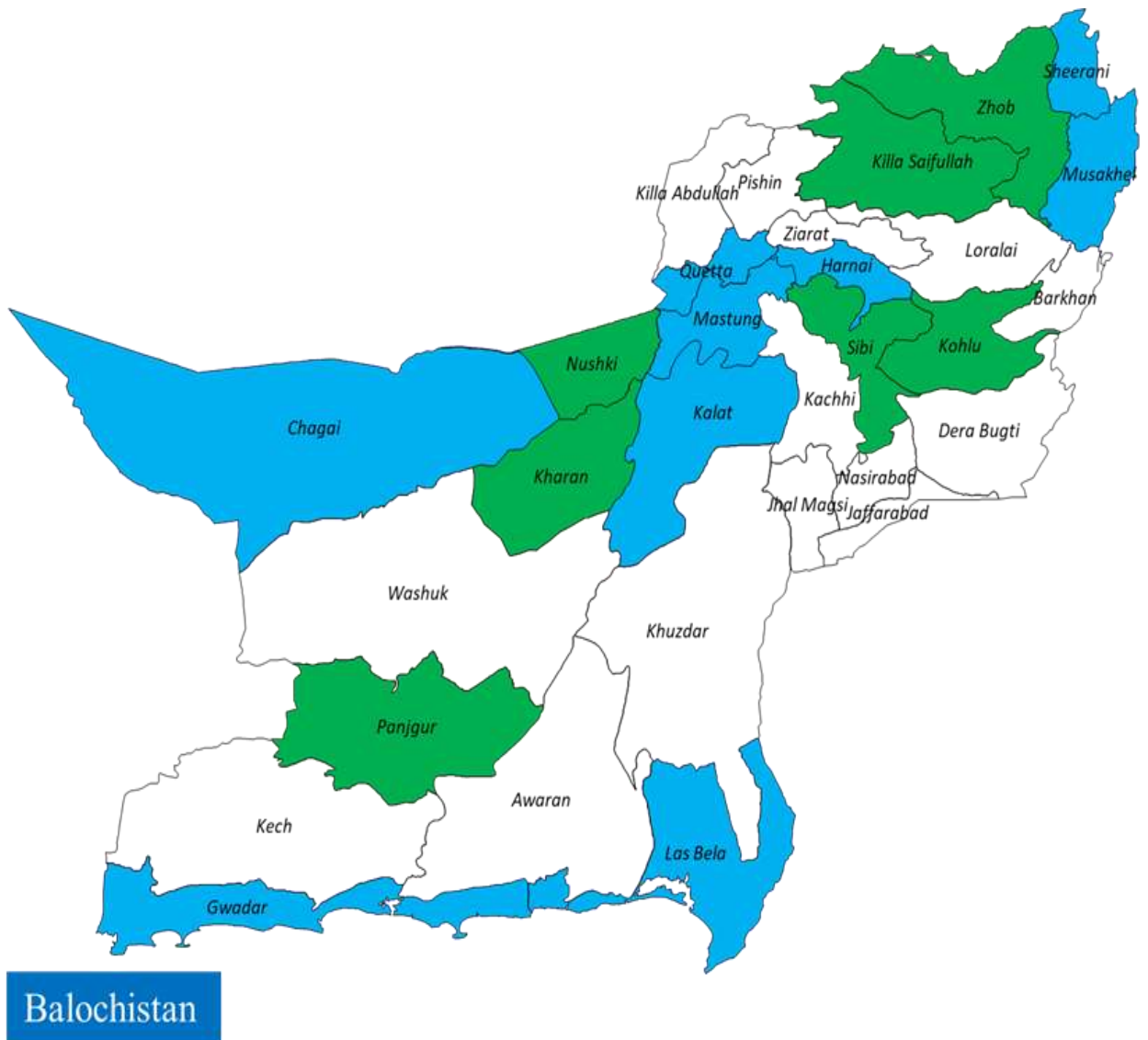


# Standardized Monitoring and Assessment of Relief and Transitions (SMART) and Knowledge Attitude Practices (KAP) Surveys 2017-18

## Balochistan





Government of Balochistan

In collaboration, with

UNICEF

(United Nations Children's Fund)

**March 2018**

## 1 FOREWORD

As per National Nutrition Survey 2011, in Balochistan Province, 52.2% of children under five years old are stunted, 16% are wasted and 39.6% are under weight. These children are not only vulnerable to contracting diseases more often, but as a consequence, will also be more impaired in their intellectual and physical development.

Standardized Monitoring and Assessment of Relief and Transition (SMART) and Knowledge, Attitude & Practices (KAP) surveys conducted in sixteen (16) districts of Balochistan for providing information about nutritional status in children under 05 years of age & women of reproductive age. These surveys also provided us information on health status and other determinants of malnutrition including food security, education, water, sanitation & hygiene, child protection and measures the key indicators that support the provincial government to monitor progress towards Sustainable Development Goals (SDGs). These surveys were carried out in 2017 by the government of Balochistan through Medical Emergency Resilience Foundation (MERF), a national organization. Financial support was provided by the United Nations Children's Fund (UNICEF).

Keeping in view the nutrition causal framework, malnutrition cannot be addressed by standalone nutrition specific interventions, the sensitive interventions may play a vital role in addressing the issue by involving different sectors. For this the government needs to dovetail the efforts of all relevant sectors and show the political will towards the achievement of Sustainable Development Goals (SDGs) as most of the SDGs are directly linked with nutrition.

GoB appreciate the efforts of the Health Department, Provincial Nutrition Cell, UNICEF and MERF for taking this initiative and generating district level evidence, which will be used in future planning and supports the government in generating resources and expansion of the nutrition program.

**Additional Chief Secretary  
Planning & Development Department  
Government of Balochistan**

## 2 ACKNOWLEDMENT

The completion of these surveys and the final report is an important achievement for supporting the Government of Balochistan in its mission to set priorities for addressing malnutrition amongst children under five years of age and pregnant & lactating mothers.

Completion of SMART & KAP surveys is the outcome of intensive efforts of the UNICEF Nutrition team, Health & Nutrition section at P&D department, Planning Cell Health department, Provincial Health Directorate, Provincial Nutrition Cell and the key informants at the districts level, who worked and supported the process quite efficiently.

This report would not have been possible without the support and cooperation of several people and departments involved. We would like to express our deepest appreciation and gratitude to all the people involved in the process. We would also like to acknowledge with thanks, the valuable contribution of all involved in completion this study. This includes Consultants, MERF's technical and operations team, provincial technical working group and UNICEF technical advisors who have provided technical support and facilitate the conduct of this study. Furthermore, thanks to the community who have given their responses on voluntarily basis.

In the end, I urge all the relevant sectors to come forward for their support in the planning and implementation of nutrition interventions for addressing malnutrition issues of children and mothers.

**Secretary  
Health Department  
Government of Balochistan**

### 3 ACRONYMS

ANC	Antenatal Care
BCG	Bacille Calmette Guerin
BNPMC	Balochistan Nutrition Program for Mothers and Children
BHU	Basic Health Unit
CSPro	Census and survey Processing System
CMW	Community Midwife
DHS	Demographic and Health Survey
DHQ	District Head Quarter
DNO	District Nutrition Officer
ENA	Emergency Nutrition Assessment
HFA	Height for Age
IYCF	Infant and Young Child Feeding
KAP	Knowledge Attitude and Practices
MNCH	Maternal Newborn and Child Health
MUAC	Mid Upper Arm Circumference
NNS	National Nutrition Survey
PLW	Pregnant and Lactating Women
PPS	Probability Proportion to the Size
PSLM	Pakistan Social and Living Measurement
RHC	Rural Health Care
SAM	Severe Acute Malnutrition
SPSS	Statistical Package for Social Sciences
SMART	Standardized Monitoring and Assessment of Relief and Transition
TT	Tetanus Toxoid
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WFA	Weight for Age
WFH	Weight for Height
GoB	Government of Balochistan

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## 6 EXECUTIVE SUMMARY

Balochistan is the largest province of Pakistan covering 43.6 % of the entire area of Pakistan but has the smallest proportion of population in comparison to all other provinces in the country. It borders with all four provinces within Pakistan and in addition shares borders with Iran, Afghanistan, opening into the Arabian Sea. Physically, Balochistan is an extensive plateau of rough terrain divided into basins by ranges of sufficient heights and ruggedness. Broadly, Balochistan's geographic area can be divided into four distinct zones: Upper high lands, lower high lands, plains, and deserts. Balochistan has a peculiar clustered distribution of population owing to its climate, culture and topography. The dwelling of populace in a widespread area makes it very thinly populated and hence development initiatives have little cumulative impact on the overall socio-economic upliftment of the area. According to recent provisional results of the 2017 census, the population of Balochistan is 12,344, 408 with an annual growth rate of 3.37 % and a sex ratio of 110.63. <sup>1</sup>

Balochistan has one of the highest stunting rates amongst children under 05 in the region and these children are not only vulnerable to morbidity and mortality, but also prone to compromised intellectual and physical abilities. Under-nutrition is a recognized health problem in Balochistan more than other regions in the country demonstrated by the NNS in 2011, PDHS in 2012-13 and PSLM in 2014-15 and plays a substantial role in the country's elevated maternal and child morbidity and mortality rates. To address under nutrition issues in Balochistan, currently the provincial government is implementing a four years Nutrition Program for Mothers and Children (BNPMC) in 07 districts of Balochistan including Sibi, Qila Saifullah, Panjgur, Zhob, Kohlu, Nushki and Kharan, while "USAID - Food for Peace" is a one year project being implemented in 09 districts including Mastung, Quetta, Lasbella, Gawadar, Chaghi, Kalat, Hernai, Musakhel and Sherani through Provincial Nutrition Cell with the support from UNICEF.

To understand the existing situation of maternal & child nutritional status as well as its contributing factors and essential determinants of health including vaccination; food security, education, birth registration and water and sanitation facilities, Health department, Government of Balochistan with the financial and technical support from UNICEF commissioned a study which was rolled-out by Medical Emergency Resilience Foundation in consultation and support from Provincial Nutrition Cell and UNICEF. The survey comprising of two important perspectives including Standardized Monitoring and Assessment of Relief and Transition (SMART) along with Knowledge, Attitude and Practices (KAP) at the household level

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<sup>1</sup> [http://www.pbs.gov.pk/sites/default/files//PAKISTAN%20TEHSIL%20WISE%20FOR%20WEB%20CENSUS\\_2017.pdf](http://www.pbs.gov.pk/sites/default/files//PAKISTAN%20TEHSIL%20WISE%20FOR%20WEB%20CENSUS_2017.pdf)

in 16 districts of Balochistan. Two stage cluster sampling methodology was used in all districts for the random selection of clusters and households.

The findings of the survey undertaken in all districts provide a cumulative inference, which might be of great importance for policy makers; health program planners and managers as well as the community and civil society in terms of realization of the magnitude and intensity of nutrition related problems and its determinants.

The situation of malnutrition is worse when assessing the nutritional status of children under 05 years of age. Based on weight and height, Global Acute Malnutrition (GAM) and Severe Acute Malnutrition (SAM) prevalence in 16 districts of Balochistan are 19.4 and 5.3 percent respectively. In these districts, it was found that 47.1 percent of the children are stunted.

Key findings for the nutritional status of children U5 are given in the table below:

	<b>Indicators</b>	<b>SMART 2017</b>
<b>Prevalence of acute malnutrition based on WHO reference (WFH)</b>	Prevalence of global malnutrition (<-2 z-score and/or oedema)	19.4%
	Moderate Acute malnutrition	14.1%
	Severe Acute Malnutrition	5.3%
<b>Prevalence of acute malnutrition based on MUAC</b>	Prevalence of global malnutrition (< 125 mm and/or oedema)	15.1%
	Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	10.4%
	Prevalence of severe malnutrition (< 115 mm and/or oedema)	4.7%
<b>Prevalence of underweight based on WHO reference</b>	Prevalence of underweight (<-2 z-score)	36.0%
	Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	22.6%
	Prevalence of severe underweight (<-3 z-score)	13.4%
<b>Prevalence of stunting based on WHO reference</b>	Prevalence of stunting (<-2 z-score)	47.1%
	Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	28.8%
	Prevalence of severe stunting (<-3 z-score)	18.3%

For IYCF indicators the survey results revealed that only 34.3 percent children were exclusively breast fed. Early initiation of breastfeeding rate within 01 hour soon after delivery, was 67.6 percent.

Over all there were 33% households which were joint families along with 12% nuclear families with dependents in Balochistan province (16 districts). There were around 3.2% households where no one worked in Balochistan while 31.5 % were found to work as daily wage laborers in addition to 4 % migrant workers and 2.7% seasonal job seekers. Around 11% of the household respondents indicated that they have a monthly income of less than PKR. 5000 while almost 24% of the household respondents mentioned that they have a monthly income which ranged between PKR 5000 and PKR 15000. The proportion of lactating women in the

entire population surveyed is 8.8% in addition to 0.8% women who were pregnant at the time of the survey. The proportion of children aged  $\leq 02$  years of age was 7.2 % and that of children  $\leq 05$  years of age in population was 18.6% whereas the proportion of children between 5 to 18 years of age is almost 10%. The average household size was found to be 09 persons. These proportions of different population strata and their dependency on meager resources and erratic sources of income as well as harsh climatic and topographical conditions and lack of economic productivity have huge implications on their nutrition, health and subsistence.

Education of females' especially young girls and mothers is an important determinant of health status of the family as it helps the individual and family in acquiring healthy behavior. Majority, 80% responded that they have not attended any school; only 8.3% shared that they have studied up to primary level. 1% from among the respondents was found to have completed their studies higher than graduation level. Similarly, only 2.1% of the respondent women reported that they have completed their graduation. With such low level of literacy one can easily assess the level of prioritization of health at the household level.

Owing to illiteracy and lack of access to appropriate information, the information on danger signs of pregnancy and delivery among pregnant and lactating women is limited. Only 23% of respondents in Balochistan knew that vaginal bleeding during pregnancy was a danger sign and 6% of PLWs were found to know about three or more danger signs during pregnancy and alarmingly almost 45% of the PLWs did not know about a single danger sign during pregnancy.

Availability of skilled birth attendants during pregnancy and delivery at a designated health facility plays a critical role in reducing early neonatal, infant and maternal mortality. Only 28.2% of the pregnant and lactating women indicated that they had availed ante-natal care during either their existing pregnancy or the previous one but only 7.8% of the women with existing pregnancies went four times or more for an ante-natal checkup. Only 20.8% of the respondents shared that they had received a tetanus Injection during their existing or previous pregnancy. Out of those who had received TT vaccination, only 36% pregnant women had received 02 doses. Majority i.e. 57.5% pregnant and lactating women in their last pregnancy had not received any iron or folic acid supplements. Around 66.4% of the deliveries were attended by traditional birth attendants in Balochistan while just 6% were attended by a qualified doctor; 7.3% by a Nurse/LHV/midwife and only 8.5% by community midwives. Lady health workers attended 2.1% of the deliveries and 09% of the respondents added that their relatives assisted them during their last labor. Well above half, 79% of the deliveries took place at homes in addition to 3.4 % deliveries where women delivered at others' homes. Only 18.4% of the women after delivery consulted for post-natal checkup. Around 7.8 % PLWs were found to be malnourished.

The knowledge among pregnant and lactating women on care of newborn soon after birth and their knowledge base on identification of danger signs was sub-optimal in the 16 districts of Balochistan where the survey was undertaken. Majority, 72.2% of the newborns were kept

next to the mother soon after birth. Around 55.3% of the respondents did not know if or not the instrument used to cut the cord of the newborn was sterilized. Around 40.4 % indicated that the instrument was sterilized while 4.2% shared that it was not sterilized. In the case of 76 % of the newborns, something was applied to the cord after it was cut, in 42.8% households *Kajal* was applied and in 32.3% households' mustard oil was applied to the cord after cutting Chlorhexidine was applied to the cord of only 3.4 % of newborns. When respondents were asked about the danger signs in a newborn, 18.5% considered convulsions as a danger sign and 63% of the respondent mothers said that fever in a new born is a danger sign. Almost 25% of the respondents thought that poor feeding/suckling is a danger sign. Difficult breathing/fast breathing was considered a danger sign by 10% of the respondent mothers. Around 6.5% of the respondents felt that hypothermia was a danger sign. Only 12.5% of the respondents shared that early birth (prematurity) and low weight were danger signs, 16% shared that yellow discoloration of palms, soles and eyes was a danger sign, 11.4% considered a swollen abdomen as a danger sign, 7.8% considered unconsciousness as a danger sign, 5.9% said redness or pus of the umbilical stump is a danger sign.

Vaccination is one of the major contributors of child survival. Quality vaccines, if rightly administered can avert the morbidity, disability and mortality resulting from preventable causes. Only 32% of the children had a BCG scar while the rest of the 3% had no scar but BCG was given while 61% of the children had not received BCG. Similarly, 35% of the children had not received polio drops and 7% households did not know about polio vaccination. It is pertinent to note the proportion of households which kept the vaccination card and showed it during the survey. Only 1208 households out of the total 14,360 households (8.4%) had kept the vaccination cards of children less than 2 years of age. Based on the card marking, out of the 25.5 % reportedly immunized for measles, only 2.6% of children 9 months and above were immunized for measles. Out of those who had reached 09 months and above, having vaccination card, 2.1% were not immunized for measles. Similarly, out of the 32.4% of the total 1208 children, who were less than 09 months of age, almost 16 % (N-753) were found to have cards at the household level and out of those nearly 11% were fully immunized for the age specific scheduled immunization while 5.3% were partially immunized.

Lack of knowledge about importance of vaccination (58%); lack of access to vaccination services (27%); denial to vaccinate children (10%); fear of side effects (7%) as well as absence of male family members at household during vaccination (7%) are major reasons for lower proportion of child vaccination coverage in Balochistan. These qualitative aspects of discourse would be helpful in developing behavior change communication alongside health information dissemination material in alignment with the contextual needs of the local population.

Food insecurity and lack of affordability are concerns affecting the nutritional status of women and children. A little more than half 54% of the households were found to have low dietary diversity which meant they could consume only 3 food groups. In 23% households,

there was absolute shortage of food. In 18% of households' women were found to eat less or did not eat at all as there was less food for children. Similarly, 24 % of the households had to sell assets to buy food for family in Balochistan. In 16% of the total households surveyed there was at least one member who slept hungry and in 61 % of such households they slept hungry 1-2 times while in 35 % households the member slept hungry 3 to 10 times. In 15% of households there was at least one person who remained hungry for the whole day and night without food in the last 4 weeks since the survey was conducted.

Proper disposal of human excreta and hand washing at critical times provides protection against a significant number of communicable diseases. Public tap water is available in only 5.3% of the households surveyed in 16 districts and similarly piped water was accessible by only 31% of the total households in the 16 districts surveyed. Respondents in almost 21.7% of the households shared that they access water sources that are at distant locations requiring a walk of more than 30 minutes. Only 13.5% households shared they treat water for drinking purpose. Only 32.6% households use a flush to septic system type of toilet and only 6.7% use a flush to piped sewerage system. A significant proportion, 25% of the households indicated that they had no choice but to practice open defecation in addition to 1.8% households which use bucket service. Around, 8.8% households use pour flush to a pit type latrine; 10.8% households use pit latrine with slab, 5.2% use a pit latrine without slab and 5.3 % households use hanging toilets. Only 34.5% of the respondents shared that after defecation or voiding they wash their hands. Around 36.2% households practice hand-washing before eating, 16% said that they wash their hands before feeding the child and similarly only 19% shared they wash their hands before preparing food/cooking. Only 16.6% respondents said they wash their hands after cleaning their child, 22.7% said that they wash their hands after eating /meals and 13.3% washed their hands after handling animals.

Right to education is a universally accepted and endorsed human right. In Pakistan in general and in Balochistan in particular the access to quality education has always remained a challenging concern. The enrollment of children in school is an ultimate strategy for reducing child labor. Only 56.6% of the children between 5 to 18 years of age were found to attend a school currently in Balochistan which requires immediate attention.

Majority i.e. 77% of the children below 18 years of age were found without any legal identity document including form B or birth registration and 13.3 % households did not have information on identity documents. Out of the total children below 18 years of age, 11.3% were seen undergoing child labor practices.

Keeping in view the existing situation of maternal and child health status indices, stakeholders including most importantly the provincial and district governments must develop coherent strategies to improve the access of women and children to quality health services with a particular focus on ante-natal care; skilled birth attendance and vaccination of children  $\leq$  05 years of age by balancing out the demand generation and provision of services through

community mobilization and health system strengthening simultaneously. It is the lack of knowledge and access to appropriate information as well as access to vaccination services that are the major reasons for lower proportions of child vaccination in almost all districts surveyed in Balochistan.

The lower proportion of households practicing handwashing after certain activities requires immediate attention of the policy makers and health promoters as well as partners of provincial governments that are engaged in water sanitation, health & hygiene promotion initiatives. Improved water and sanitation facilities along with improved school enrolment/retention will indirectly help the stakeholder in improving maternal and child health status in the district. Long term strategies must include the effective planning and implementation of actions focusing on female literacy, as mothers are primary caregivers of the newborn. Implementable plans to improve health seeking behaviour among children going to schools as well as women of reproductive age groups must be rolled out. The engagement of change activists and change catalysts as well as means of communication are required to be effectively in place to mobilise the communities enabling them to prioritise health individually as well as at the household level.

