8	43.6	587	57.9	50.9	285	52.5	46.0	872
Region							**χ=0.000**	**χ=0.000**	
Punjab	38.8	34.2	1,143	47.9	40.5	467	41.4	36.0	1,609
Sindh	47.1	35.8	494	49.7	34.0	118	47.6	35.5	612
Khyber Pakhtunkhwa	53.1	28.9	371	61.7	43.8	95	54.9	32.0	467
Balochistan	23.5	18.4	101	35.6	15.0	31	26.4	17.6	131
ICT Islamabad	60.9	55.3	8	67.5	64.2	5	63.5	58.8	12

Table B.9: Consumption of Food Rich in Vitamin A and Iron among breastfed and non-breastfed children 6-23 months by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Among breastfed children 6-23 months, percentage fed:		Number of breastfed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:		Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:		Number of all children 6-23 months
	Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]		Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]		Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]	
Gilgit Baltistan	50.5	40.3	19	76.3	66.6	4	55.3	45.3	23
Division							**χ=0.000**	**χ=0.000**	
Bahawalpur	20.5	15.5	119	30.2	25.3	61	23.8	18.8	180
Dera Ghazi Khan	23.3	22.3	167	49.1	42.8	40	28.3	26.3	207
Faisalabad	50.0	41.2	146	49.6	47.3	56	49.9	42.9	203
Gujranwala	22.7	22.7	112	52.4	45.8	64	33.5	31.1	176
Lahore	46.5	42.0	236	56.5	43.1	113	49.8	42.3	349
Multan	27.3	25.4	109	28.3	28.3	38	27.5	26.2	147
Rawalpindi	66.3	58.0	78	60.2	56.6	30	64.6	57.6	108
Sahiwal	49.7	40.3	89	33.3	29.6	38	44.8	37.1	127
Sargodha	53.7	48.2	86	70.5	48.0	26	57.6	48.1	113
Banbhore/ Thatta	56.9	40.0	43	66.0	30.3	12	58.9	37.9	55
Hyderabad	49.5	37.7	100	61.1	41.7	15	51.0	38.2	115
Karachi	52.1	50.5	100	53.0	48.8	40	52.4	50.0	140
Larkana	50.3	39.0	75	56.8	13.5	11	51.1	35.8	86
Mirpur Khas	34.9	19.2	81	40.3	31.3	15	35.8	21.1	96
Shaheed Benazirabad	28.1	15.4	41	0.0	0.0	7	24.0	13.2	48
Sukkur	54.4	37.9	54	45.0	25.0	18	52.0	34.6	72
Bannu	55.8	37.8	18	41.1	39.2	9	50.8	38.3	27
Dera Ismail Khan	33.4	21.0	37	23.3	3.4	6	32.0	18.6	42
Hazara	44.8	24.4	49	51.5	44.6	20	46.8	30.3	69
Kohat	60.4	41.7	19	62.3	62.3	7	60.9	47.1	26
Malakand	55.3	16.9	133	70.6	36.2	19	57.2	19.3	152
Mardan	62.2	33.0	42	70.1	23.1	9	63.5	31.4	51
Peshawar	57.0	49.7	74	75.6	61.6	26	61.8	52.8	99
Kalat	18.2	12.2	43	34.2	9.7	16	22.6	11.6	60
Makran	75.0	75.0	6	100.0	63.6	0	76.3	74.4	7
Nasirabad	24.3	11.3	16	24.5	10.8	4	24.3	11.2	20
Quetta	15.5	13.1	22	28.2	9.4	7	18.7	12.2	29
Sibi	5.5	3.6	3	17.6	0.0	0	6.7	3.3	3
Zhob	34.8	34.8	11	75.0	65.6	3	42.8	40.9	13
Baltistan	31.7	24.4	5	40.1	40.1	1	33.1	26.9	6
Gilgit	56.5	45.4	14	85.6	73.4	4	62.2	50.9	18

Table B.10: Consumption of Food Rich in Vitamin A and Iron among breastfed and non-breastfed children 6-23 months by Health characteristics

Health characteristics	Among breastfed children 6-23 months, percentage fed:			Among non-breastfed children 6-23 months, percentage fed:			Among all children 6-23 months, percentage fed:		
	Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]	Number of breastfed children 6-23 months	Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]	Number of non-breastfed children 6-23 months	Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]	Number of all children 6-23 months
All	**42.7**	**33.0**	**2,135**	**49.8**	**39.1**	**720**	**44.5**	**34.6**	**2,855**
Birth order of child							**χ=0.005**	**χ=0.000**	
1	40.9	32.4	477	58.2	48.0	216	46.3	37.2	693
2 – 3	47.0	37.9	785	50.1	40.3	277	47.8	38.5	1,062
4 – 5	38.9	30.7	511	47.9	39.9	111	40.5	32.3	622
6+	41.1	26.7	363	35.0	18.9	116	39.6	24.8	479
Birth interval							**χ=0.355**	**χ=0.330**	
No previous birth	41.0	32.5	479	58.4	48.5	224	46.5	37.6	703
<24 months	42.3	34.3	524	38.6	30.5	173	41.4	33.3	698
>= 24 months	43.6	32.7	1,132	49.8	37.2	322	45.0	33.7	1,454
Birth at health facility							**χ=0.000**	**χ=0.000**	
Yes	47.7	40.6	1,088	56.3	46.6	422	50.1	42.3	1,509
No	37.4	25.2	1,048	40.6	28.4	298	38.1	25.9	1,346
Mother and child Continuum of care							**χ=0.000**	**χ=0.000**	
All	57.3	50.5	320	57.7	51.2	188	57.5	50.8	508
At least 2	43.7	36.7	944	54.6	44.4	258	46.0	38.3	1,202
At least 1	38.0	27.5	370	46.3	30.8	107	39.9	28.3	477
None	34.9	19.0	502	35.6	22.5	167	35.1	19.9	669
Received Vitamin A dose postpartum							**χ=0.000**	**χ=0.000**	
Yes	54.9	46.5	300	66.0	53.4	96	57.6	48.2	397
No	40.7	30.8	1,835	47.3	36.9	624	42.3	32.4	2,458
Took Iron tablets during last pregnancy							**χ=0.000**	**χ=0.000**	
Yes	48.0	39.7	976	56.8	49.9	328	50.2	42.3	1,303
No	38.2	27.4	1,159	44.0	30.0	392	39.7	28.1	1,552
Mother's BMI							**χ=0.069**	**χ=0.004**	
≥ 18.5	44.4	37.2	591	49.7	41.8	232	45.9	38.5	822
<18.5	33.4	18.3	150	54.0	43.4	22	36.0	21.5	172
Child fully immunized							**χ=0.000**	**χ=0.000**	
Yes	44.3	36.1	890	56.1	50.2	370	47.8	40.2	1,260
No	41.5	30.9	1,245	43.1	27.3	350	41.9	30.1	1,595
Diarrhea							**χ=0.491**	**χ=0.907**	
Yes	42.6	32.0	744	49.2	38.5	235	44.2	33.5	979
No	42.7	33.6	1,391	50.1	39.4	485	44.6	35.1	1,877
Treatment for Diarrhea							**χ=0.002**	**χ=0.000**	

Table B.10: Consumption of Food Rich in Vitamin A and Iron among breastfed and non-breastfed children 6-23 months by Health characteristics

Health characteristics	Among breastfed children 6-23 months, percentage fed:		Number of breastfed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:		Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:		Number of all children 6-23 months
	Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]		Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]		Consumed foods rich in Vitamin A[1]	Consumed foods rich in iron[2]	
Yes	44.5	34.3	681	49.6	39.2	225	45.8	35.5	906
No	22.4	7.2	63	37.6	20.4	9	24.4	8.8	72
No Diarrhea reported	42.7	33.6	1,391	50.1	39.4	485	44.6	35.1	1,877
Size at birth (mother's perception)							**χ=0.000**	**χ=0.002**	
Large	33.4	28.3	89	63.6	53.0	52	44.6	37.4	142
Average	45.8	35.5	1,612	50.1	39.5	506	46.8	36.4	2,118
Small	33.2	24.9	434	44.3	33.3	161	36.2	27.2	595
Child received vitamin A							**χ=0.134**	**χ=0.588**	
Yes	45.1	33.8	1,492	48.3	37.9	533	45.9	34.9	2,025
No	37.2	31.3	644	54.1	42.5	186	41.0	33.8	830
Stunted							**χ=0.033**	**χ=0.014**	
Yes	39.1	29.0	285	42.5	34.3	77	39.8	30.2	362
No	47.7	39.6	358	54.1	46.5	143	49.5	41.6	501
Wasted							**χ=0.117**	**χ=0.072**	
Yes	33.0	23.0	108	26.6	19.7	43	31.1	22.1	151
No	46.0	37.3	535	55.8	47.7	177	48.5	39.9	712
Underweight							**χ=0.002**	**χ=0.000**	
Yes	36.4	26.8	226	35.8	27.5	59	36.3	27.0	286
No	47.9	39.3	417	55.3	47.6	161	50.0	41.6	578