Particular attention has to be paid to the children who are not enrolled in any school (44%) and instead are engaged in child labor (11.3%). The significant number of children who undergo both physical and psychosocial trauma must be provided with an opportunity to learn from formal and informal channels engendering skillful and productive citizens.

**Recommendations** - These surveys revealed that the causes of acute malnutrition in the areas are multi-faceted, and to improve nutrition sustainably simultaneous action may be required in many ways.

**Based on the anthropometric findings there is a need to strengthen, expand and sustain the nutrition programme:** Strengthen the performance, increase the coverage and sustain the current nutrition programs to prevent an increase in acute malnutrition in the most vulnerable groups. Consider expanding the programme to additional districts.

Keeping in view the malnutrition situation, the role of the government is imperative and there is a need for large scale nutrition program covering all the districts to address both nutrition sensitive and specific aspects of malnutrition.

**There is an urgent need to develop and strengthen linkages amongst the various sectors for addressing malnutrition through multi-sectoral approaches.** Based on the findings, it is recommended to develop linkages amongst health, agriculture, livestock, local government, public health engineering, education and food for addressing malnutrition by implementing multi-sectoral programs including both nutrition specific and sensitive interventions.

**There is a need to allocate sufficient finances for nutrition programming in the province.** Currently the coverage in the province for nutrition programs is quite low and it is recommended to expand the program in all the districts covering all the union councils – For this funds allocation in the government budget is recommended for ensuring the provision of nutrition services based on equity model.

**Strengthen advocacy, social mobilization and communication strategies.** Addressing the various causes of child malnutrition depend on the active participation of many stakeholders at different levels, and strong multi-sectoral linkages. The results of these surveys need to capture the attention of decision makers and the public at large. It also needs to support the community-based behavioral change efforts through strengthening the communications skills of health workers both at community and health facility levels, and reinforcing their efforts through well targeted communication strategies.

**Strengthen the capacity of the health workforce through technical support for ensuring effective implementation of nutrition programmes.** Good IYCF practices can play an important role in the prevention of stunting in the long run and the survey findings regarding IYCF indicators were good in some areas. Keeping in view the findings for knowledge and practices related to exclusive breastfeeding, meal frequency etc, it is recommended to increase efforts to improve practices through the BCC component at the community levels. Based on the findings of this survey, it is recommended to further enhance the knowledge of the community based health workers and support the community based structures in effective counselling on IYCF practices in the communities for improved breastfeeding and complementary feeding practices.

**Strengthen water, sanitation and hygiene (WASH) programming.** It is of utmost importance that sources of clean and safe drinking water resources including springs and underground water reservoirs be explored, protected and made accessible to the local population. Awareness of households on protection of clean water reservoirs and supply systems as well as purification of water should be incorporated in health and nutrition programs.

Community must be mobilized to discourage the practices of open defecation (over 1 %) and to organize themselves to work on building and strengthening the sewerage system as well as treatment of sewerage either by external support or by cost sharing with the local government or provincial development programs. Hand washing practices must be improved highlighting the critical times when hands must be washed with soap and water.

**Support initiatives that enhance the food production and increase resilience through the diversification of income, like alternative income generating opportunities within the province.** Food insecurity and lack of affordability are grave concerns. Respondents from a significant number of households were found to fear non-availability of food due to lack of resources as well as lack of access to food they liked. Households also reported to have reduced intake of meals both in frequency and quantity. Around 54% of the households were found to have low dietary diversity which meant they could consume only 3 food groups and women in over 06% households had to eat less to spare food for children. This is linked with the overall income of the household, unless productivity improves the affordability of nutritiously balanced and consumption of diversely grouped food will remain an issue. Government may introduce food support programs, voucher schemes or provide subsidies for households with women and children requiring diversely modified food.

**Strengthen the health service delivery and education system through technical, logistical and financial support.** The long terms strategy of MNCH programs must have a focus on girl's education and health promotion activities must be tailored to benefit a larger proportion of the mothers and young women (78%) who never attended school. Knowledge on danger signs during pregnancy and danger signs in a newborns as well as skills required for the care of the newborn has to be improved along with health seeking behavior for safer pregnancy and delivery as well as post-natal care in order to attain significantly improved status of maternal and child health indicators including vaccination coverage, skilled birth



attendance as well as post-natal care so that efforts towards milestones set in Sustainable Development Goal 3 could be set in direction.

The information on the importance of the skilled birth attendance at a proper health facility should be widely disseminated among pregnant women and newly-wed couples through MNCH programs discouraging the trend of assistance from traditional birth attendants and home based deliveries.

The coverage of vaccination in Balochistan requires significant improvement and measures must be taken to ensure that every child gets completely immunized through community mobilization and access to immunization services at their door steps. Dispelling the myths through community mobilization and awareness raising as well as access and quality of vaccination services must improve to reduce the vulnerability of children to vaccine preventable diseases.

Keeping in view the higher rates for ARI, fever and diarrhea cases amongst the children U5 and the higher number of deaths due to these diseases, integration is recommended for water & sanitation, health and nutrition interventions to ensure the prevention of water borne diseases and timely identification and referral of such cases to the health facilities for further management. It is also recommended to raise awareness amongst the communities, keeping in view the seasonality for ARI and diarrheal diseases

**Strengthen child protection initiatives.** Government and stakeholders must prioritize child protection. A significant number of children are out of school and over 11% of the households are seen to be engaged in child labor. The stakeholders are required to develop joint program plans encompassing child birth registration child protection, and development initiatives such as education and healthcare.

## 7 CHAPTER 1 INTRODUCTION AND RATIONALE OF THE SURVEY

### 7.1 INTRODUCTION

Balochistan is the largest province of Pakistan covering 43.6 % of the entire area of Pakistan but has the smallest proportion of population in comparison to all other provinces in the country. It borders with all four provinces within Pakistan and in addition shares borders with Iran, Afghanistan, opening into the Arabian sea. Physically, Balochistan is an extensive plateau of rough terrain divided into basins by ranges of sufficient heights and ruggedness. Broadly, Balochistan's geographic area can be divided into four distinct zones: Upper high lands, lower high lands, plains, and deserts. Balochistan has a peculiar clustered distribution of population owing to its climate, culture and topography. The dwelling of populace in a widespread area makes it very thinly populated and hence development initiatives have little cumulative impact on the overall socio-economic uplift the area. According to recent provisional results of the 2017 census, the population of Balochistan is 12,344, 408 with an annual growth rate of 3.37 % and a sex ratio of 110.63.<sup>2</sup>

The upper highlands, known locally as Khorasan, rise as high as 3,700 meters, with valley floors about 1,500 meters above sea levels. The highlands include Makran, Kharan and Chaghi ranges in the West and Sulaiman, Pab, Kirther in the east. The Upper High Lands fall mainly in districts Zhob, Killa Saifullah, Pishin, Quetta, Ziarat and Kalat. It comprises of a number of ranges such as Sulaiman, Toba Kakari, Murdar, Zarghoon, Takatu, and Chiltan ranges. The Lower High Lands have an altitude ranging from 1970 to 3940 ft. (600 to 1200 M). They are located in south-eastern Balochistan, except the eastern part of Kachi, the southern end of Dera Bugti and Naseerabad districts. Some are extensions of lower high lands that exist at the boundary of Gwadar, Turbat, Panjgur, Kharan and Chaghi districts.

Balochistan has rich deposits of mineral and natural resources including coal, chromite, barites, sulphur, marble, iron, limestone and quartzite. The climate of the upper highlands is characterized by very cold winters and warm summers. Winters of the lower highlands vary from extremely cold in the northern districts to mild conditions closer to the Makran coast. Summers are hot and dry. The arid zones of Chaghi and Kharan districts are extremely hot in summer. The plain areas are also very hot in summer with temperatures rising as high as 120 degrees F (50 degrees Celsius).

Globally, Pakistan is among the countries with the highest burden of maternal, infant and child mortality. If Pakistan is to achieve Sustainable Development Goal 3 of reducing maternal mortality and ending preventable deaths of newborns and children less than 5 years of age, it has to expedite the progress towards addressing modifiable threats to global health and

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<sup>2</sup> <http://www.pbs.gov.pk/content/provisional-summary-results-6th-population-and-housing-census-2017-0>

child survival like malnutrition. Pakistan has one of the highest stunting rates in children in the region and as a result these children are not only vulnerable to morbidity and mortality, but also to compromised intellectual and physical development. Under-nutrition is a recognized health problem in Balochistan more than other regions in the country demonstrated by the NNS in 2011, PDHS in 2012-13 and PSLM in 2014-15 and plays a substantial role in the country's elevated maternal and child morbidity and mortality rates. As per National Nutrition Survey, 2011, 52.2% of the children aged under 05 years are stunted (chronic malnutrition), 16% are wasted (acute malnutrition) and 39.6% are underweight. Undernutrition is a substantial underlying cause of illness and death in children under 05 years of age as these children are more vulnerable to contracting diseases. Infant and under 05 mortality rates for Balochistan are 97 and 111 per 1000 live births (PDHS 2012-13), respectively.

To address under nutrition issues currently the provincial government of Balochistan is implementing a four years Nutrition Program for Mothers and Children (BNPMC) in 07 districts with the envisaged goal, "to improve the nutritional status of male and female children under 5 of age and that of women of reproductive age, by improving the coverage of effective nutrition interventions in the selected districts of the province" while "USAID - Food for Peace" is a one year project being implemented in another 09 districts including Mastung, Quetta, Lasbella, Gwadar, Chagai, Kalat, Hernai, Musakhel and Sherani of Balochistan through Provincial Nutrition Cell with support from UNICEF.

The findings of the SMART surveys portray a poor nutrition situation in the districts, well above the World Health Organization's emergency threshold. There is a robust need for the implementation of nutrition programs focusing on both sensitive and specific aspects of malnutrition. Community based management of acute malnutrition (CMAM) interventions along with IYCF should be scaled up in order to ensure timely screening, identification, referral and treatment of severely malnourished cases and also to raise awareness amongst the communities regarding IYCF practices for ensuring the prevention of malnutrition in the long run.

## **7.2 RATIONALE AND OBJECTIVES OF THE SURVEY**

It is a well-known fact that both prioritization of health at individual, family and community level as well as accessibility, availability and affordability of the health services play a critical role in ascertaining the overall health status of the individuals and community at large. Estimating the district wise prevalence of malnutrition amongst children under 05 years of age and understanding the knowledge, attitudes and practices of the communities especially the pregnant & lactating women, caregivers for children under 05 years of age and the other relevant target groups directly or indirectly influencing the health seeking & nutritional practices of pregnant & lactating women and children under 05 years of age can help planners in effectively dealing with the situation, challenges and health issues the marginalized groups face in any society. Government of Balochistan also strives to address

the malnutrition amongst the targeted vulnerable groups and understand the nutrition situation in the province. The survey comprising of two important perspectives including Standardized Monitoring and Assessment of Relief and Transition (SMART) along with Knowledge, Attitude and Practices (KAP) at the household level was planned and implemented in 16 districts of Balochistan by Medical Emergency Resilience Foundation (MERF) in consultation and support from Balochistan Provincial Nutrition Cell and UNICEF.

The following objectives were measured through the KAP survey,

1. To estimate the prevalence of malnutrition on MUAC (Mid Upper Arm Circumference) <21 cm) in pregnant & lactating women
2. To assess the IYCF (Infant & Young Child Feeding) practices among children aged 0-23 months including breastfeeding & complementary feeding practices
3. To assess key Maternal Newborn Child Health indicators
4. To assess Access, availability and acceptability of food and food diversity
5. To assess household WASH facilities and practices
6. Estimating education Indicators (Children in school and children out of schools-Primary 6-18 years of age)
7. Assessing Child protection through estimating Birth Registrations
8. To generate recommendations for addressing the malnutrition situation and key health indicators in the targeted 16 districts through nutrition interventions

The survey was conducted using SMART methodology focusing on the accomplishments of the following objectives.

1. To estimate the prevalence of acute malnutrition (including bilateral edema) in children 6 to 59 months
2. To estimate the prevalence of stunting and underweight in children aged 06-59 months
3. To estimate the morbidity rates (for Diarrhea, ARI, Fever & other common childhood illnesses) in children 0-59 months of age
4. To measure the crude and under five mortality rates in children 0-59 months
5. To estimate the coverage of measles and vitamin A supplementation amongst the targeted groups (06-59 months children)

## 8 CHAPTER 2 METHODOLOGY OF THE SURVEY

### 8.1 SAMPLING METHODOLOGY

Two Stage Cluster Sampling methodology was used to select the households and potential survey participants. The 1998 census villages list, acquired from Bureau of statistics Pakistan, was used for cluster sampling as it was the only list available with the smallest administrative units (villages in rural areas and circles in urban areas). In the first stage, 60 clusters/villages were selected randomly using Probability Proportion to the Size (PPS) of the village population. In the second stage, 24 households were systematically selected from each cluster. If there were more than 250 households, segmentation was done to divide the total area roughly into equal number of segments. Several factors were taken into consideration for selecting an optimal number of clusters from the district. As a general principle, the smaller the cluster size and the more the number of clusters, the higher the statistical efficiency. Other considerations included; an assessment of the time required for one household to be interviewed, time taken to complete one cluster, the number of working hours in a day, and the burden of work on individual teams. Best practice was to complete one cluster a day.

### 8.2 SAMPLE SIZE REQUIREMENTS

The survey had several objectives requiring different sample sizes. Estimates from previous surveys, mainly the Demographic and Health Survey of Pakistan (2013) (DHS), National Nutrition Survey of Pakistan (NNS) and Pakistan Social and Living Measurement (PSLM), have been used in the sample size calculation. Balochistan's specific estimates were used for the most part but in some cases national level estimates were compensated. As cluster sampling was used, sample sizes were adjusted for the potential homogeneity of HHs within a cluster. Design effects from the DHS were used to adjust the sample size. The required size was also adjusted for non-response, which was 9% in the case of Balochistan in the Demographic and Health Survey (DHS) of Pakistan done in 2012-2013. For the population proportions, they were derived from the DHS. The proportions of population of interest (e.g. children under 5, 15-49-year-old women) were translated into proportions of households so that the required number of individuals were included when sampling the total number of houses. Where estimates were not available, informed assumptions were made to come up with a suitable sample size. A suitable sample size caters to the precision requirements of all the objectives. The sample size calculations are made based on the following formula;

$$n = DEFF * Z_{\alpha/2} (\sqrt{pq})/D^2$$

Where

n = Sample size

$\alpha$  = Level of significance ("alpha"), usually 0.05 or 5% (corresponds with 95% confidence interval)

P= Existing estimated prevalence

DEFF=Estimated design effect.  
D= Margin of error

Table 1 Individual Component Sample size requirements

Indicators	Required Household sample size	Adjusted Sample Size	Frequency of Administration
<b>Anthropometric measures of children aged 6-59 months</b>	<b>710</b>	720	12 HHs per cluster
<b>Child morbidity</b>	<b>476</b>	720	12 HHs per cluster
<b>Food security</b>	<b>618</b>	720	12 HHs per cluster
<b>WASH Facilities</b>	<b>632</b>	720	12 HHs per cluster
<b>Malnutrition in pregnant and lactating women</b>	<b>1061</b>	1440	24 HHs per cluster
<b>Crude and Age-specific under 5 mortality rate</b>	<b>1424</b>	1440	24 HHs per cluster
<b>Measles vaccination and vitamin A Supplementation</b>	<b>1271</b>	1440	24 HHs per cluster
<b>IYCF Practices in children under 2 years</b>	<b>1376</b>	1440	24 HHs per cluster
<b>MNCH indicators in mothers of children under 2 years</b>	<b>1380</b>	1440	24 HHs per cluster
<b>Birth registration for children under 5 years</b>	<b>721</b>	1440	24 HHs per cluster
<b>School enrollment (primary) in 6-12 year old children</b>	<b>1159</b>	1440	24 HHs per cluster

### 8.3 DATA COLLECTION TOOL

Standardized and validated structured questionnaires (tools) with no open-ended questions were used for data collection. The questionnaires were divided into different sections or modules including components which were developed for individual objectives of the survey. The questions were adapted from the SMART survey questionnaires for Nutrition level assessment and mortality, and other standard indicators validated for Balochistan and recommended by the relevant stakeholders in the province.

### 8.4 DATA COLLECTION, DATA ENTRY AND DATA ANALYSIS

Field data collectors filled the questionnaires at time of the household interviews. These questionnaires were checked for errors and completeness in the field by the supervisors, and were then sent to the head office in Quetta. The filled questionnaires were sent on a periodic basis and data was entered simultaneously into computers for recording and subsequently for analysis. Double entry was done i.e. two personnel entered the same data twice and the entered data was then compared. A discrepancy of over 3% between the two sources and the results was considered unacceptable and it triggered the red flag for re-entry of that batch of data. Comparison checks were also done daily.

A computer software using CSPro was developed for KAP data entry, with programmed entry checks and skip patterns to minimize any data entry errors while SPSS 24 version was used for KAP data analysis.

For the nutrition and mortality component of the SMART survey, ENA software was used for data entry and analysis.

The unit of analysis was individuals for all study indicators except for those that were estimated at the household level. Components of food security and WASH had households as the units of collection and analysis. Descriptive analysis was done to calculate prevalence (proportion) estimates of binary/ categorical indicators. Subgroup analysis was done for certain indicators e.g. the age-specific under 5 mortality rate in children under 5. The crude mortality rate for a district was calculated for the whole population of the district.

### 8.5 SPECIAL CASES FOR SAMPLING

1. *Refusals, unavailability, locked houses:* Non-response household was minimized through revisits and additional efforts to convince households to participate (However, if a household refused to participate, or was locked or unavailable, they were NOT substituted with another household adjacent to it).

2. *No children or eligible participants available in selected houses:* In the event that no children were residing in a household selected for the nutrition survey (anthropometric measures) or for the IYCF components, the same principle of non-substitution applied.
3. *Multiple families living in a compound:* The line-listing team took utmost care to identify the number of families living in a compound. In the event that they failed to number every family during line-listing process, the team randomly selected one household to participate in the survey
4. *Apartments in urban areas:* All households in the buildings/apartments were numbered and included in the line-listing. The data team followed the same procedure for household selection from the numbered line-list.

## **8.6 TRAINING:**

### **8.6.1 TOT (TRAINING OF TRAINERS) AND DISTRICT LEVEL TRAINING**

As a first step, experienced field supervisors were identified as trainers and trained on study protocols, study tools followed by practical sessions, role play exercises, and field testing. This was a three-days training conducted in Quetta. Subsequently, the training was trickled down to the district level in a three days' session organized and conducted by the master trainers for field enumerators. For ensuring the quality of district level trainings, these were monitored by the MERF provincial team, district nutrition staff and supervisors. .

### **8.6.2 PILOT TESTING**

Data collection teams and the supervisors were assigned different areas within the target population which were not selected for inclusion in the study. These areas were chosen per the following criteria: convenience i.e. adjacent areas to local health directorates, inclusion of areas not selected for sampling already and nearby areas. The exercise included reaching and identifying the area and its boundaries correctly by the study teams, forming a complete listing of the locality, selection of the households and performance of at least 8 household interviews by each team. The exercise was monitored directly by field supervisors who then made a detailed assessment of team performance, obstacles encountered, and other information such as time taken for the completion of different tasks.

## **8.7 QUALITY ASSURANCE AND QUALITY CONTROL**

For quality assurance, following steps were taken.

### **8.7.1 MINIMIZING COVERAGE ERROR**

1. Listing of households in the respective cluster with the help of the local individual and a random start by applying systematic random sampling technique.



2. Data collection teams adequately trained on sampling methodologies i.e. mapping, listing, and household selection.
3. Any households not present at the time of the first visit, were revisited at the end of the day and approached for ensuring their participation in the survey.

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### **8.7.2 NON-RESPONSE/ REFUSALS**

The strategy adopted to minimized any potential refusals through; (1) Interviews conducted by female interviewers who ensured the comfort of respondents taking into account the local culture and context (2) Revisit of non-responding/ refusing households at the end of the day with the field supervisor to convince households for participation (3) Data collectors trainings in rapport building with the household respondents

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### **8.7.3 SAMPLING ERRORS**

1. Sampling errors were minimized by employing probability sampling with an adequate number of households, which were representative of the population under consideration.
2. This was supplemented by inflation of the sample size by 9% to accommodate any non-response.
3. Any households not available or refused to participate were **not** substituted by an adjacent household, so as not to compromise the probability sampling methodology.

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### **8.7.4 MEASUREMENT ERRORS**

These were minimized through: (1) Adequate training of data collection teams. (2) Data collection on standard structured questionnaires (3) Standardized skills and techniques for anthropometric measurements (4) Using standard and calibrated measurement instruments. (5) Verification of vaccinations, registrations, reported deaths, dates, and causes, by confirming with vaccination cards, form B, death certificates, where available. (6) Reporting errors due to limitations in recall were minimized by using local events calendar. (7) Ensuring adequate understanding of the study tools by the interviewees. (8) The pre-testing of tools included interviewing a smaller sample of eligible participants and asking them about their understanding of the study questions. (9) Field teams were provided with field manuals with details on study protocols and measurement procedures. (10) Field editing by supervisors, correcting errors and ensuring completeness of questionnaires and other information on pre-approved tools.

## **8.8 MONITORING MECHANISMS**

Process monitoring was undertaken by field supervisors, internal and external monitors.

**SUPERVISORS** directly monitored team's field activities and provided supportive supervision to them. There was one team supervisor and two team leaders for each district. The supervisor was responsible for the overall district supervision while each team leader was assigned two teams and he/she was responsible for the cluster mapping, HH listing, selection and other data collection activities including data consistency and data accuracy. The supervisors daily monitored the teams and gave feedback to the field teams on the spot. In case of wide geographical placement of cluster, the supervisors randomly selected one district team for monitoring and gave feedback to the team leader and team members accordingly.

**INTERNAL MONITORS** were employed to monitor the field team activities and report back to the study head office in Quetta. They used monitoring checklists to ensure they observed and commented on all critical aspects of field activities including household selection and interviewing techniques. There were 4 internal monitors, who stayed out in the field for the entire survey work and visited all districts. They monitored and supervised the field teams including the supervisors, team leaders and data collectors. On spot feedback was given to the field staff and progress was reported to the head office in Quetta.

**LOCAL PERSON** contact information was used to verify that data collection and line-listing teams visited the cluster location and sampled households from the correct location. Their contact details were verified by internal monitors and supervisors, and they were randomly contacted by the head office team to verify location and the field team's activity.

**EXTERNAL MONITORS:** The field work was also monitored and supervised by the members of the technical working committee including health and nutrition technical experts and program managers. They gave on the spot feedback to the field team and commended their efforts at various occasions.

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### **8.8.1 ANALYTIC QUALITY CHECKS**

Comparison of data across teams working in one district was made possible. Statistically significant differences in information gathered by different teams on indicators like anthropometric measures and their derivatives (WFH, WFA, and HFA), gender ratios, average household sizes in a cluster were indicative of the biases or errors introduced in one or more team's performance. Analysis of variance (built into ENA software) was used to assess significant differences in the nutrition indicators while SPSS 24 was used for biases and errors as well as deviations for information on other indicators.

**STANDARD DEVIATIONS** of WFH were measured for each team separately. The SD for WFH should be within the range 0.8-1.2 z scores. If any team's values did not have an SD within this range, their data was excluded from the analyses.

**DUPLICATION AND FABRICATION CHECKS:** Duplication of both deployment of teams and data collection was checked regularly and flagged. If an incident of duplication was found, where field teams used study subjects twice or more i.e. they used the same data for multiple locations or households the team and supervisor were replaced.

**BUILT-IN ENA, DAILY CHECKS BY CLUSTER:** The ENA software has built-in checks to examine the internal structure of the data to see if the teams were consistent with each other, that the measurers were not rounding the values inappropriately, and that there were no large numbers of unlikely values.

**OTHER DATA QUALITY ASSURANCE MEASURES:** (1) Meeting sample sizes efficiently by not including all components in all households, and limiting the daily number of interviews to be done to a manageable number. (2) Involving team leader for line-listing, segmentation and mapping. This ensured cross checking of the sampling technique, at least of the initial stages as any problems in the segmentation/ mapping was identified and rectified by the data collection teams.

## 8.9 STRENGTH AND LIMITATION:

### 8.9.1 STRENGTH:

#### 8.9.1.1 CHOOSING A REPRESENTATIVE SAMPLE

- Since there was a considerable variation in the sizes of the populations in neighborhoods and village districts or the PSUs. Thus to save time and to reduce the field team workload, segmentation was applied where cluster with large population have been divided into equal segments and then randomly selected a segment for inclusion in the survey.
- In order to achieve desire level of precision and representativeness of estimates an individual sample from every district was chosen.
- Since the survey has a number of objectives with required sample being different thus to maximize the efficiency, a separate sample size was calculated for each objective.

#### 8.9.1.2 LARGE SAMPLE SIZE:

- Sufficiently large enough sample size was chosen to estimate the prevalence of the conditions of interest with adequate precision. Sample size has been calculated using computer software with built in formal.

#### 8.9.1.3 DATA COLLECTION WORK

- Field team were deployed in all the districts and data collection work was commenced simultaneously in all the districts and was timely completed in all the district.
- Field work was thoroughly monitored by internal and external monitoring teams

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### **8.9.2 LIMITATION/CHALLENGES:**

- Balochistan is the largest province in term of land/area and district population are widely scattered therefore, it was very difficult for the survey team to reach every selected cluster and household of the respective district but being a local they made it possible and touched all the selected cluster for data collection.
- The security situation was volatile and remained unpredictable during the whole survey period but with support of local administration, the survey work was smoothly implemented and no mishap has been reported during the whole survey period.
- Availability of train enumerator was also a big challenge for the implementing organization but with support of the local partners, the organization managed to recruited field team member (enumerators) from the respective districts.
- Household refusal rate was another challenge for the survey team, but being local they made it possible to control and minimize the household refusal rate to the maximum possible level.

## 9 CHAPTER 3 RESULTS OF THE SURVEY

### 9.1 RESULTS OF KNOWLEDGE ATTITUDE AND PRACTICES SURVEY

#### 9.1.1 HOUSEHOLD CHARACTERISTICS

Out of the total 22,184 households surveyed in 16 districts of Balochistan, nearly 55% were found to live as a nuclear family whereas 33 % were found to live as a joint family and 12 % as nuclear families with dependents. Highest nuclear family structure of 82% were found in district Chaghi while lowest 20% nuclear family structure were found in district Killa Saifullah. On the other hand, highest Joint family structure were reported from Quetta and Musa Khail, each with 46% household were found to live as Joint family.

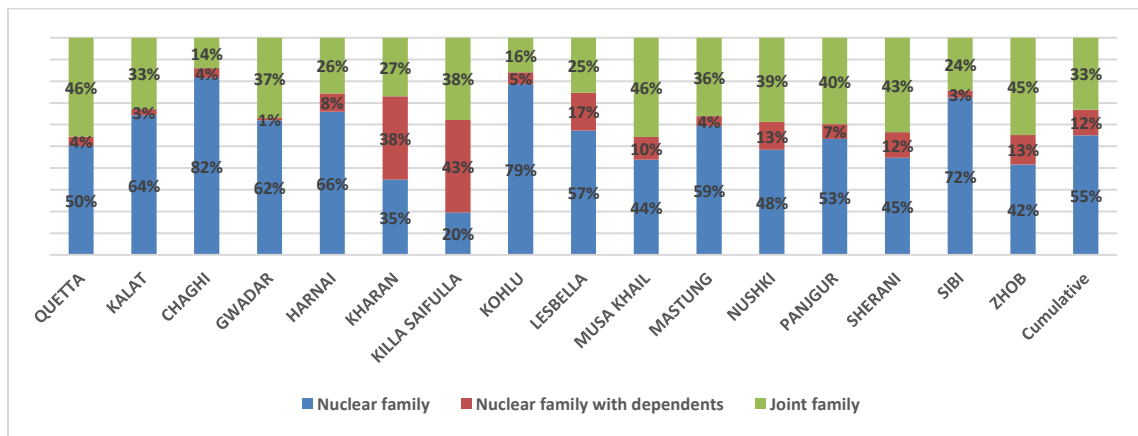


Figure 1- Type of family structure at households in Balochistan Province

Out of these 22,184 households surveyed in 70.7% of the households, the husband of the respondent was head of household while in almost 3.2% of the households, the respondent being a mother was the household head herself. In almost 17.6% of the households' the father in law as well as in 2.5% the mother in law was reported to be the household head. Around 5.2% of the households were headed by either a brother in law or a brother.

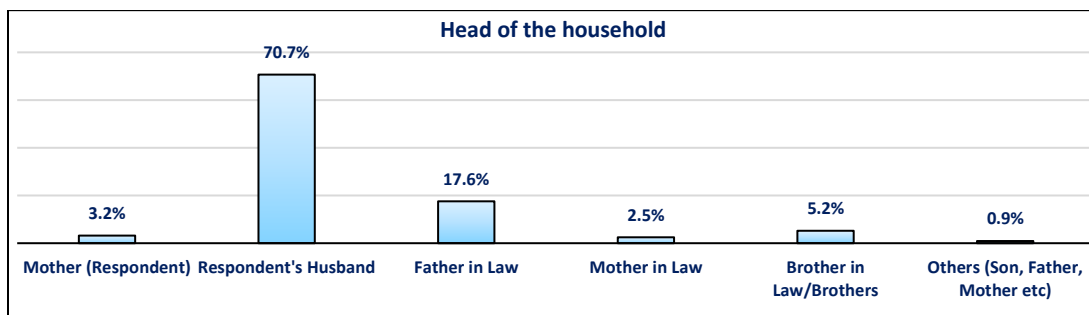


Figure 2- Head of Household

The proportion of pregnant and lactating women was 8.8% in addition to 0.8% women who were pregnant at the time of the survey. The proportion of children aged  $\leq 02$  years of age was 7.2% and that of children  $\leq 05$  years of age was 18.6% whereas the proportion of children between 5 to 18 years of age was almost 10%. The average household size was found to be of 09 persons.

### 9.1.2 EMPLOYMENT AND INCOME

The following graph represents the proportion of households with respect to the number of individuals from the family/household working. In only 63.3% of the households, at least one individual worked whereas in 19.4% of the households there were two family members who worked. Similarly, in 9.5% of the households there were 3 earning members of the family while in 3.2% of the household no one was found to be working.

Graph on the right shows proportion of household having only one individual working to earn money. In term of a single individual working in a household, district Chaghi remained on top where 87% of the household had reported that only one individual do some works to earn money.

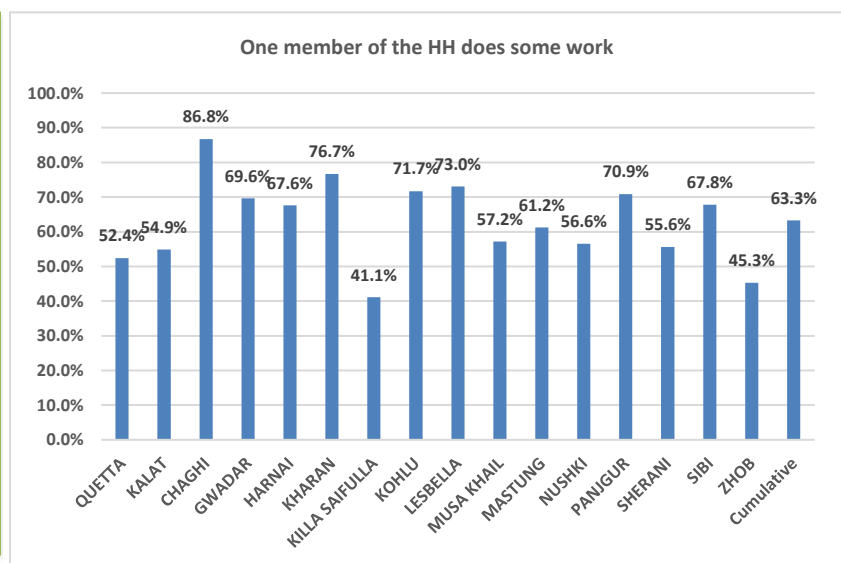
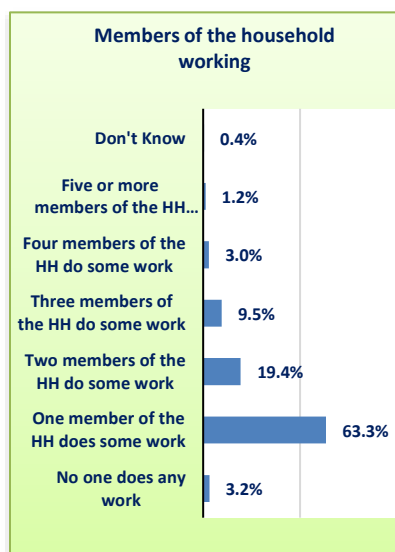


Figure 3 Number of household members working

Figure 4- Number of household members working

The following graph presents the type of work the working individuals in a household were found to have in the population surveyed in Balochistan. Around 25.4% of the households were found to have an earning person working as a government employee while almost 31.5% were found to work as daily wage laborers, 13% were reported to be farmers while 11.4% were skilled workers including technicians, masons, tailors and workshop owners while

15.6% were shop keepers. Only 6.8% of the earning members were working as private employees and a proportion of almost 11% were associated with private businesses. Nearly 4% were migrant workers and 2.7% worked as seasonal job workers.

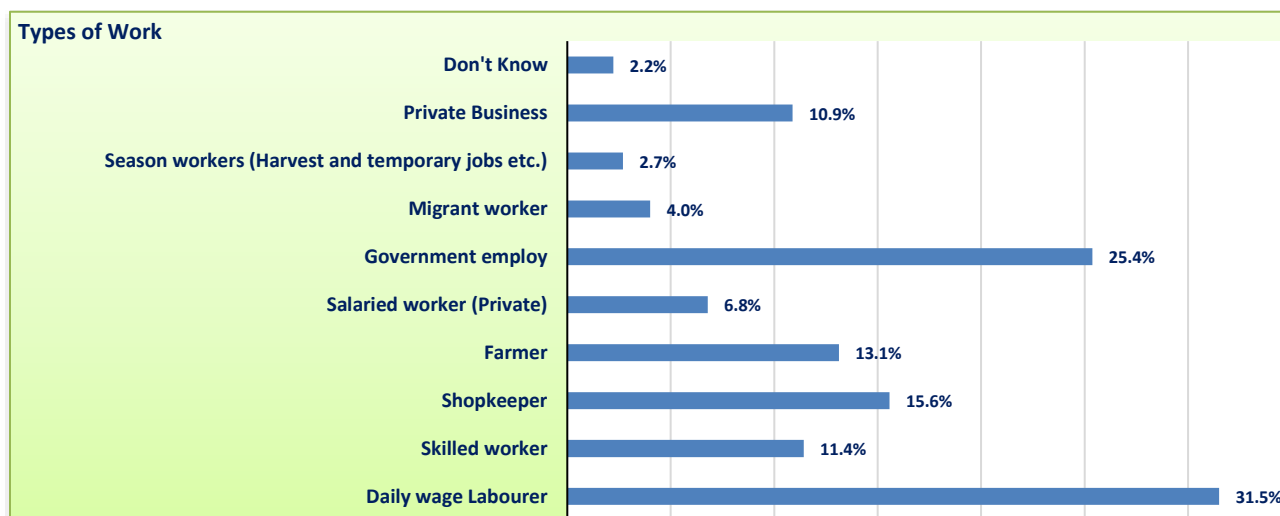


Figure 5- Type of work of the working individuals in Balochistan

The data collectors also inquired about the monthly income of the households. This included income from all sources. Around 16.8% of the households had a monthly income ranging between PKR 16,000 and PKR 30,000. Only 10.2% of the households reported their household income ranged between PKR 31,000 and PKR 50,000, 12% of the households reported that they have a monthly income of PKR 100,000 and above. In 11% of the household respondents indicated that they have a monthly income less than PKR. 5000 while 24.2% of the household respondents mentioned that they have a monthly income which ranged between PKR 5000 and PKR 15000.

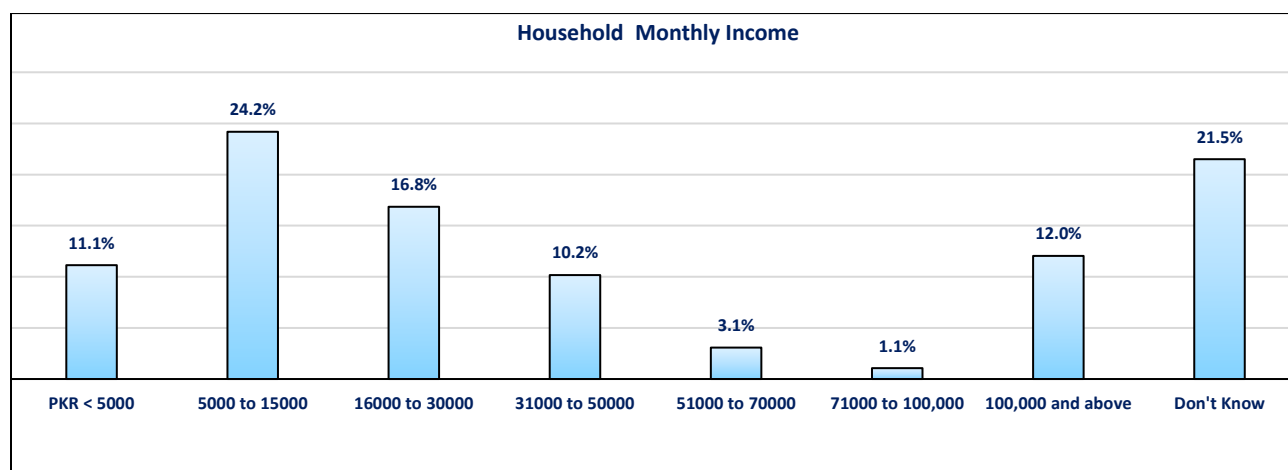


Figure 6-Monthly Income of Households in Balochistan

### 9.1.3 RESPONDENT'S EDUCATION

The literacy rate in Balochistan has remained historically low. This is more pronounced in case of female literacy rates. Since majority of the respondents were females, 80% responded that they had not attended any school; only 8.3 % shared that they had studied up to primary level. Only 1% from among the respondents were found to have completed their studies higher than the graduation level. Similarly, only 2.1% of the respondent women reported that they had completed their graduation while 4.6% of the respondents had completed their matriculation certificate.

Among the surveyed districts, Quetta remained on top where 51.7% of the mothers reported to study at least up-to primary level and was followed by district Panjgure where 34.3% of the mother had attended school up to primary level. In contrast, female literacy rate in districts Sherani and Musa khail remained at the lowest with 3.9% and 9.7% of the mother had ever gone to school up to primary level respectively.

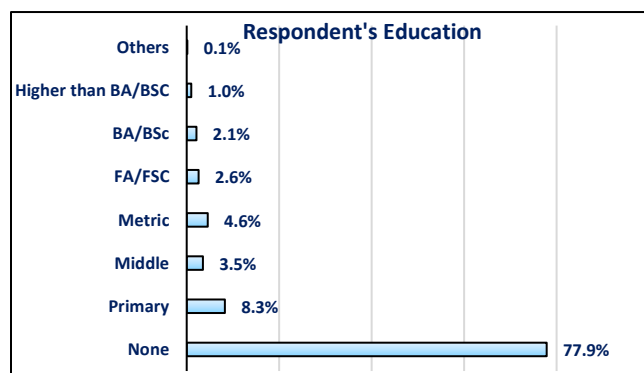


Figure 7 Respondent's education in Balochistan

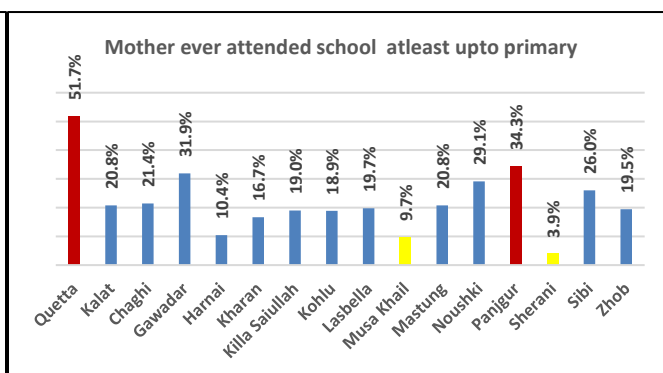


Figure 8- Mother ever attended school at least up to primary level

### 9.1.4 MATERNAL, NEWBORN & CHILD HEALTH

#### Knowledge about danger signs in pregnancy and newborn care

Knowledge about disease, its signs and symptoms and determinants can help individuals, families and the community at large in averting the drastic impact it can have on their health. Understanding pregnancy related normal conditions and care of newborns as well as updated knowledge of signs and symptoms which require urgent and timely medical attention can save thousands of lives of both women and children.

During the survey, knowledge of Pregnant and Lactating Women (PLW) was ascertained using the standard set of questionnaires. The following graphs present the findings of their knowledge on danger signs of both pregnancy as well as those considered to be danger signs in newborns.



Only 23% of the respondents in Balochistan said that vaginal bleeding was a danger sign while 24.7% respondents believed shortness of breath was danger sign. Around 33% regarded fever as danger sign during pregnancy, 25% considered severe abdominal pain a danger sign, 19.7% considered headache /blurred vision a danger sign and only 11% respondents said convulsions during pregnancy were danger signs. Nearly 15.2% considered swelling of the body including face or hands a danger sign.