Table B.11: Consumption of Food Rich in Carbohydrates, Proteins and Vitamin A among breastfed and non-breastfed children 6-23 months by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Among breastfed children 6-23 months, percentage fed:					Among non-breastfed children 6-23 months, percentage fed:					Among all children 6-23 months, percentage fed:				
	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of non-breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of all children 6-23 months
All	**80.1**	**31.7**	**5.3**	**40.9**	**2,135**	**89.5**	**37.8**	**7.1**	**48.3**	**720**	**82.5**	**33.2**	**5.8**	**42.8**	**2,855**
Child's sex											**χ=0.155**	**χ=0.161**	**χ=0.964**	**χ=0.225**	
Male	81.8	32.4	5.1	42.8	1,106	89.1	38.3	8.3	47.6	349	83.5	33.8	5.8	43.9	1,455
Female	78.4	30.9	5.6	38.9	1,029	89.9	37.4	6.1	48.9	371	81.4	32.6	5.7	41.6	1,400
Age of child (in months)											**χ=0.000**	**χ=0.000**	**χ=0.000**	**χ=0.000**	
6 – 8	61.8	21.5	1.4	25.2	383	63.4	15.9	1.6	17.4	72	62.0	20.6	1.4	24.0	455
9 – 11	71.8	21.2	1.5	28.1	458	83.7	26.3	3.5	36.1	96	73.8	22.1	1.8	29.5	554
12 – 17	86.4	36.2	6.6	48.4	880	93.2	38.5	6.0	46.7	287	88.1	36.7	6.5	48.0	1,167
18 – 23	93.0	43.1	10.4	53.6	414	94.7	47.3	11.2	63.0	264	93.7	44.7	10.7	57.3	679
Age of mother											**χ=0.193**	**χ=0.001**	**χ=0.628**	**χ=0.012**	
15-18	62.4	12.5	5.6	27.7	44	99.8	57.5	0.6	58.6	11	70.0	21.6	4.6	33.9	55
19-34	80.6	31.9	5.6	40.8	1,774	89.5	37.6	7.6	47.6	614	82.9	33.3	6.1	42.5	2,387
≥ 35	80.1	33.2	3.9	43.5	318	88.1	37.0	4.7	51.5	95	81.9	34.0	4.1	45.4	413
Parental education											**χ=0.000**	**χ=0.000**	**χ=0.000**	**χ=0.000**	
Both educated	85.6	44.9	5.2	50.0	786	93.0	44.3	6.7	51.7	331	87.8	44.7	5.6	50.5	1,117
Mother educated	80.4	34.1	3.0	42.8	127	94.1	50.6	7.6	51.7	55	84.5	39.1	4.4	45.5	182
Father educated	75.6	23.6	6.6	34.8	632	84.3	33.7	9.3	49.9	180	77.5	25.8	7.2	38.2	812
Both uneducated	77.8	22.3	4.6	35.0	591	86.3	24.1	5.4	37.8	154	79.5	22.7	4.8	35.6	745
Number of children ever born											**χ=0.184**	**χ=0.000**	**χ=0.383**	**χ=0.025**	
Upto 2	80.9	34.3	4.5	42.3	898	89.3	40.3	8.1	50.9	367	83.4	36.0	5.5	44.8	1,265
03 – 05	79.8	31.3	6.8	40.0	875	90.3	43.3	6.9	50.9	236	82.0	33.9	6.8	42.3	1,111
06+	79.0	26.0	3.8	39.7	363	88.5	18.8	4.4	34.8	117	81.3	24.2	3.9	38.5	479
Number of person/per-room											**χ=0.128**	**χ=0.000**	**χ=0.030**	**χ=0.001**	
1	89.5	50.8	9.3	59.5	24	65.6	10.8	9.0	32.1	6	85.0	43.2	9.2	54.3	29
2	87.3	46.1	3.3	53.7	130	87.8	46.1	4.8	53.7	61	87.4	46.1	3.8	53.7	191
3 – 4	81.4	35.3	4.8	43.8	944	89.9	41.8	8.4	50.0	406	84.0	37.3	5.9	45.7	1,350
5+	77.9	26.1	5.9	36.3	1,038	89.8	29.8	5.7	44.4	247	80.2	26.8	5.9	37.9	1,285
Type of family											**χ=0.480**	**χ=0.476**	**χ=0.956**	**χ=0.737**	
Nuclear	80.4	30.5	5.2	41.3	727	92.5	38.7	5.3	48.6	224	83.2	32.4	5.2	43.0	951
Joint	79.8	31.1	5.7	39.7	854	86.4	33.8	7.2	44.0	291	81.4	31.8	6.0	40.8	1,145
Extended	80.4	34.1	5.0	42.3	554	90.7	42.4	9.1	54.1	205	83.2	36.4	6.1	45.5	759
Access to improved source of drinking water											**χ=0.694**	**χ=0.000**	**χ=0.501**	**χ=0.278**	
Yes	79.8	32.4	4.7	40.3	1,815	89.0	38.1	6.9	47.5	641	82.2	33.9	5.3	42.1	2,455

Table B.11: Consumption of Food Rich in Carbohydrates, Proteins and Vitamin A among breastfed and non-breastfed children 6-23 months by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Among breastfed children 6-23 months, percentage fed:					Among non-breastfed children 6-23 months, percentage fed:					Among all children 6-23 months, percentage fed:				
	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of non-breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of all children 6-23 months
No	81.8	27.5	8.7	44.7	320	93.4	35.6	9.1	55.1	79	84.1	29.2	8.8	46.7	400
Access to improved source of sanitation											**χ=0.288**	**χ=0.000**	**χ=0.888**	**χ=0.072**	
Yes	82.6	37.7	5.6	43.7	966	90.9	47.3	6.3	54.6	378	85.0	40.4	5.8	46.8	1,345
No	78.1	26.7	5.1	38.6	1,169	87.9	27.3	8.1	41.3	341	80.3	26.8	5.8	39.2	1,510
Hand washing both soap and water available											**χ=0.001**	**χ=0.000**	**χ=0.025**	**χ=0.000**	
Yes	82.4	38.9	3.6	45.7	1,046	90.7	40.9	6.2	50.7	428.8	84.8	39.5	4.4	47.2	1475
No	78.0	24.7	6.9	36.3	1,089	87.7	33.2	8.5	44.8	291.1	80.0	26.5	7.3	38.1	1380
Decision on HH purchases											**χ=0.622**	**χ=0.005**	**χ=0.252**	**χ=0.161**	
Someone else	79.3	32.3	5.0	40.6	644	85.7	41.3	7.2	48.1	200	80.8	34.4	5.5	42.4	844
Husband alone	80.6	29.9	7.2	40.6	641	87.0	23.8	5.9	40.8	222	82.3	28.3	6.8	40.6	863
Husband and wife jointly	80.2	32.6	3.9	40.7	737	93.7	43.3	7.5	52.0	271	83.8	35.5	4.8	43.7	1,008
Wife alone	81.9	32.3	6.3	46.0	113	96.3	72.6	13.3	74.9	27	84.6	40.0	7.6	51.6	140
Working status by occupation											**χ=0.019**	**χ=0.000**	**χ=0.041**	**χ=0.000**	
Agriculture	73.2	18.1	2.8	28.0	200	85.0	14.6	0.0	25.2	46	75.4	17.4	2.2	27.5	247
Non-agriculture	79.8	25.0	5.3	33.5	275	93.5	38.1	4.5	52.8	89	83.1	28.2	5.1	38.2	364
Not working	81.0	34.4	5.6	43.7	1,660	89.2	39.6	8.1	49.4	585	83.2	35.8	6.3	45.2	2,245
Exposure to media											**χ=0.001**	**χ=0.000**	**χ=0.184**	**χ=0.000**	
Media exposure	84.8	40.6	3.7	48.0	936	90.8	45.9	6.8	56.8	369	86.5	42.1	4.6	50.5	1,304
No media exposure	76.5	24.7	6.6	35.4	1,200	88.1	29.3	7.5	39.3	351	79.1	25.7	6.8	36.3	1,551
Wealth index											**χ=0.000**	**χ=0.000**	**χ=0.994**	**χ=0.000**	
Poorest	80.7	18.9	6.0	30.6	502	89.7	14.5	8.5	31.0	101	82.2	18.2	6.4	30.6	603
Poorer	73.1	23.7	5.9	38.5	499	84.1	25.7	7.4	36.9	138	75.5	24.2	6.2	38.2	637
Middle	78.0	29.8	5.5	38.7	433	86.1	41.6	6.4	52.2	139	80.0	32.7	5.7	41.9	571
Richer	83.1	43.0	4.9	46.5	417	93.1	40.9	7.3	53.4	176	86.1	42.4	5.6	48.6	593
Richest	90.3	54.3	3.4	58.7	284	92.8	55.4	6.6	59.5	167	91.2	54.7	4.6	59.0	451
Residence											**χ=0.000**	**χ=0.000**	**χ=0.239**	**χ=0.000**	
Rural	77.6	27.6	6.1	38.1	1,548	87.3	30.5	7.8	43.2	435	79.7	28.2	6.5	39.2	1,983
Urban	86.9	42.5	3.1	48.4	587	92.8	49.0	6.1	56.1	285	88.8	44.6	4.1	50.9	872
Region											**χ=0.000**	**χ=0.000**	**χ=0.000**	**χ=0.000**	
Punjab	78.1	32.6	3.9	37.1	1,143	88.6	38.6	5.2	46.0	467	81.1	34.4	4.3	39.7	1,609
Sindh	87.3	34.8	4.5	46.1	494	94.8	34.0	5.2	49.7	118	88.7	34.6	4.6	46.8	612
Khyber Pakhtunkhwa	79.0	27.3	10.3	49.7	371	89.2	43.4	18.9	60.3	95	81.1	30.6	12.1	51.8	467
Balochistan	71.9	18.4	5.8	23.2	101	82.7	15.0	3.4	33.6	31	74.4	17.6	5.2	25.6	131