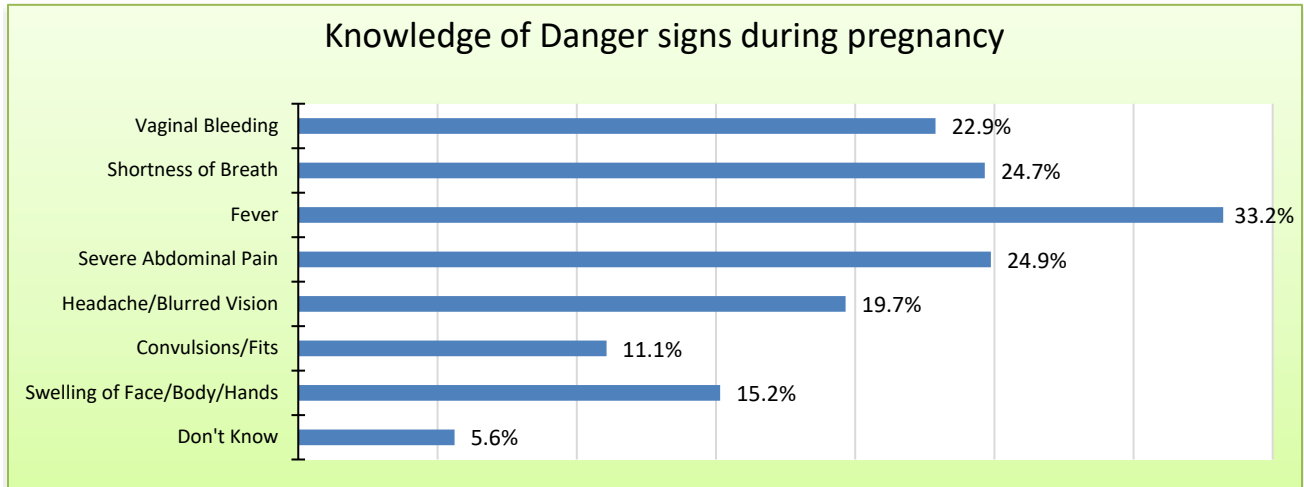


Figure 9- Knowledge of different danger signs during pregnancy among PLWs in Balochistan

The following graph presents the proportions of PLWs with knowledge of one or more danger signs. It is clear from the graph that almost 45% of the total PLWs did not know about any danger signs during pregnancy while 36% knew only about one danger sign and 13% of the respondents knew about 2 danger signs. Only 6% of PLWs were found to know about three or more danger signs during pregnancy.

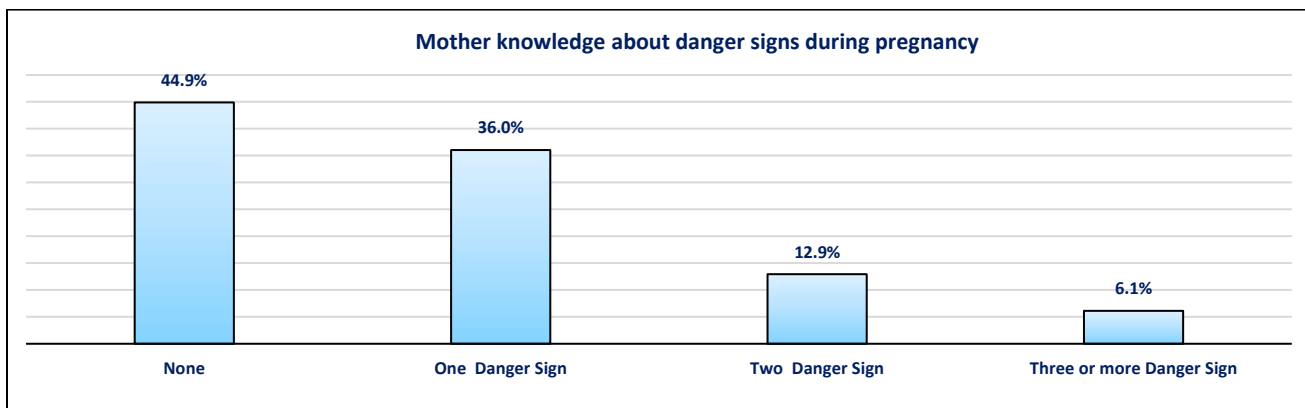


Figure 10- Proportion of women with knowledge on one or more danger signs during pregnancy in Balochistan

When respondents were asked about the danger signs in newborns, 18.5% considered convulsions a danger sign, 63% of the respondent mothers said fever is a danger sign, and

almost 25% of the respondents thought that poor feeding/suckling is a danger sign. Difficult breathing/fast breathing was considered a danger sign by 10% of the respondent mothers while 6.5% of the respondents felt that hypothermia was a danger sign. Only 12.5% of the respondents shared that early birth (prematurity) and low weight were danger signs. Around 16% shared that yellow discoloration of palms, soles and eyes was a danger sign, 11.4% considered a swollen abdomen a danger sign, 7.8% considered unconsciousness a danger sign and only 5.9% said redness or pus of the umbilical stump as danger sign.

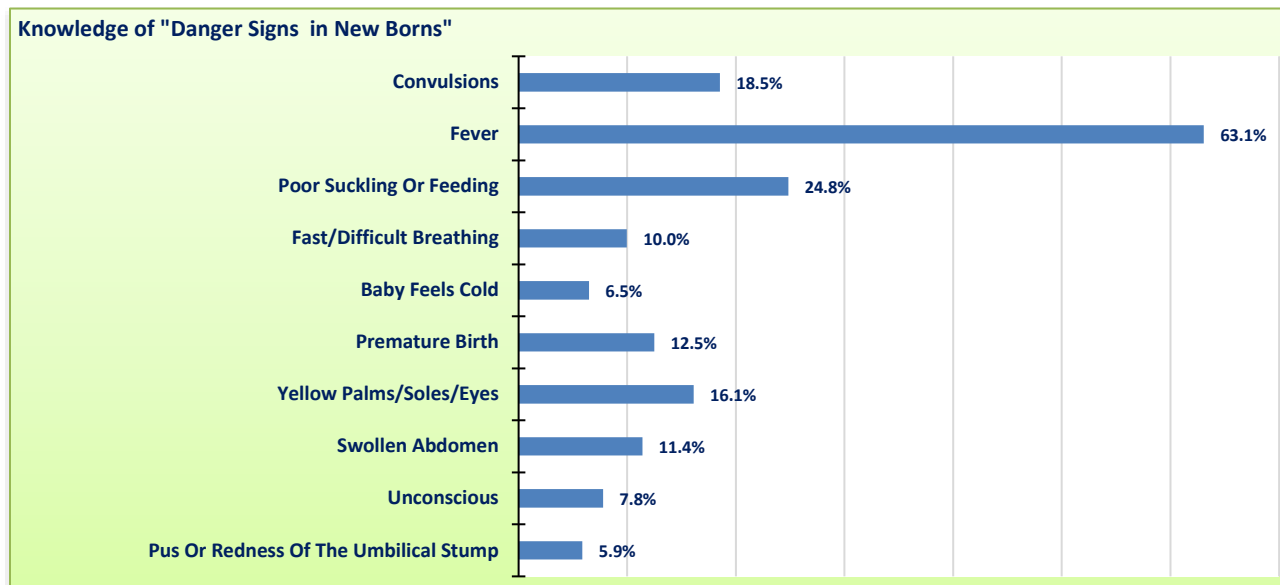


Figure 11- Proportion of PLWs with knowledge of “danger signs in newborns” Balochistan

### 9.1.5 HEALTH SEEKING PRACTICES DURING PREGNANCY AND ACCESS TO QUALITY SERVICES DURING AND AFTER DELIVERY

Health seeking behavior among pregnant and lactating mothers plays a critical role in determining the outcome of mother and child health alongside safe deliveries undertaken by skilled birth attendants. The following graph shows that only 28.2% of the pregnant and lactating women indicated that they had availed ante-natal care during either their existing pregnancy or the previous one. District Sibi remained on top where 61% of the women had avail ante-natal care whereas Kohlu remained at the lowest where only 16.1% of the mother reported that they had availed antenatal care services.

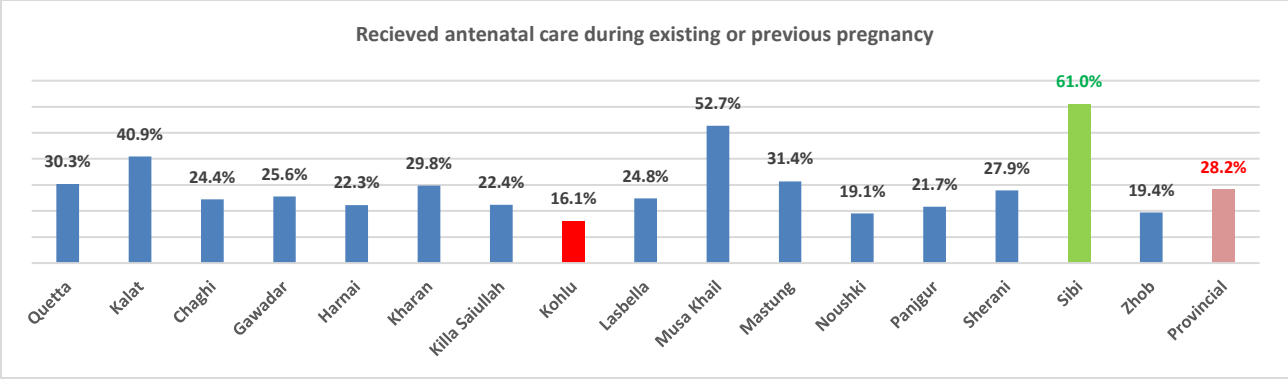


Figure 12- Proportion of eligible women who availed ante-natal care Balochistan

The experts working for maternal and child health recommends that pregnant women should ideally visit a trained and skillful person at least four times during pregnancy. The following graph presets the proportion of women who visited a health facility for ante-natal care during their existing pregnancy. Only 7.8% of women responded that they went for ante-natal checkup four times or more. Around 13.4% of pregnant women had made 3 visits for ANC while 41% made only one visit to the health facility/trained healthcare provider and 27.6% made two visits during their existing pregnancy.

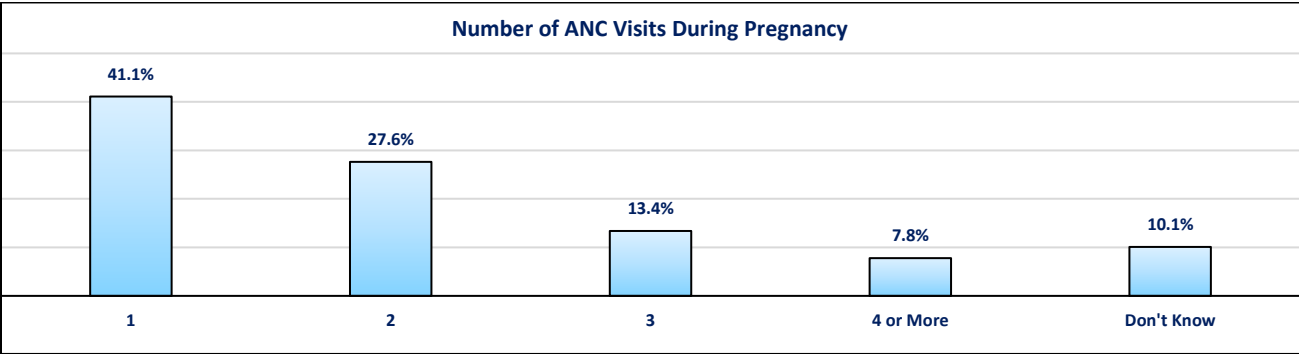


Figure 13- Number of ANC visits during pregnancy

An important aspect of antenatal care is vaccination against tetanus. In the surveyed population, only 20.8% of the respondents shared that they had received a tetanus Injection during their pregnancy but majority i.e.49.5% did not. Another 29.8% did not know or failed to recall if or not they had received a TT vaccination during pregnancy.

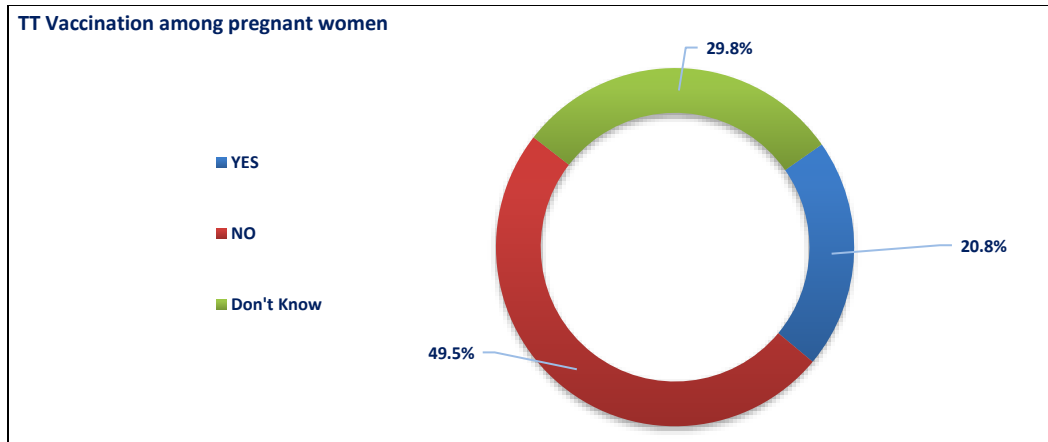


Figure 14- Vaccination against Tetanus among pregnant women Balochistan

When asked about the number of TT doses during their recent pregnancy, out of the total 20.8% women who received TT doses, 21.6% shared that they received one dose of TT vaccination. Around 36% had received 02 doses and 23.6% shared that they had received 3 doses while only 5.2% had received four doses.

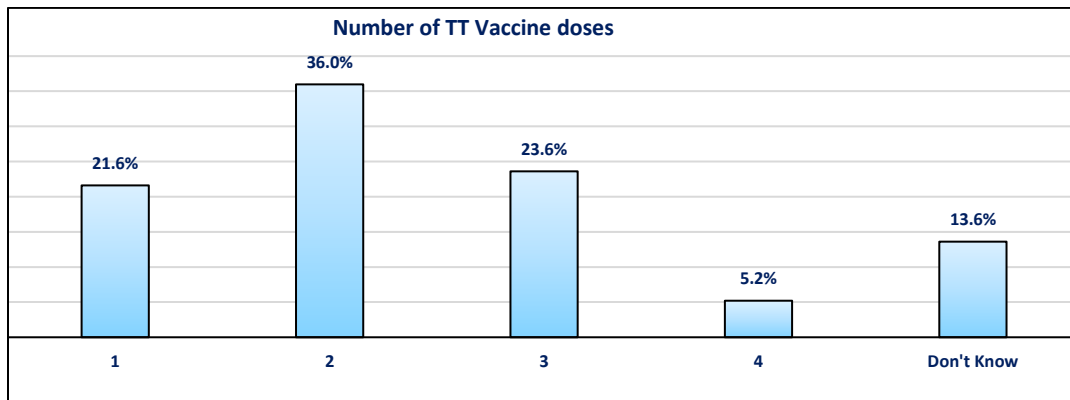


Figure 15- Number of TT injections received during the pregnancy period

When asked about iron and folic acid intake during pregnancy, 57.5% of women responded that they did not take iron and folic acid during pregnancy while 40.6% of the PLWs had received supplementation of iron and folic acid.

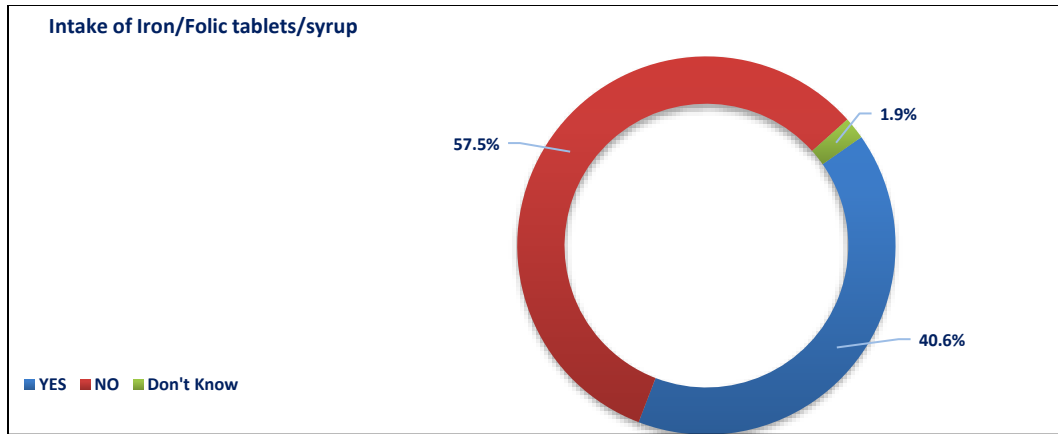


Figure 16- Intake of Iron and Folic Acid during pregnancy Balochistan

During the survey period, women who had undergone the process of pregnancy and delivery were interviewed and it was learnt that 66.4% of the deliveries were attended by a traditional birth attendant while just 6% were attended by a qualified doctor, 7.3% by a Nurse/LHV/midwife and only 8.5% by community midwives. Lady health workers attended 2% of the deliveries and almost 9% of the respondents added that their relatives assisted them during their last labor.

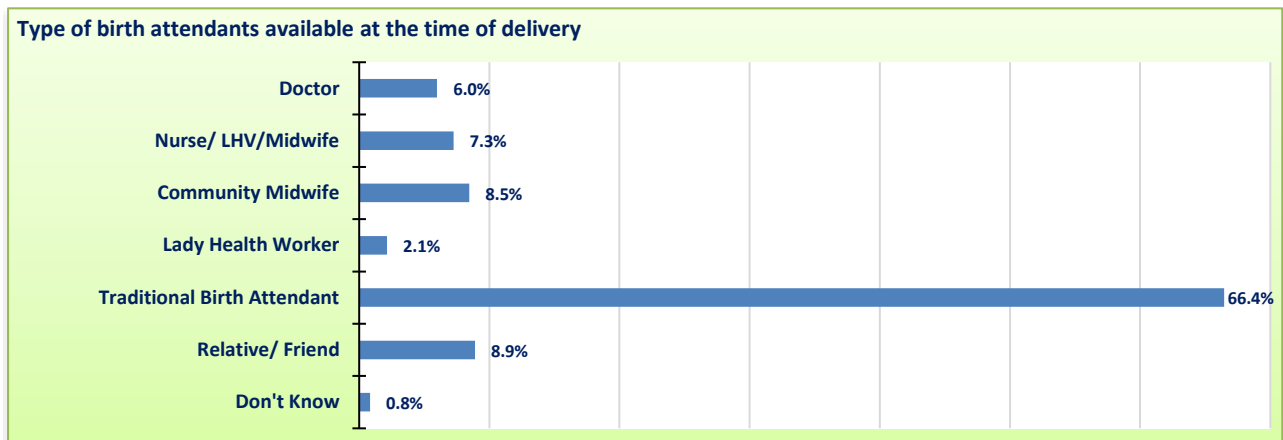


Figure 17- Type of birth attendants available during delivery Balochistan

Graph below shows district wise proportion of delivery attended by skilled and qualified staff. District Nouski remained on top with 28.1% of the deliveries attended by skilled staff which was followed by district Quetta where 26.8% of the deliveries had been conducted by trained staff. Similarly, lowest of 14.4% proportion of birth attended by qualified staff were reported from district Kohlu.

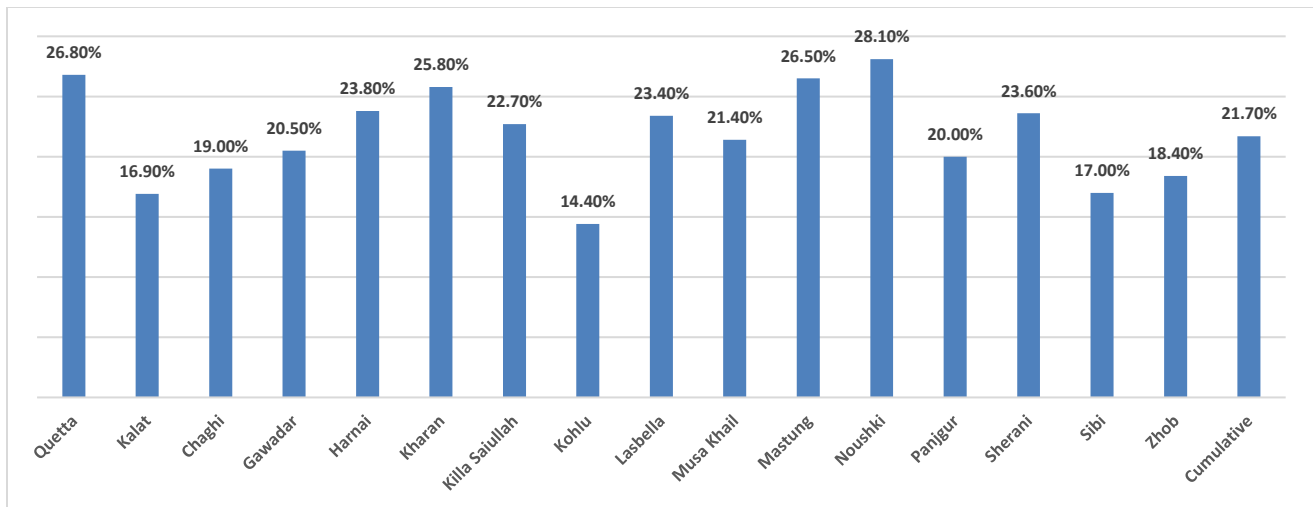


Figure 18: Deliveries attended by skilled staff

During the survey when asked about the place of delivery/birth of the child, a very huge proportion of the respondents i.e. 79% of the total added that they had home based delivered at the birth of their youngest child. Only 8 % reported that they had delivered at a government hospital, 4.7% reported to have had their last delivery managed at a private hospital and 3.3% reported to have delivered at a private clinic. Nearly 3.4% reported to have delivered at other's home and 0.4% had delivered at CMW house/birth station.

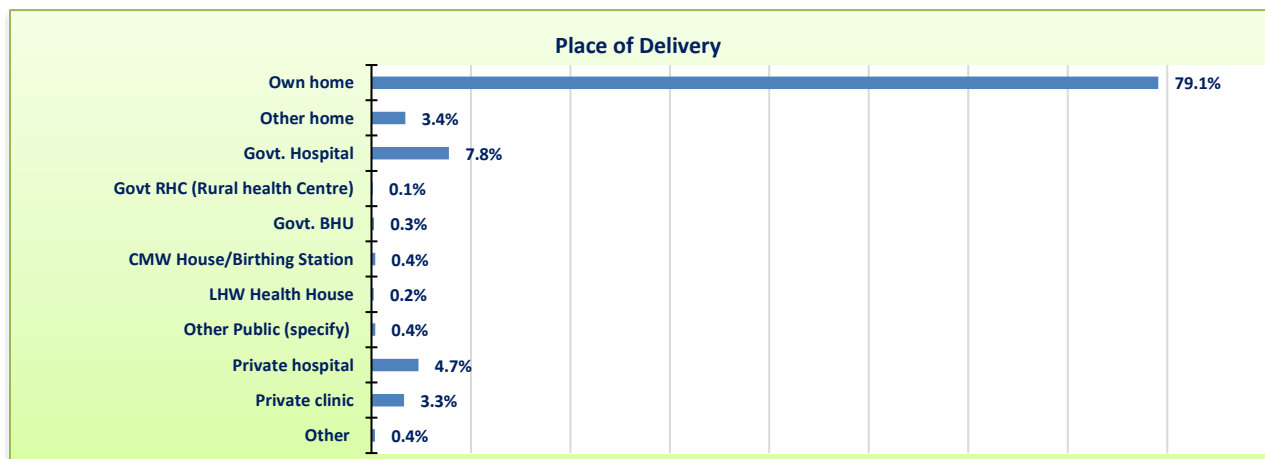


Figure 19- Places where pregnant women gave birth last time Balochistan

Within 42 days of termination of pregnancy, a woman can remain vulnerable to injuries, infections, disability and death from puerperal causes. Hence it is recommended that enough care be taken to avoid unwanted deaths and disabilities. This requires clinical check up by a trained birth attendant after birth till the 28<sup>th</sup> day of delivery at least 3 times. The following graph represents the proportion of women seeking post-natal care in the 16

surveyed districts Balochistan. It is evident that that on the average only 18.4% women consulted for post-natal checkup and 81.6% of the women after delivery did not consult the healthcare provider for post-natal care. Among the surveyed districts, Quetta remained on top where 40.5% of the women had availed post-natal care whereas Kohlu remained at the lowest where only 5.9% of the women narrated that they had received post natal care.

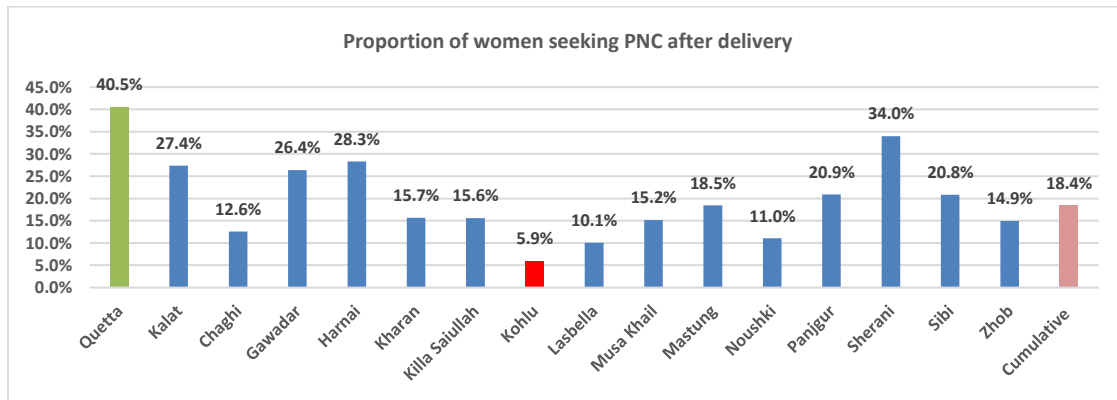


Figure 20- Proportion of women who sought post-natal care Balochistan

When asked about the place where post-natal care was given, almost 29% of those who had post-natal check-up added that they had post-natal consultation at a government hospital including DHQ, BHU and RHC whereas 22.6% of those 18.4% received post-natal care shared that they received it at a private hospital. Around 3.4% went to CMW house for post-natal care, 22.3% of those who received post-natal care had their check up at a private clinic. Around 1.3% consulted LWHs for post-natal checkup while 16.3% of women had their PNC checkup at home in addition to 4.6% who went to someone else's home for post-natal checkup.

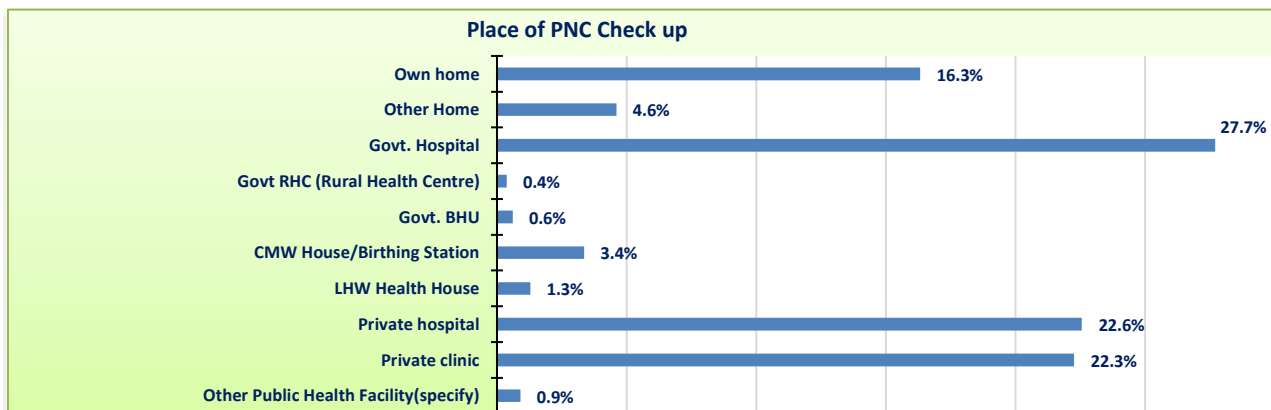


Figure 21- Place of post-natal checkup Balochistan

To undertake a rapid assessment of the nutritional status of eligible pregnant and lactating women (PLW), Mid Upper Arm Circumference (MUAC) tape was used. Among all districts an average 92.2 % of the mother were found to be of normal nutritional status while 7.8% were found to be malnourished in accordance to the measurements of the MUAC scale. Among the surveyed districts, the lowest proportion (1.1%) of malnourished mothers were found in district Quetta whereas highest proportion of malnourished mothers were reported in district Kharan with almost one malnourished in every 5 women.

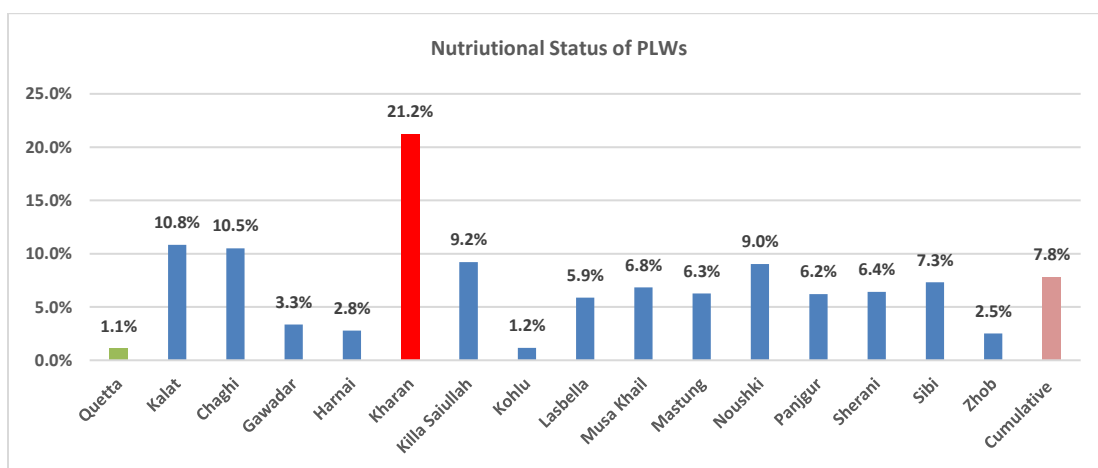


Figure 22- Nutritional Status of pregnant and lactating women Balochistan

### 9.1.6 CARE OF THE NEWBORN AFTER BIRTH

The care of the new born soon after birth plays the most critical role in reducing early neonatal mortality rates. It is recommended that the baby soon after birth and cleaning be placed on the mother's chest and that breast feeding be initiated within half an hour. The graph below, drawn from the responses of the women who had delivered, shows that 72.2% of the newborns were kept next to mother, 23.5% had put newborns in a covered cot while only 1.4% of the newborns were kept in an uncovered cot. Around 3% of the respondents did not know where the baby was kept after birth and cutting of the cord.

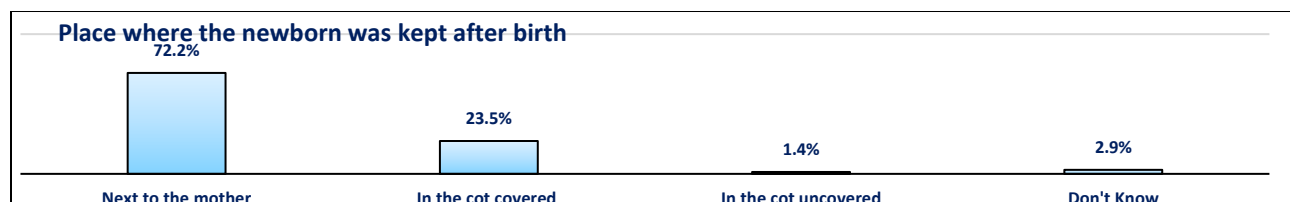


Figure 23- Place where the baby was kept after birth

It is also recommended that hypothermia be avoided by keeping the newborn dried and wrapped in a clean cloth. The graph given below indicates the proportion of newborns



Balochistan who were dried and wiped soon after birth. One can see that almost 94.4% of the newborns were dried /wiped soon after birth.

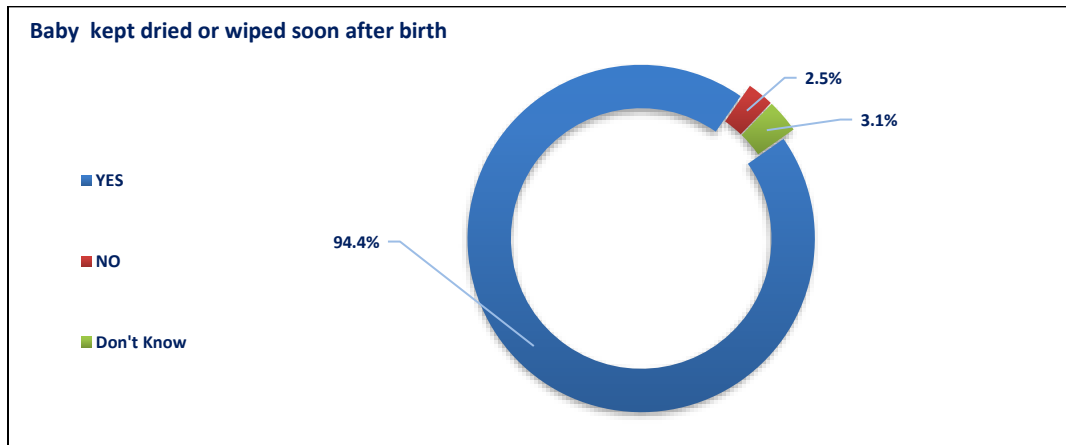


Figure 24- Proportion of newborns wiped/dried soon after birth

The cord infection is one of the major causes of sepsis and neonatal mortality in Pakistan. It is advised that the umbilical cord be safely cut after birth with a clean and new/sterilized sharp blade. From the responses gathered during the survey, we can conclude that in 71.8% of the newborns the cord was cut using a new blade. In case of 0.4% of newborns, the cord was cut using a blade already used for other purposes. The cord of 17.7% of the newborns was cut through scissors while in the case of almost 10.1% of the newborns the respondents did not know/recall the instrument used to cut the cord of their baby.

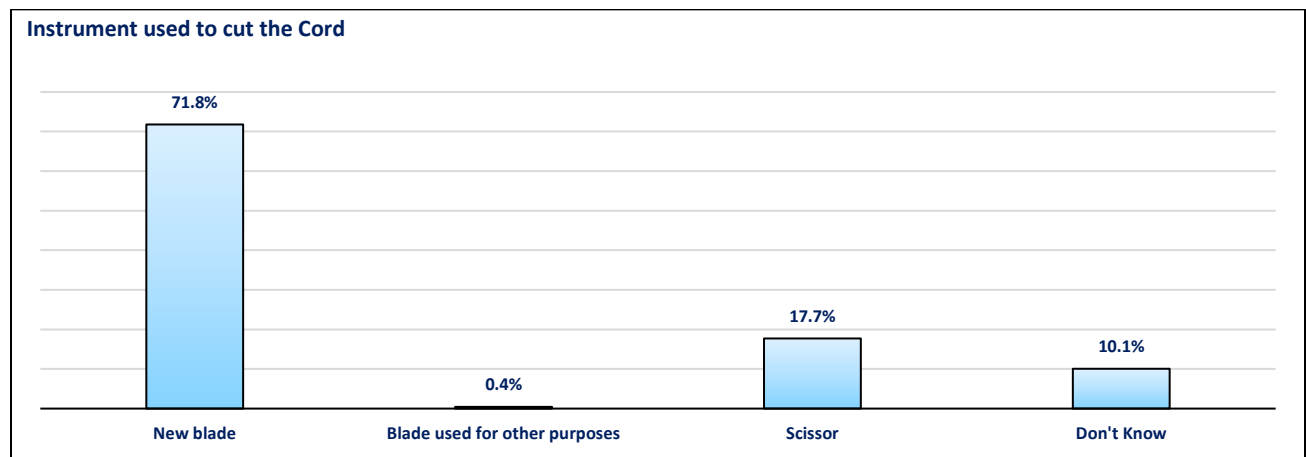


Figure 25- Type of instruments used to cut the cord in newborns Balochistan

It is also important to ensure that the instrument used for the purpose of cutting the cord be sterilized. The graph given below shows the proportion of responses with regard to sterilization status of the instrument used. Nearly half, 55.3% of the respondents did not know if or not the

instrument used to cut the cord of the newborn was sterilized. Only 40.4% indicated that the instrument was sterilized while 4.2% shared that it was not sterilized.

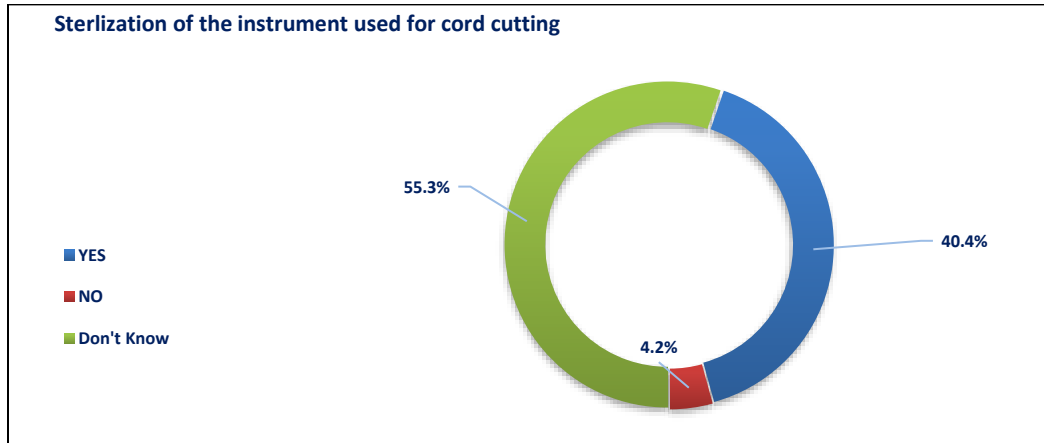


Figure 26- Sterilization status of the instrument used for cord-cutting

It is recommended that nothing be applied to the cord and that it be kept dried allowing it to fall off. However, in case of infection, use of chlorhexidine is recommended. Almost 76% of the respondents shared that something was applied to the cord after it was cut and only 18.7% indicated that nothing was applied whereas 4.6% said that they did not know if or not something was applied.

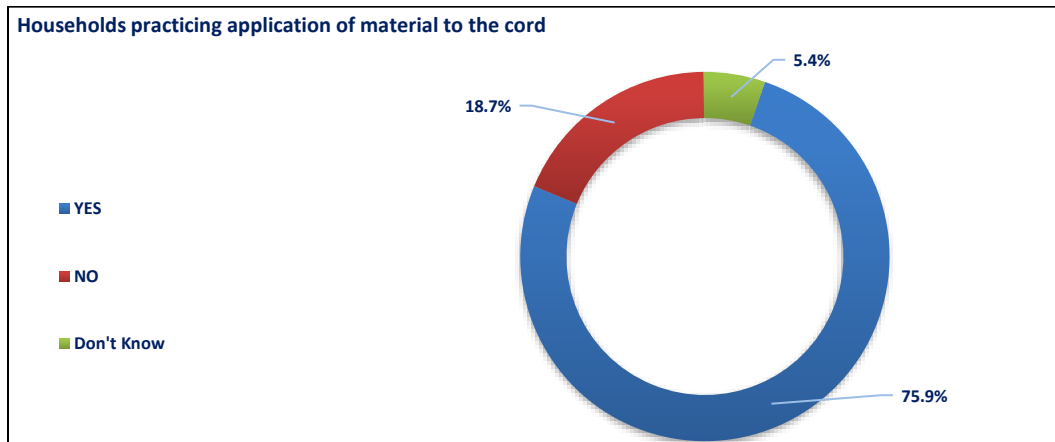


Figure 27- Proportion of newborns with application of material to cord after cutting

. Chlorhexidine was applied to the cord after cutting in only 3.4% of the newborns. In 42.8% of the newborns Kajal was applied after cutting the cord. Ash was applied to the cut cord in 3.2% of the newborns. Around 32.3% of the attendants applied mustard oil to the cord of the new born after cutting. In 1.8% households' animal dung was applied to the cord of the newborn after cutting and 9.5% households applied different antiseptics to the cord of newborn.

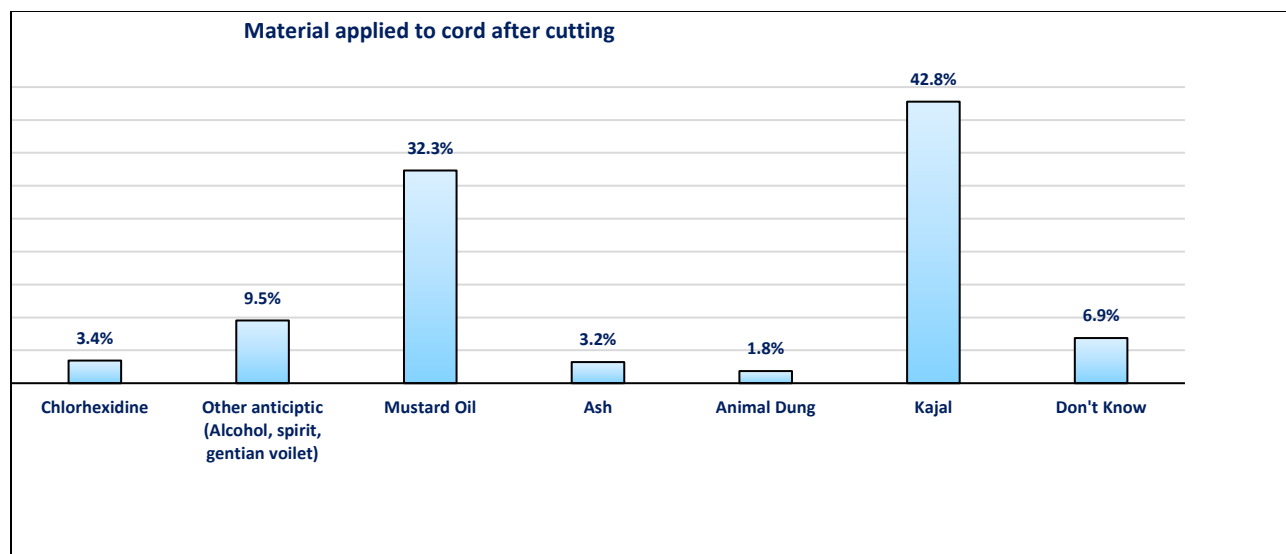


Figure 28- Type of material applied to umbilical cord after cutting

### 9.1.7 IMMUNIZATION COVERAGE

Immunization along with skilled birth attendance, breastfeeding and nutrition is one of the determinants of child survival. In Balochistan, the EPI program is functional and being supported by the provincial health department.