Table B.11: Consumption of Food Rich in Carbohydrates, Proteins and Vitamin A among breastfed and non-breastfed children 6-23 months by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Among breastfed children 6-23 months, percentage fed:					Among non-breastfed children 6-23 months, percentage fed:					Among all children 6-23 months, percentage fed:				
	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of non-breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of all children 6-23 months
ICT Islamabad	85.7	52.8	10.2	58.4	8	88.5	60.1	6.9	63.4	5	86.8	55.7	8.9	60.3	12
Gilgit Baltistan	81.7	40.0	9.1	50.2	19	92.7	66.0	35.8	75.8	4	83.8	44.9	14.1	55.0	23
Division											**χ=0.000**	**χ=0.000**	**χ=0.000**	**χ=0.000**	
Bahawalpur	75.0	14.8	2.5	19.7	119	85.4	25.3	4.6	30.2	61	78.5	18.4	3.2	23.3	180
Dera Ghazi Khan	84.4	20.8	5.4	21.8	167	86.3	38.3	4.9	44.7	40	84.8	24.2	5.3	26.1	207
Faisalabad	72.1	36.5	3.9	45.3	146	86.7	45.2	5.9	47.5	56	76.2	38.9	4.4	45.9	203
Gujranwala	75.8	22.7	5.7	22.7	112	86.9	45.8	4.5	52.4	64	79.8	31.1	5.3	33.5	176
Lahore	85.8	40.4	1.2	44.9	236	98.2	43.1	3.1	56.5	113	89.8	41.3	1.8	48.7	349
Multan	65.5	25.4	5.9	27.3	109	81.7	19.7	0.0	19.7	38	69.6	23.9	4.4	25.3	147
Rawalpindi	82.2	56.3	9.1	63.1	78	86.6	56.6	25.4	60.2	30	83.4	56.4	13.7	62.3	108
Sahiwal	68.5	37.4	4.0	46.8	89	82.2	25.8	0.0	29.6	38	72.6	33.9	2.8	41.6	127
Sargodha	84.1	48.2	1.0	53.7	86	88.0	44.7	8.1	67.1	26	85.0	47.3	2.7	56.8	113
Banbhore/ Thatta	89.5	40.0	11.7	56.9	43	100.0	30.3	25.5	66.0	12	91.9	37.9	14.7	58.9	55
Hyderabad	91.4	37.7	11.0	49.5	100	87.0	41.7	3.9	61.1	15	90.8	38.2	10.1	51.0	115
Karachi	88.9	49.5	1.9	51.1	100	91.8	48.8	6.2	53.0	40	89.7	49.3	3.1	51.6	140
Larkana	91.0	39.0	0.0	50.3	75	100.0	13.5	0.0	56.8	11	92.1	35.8	0.0	51.1	86
Mirpur Khas	78.8	16.0	2.6	31.7	81	100.0	31.3	0.0	40.3	15	82.1	18.4	2.2	33.0	96
Shaheed Benazirabad	72.4	13.0	0.0	25.6	41	87.1	0.0	0.0	0.0	7	74.5	11.1	0.0	21.9	48
Sukkur	93.7	37.3	3.9	53.8	54	100.0	25.0	0.0	45.0	18	95.3	34.2	2.9	51.6	72
Bannu	72.0	37.8	22.6	42.4	18	89.9	39.2	30.2	41.1	9	78.1	38.3	25.1	42.0	27
Dera Ismail Khan	67.9	21.0	0.6	33.4	37	31.4	3.4	0.0	7.4	6	63.1	18.6	0.5	29.9	42
Hazara	74.3	23.9	19.1	42.1	49	85.4	44.6	26.1	51.5	20	77.6	29.9	21.1	44.8	69
Kohat	69.4	41.7	23.1	53.4	19	100.0	62.3	43.2	62.3	7	77.4	47.1	28.4	55.7	26
Malakand	82.5	16.9	3.3	54.0	133	95.2	36.2	1.7	70.6	19	84.1	19.3	3.1	56.1	152
Mardan	83.1	33.0	20.3	62.2	42	92.5	23.1	20.4	70.1	9	84.7	31.4	20.3	63.5	51
Peshawar	83.3	42.0	10.0	48.6	74	96.0	59.9	19.6	73.9	26	86.6	46.6	12.5	55.2	99
Kalat	84.1	12.2	8.4	18.2	43	86.1	9.7	4.7	33.0	16	84.6	11.6	7.4	22.2	60
Makran	100.0	75.0	27.0	75.0	6	100.0	63.6	31.8	100.0	0	100.0	74.4	27.2	76.3	7
Nasirabad	71.2	11.3	0.0	21.9	16	87.8	10.8	0.0	14.5	4	74.6	11.2	0.0	20.4	20
Quetta	40.5	13.1	2.1	15.5	22	68.1	9.4	0.0	28.2	7	47.4	12.2	1.6	18.7	29
Sibi	37.2	3.6	0.0	5.5	3	55.9	0.0	0.0	17.6	0	39.0	3.3	0.0	6.7	3
Zhob	80.2	34.8	0.0	34.8	11	95.7	65.6	6.3	75.0	3	83.3	40.9	1.2	42.8	13
Baltistan	66.9	23.2	6.6	30.6	5	66.9	40.1	0.0	40.1	1	66.9	26.0	5.6	32.1	6
Gilgit	86.5	45.4	9.9	56.5	14	99.3	72.7	44.9	84.9	4	89.0	50.8	16.8	62.1	18

Table B.12: Consumption of Food Rich in Carbohydrates, Proteins and Vitamin A among breastfed and non-breastfed children 6-23 months by Health characteristics