The following graph shows that out of a total of **14,360** children of less than 2 years of age, only 42 % of the children were reportedly immunized and a huge proportion i.e. 54% were not immunized. Among the surveyed districts,, highest proportion of 51% immunized children were reported from district Sherani whereas lowest percentage of the immunized children were noticed in district Noushki (32%). Similarly, only 27% of those 14,360 children were found immunized with pentavalent vaccine having highest coverage of 35% in Chaghi and lowest 6% in district Musa Khail.

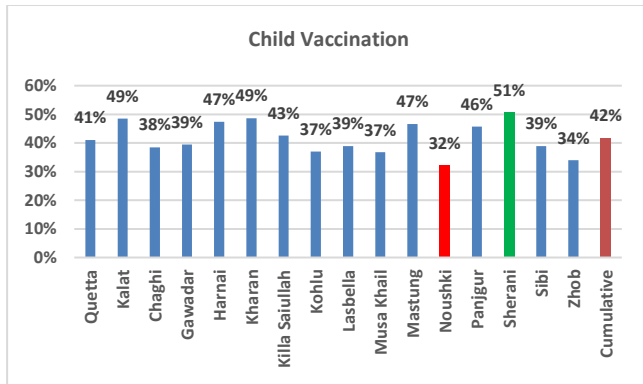


Figure 29 Proportion of children Vaccinated

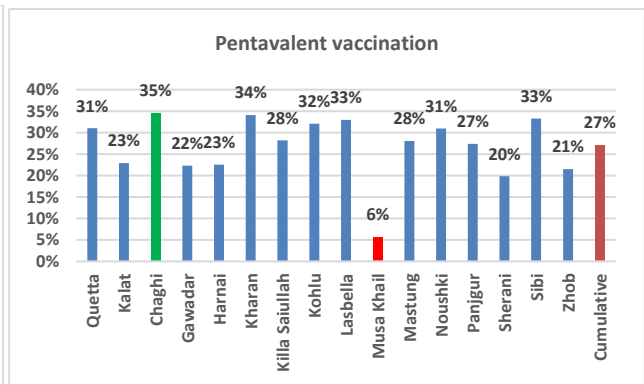


Figure 30- Proportion of children Immunized with Pentavalent

Only 32% of the children had a BCG scar while the rest of the 3% had no scar but BCG was given. Around 61% of the children had not received BCG. Among the surveyed districts, Kharan remained on top where 47% of the children reportedly had a BCG scar and 2% had no scar but BCG was administered.

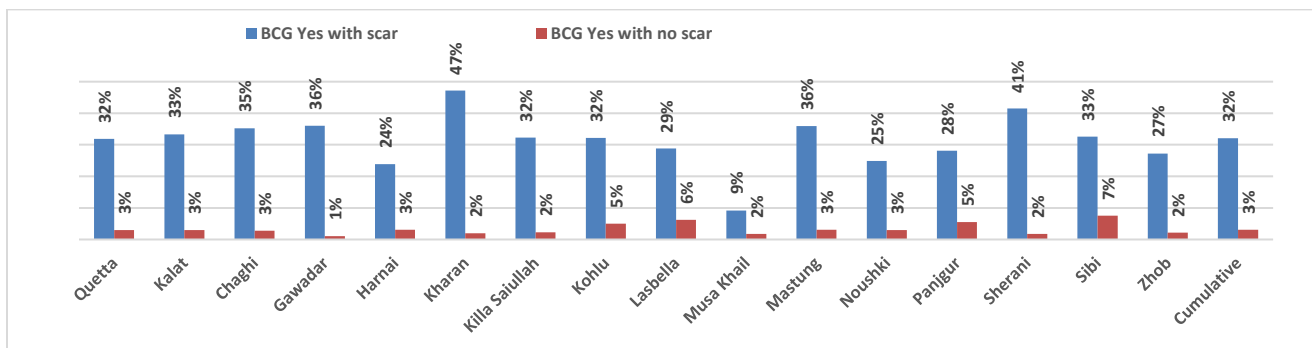


Figure 31: Proportion of children who received BCG vaccine

Similarly, 35% of children had not received polio drops and 7% households did not know about polio vaccination. Amongst the surveyed districts, Chaghi and Gawadar remained on top where 82% of the children had received polio drops. On the other hand district Kohlu had reported lowest proportion (43%) of the children who had received polio drops.

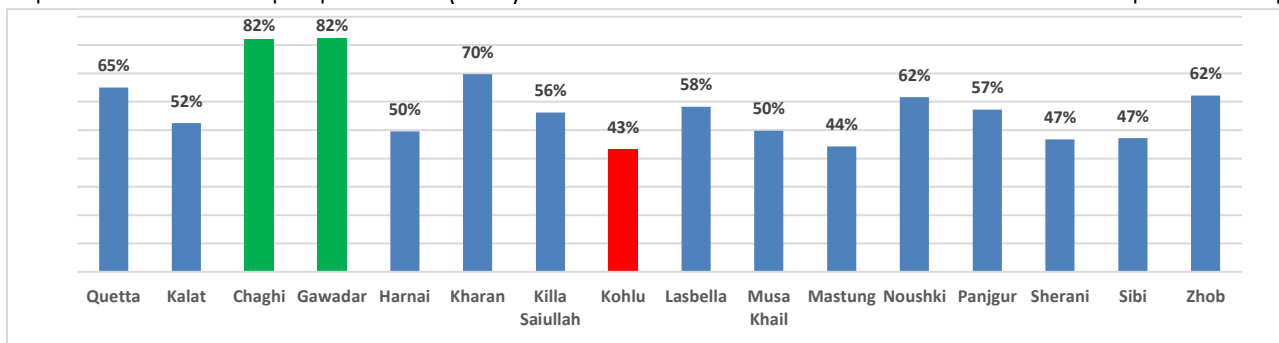


Figure 32- Proportion of children who received Polio vaccines

Out of the 27% children who were vaccinated with Pentavalent, only 11% children received one dose of Pentavalent (Penta I); another 12% children received two doses (Penta II) and only 13% received three doses (Penta III). The rest i.e. 64 % did not know about the total number of doses the child had received.

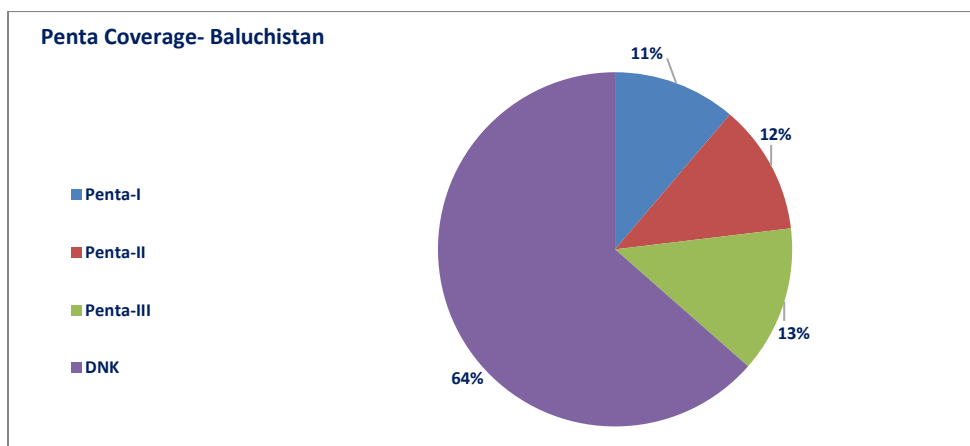


Figure 33- Proportion of children with number of pentavalent doses Baluchistan

During the survey, the respondents were asked about the presence of vaccination cards of their child. Only 20% of those who had reported to have their child vaccinated (5987-42%) showed the vaccination card and 27.4% shared that the card was not available. Around 23.3% had lost their card whereas 11.4% of the respondent mothers never had a vaccination card while 17.8% of the respondent mothers did not know about vaccination cards.

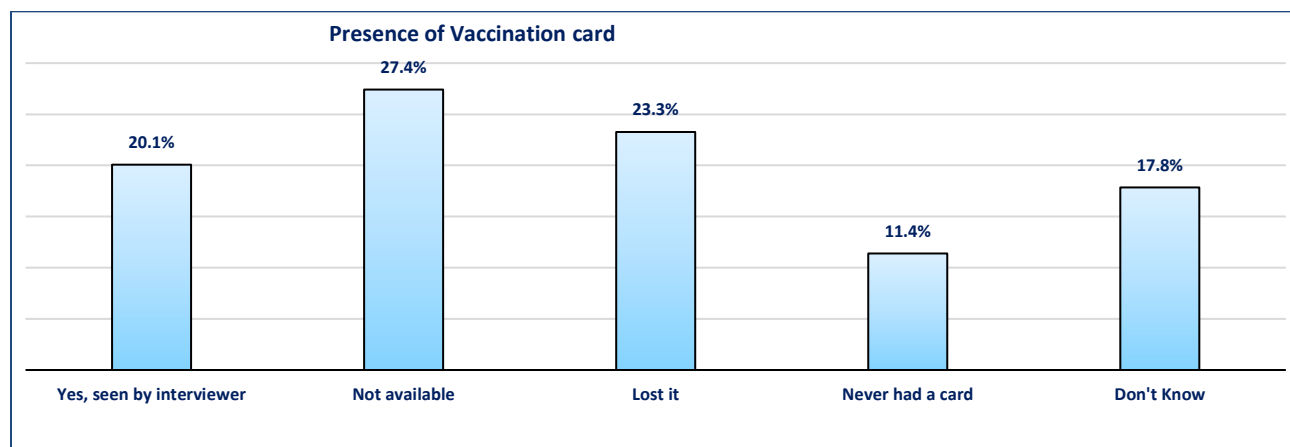


Figure 34- Availability of child vaccination card among those who were vaccinated Baluchistan

An important indicator of coverage of immunization programs is proportion of children immunized against measles at the age of 09 months. The graph shows that on mother recall an average of 65.4% of the children aged 09 months and above were not immunized against measles and only 25.5% were found to be immunized. Similarly amongst the

surveyed districts, Panjgure had highest measles coverage with 35.8% while district Harnai and Chaghi had lowest proportion (18.7% from each districts) of children immunized against measles.

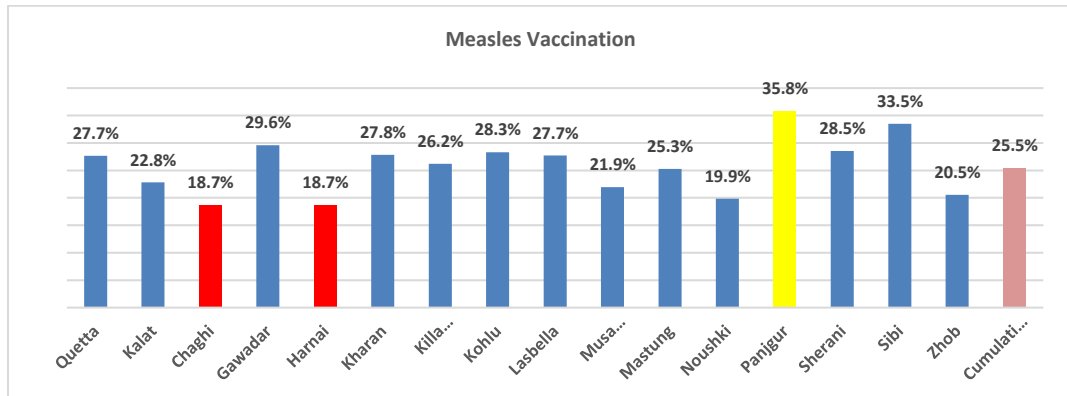


Figure 35- Proportion of measles vaccination

It is pertinent to note the proportion of households which kept the vaccination card and showed it during the survey. Only 1208 households out of the total 14360 households (8.4%) had kept the vaccination cards of children less than 2 years of age. Based on the card marking, out of the 25.5 % reportedly fully immunized for all the vaccines as per schedule of Epi including measles, only 2.6% of children 9 months and above were immunized for measles. Out of those who had reached 09 months and above, 2.1% were not immunized for measles. Similarly, out of the 32.4% of the total 14,360 children, who were less than 09 months of age, almost 16 % (N-753) were found to have cards at the household level and then out of those nearly 11% were fully immunized for the age specific scheduled immunization while 5.3% were partially immunized.

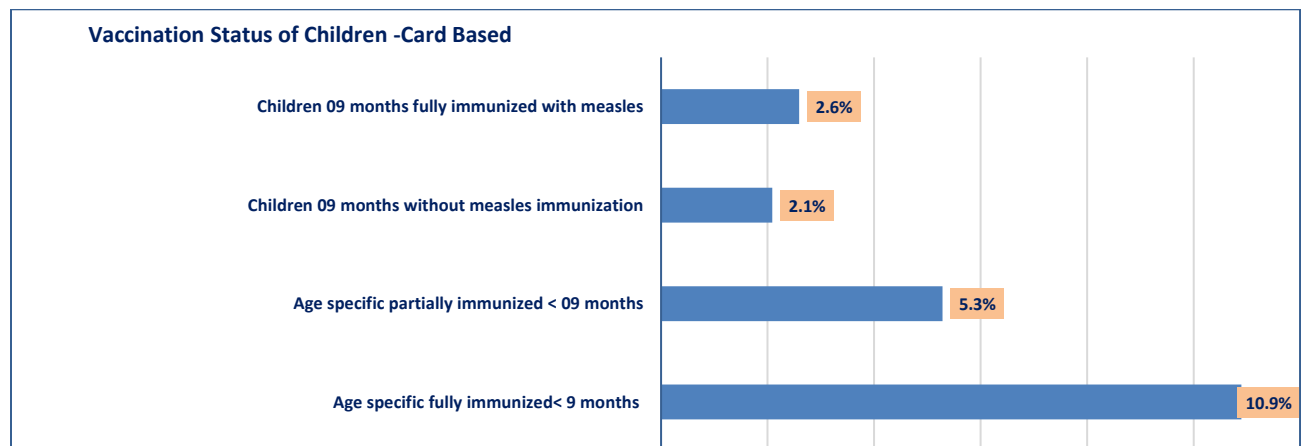


Figure 36- Immunization rates of children (card based) Balochistan

The following graph presents the information on the proportion of the respondents who consider the importance of vaccination for child health and survival. Around 70.2% believed that vaccination is important for their child while 7.8% of the households were found to believe that vaccination is not important and almost 22% did not know whether vaccination has any importance or not.

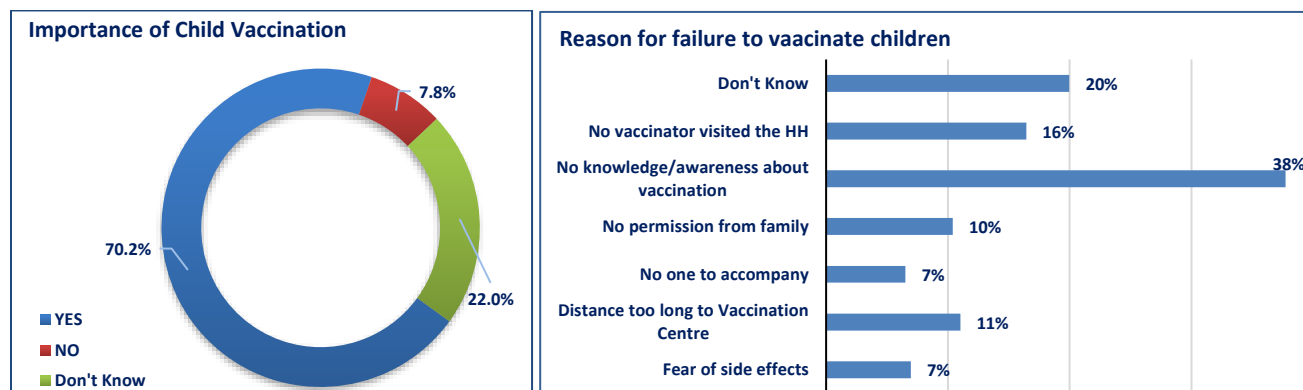


Figure 37- Proportion of respondents aware of the importance of child vaccination and reasons for no/low vaccination

It can be seen that, lack of knowledge about importance of vaccination (58%); lack of access to vaccination services (27%); denial to vaccinate children (10%); fear of side effects (7%) as well as absence of male family members at the household to accompany (7%) are major reasons for lower proportions of child vaccination.

### 9.1.8 HOUSEHOLD FOOD INSECURITY & ACCESS SCALE

The questionnaire related to household level food insecurity and access scale was administered in all households and the respondents were asked about both availability and access to food; food of choice and desired quantity of food at the household level. The survey covered the following component of food insecurity at household level.

- Food insecurity & access scale
- Household dietary diversity scale
- Negative coping strategies

#### 9.1.8.1 HOUSEHOLD FOOD INSECURITY & ACCESS SCALE

The Household food insecurity and Access Scale (HFIAS) module yields information on food insecurity (access) at the household level. Three types of indicators have been calculated to help understand the characteristics of and changes in household food insecurity (access) in the surveyed population. These indicators provide summary information on:

- Household Food Insecurity Access-related Conditions

- Household Food Insecurity Access-related Domains
- Household Food Insecurity Access Prevalence

9.1.8.2 HOUSEHOLD FOOD INSECURITY ACCESS-RELATED CONDITIONS

These indicators provide specific, disaggregated information about the behaviors and perceptions of the surveyed households. The indicators present the percent of households that responded affirmatively to each question, regardless of the frequency of the experience. Thus, they measure the percent of households experiencing the condition at any level of severity. Each indicator has been further disaggregated to examine the frequency of experience of the condition across the surveyed households.

The following graph presents the level of fear the household had about non-availability of enough food for his/her family during the past four weeks since the survey was conducted. 58% of the respondents from 8220 households did not fear lack of food availability while 42% feared having a shortage of food. Out of the 42% households who feared non-availability, 40% indicated that they remained worried almost 1 to 2 times and 59% remained worried 3 to 10 times during the past 4 weeks. Only 1% remained worried about non-availability of food at household level most often.

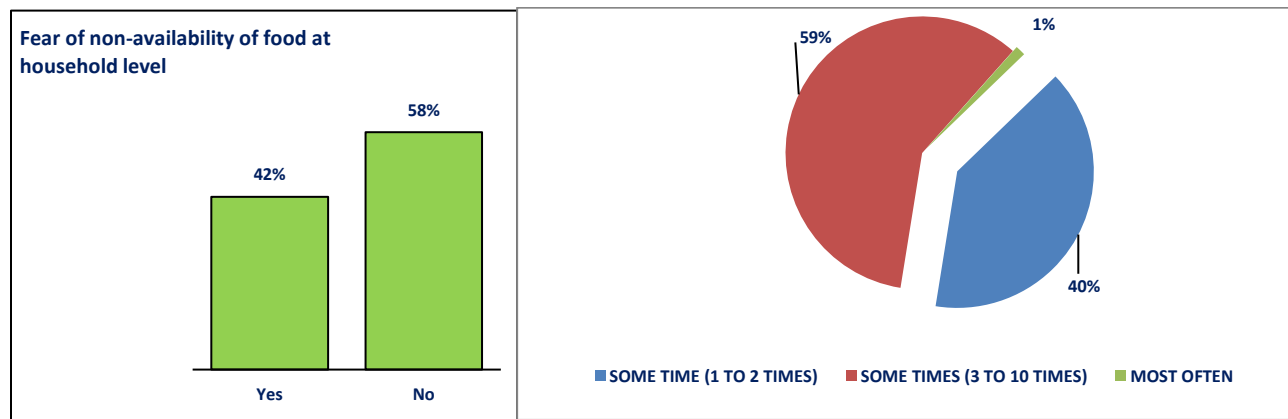


Figure 38- Fear about enough food availability at household level Balochistan

When respondents were asked about non-availability and non-affordability of having food of their preference (choice), 73 % said that they did not face the problem while 27 % had faced it once or more than once. Out of the 27% households who had faced the challenge 78 % did not have the food of their preference 1 to 2 times and 18 % had not had their food of preference 3 to 10 times. Four percent households faced such a situation most often.

When asked about the non-affordability of having food of their preference (choice) 55 % of the respondents said that they did not face any problem to have food they † liked while 45 % did. Out of the 45% households who faced the challenges 26% did not have the food of their



preference 1 to 2 times and 73% did not have the food of their preference 3 to 10 times while 1% households had food they did not like often.