Health characteristics	Among breastfed children 6-23 months, percentage fed:					Among non-breastfed children 6-23 months, percentage fed:					Among all children 6-23 months, percentage fed:				
	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of non-breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of all children 6-23 months
All	**80.1**	**31.7**	**5.3**	**40.9**	**2,135**	**89.5**	**37.8**	**7.1**	**48.3**	**720**	**82.5**	**33.2**	**5.8**	**42.8**	**2,855**
Birth order of child											**χ=0.143**	**χ=0.000**	**χ=0.128**	**χ=0.022**	
1	82.1	31.0	4.2	39.0	477	91.9	46.6	5.6	56.4	216	85.2	35.9	4.7	44.4	693
2 – 3	80.6	36.1	4.2	45.0	785	87.3	38.0	9.8	47.8	277	82.3	36.6	5.7	45.7	1,062
4 – 5	78.3	29.5	9.2	37.3	511	91.3	39.9	6.4	47.9	111	80.7	31.3	8.7	39.2	622
6+	79.0	26.0	3.8	39.7	363	88.4	18.9	4.5	34.7	116	81.3	24.3	3.9	38.5	479
Birth interval											**χ=0.115**	**χ=0.439**	**χ=0.115**	**χ=0.586**	
No previous birth	82.2	31.1	4.2	39.1	479	92.2	47.1	6.3	56.6	224	85.4	36.2	4.9	44.7	703
<24 months	81.2	33.0	5.2	40.5	524	86.9	30.0	6.5	38.1	173	82.6	32.2	5.6	39.9	698
>= 24 months	78.8	31.3	5.8	41.9	1,132	89.0	35.5	8.1	48.0	322	81.0	32.2	6.3	43.2	1,454
Birth at health facility											**χ=0.000**	**χ=0.000**	**χ=0.021**	**χ=0.000**	
Yes	83.1	38.9	5.6	45.7	1,088	88.8	44.8	9.2	54.4	422	84.7	40.6	6.6	48.1	1,509
No	77.1	24.1	5.0	36.0	1,048	90.4	27.9	4.2	39.6	298	80.0	25.0	4.8	36.8	1,346
Mother and child Continuum of care											**χ=0.000**	**χ=0.000**	**χ=0.198**	**χ=0.000**	
All	88.0	49.2	4.7	55.1	320	88.9	49.5	10.0	56.0	188	88.4	49.3	6.6	55.5	508
At least 2	79.5	34.9	5.8	41.7	944	90.3	42.6	7.9	52.9	258	81.8	36.5	6.3	44.1	1,202
At least 1	74.3	26.2	4.7	36.7	370	88.6	29.5	6.2	44.2	107	77.5	27.0	5.1	38.4	477
None	80.7	18.5	5.2	33.5	502	89.4	22.5	3.4	35.2	167	82.9	19.5	4.8	33.9	669
Received Vitamin A dose postpartum											**χ=0.002**	**χ=0.000**	**χ=0.000**	**χ=0.000**	
Yes	83.8	42.0	9.0	49.8	300	98.1	53.4	14.4	66.0	96	87.3	44.7	10.3	53.7	397
No	79.5	30.0	4.7	39.5	1,835	88.1	35.4	6.0	45.6	624	81.7	31.4	5.1	41.0	2,458
Took Iron tablets during last pregnancy											**χ=0.000**	**χ=0.000**	**χ=0.010**	**χ=0.000**	
Yes	84.1	38.7	5.4	46.7	976	92.1	49.0	9.5	55.9	328	86.2	41.3	6.4	49.0	1,303
No	76.8	25.8	5.2	36.1	1,159	87.3	28.4	5.2	42.0	392	79.4	26.4	5.2	37.5	1,552
Mother's BMI											**χ=0.972**	**χ=0.003**	**χ=0.933**	**χ=0.074**	
≥ 18.5	80.1	35.0	5.2	41.7	591	90.3	40.8	6.7	48.2	232	83.0	36.7	5.7	43.6	822
<18.5	79.7	17.3	7.5	32.4	150	93.5	36.9	16.3	47.5	22	81.4	19.8	8.6	34.3	172
Child fully immunized											**χ=0.000**	**χ=0.000**	**χ=0.053**	**χ=0.000**	
Yes	82.7	35.0	5.8	42.7	890	92.5	48.3	8.6	54.2	370	85.6	38.9	6.6	46.1	1,260

Table B.12: Consumption of Food Rich in Carbohydrates, Proteins and Vitamin A among breastfed and non-breastfed children 6-23 months by Health characteristics

Health characteristics	Among breastfed children 6-23 months, percentage fed:					Among non-breastfed children 6-23 months, percentage fed:					Among all children 6-23 months, percentage fed:				
	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of non-breastfed children 6-23 months	Consumed foods rich in carbohydrates [1]	Consumed foods rich in carbohydrates and high-quality protiens [2]	Consumed foods rich in carbohydrates and low-quality protiens [3]	Consumed foods rich in carbohydrates and vitamin A [4]	Number of all children 6-23 months
No	78.3	29.3	5.0	39.6	1,245	86.3	26.7	5.6	42.0	350	80.0	28.7	5.1	40.2	1,595
Diarrhea											**χ=0.163**	**χ=0.805**	**χ=0.288**	**χ=0.487**	
Yes	78.6	30.9	5.1	41.1	744	88.7	36.4	7.2	46.6	235	81.0	32.2	5.6	42.4	979
No	81.0	32.1	5.4	40.9	1,391	89.9	38.5	7.1	49.1	485	83.3	33.7	5.9	43.0	1,877
Treatment for Diarrhea											**χ=0.141**	**χ=0.000**	**χ=0.79**	**χ=0.006**	
Yes	79.0	33.1	5.4	42.8	681	89.1	37.1	7.5	46.9	225	81.5	34.1	5.9	43.8	906
No	73.8	7.2	2.6	22.4	63	78.8	20.4	0.0	37.6	9	74.5	8.8	2.3	24.4	72
No Diarrhea reported	81.0	32.1	5.4	40.9	1,391	89.9	38.5	7.1	49.1	485	83.3	33.7	5.9	43.0	1,877
Size at birth (mother's perception)											**χ=0.003**	**χ=0.001**	**χ=0.165**	**χ=0.000**	
Large	70.9	28.0	5.5	33.2	89	90.3	53.0	2.1	63.6	52	78.1	37.3	4.3	44.4	142
Average	82.4	34.2	5.1	44.1	1,612	90.9	37.9	8.0	48.5	506	84.4	35.1	5.8	45.2	2,118
Small	73.6	23.1	6.0	30.6	434	84.9	32.5	6.0	42.6	161	76.7	25.6	6.0	33.9	595
Child received vitamin A											**χ=0.000**	**χ=0.403**	**χ=0.427**	**χ=0.274**	
Yes	81.5	32.0	5.6	42.8	1,492	90.8	36.8	7.4	47.1	533	84.0	33.3	6.1	43.9	2,025
No	76.9	30.9	4.8	36.6	644	85.7	40.5	6.4	51.8	186	78.9	33.1	5.1	40.0	830
Stunted											**χ=0.388**	**χ=0.003**	**χ=0.138**	**χ=0.012**	
Yes	80.1	25.4	6.1	35.4	285	94.4	32.0	8.6	39.9	77	83.2	26.8	6.6	36.4	362
No	81.6	38.9	5.3	46.5	358	88.1	45.2	7.6	52.2	143	83.4	40.7	6.0	48.2	501
Wasted											**χ=0.298**	**χ=0.082**	**χ=0266**	**χ=0.172**	
Yes	90.3	22.9	2.5	32.9	108	85.2	16.4	14.8	23.3	43	88.8	21.1	6.0	30.2	151
No	79.1	34.9	6.3	43.4	535	91.6	46.4	6.3	53.9	177	82.2	37.8	6.3	46.0	712
Underweight											**χ=0.671**	**χ=0.000**	**χ=0.031**	**χ=0.001**	
Yes	82.2	23.5	4.1	33.1	226	90.9	22.1	11.6	30.4	59	84.0	23.2	5.7	32.5	286
No	80.3	38.0	6.5	46.3	417	90.1	47.3	6.6	54.4	161	83.0	40.6	6.5	48.5	578

Table B.13: Distribution of Complementary Feeding Practices among breastfed and non-breastfed children by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Among breastfed children 6-23 months, percentage fed:			Number of breastfed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:			Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:			Number of all children 6-23 months
	Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet	
All	**19.7**	**55.3**	**16.4**	**2,135**	**29.5**	**84.6**	**9.9**	**720**	**22.2**	**62.7**	**14.8**	**2,855**
Child's sex									**χ=0.027**	**χ=0.976**	**χ=0.536**	
Male	20.7	54.5	16.4	1,106	35.4	84.0	9.9	349	24.2	61.5	14.9	1,455
Female	18.8	56.2	16.4	1,029	23.9	85.2	9.9	371	20.1	63.9	14.7	1,400
Age of child (in months)									**χ=0.000**	**χ=0.000**	**χ=0.000**	
6 – 8	12.8	56.1	12.5	383	10.8	76.4	1.9	72	12.5	59.4	10.8	455
9 – 11	9.3	39.0	7.6	458	22.6	89.6	10.8	96	11.6	47.8	8.2	554
12 – 17	23.2	57.8	17.8	880	25.7	84.9	7.8	287	23.8	64.4	15.4	1,167
18 – 23	30.4	67.3	26.8	414	41.4	84.7	14.0	264	34.7	74.1	21.8	679
Age of mother									**χ=0.040**	**χ=0.724**	**χ=0.027**	
15-18	5.6	43.4	5.6	44	40.2	100.0	17.6	11	12.6	54.9	8.0	55
19-34	20.5	55.4	16.9	1,774	30.2	85.4	10.7	614	23.0	63.1	15.3	2,387
≥ 35	17.4	56.4	15.3	318	23.7	77.9	4.1	95	18.9	61.3	12.7	413
Parental education									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Both educated	27.8	58.6	23.8	786	36.7	91.5	14.2	331	30.5	68.4	20.9	1,117
Mother educated	18.0	47.5	11.3	127	43.2	94.1	12.0	55	25.7	61.7	11.5	182
Father educated	15.7	54.8	12.6	632	22.3	80.9	5.7	180	17.1	60.6	11.0	812
Both uneducated	13.7	53.1	11.8	591	17.6	70.6	4.8	154	14.5	56.7	10.4	745
Number of children ever born									**χ=0.000**	**χ=0.004**	**χ=0.001**	
Upto 2	23.8	56.9	20.4	898	33.8	84.5	10.7	367	26.7	64.9	17.6	1,265
03 – 05	16.4	53.2	12.8	875	29.9	86.0	10.5	236	19.3	60.1	12.3	1,111
06+	17.7	56.5	15.4	363	15.4	82.2	6.2	117	17.1	62.8	13.1	479
Number of person/per-room									**χ=0.000**	**χ=0.000**	**χ=0.071**	
1	49.0	86.2	46.1	24	6.5	50.9	0.0	6	41.0	79.5	37.4	29
2	33.5	59.7	23.7	130	25.1	88.3	6.6	61	30.8	68.8	18.3	191
3 – 4	21.1	57.9	17.2	944	32.2	84.3	9.7	406	24.4	65.8	14.9	1,350
5+	16.1	51.7	14.1	1,038	26.8	84.9	11.3	247	18.2	58.1	13.6	1,285
Type of family									**χ=0.223**	**χ=0.872**	**χ=0.321**	
Nuclear	17.6	54.4	15.1	727	30.1	85.5	10.1	224	20.5	61.7	13.9	951
Joint	19.4	55.6	16.0	854	25.0	82.9	7.1	291	20.8	62.5	13.7	1,145
Extended	23.1	56.1	18.9	554	35.3	86.1	13.7	205	26.4	64.2	17.5	759
Access to improved source of drinking water									**χ=0.010**	**χ=0.141**	**χ=0.018**	
Yes	19.7	55.1	16.5	1,815	29.9	85.8	10.4	641	22.4	63.1	14.9	2,455
No	19.9	56.6	16.0	320	26.6	74.8	6.0	79	21.2	60.2	14.0	400
Access to improved source of sanitation									**χ=0.000**	**χ=0.028**	**χ=0.000**	

Table B.13: Distribution of Complementary Feeding Practices among breastfed and non-breastfed children by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Among breastfed children 6-23 months, percentage fed:			Number of breastfed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:			Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:			Number of all children 6-23 months
	Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet	
Yes	24.7	56.4	20.8	966	35.6	89.6	12.5	378	27.8	65.8	18.4	1,345
No	15.6	54.3	12.8	1,169	22.8	79.0	7.0	341	17.3	59.9	11.5	1,510
Hand washing both soap and water available									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Yes	23.6	56.8	19.6	1,046	31.5	87.2	12.6	429	25.9	65.6	17.6	1,475
No	16.0	53.9	13.3	1,089	26.5	80.7	5.9	291	18.3	59.5	11.7	1,380
Decision on HH purchases									**χ=0.007**	**χ=0.526**	**χ=0.006**	
Someone else	21.1	53.8	18.0	644	32.8	83.4	10.8	200	23.8	60.8	16.3	844
Husband alone	17.5	60.4	14.9	641	21.5	79.8	4.6	222	18.5	65.4	12.2	863
Husband and wife jointly	20.8	53.8	16.1	737	31.8	88.4	12.8	271	23.7	63.1	15.2	1,008
Wife alone	18.1	44.8	17.7	113	48.9	94.8	17.5	27	24.0	54.4	17.6	140
Working status by occupation									**χ=0.002**	**χ=0.021**	**χ=0.049**	
Agriculture	10.9	59.8	9.5	200	9.8	67.9	0.0	46	10.7	61.3	7.7	247
Non-agriculture	14.9	44.9	11.3	275	28.7	85.3	14.0	89	18.3	54.8	12.0	364
Not working	21.6	56.5	18.1	1,660	31.2	85.8	10.1	585	24.1	64.1	16.0	2,245
Exposure to media									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Media exposure	25.8	57.2	22.0	936	39.5	90.6	13.1	369	29.7	66.6	19.5	1,304
No media exposure	15.0	53.8	12.0	1,200	19.1	78.3	6.5	351	15.9	59.4	10.8	1,551
Wealth index									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Poorest	11.6	54.6	9.8	502	13.5	69.0	2.8	101	11.9	57.0	8.6	603
Poorer	15.7	49.5	11.5	499	17.8	83.5	3.3	138	16.2	56.8	9.7	637
Middle	18.1	53.2	14.5	433	30.2	82.7	11.4	139	21.0	60.4	13.7	571
Richer	25.1	55.8	21.5	417	33.9	89.4	13.0	176	27.7	65.8	19.0	593
Richest	35.8	69.1	32.3	284	43.7	91.4	15.2	167	38.7	77.4	26.0	451
Residence									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Rural	17.2	53.2	13.8	1,548	23.6	80.7	7.5	435	18.6	59.2	12.4	1,983
Urban	26.5	61.0	23.3	587	38.6	90.6	13.6	285	30.5	70.6	20.2	872
Region									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Punjab	19.3	48.8	15.4	1,143	29.3	87.2	11.2	467	22.2	59.9	14.2	1,609
Sindh	23.7	63.8	20.6	494	29.1	84.0	9.4	118	24.8	67.7	18.4	612
Khyber Pakhtunkhwa	17.9	61.5	15.2	371	35.5	77.6	6.7	95	21.5	64.8	13.5	467
Balochistan	8.8	61.3	8.8	101	10.1	73.3	1.0	31	9.1	64.1	7.0	131
ICT Islamabad	37.5	76.4	35.0	8	50.6	88.9	14.2	5	42.6	81.3	26.9	12
Gilgit Baltistan	26.8	61.7	25.3	19	46.3	55.3	14.5	4	30.5	60.5	23.2	23
Division									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Bahawalpur	4.5	58.1	4.5	119	22.2	83.2	3.0	61	10.5	66.6	4.0	180

Table B.13: Distribution of Complementary Feeding Practices among breastfed and non-breastfed children by Demographic and Socioeconomic characteristics

Demographic and Socioeconomic characteristics	Among breastfed children 6-23 months, percentage fed:			Number of breastfed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:			Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:			Number of all children 6-23 months
	Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet	
Dera Ghazi Khan	11.7	68.3	11.7	167	37.3	94.3	16.2	40	16.6	73.3	12.6	207
Faisalabad	27.3	33.1	16.6	146	36.6	89.8	12.9	56	29.9	48.9	15.6	203
Gujranwala	8.9	28.8	6.7	112	28.1	82.5	20.2	64	15.9	48.3	11.6	176
Lahore	28.5	52.7	24.3	236	28.4	97.9	5.5	113	28.4	67.4	18.2	349
Multan	12.6	42.5	10.6	109	19.7	66.9	11.0	38	14.4	48.8	10.7	147
Rawalpindi	33.1	74.3	33.1	78	51.1	100.0	33.6	30	38.1	81.5	33.2	108
Sahiwal	14.8	35.3	12.2	89	12.9	86.9	0.0	38	14.2	50.8	8.6	127
Sargodha	30.4	39.4	15.6	86	37.5	59.7	12.2	26	32.0	44.1	14.8	113
Banbhore/ Thatta	21.8	65.1	21.8	43	34.1	64.3	21.1	12	24.5	64.9	21.7	55
Hyderabad	29.3	83.4	25.0	100	49.1	60.0	7.8	15	31.8	80.4	22.8	115
Karachi	29.3	71.3	28.0	100	33.6	92.0	13.1	40	30.6	77.3	23.7	140
Larkana	31.4	66.0	29.4	75	27.5	84.5	0.0	11	30.9	68.4	25.7	86
Mirpur Khas	9.7	46.7	8.1	81	17.8	83.0	5.4	15	11.0	52.4	7.6	96
Shaheed Benazirabad	15.0	38.7	12.9	41	0.0	100.0	0.0	7	12.8	47.6	11.0	48
Sukkur	21.8	54.7	10.1	54	21.6	92.9	7.3	18	21.7	64.4	9.4	72
Bannu	28.4	57.4	27.7	18	30.2	68.4	0.0	9	29.0	61.1	18.3	27
Dera Ismail Khan	1.1	49.4	1.1	37	4.0	82.7	0.0	6	1.5	53.8	1.0	42
Hazara	22.9	50.5	19.2	49	27.2	62.8	2.7	20	24.1	54.1	14.4	69
Kohat	43.6	57.5	31.7	19	51.7	79.1	4.3	7	45.7	63.2	24.5	26
Malakand	9.0	64.3	9.0	133	29.6	80.7	0.0	19	11.6	66.4	7.9	152
Mardan	24.4	67.5	17.4	42	10.9	76.4	3.2	9	22.2	69.0	15.0	51
Peshawar	25.8	68.1	22.3	74	59.3	89.3	20.6	26	34.4	73.6	21.9	99
Kalat	3.6	65.5	3.6	43	4.7	70.8	0.0	16	3.9	67.0	2.6	60
Makran	56.9	98.3	56.9	6	63.6	100.0	31.8	1	57.3	98.4	55.6	7
Nasirabad	7.8	65.2	7.8	16	12.6	66.9	0.0	4	8.8	65.5	6.2	20
Quetta	6.4	34.4	6.4	22	6.9	72.8	2.7	7	6.5	44.0	5.5	29
Sibi	3.6	33.0	3.6	3	0.0	78.0	0.0	1	3.3	37.3	3.3	3
Zhob	9.6	79.2	9.6	11	42.3	95.7	0.0	3	16.1	82.5	7.7	13
Baltistan	6.9	32.7	6.9	5	21.2	37.2	16.1	1	9.2	33.4	8.4	6
Gilgit	33.2	71.0	31.2	14	52.7	60.0	14.1	4	37.1	68.9	27.8	18