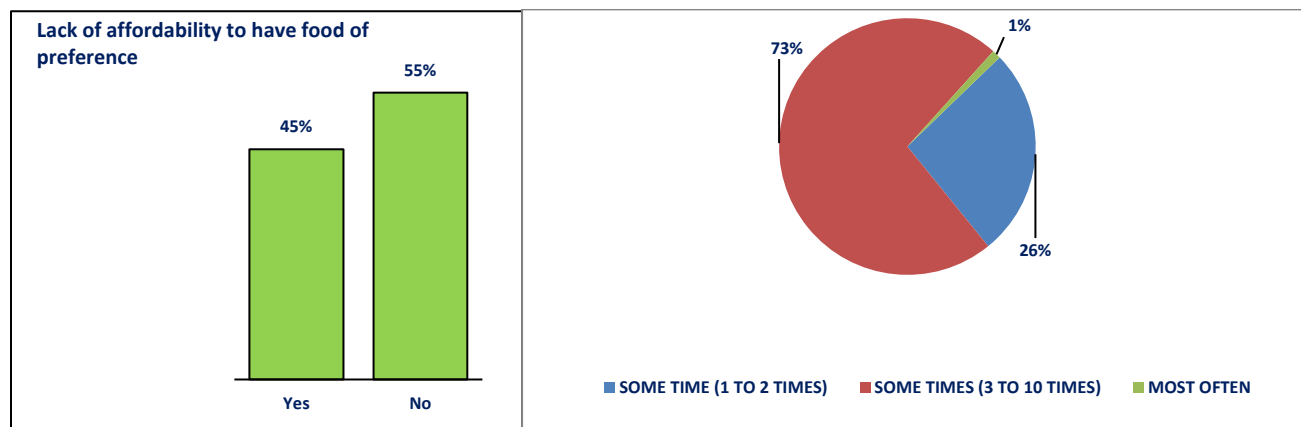


Figure 39- Availability and affordability of food of preference at household level

When the respondents were asked if in the past four weeks, they or any of their household members had to eat a limited variety of foods due to a lack of resources, 58% of the respondents said they did not have to, 30 % of the 42% households had to limit to their food items due to lack of resources and had to eat the limited food item 1 to 2 times. Around 69% of the 42 % households who had to limit their use to a few food items due to lack of resources, had to eat the limited food item 3 to 10 times and 1% households faced problem most often.

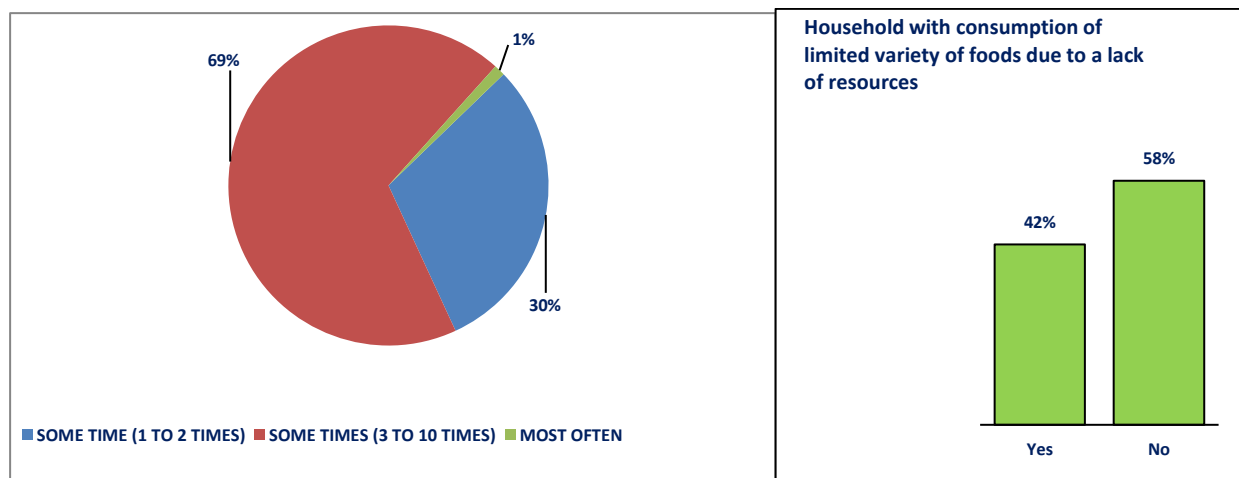


Figure 40- Use of limited food variety due to lack of resources at household level

Respondents were also asked if in the past four weeks, due to lack of resources to obtain other types of food, they or any household member had to eat some foods that they really did not wanted to eat. Responding to this question 54% of the respondents were not found to have eaten the food they did not like whereas 23% of the rest of the 46% households had to eat the food they did not like due to lack of resources 1 to 2 times and 76% had to eat the

food items they did not like, almost 3 to 10 times while 1% of the households had to eat the food item they did not like most often.

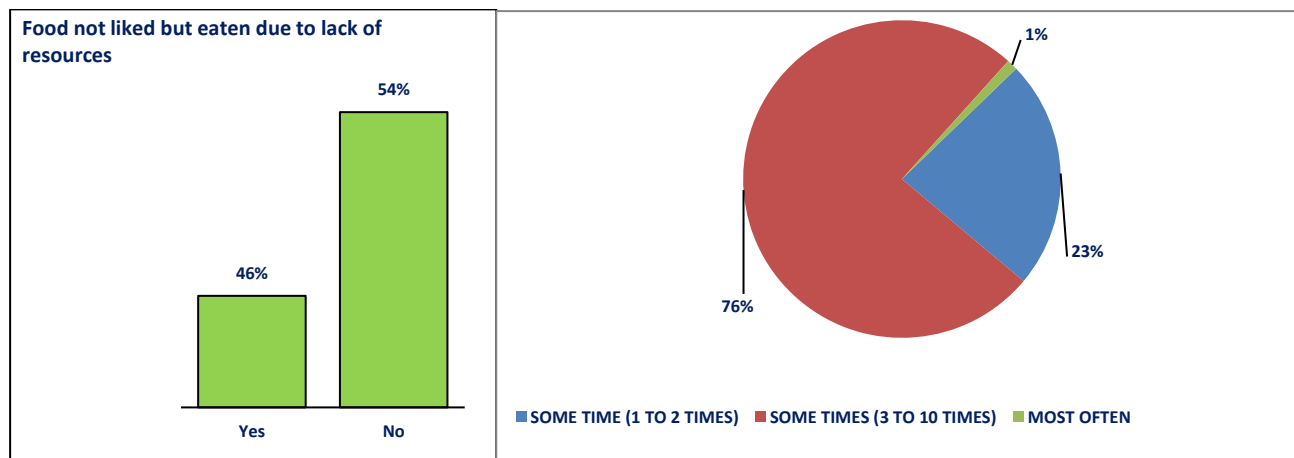


Figure 41- Food not liked but eaten due to lack of resources at household level Balochistan

Similarly, there were households where the household members had to reduce the number of meals in a day due to lack of resources. Around 34% of the households were found to have reduced their number of meals in a day due to lack of resources and out of those households 42% had to take fewer meals in a day at least 1 to 2 times, 54% had to reduce their number of meals 3 to 10 times and 4% households had to eat fewer meals often.

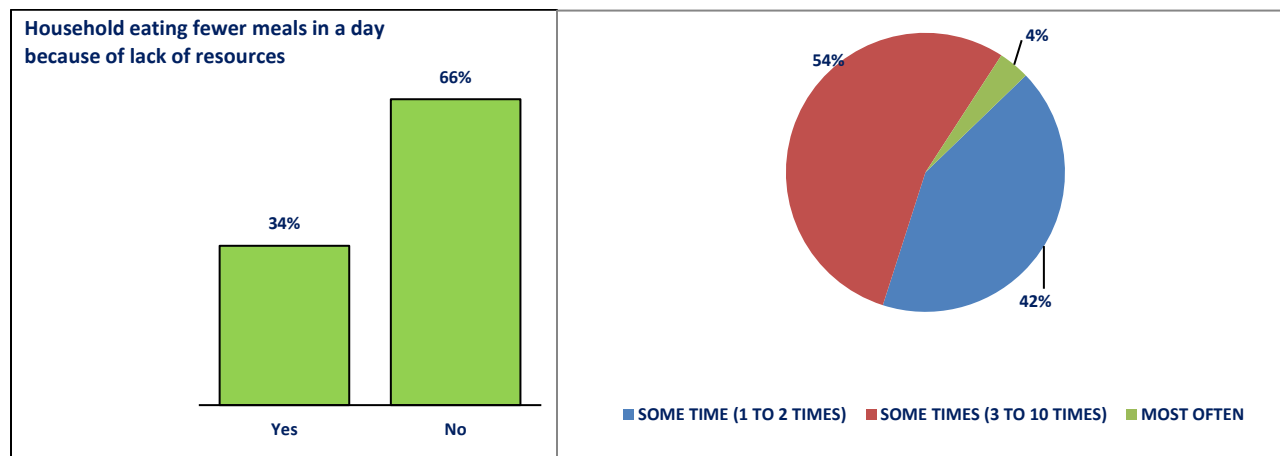


Figure 42- Proportion of households having fewer number of meals

Responding to the situation where there was no food item at all, due to lack of resources at household level, 23% of the households responded that they had been facing situations where food was not available at all. Out of those household who faced shortage of food 62%

had been facing it once or twice, 36 % 3 to 10 times in a month and the remaining 2% were facing it most often.

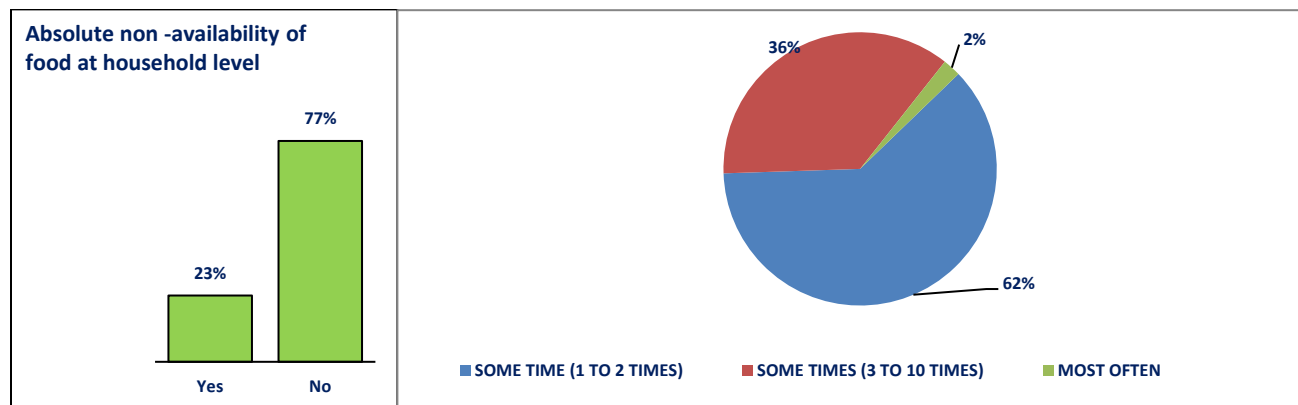


Figure 43- Absolute non-availability of food items due to lack of resource

In 16% of the total households surveyed there was at least one member who slept hungry and in 61 % of such households the member slept hungry 1-2 times while in 35 % of the households the member slept hungry 3 to 10 times. In 15% of the households there was at least one person who remained hungry for the whole day and night without food in the 4 weeks since the survey was conducted.

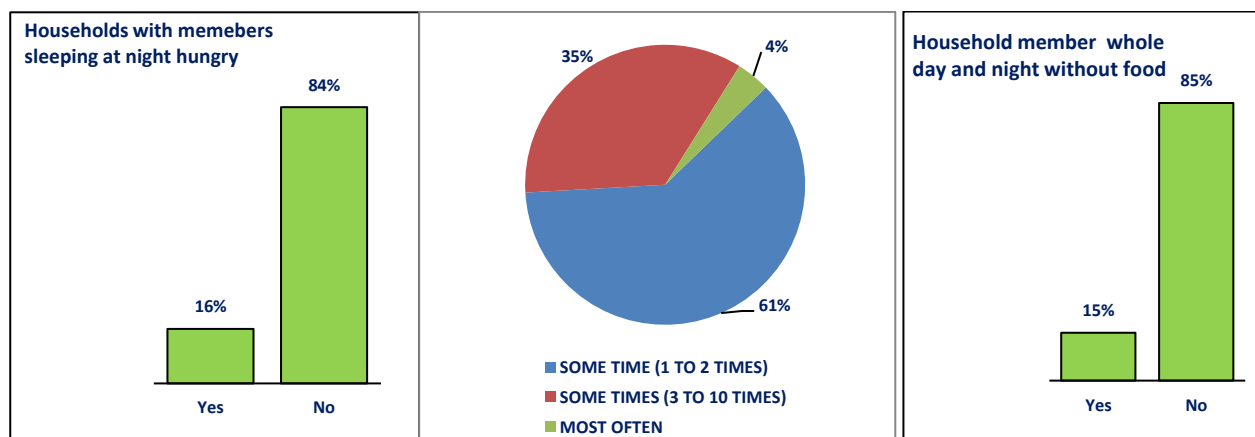


Figure 44- Household member sleeping hungry due to lack of resources to have food Balochistan

### 9.1.8.3 HOUSEHOLD FOOD INSECURITY ACCESS-RELATED DOMAINS

These indicators provide summary information on the prevalence of households experiencing one or more behaviors in each of the three domains reflected in the household food insecurity access scale i.e.- anxiety and uncertainty, Insufficient Quality, and Insufficient food intake and its physical consequences

The following graph presents the level of one or more behaviors of the household had about food insecurity (access), during the past four weeks. 42 % of the households had experienced anxiety and uncertainty. 49% consumed food that they recognized as being of insufficient quality and 41% were found with insufficient food intake and its physical consequences during the past on week of the survey.

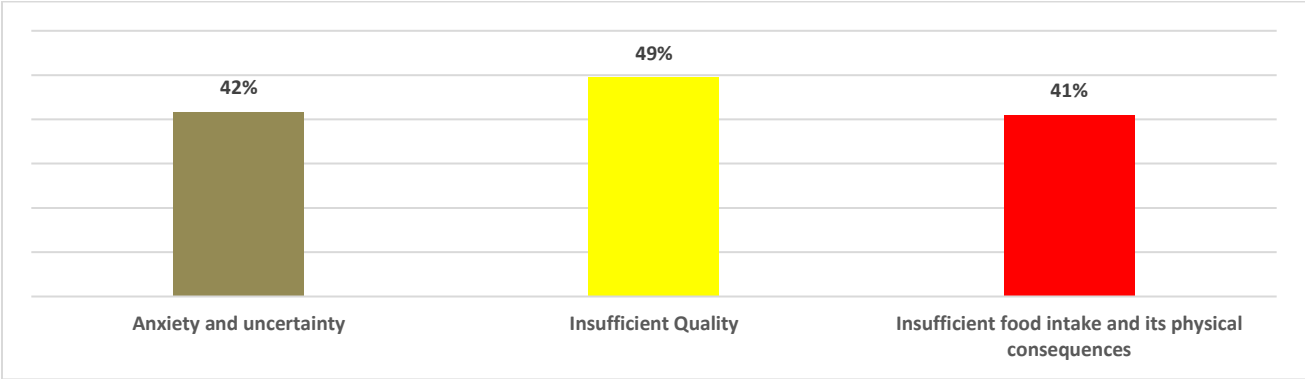


Figure 45: Household Food Insecurity Access Domains

9.1.8.4 HOUSEHOLD FOOD INSECURITY ACCESS PREVALENCE

Household food insecurity access status has been assessed to determine the household food insecurity prevalence. Based on the survey finding, the households have been categorized into four levels of food insecurity (access) i.e. food secure, mildly, moderately and severely food insecure.

49.1% household experienced none of the food insecurity (access) conditions. 9.1% of the household were found mildly food insecure, 13.8% were found moderately food insecure and 28% of the household were found with severely food insecure condition. In severe food insecure condition a household has experienced one of the following three server conditions i.e. running out of food, going to bed hungry or going a whole day and night without eating, at least once in the last four weeks (30 days).

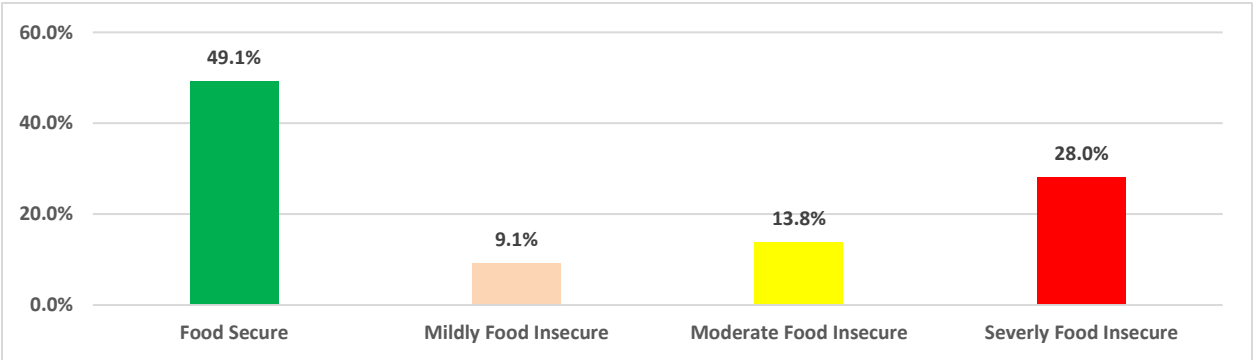


Figure 46-HOUSEHOLD FOOD INSECURITY ACCESS PREVALENCE

Household level pattern of diet diversity is an important marker of both access to and availability of the food of choice. As shown in the following graphs, 54.8% of the households were found to have low dietary diversity which meant they could consume only 3 food groups. Another 30.3% of the households were found to fall in the medium dietary diversity group with consumption of 4 to 5 types of food groups. Only 15.9% of the total households consumed food with high diversity dietary food groups with consumption of more than 06 types of food groups.

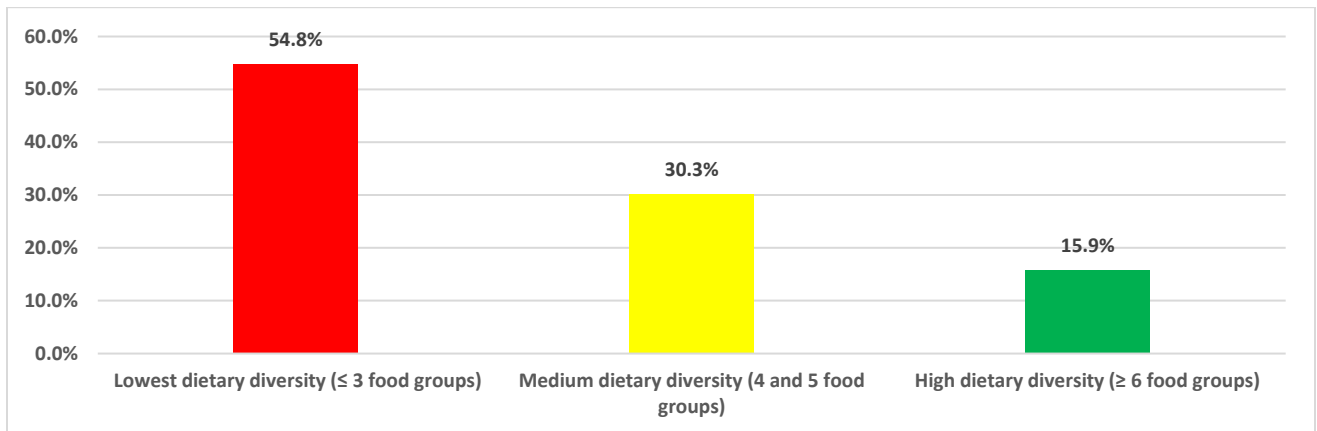


Figure 47 Household Diet Diversity Score

#### 9.1.8.5 NEGATIVE COPING STRATEGIES.

Individuals and families from a significant proportion of the households borrowed cash, food and other items with or without interest. Around 30 % of the households as a whole or any member had to borrow cash, food or other items with or without interest to make food available for his / her family. Similarly, 24 % of the household head or any member reported to have sold an asset for food which otherwise would not have been sold had there been food available for household consumption.

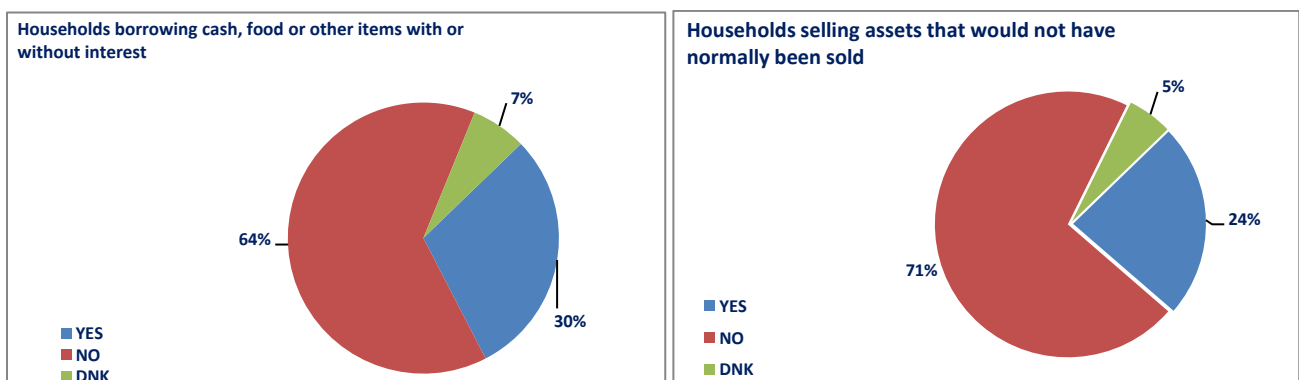


Figure 48- Borrowing of cash and food and selling of asset for food at household level Balochistan

Gender discrimination has always affected the female population disproportionately. Balochistan 18 % of the households women had to eat less at least one or more times or did not eat enough because there was less food for children.