Table B.14: Distribution of Complementary Feeding Practices among breastfed and non-breastfed children by Health characteristics

Health characteristics	Among breastfed children 6-23 months, percentage fed:			Number of breastfed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:			Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:			Number of all children 6-23 months
	Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet	
All	**19.7**	**55.3**	**16.4**	**2,135**	**29.5**	**84.6**	**9.9**	**720**	**22.2**	**62.7**	**14.8**	**2,855**
Birth order of child									**χ=0.000**	**χ=0.010**	**χ=0.107**	
1	23.0	55.0	18.5	477	40.8	86.6	13.1	216	28.5	64.9	16.8	693
2 – 3	20.3	57.2	16.8	785	28.7	80.7	8.5	277	22.5	63.4	14.6	1,062
4 – 5	17.3	51.7	14.6	511	24.1	92.7	10.8	111	18.5	59.0	14.0	622
6+	17.7	56.5	15.4	363	15.5	82.4	6.3	116	17.1	62.8	13.2	479
Birth interval									**χ=0.002**	**χ=0.034**	**χ=0.289**	
No previous birth	22.9	55.1	18.4	479	41.5	86.3	13.6	224	28.8	65.0	16.9	703
<24 months	22.2	55.7	17.8	524	22.4	82.8	8.4	173	22.2	62.4	15.4	698
>= 24 months	17.3	55.2	14.9	1,132	25.0	84.4	8.2	322	19.0	61.7	13.4	1,454
Birth at health facility									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Yes	24.3	57.4	20.3	1,088	34.0	88.0	12.5	422	27.0	65.9	18.1	1,509
No	15.0	53.2	12.4	1,048	23.2	79.8	6.2	298	16.9	59.1	11.0	1,346
Mother and child Continuum of care									**χ=0.000**	**χ=0.000**	**χ=0.000**	
All	33.0	61.1	28.0	320	36.9	91.9	15.5	188	34.5	72.5	23.4	508
At least 2	20.8	54.3	16.8	944	35.2	85.4	9.0	258	23.9	61.0	15.1	1,202
At least 1	20.2	49.1	17.2	370	23.9	80.6	9.8	107	21.0	56.2	15.5	477
None	8.9	58.0	7.7	502	16.0	77.8	5.0	167	10.7	62.9	7.1	669
Received Vitamin A dose postpartum									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Yes	33.4	68.6	30.1	300	37.8	86.6	16.1	96	34.4	73.0	26.7	397
No	17.5	53.1	14.2	1,835	28.2	84.3	9.0	624	20.2	61.0	12.8	2,458
Took Iron tablets during last pregnancy									**χ=0.000**	**χ=0.000**	**χ=0.000**	
Yes	25.1	61.4	21.2	976	39.3	89.5	13.1	328	28.7	68.5	19.2	1,303
No	15.2	50.2	12.4	1,159	21.3	80.5	7.2	392	16.8	57.8	11.1	1,552
Mother's BMI									**χ=0.258**	**χ=0.130**	**χ=0.956**	
≥ 18.5	20.0	56.9	16.6	591	29.8	83.4	7.8	232	22.8	64.3	14.1	822
<18.5	14.2	56.5	12.8	150	28.1	70.6	9.0	22	15.9	58.3	12.3	172
Child fully immunized									**χ=0.000**	**χ=0.000**	**χ=0.001**	
Yes	19.4	55.3	16.0	890	34.3	90.7	13.6	370	23.8	65.7	15.3	1,260
No	20.0	55.3	16.7	1,245	24.5	78.1	6.0	350	21.0	60.3	14.4	1,595
Diarrhea									**χ=0.480**	**χ=0.867**	**χ=0.841**	
Yes	18.9	54.3	15.2	744	30.2	84.7	11.3	235	21.6	61.6	14.3	979
No	20.2	55.9	17.1	1,391	29.2	84.5	9.2	485	22.5	63.3	15.0	1,877
Treatment for Diarrhea									**χ=0.014**	**χ=0.127**	**χ=0.006**	
Yes	19.9	54.7	16.1	681	30.6	84.2	11.8	225	22.6	62.0	15.0	906
No	8.1	50.0	5.5	63	20.4	98.1	0.0	9	9.7	56.2	4.8	72
No Diarrhea reported	20.2	55.9	17.1	1,391	29.2	84.5	9.2	485	22.5	63.3	15.0	1,877
Size at birth (mother's perception)									**χ=0.000**	**χ=0.029**	**χ=0.003**	

Table B.14: Distribution of Complementary Feeding Practices among breastfed and non-breastfed children by Health characteristics

Health characteristics	Among breastfed children 6-23 months, percentage fed:			Number of breastfed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:			Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:			Number of all children 6-23 months
	Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet	
Large	23.4	46.6	22.6	89	27.0	90.4	9.3	52	24.7	62.8	17.7	142
Average	21.4	56.7	17.5	1,612	32.4	86.2	9.6	506	24.0	63.7	15.6	2,118
Small	12.8	52.0	11.1	434	21.2	77.6	11.2	161	15.1	59.0	11.1	595
Child received vitamin A									**χ=0.749**	**χ=0.329**	**χ=0.863**	
Yes	20.1	55.4	16.5	1,492	28.9	85.7	9.2	533	22.4	63.4	14.6	2,025
No	19.0	55.0	16.1	644	31.2	81.5	11.8	186	21.7	60.9	15.2	830
Stunted									**χ=0.163**	**χ=0.052**	**χ=0.114**	
Yes	17.9	55.0	13.9	285	28.6	78.6	1.6	77	20.2	60.0	11.3	362
No	21.0	56.1	18.9	358	31.2	83.9	13.1	143	23.9	64.1	17.3	501
Wasted									**χ=0.438**	**χ=0.921**	**χ=0.365**	
Yes	13.1	59.2	12.1	108	23.6	82.1	7.1	43	16.1	65.7	10.7	151
No	21.0	54.9	17.6	535	31.9	82.0	9.6	177	23.7	61.6	15.6	712
Underweight									**χ=0.002**	**χ=0.203**	**χ=0.003**	
Yes	13.3	55.2	10.3	226	28.2	81.6	5.1	59	16.4	60.7	9.2	286
No	23.1	55.8	20.2	417	31.1	82.2	10.5	161	25.3	63.2	17.5	578

Annex C
Multivariate Analysis Tables

ANNEX C – MULTIVARIATE ANALYSIS TABLES

Table C.1: Determinants of Minimum Dietary Diversity among children 6-23 months in Pakistan

Demographic, Socioeconomic, and Health characteristics	Adjusted				Un-adjusted	
	Model 1		Model 2			
	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)
Child's sex						
Female (ref)	1.000		1.000		1.000	
Male	1.179*	0.981-1.417	1.149	0.953-1.385	0.283**	1.022-1.443
Age of child (in months)						
6 – 8 (ref)	1.000		1.000		1.000	
9 – 11	1.84***	1.239-2.734	1.922***	1.290-2.865	1.977***	1.344-2.906
12 – 17	3.781***	2.675-5.344	3.987***	2.812-5.655	3.71***	2.649-5.194
18 – 23	6.053***	4.238-8.645	6.314***	4.406-9.049	5.741***	4.064-8.110
Age of mother						
15-18 (ref)	1.000		1.000		1.000	
19-34	2.329**	1.028-5.279	2.518**	1.094-5.799	2.556**	1.157-5.645
≥ 35	2.141*	0.913-5.018	2.635**	1.087-6.385	2.282**	1.009-5.163
Parental education						
Both educated (ref)	1.000		1.000		1.000	
Mother educated	0.931	0.604-1.435	1.002	0.647-1.551	0.69*	0.462-1.029
Father educated	0.877	0.678-1.134	0.975	0.748-1.271	0.537	0.435-0.663
Both uneducated	0.799	0.586-1.088	0.903	0.657-1.243	0.388	0.306-0.492
Number of person/per-room						
1 (ref)	1.000		1.000		1.000	
2	0.983	0.417-2.315	1.04	0.439-2.463	1.051	0.480-2.303
3 – 4	1.023	0.451-2.322	1.164	0.510-2.652	0.834	0.395-1.763
5+	0.997	0.435-2.285	1.172	0.508-2.703	0.607	0.286-1.287
Type of family						
Nuclear (ref)	1.000		1.000		1.000	
Joint	0.956	0.738-1.238	0.955	0.731-1.246	0.122	0.937-1.422
Extended	1.114	0.862-1.439	1.082	0.832-1.406	0.137	0.964-1.508
Access to improved source of drinking water						
No (ref)	1.000		1.000		1.000	
Yes	0.839	0.639-1.101	0.82	0.623-1.081	1.358**	1.074-1.718
Access to improved source of sanitation						
No (ref)	1.000		1.000		1.000	
Yes	1.044	0.838-1.301	1.054	0.843-1.318	1.5**	1.263-1.783
Decision on HH purchases						
Someone else (ref)	1.000		1.000		1.000	
Husband alone	0.943	0.726-1.224	0.998	0.765-1.303	0.72***	0.578-0.897
Husband and wife jointly	1.018	0.79-1.311	1.054	0.815-1.364	1.012	0.818-1.251
Wife alone	0.942	0.587-1.51	1.025	0.635-1.655	0.989	0.643-1.519
Working status by occupation						
Agriculture (ref)	1.000		1.000		1.000	
Non-agriculture	1.275	0.694-2.342	1.298	0.701-2.402	2.338***	1.326-4.123
Not working	1.172	0.668-2.057	1.17	0.661-2.068	2.447***	1.462-4.094
Exposure to media						
No media exposure (ref)	1.000		1.000		1.000	
Media exposure	1.378***	1.11-1.71	1.326**	1.064-1.652	1.993***	1.673-2.373
Wealth index						
Poorest (ref)	1.000		1.000		1.000	
Poorer	1.372*	0.977-1.927	1.285	0.910-1.816	1.549***	1.140-2.105
Middle	1.517**	1.045-2.202	1.438*	0.984-2.101	1.74***	1.282-2.360
Richer	1.752***	1.154-2.661	1.596**	1.041-2.449	2.341***	1.734-3.160
Richest	2.807***	1.746-4.514	2.466***	1.512-4.022	3.915***	2.937-5.220
Residence						
Urban (ref)	1.000		1.000		1.000	
Rural	1.05	0.831-1.327	1.077	0.849-1.366	0.607***	0.511-0.722
Region						
Punjab (ref)	1.000		1.000		1.000	
Sindh	1.091	0.827-1.439	1.047	0.787-1.391	1.011	0.786-1.301

Table C.1: Determinants of Minimum Dietary Diversity among children 6-23 months in Pakistan

Demographic, Socioeconomic, and Health characteristics	Adjusted				Un-adjusted	
	Model 1		Model 2			
	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)
Khyber Pakhtunkhwa	1.211	0.922-1.59	1.359**	1.027-1.798	1.023	0.800-1.309
Balochistan	0.465***	0.313-0.691	0.533***	0.353-0.807	0.366***	0.255-0.524
Gilgit Baltistan	2.114***	1.47-3.041	2.428***	1.626-3.624	1.367**	1.012-1.848
ICT Islamabad	1.693***	1.171-2.448	1.693***	1.157-2.477	2.393***	1.716-3.337
Birth order of child						
1 (ref)			1.000		1.000	
2 – 3			1.267	0.244-6.577	0.867	0.699-1.077
4 – 5			1.16	0.218-6.157	0.681***	0.528-0.879
6+			1.092	0.203-5.859	0.541***	0.408-0.717
Birth interval						
No previous birth (ref)			1.000		1.000	
<24 months			0.761	0.146-3.965	0.796*	0.626-1.014
>= 24 months			0.646	0.124-3.359	0.694***	0.565-0.852
Mother and child Continuum of care						
All (ref)			1.000		1.000	
At least 2			0.774*	0.595-1.007	0.626***	0.498-0.785
At least 1			0.826	0.586-1.164	0.52***	0.393-0.687
None			0.417***	0.289-0.603	0.241***	0.181-0.321
Child fully immunized						
No (ref)			1.000		1.000	
Yes			0.846	0.687-1.041	1.51***	1.270-1.794
Diarrhea						
No (ref)			1.000		1.000	
Yes			1.035	0.846-1.265	1.068	0.889-1.281
Size at birth (mother's perception)						
Large (ref)			1.000		1.000	
Average			1.207	0.821-1.776	0.874	0.611-1.251
Small			0.8	0.516-1.239	0.55***	0.366-0.825
Child received vitamin A						
No (ref)			1.000		1.000	
Yes			0.981	0.790-1.219	1.028	0.863-1.225
Constant	0.017***	0.003-0.077	0.019***	0.004-0.094		
Observations	**2,855**		**2,855**		**2,855**	
Pseudo R2	**0.1117**		**0.1262**			

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table C.2: Determinants of Minimum Meal Frequency among children 6-23 months in Pakistan

Demographic, Socioeconomic, and Health characteristics	Adjusted				Un-adjusted	
	Model 1		Model 2			
	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)
Child's sex						
Female (ref)	1.000		1.000		1.000	
Male	0.985	0.840-1.155	0.97	0.826-1.139	0.997	0.856-1.162
Age of child (in months)						
6 – 8 (ref)	1.000		1.000		1.000	
9 – 11	0.707***	0.548-0.912	0.693***	0.536-0.896	0.758**	0.593-0.970
12 – 17	1.544***	1.233-1.933	1.553***	1.237-1.949	1.562***	1.256-1.942
18 – 23	2.134***	1.658-2.745	2.122***	1.645-2.738	2.153***	1.684-2.751
Age of mother						
15-18 (ref)	1.000		1.000		1.000	
19-34	1.112	0.650-1.903	1.175	0.674-2.049	1.234	0.737-2.064
≥ 35	1.118	0.629-1.986	1.168	0.634-2.151	1.227	0.714-2.111
Parental education						
Both educated (ref)	1.000		1.000		1.000	
Mother educated	0.799	0.547-1.167	0.822	0.562-1.203	0.651**	0.456-0.932
Father educated	0.803*	0.642-1.004	0.88	0.700-1.107	0.635***	0.526-0.766
Both uneducated	0.813	0.630-1.050	0.888	0.684-1.153	0.606***	0.499-0.736
Number of person/per-room						
1 (ref)	1.000		1.000		1.000	
2	0.838	0.351-2.007	0.788	0.325-1.909	0.833	0.360-1.929
3 – 4	0.727	0.316-1.672	0.711	0.305-1.655	0.596	0.267-1.327
5+	0.685	0.297-1.581	0.694	0.297-1.626	0.473*	0.212-1.054
Type of family						
Nuclear (ref)	1.000		1.000		1.000	
Joint	1.042	0.834-1.302	1.034	0.824-1.298	1.049	0.873-1.26
Extended	0.983	0.789-1.226	0.969	0.775-1.212	1.036	0.85-1.262
Access to improved source of drinking water						
No (ref)	1.000		1.000		1.000	
Yes	0.975	0.778-1.221	0.976	0.778-1.224	1.158	0.952-1.407
Access to improved source of sanitation						
No (ref)	1.000		1.000		1.000	
Yes	0.842*	0.697-1.018	0.839*	0.693-1.016	1.187**	1.019-1.384
Decision on HH purchases						
Someone else (ref)	1.000		1.000		1.000	
Husband alone	1.41***	1.123-1.771	1.462***	1.161-1.841	1.14	0.941-1.381
Husband and wife jointly	1.086	0.866-1.361	1.106	0.880-1.391	1.018	0.839-1.235
Wife alone	1.009	0.661-1.539	1.061	0.693-1.626	0.992	0.673-1.464
Working status by occupation						
Agriculture (ref)	1.000		1.000		1.000	
Non-agriculture	0.754	0.492-1.154	0.728	0.474-1.118	1.033	0.693-1.539
Not working	0.942	0.645-1.375	0.903	0.616-1.324	1.361*	0.967-1.915
Exposure to media						
No media exposure (ref)	1.000		1.000		1.000	
Media exposure	1.031	0.853-1.245	0.991	0.818-1.201	1.37***	1.174-1.599
Wealth index						
Poorest (ref)	1.000		1.000		1.000	
Poorer	1.147	0.889-1.479	1.122	0.868-1.452	1.061	0.844-1.334
Middle	1.422**	1.063-1.903	1.38**	1.028-1.852	1.318**	1.043-1.666
Richer	1.653***	1.170-2.335	1.551**	1.092-2.201	1.58***	1.239-2.014
Richest	2.314***	1.535-3.487	1.99***	1.308-3.029	2.484***	1.927-3.202
Residence						
Urban (ref)	1.000		1.000		1.000	
Rural	0.923	0.749-1.137	0.934	0.757-1.151	0.672***	0.574-0.786
Region						
Punjab (ref)	1.000		1.000		1.000	
Sindh	1.525***	1.194-1.947	1.597***	1.244-2.051	1.443***	1.152-1.809
Khyber Pakhtunkhwa	1.463***	1.148-1.864	1.573***	1.226-2.017	1.354***	1.087-1.686
Balochistan	1.135	0.853-1.510	1.311*	0.969-1.773	1.035	0.810-1.323

Table C.2: Determinants of Minimum Meal Frequency among children 6-23 months in Pakistan

Demographic, Socioeconomic, and Health characteristics	Adjusted				Un-adjusted	
	Model 1		Model 2			
	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)
Gilgit Baltistan	1.263	0.915-1.742	1.414*	0.996-2.007	1.116	0.845-1.473
ICT Islamabad	2.105***	1.396-3.174	2.123***	1.398-3.223	2.801***	1.902-4.126
Birth order of child						
1 (ref)			1.000		1.000	
2 – 3			0.973	0.165-5.732	0.872	0.710-1.071
4 – 5			0.861	0.144-5.144	0.698***	0.556-0.877
6+			0.984	0.163-5.916	0.752***	0.591-0.957
Birth interval						
No previous birth (ref)			1.000		1.000	
<24 months			0.947	0.161-5.585	0.812*	0.649-1.017
>= 24 months			0.91	0.154-5.358	0.777*	0.641-0.941
Mother and child Continuum of care						
All (ref)			1.000		1.000	
At least 2			0.739**	0.566-0.966	0.628***	0.493-0.799
At least 1			0.651***	0.472-0.898	0.478***	0.363-0.629
None			0.67**	0.487-0.922	0.465***	0.361-0.599
Child fully immunized						
No (ref)			1.000		1.000	
Yes			1.278***	1.062-1.539	1.466***	1.252-1.716
Diarrhea						
No (ref)			1.000		1.000	
Yes			1.034	0.868-1.232	1.014	0.861-1.194
Size at birth (mother's perception)						
Large (ref)			1.000		1.000	
Average			1.235	0.863-1.766	1.022	0.73-1.431
Small			1.039	0.704-1.533	0.791	0.549-1.14
Child received vitamin A						
No (ref)			1.000		1.000	
Yes			0.978	0.811-1.179	1.08	0.925-1.262
Constant	**1.26**	0.371-4.286	**1.376**	0.376-5.037		
Observations	**2,855**		**2,855**		**2,855**	
Pseudo R2	**0.0569**		**0.0633**			

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table C.3: Determinants of Minimum Acceptable Diet among children 6-23 months in Pakistan

Demographic, Socioeconomic, and Health characteristics	Adjusted				Un-adjusted	
	Model 1		Model 2			
	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)
Child's sex						
Female (ref)	1.000		1.000		1.000	
Male	1.018	0.828-1.251	0.996	0.809-1.227	1.064	0.873-1.297
Age of child (in months)						
6 – 8 (ref)	1.000		1.000		1.000	
9 – 11	1.427	0.929-2.193	1.502*	0.975-2.316	1.522*	0.999-2.319
12 – 17	2.679***	1.854-3.871	2.812***	1.940-4.078	2.64***	1.842-3.784
18 – 23	3.52***	2.408-5.146	3.649***	2.488-5.352	3.436***	2.371-4.979
Age of mother						
15-18 (ref)	1.000		1.000		1.000	
19-34	2.801*	0.994-7.894	2.609*	0.910-7.476	2.998**	1.082-8.306
≥ 35	2.247	0.769-6.564	2.105	0.696-6.361	2.374	0.833-6.761
Parental education						
Both educated (ref)	1.000		1.000		1.000	
Mother educated	0.671	0.401-1.124	0.716	0.426-1.204	0.559**	0.342-0.913
Father educated	0.775*	0.581-1.034	0.837	0.622-1.127	0.544***	0.427-0.694
Both uneducated	0.656**	0.461-0.933	0.726*	0.506-1.044	0.391***	0.296-0.517
Number of person/per-room						
1 (ref)	1.000		1.000		1.000	
2	1.055	0.416-2.675	1.1	0.432-2.801	1.08	0.446-2.610
3 – 4	0.922	0.378-2.247	0.999	0.408-2.445	0.746	0.321-1.736
5+	1.199	0.487-2.953	1.278	0.516-3.168	0.698	0.299-1.628
Type of family						
Nuclear (ref)	1.000		1.000		1.000	
Joint	0.901	0.673-1.206	0.963	0.713-1.299	1.181	0.928-1.503
Extended	1.005	0.753-1.341	1.034	0.770-1.388	1.187	0.916-1.538
Access to improved source of drinking water						
No (ref)	1.000		1.000		1.000	
Yes	0.939	0.690-1.279	0.909	0.665-1.242	1.394**	1.057-1.838
Access to improved source of sanitation						
No (ref)	1.000		1.000		1.000	
Yes	1.133	0.885-1.449	1.156	0.901-1.484	1.493***	1.224-1.822
Decision on HH purchases						
Someone else (ref)	1.000		1.000		1.000	
Husband alone	0.79	0.590-1.059	0.81	0.602-1.091	0.651***	0.505-0.838
Husband and wife jointly	0.881	0.665-1.167	0.88	0.662-1.171	0.903	0.709-1.151
Wife alone	0.977	0.585-1.633	1.001	0.595-1.685	1.027	0.638-1.655
Working status by occupation						
Agriculture (ref)	1.000		1.000		1.000	
Non-agriculture	1.121	0.569-2.211	1.154	0.581-2.291	2.022**	1.066-3.838
Not working	1.013	0.541-1.898	1.019	0.539-1.926	2.036**	1.141-3.636
Exposure to media						
No media exposure (ref)	1.000		1.000		1.000	
Media exposure	1.302**	1.021-1.662	1.253*	0.979-1.604	1.83***	1.497-2.238
Wealth index						
Poorest (ref)	1.000		1.000		1.000	
Poorer	1.107	0.752-1.630	1.042	0.704-1.543	1.261	0.885-1.797
Middle	1.357	0.894-2.059	1.298	0.851-1.982	1.548**	1.095-2.188
Richer	1.537*	0.963-2.452	1.392	0.863-2.244	1.979***	1.409-2.780
Richest	2.035***	1.198-3.456	1.747**	1.014-3.009	2.946***	2.133-4.068
Residence						
Urban (ref)	1.000		1.000		1.000	
Rural	1.113	0.856-1.447	1.13	0.867-1.472	0.656***	0.538-0.800
Region						
Punjab (ref)	1.000		1.000		1.000	
Sindh	1.277	0.936-1.742	1.241	0.902-1.708	1.17	0.875-1.565
Khyber Pakhtunkhwa	1.259	0.921-1.721	1.373*	0.998-1.889	1.048	0.783-1.401
Balochistan	0.724	0.467-1.123	0.839	0.531-1.327	0.505***	0.337-0.755

Table C.3: Determinants of Minimum Acceptable Diet among children 6-23 months in Pakistan

Demographic, Socioeconomic, and Health characteristics	Adjusted				Un-adjusted	
	Model 1		Model 2			
	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)	Odd ratio	Confidence Interval (95%)
Gilgit Baltistan	2.463***	1.645-3.687	2.808***	1.799-4.383	1.573***	1.119-2.210
ICT Islamabad	1.655**	1.106-2.478	1.655**	1.093-2.504	2.222***	1.531-3.223
Birth order of child						
1 (ref)			1.000		1.000	
2 – 3			0.61	0.068-5.428	0.961	0.747-1.237
4 – 5			0.677	0.074-6.142	0.884	0.661-1.181
6+			0.673	0.073-6.168	0.685**	0.495-0.947
Birth interval						
No previous birth (ref)			1.000		1.000	
<24 months			1.796	0.201-16.018	0.959	0.726-1.268
>= 24 months			1.582	0.177-14.083	0.838	0.659-1.066
Mother and child Continuum of care						
All (ref)			1.000		1.000	
At least 2			0.701**	0.526-0.933	0.601***	0.465-0.775
At least 1			0.804	0.553-1.170	0.588***	0.432-0.801
None			0.384***	0.253-0.582	0.251***	0.181-0.350
Child fully immunized						
No (ref)			1.000		1.000	
Yes			0.882	0.700-1.111	1.418***	1.163-1.729
Diarrhea						
No (ref)			1.000		1.000	
Yes			0.989	0.790-1.239	1.021	0.827-1.261
Size at birth (mother's perception)						
Large (ref)			1.000		1.000	
Average			0.944	0.627-1.421	0.713*	0.484-1.051
Small			0.693	0.433-1.111	0.49***	0.313-0.765
Child received vitamin A						
No (ref)			1.000		1.000	
Yes			1.053	0.826-1.341	1.017	0.832-1.244
Constant	**0.017*** **	0.003-0.097	**0.025*** **	0.004-0.154		
Observations	**2,855**		**2,855**		**2,855**	
Pseudo R2	**0.0741**		**0.0867**			

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1