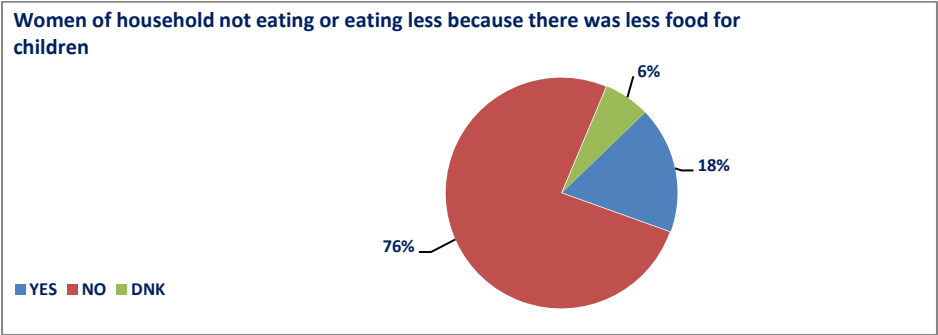


Figure 49- Proportion of households where women had to eat less or did not eat

**9.1.9 WATER, SANITATION & HYGIENE (WASH)**

It can be concluded from the graph given below, that 31.2% of the household's access and use piped water in Balochistan the surveyed districts. Only 5.3% households were found to access and use water from public tap water points, 21.6% of the households' access underground water for drinking from tube wells, 13.4% of the households were found to access drinking water from protected wells and 3.3% of the households accessed water from unprotected wells. Around 5% households accessed water from protected springs, 2% of the households from unprotected springs while almost 11% households purchased water from water suppliers. Around 2.6% households were found to use surface water for drinking.

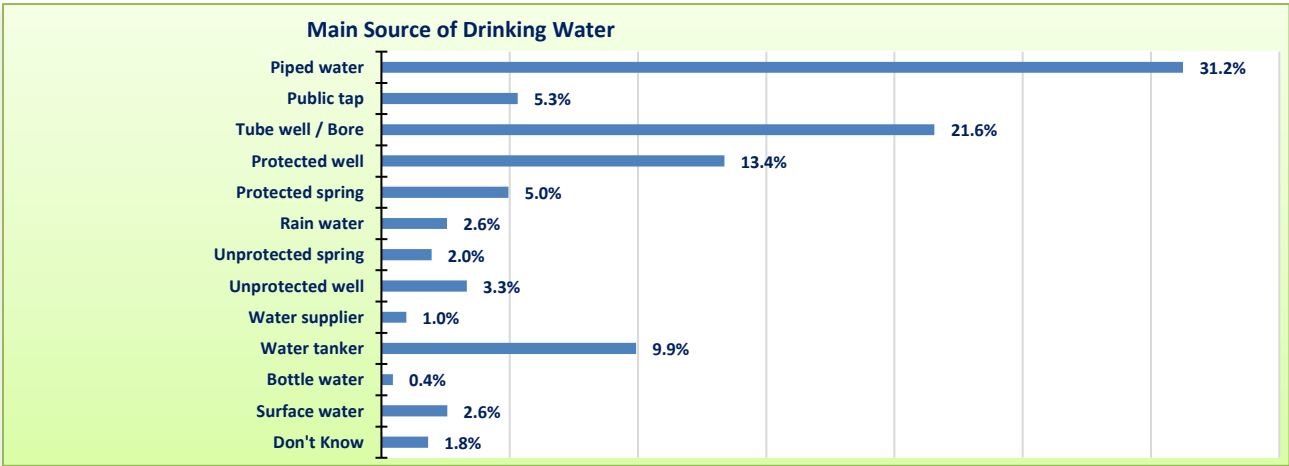


Figure 50- Sources of drinking water used by households Balochistan

Out of the 10,863 households approached for data collection, 55.7% shared that the access point of water was inside their dwelling while almost 16% households reported to access and

fetch water from a source in a location which entailed a walk of less than 30 minutes. Family members in 21.7% of the households shared that they accessed water sources at a significantly distant location requiring a walk of more than 30 minutes.

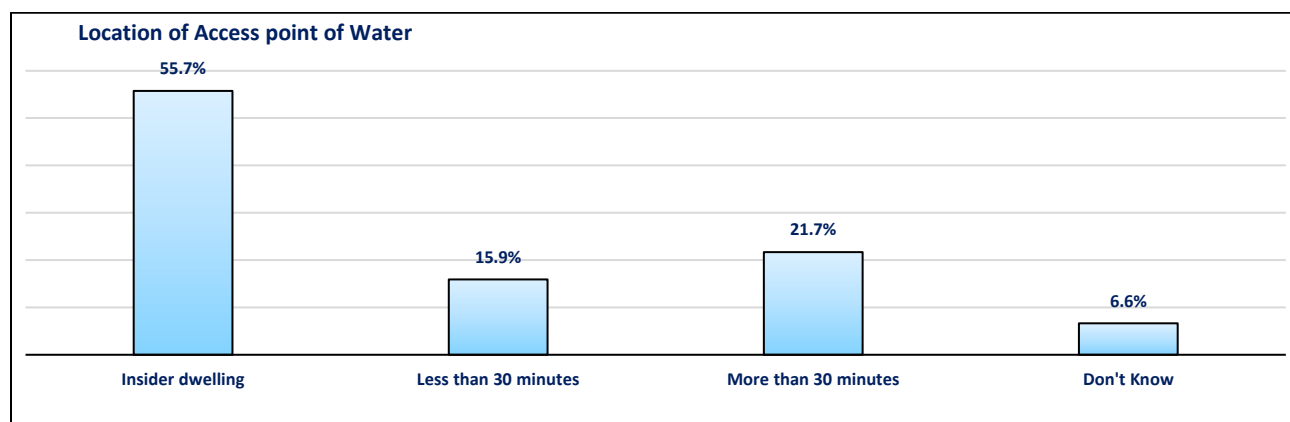


Figure 51- Location point of drinking water at household level Balochistan

Households use different methods of purification to make drinking water safe. When asked about the treatment of water of any kind for drinking purpose, only 13.5 % shared they purify water before drinking.

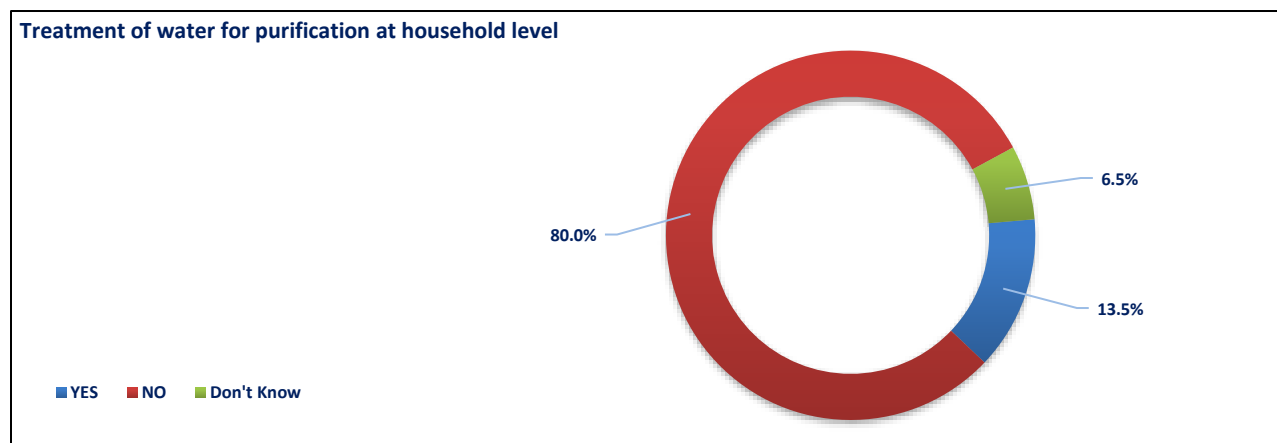


Figure 52- Proportion of households treating water for drinking purpose Balochistan

### 9.1.9.1 SANITATION

Proper disposal of household waste is important to ensure healthy living. Safe disposal of human excreta is one of the integral components of sanitation and hygiene. The graph given below, drawn from the responses of the household members indicates that over 32.6% households use a flush to septic system type of toilet, 6.7% use a flush to piped sewerage system, 25% practice open defecation in addition to 1.8% households which use bucket service. Around 8.8% households use pour flush to a pit type latrine; 10.8% households use pit

latrine with slab and 5.2% use a pit latrine without slab while 5.3 % households use hanging toilets.

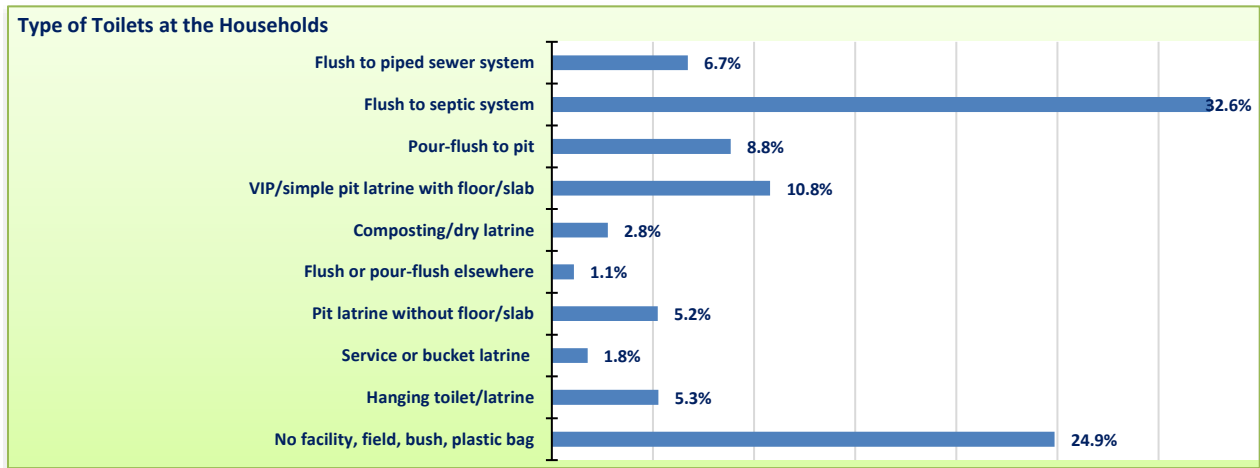


Figure 53- Type of toilet used at household level Balochistan

#### 9.1.9.2 HYGIENE

The following graph presents the proportion of households practicing hand-washing on a routine basis at critical times. Only 34.5% of the respondents shared that after defecation or voiding they wash their hands, 36.2% households practice hand-washing before eating, 16% said that they wash their hands before feeding their child and only 19% shared they wash their hands before preparing food/cooking. Around 16.6% respondents said they wash their hands after cleaning their child while 22.7% said that they wash their hands after eating /meals. Around 13.3% said they washed their hands after handling animals.

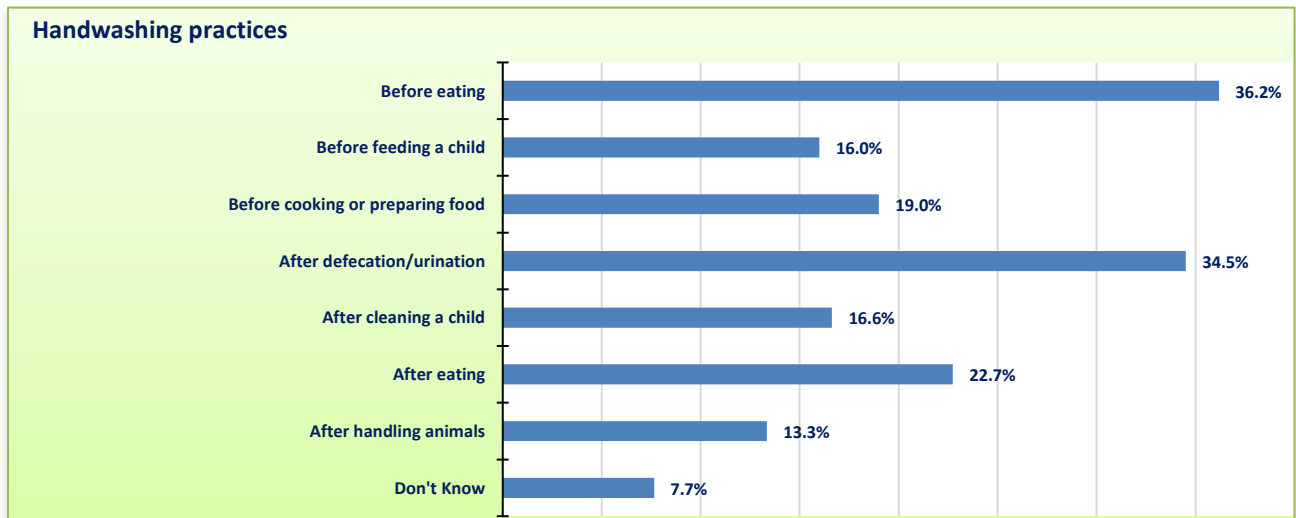


Figure 54- Routine hand washing at critical times at household level Balochistan



### 9.1.10 CHILD EDUCATION

Right to education is one of the basic entitlements of every child universally. Unfortunately, in Pakistan access of children to quality education has always remained sub-optimal throughout history. During this survey, 48.8% children (between ages 5 and 18 year) were found to have ever attended a school while only 56.6% of the children were found currently going to school. 43.4% children are out of school.

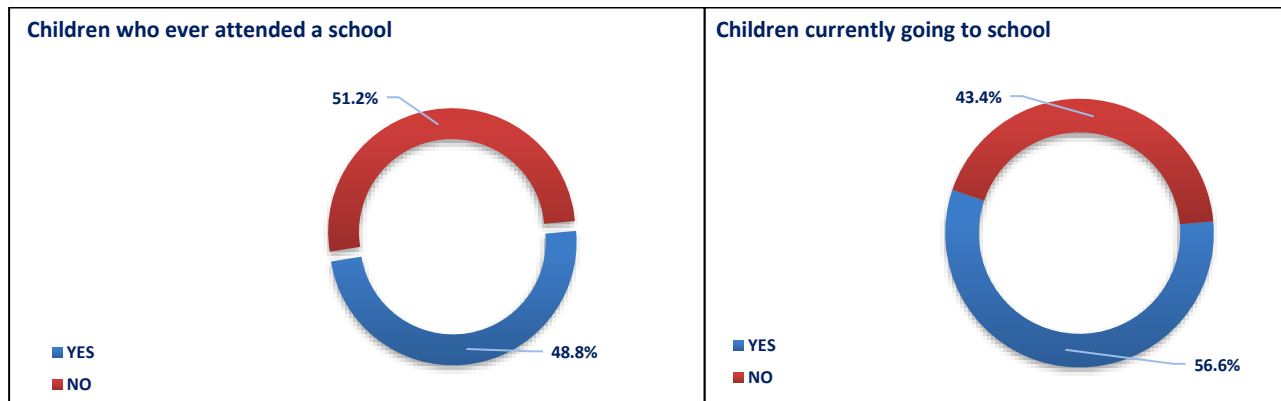


Figure 55- Children's access to education and enrollment Balochistan

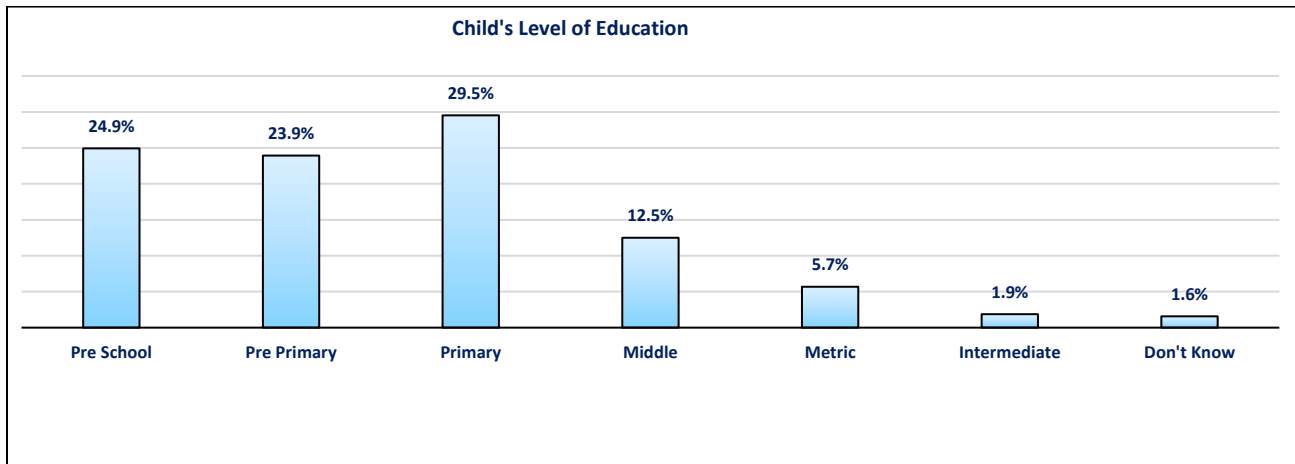


Figure 56: Child's Level of Education

### 9.1.11 CHILD PROTECTION

#### 9.1.11.1 BIRTH REGISTRATION

Birth registration is a universally accepted right of the child as it has importance for both the individual in terms of identification as well as the state for it has to plan the development process according to the available demographic data. The following graph presents the proportion of children having birth registration and/or having a valid identity document

including Form B. Almost 77% of the children below 18 years of age were found without any legal document for identity including form B and birth certificates which are prerequisites for a national identity card after the child reaches 18. Only 9.8% of the children had any identity document and 13.3% of the households did not know about the birth registration, certificates or form B.

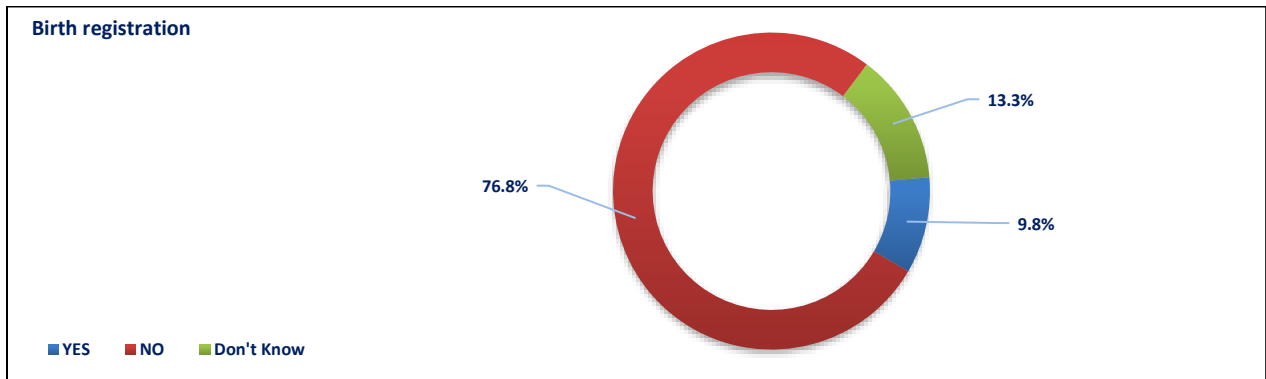


Figure 57- Child's birth registration Balochistan

#### 9.1.11.2 CHILD LABOR

Child labor is a deplorable practice which bears a lot of implication both physically as well as on the mental health of a child. In Balochistan out of the total households having children below 18 years of age, 11.3% were seen undergoing child labor practices.

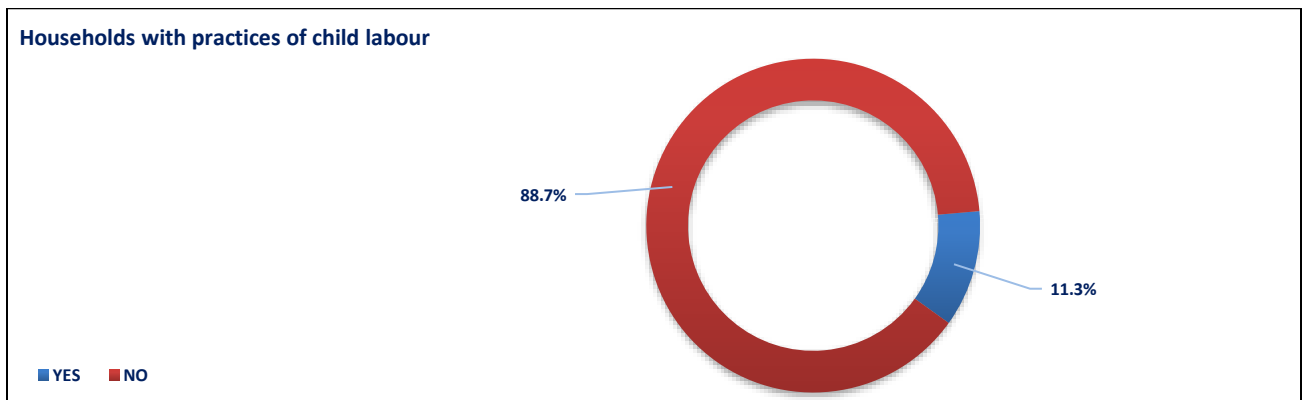


Figure 58- Proportion of households with children in labor Balochistan

## 9.2 RESULTS OF STANDARDIZED MONITORING AND ASSESSMENT OF RELIEF AND TRANSITION (SMART) SURVEY

### 9.2.1 AGE AND SEX DISTRIBUTION OF CHILDREN 06-59 MONTHS

A total of 14471 children (Boys 7466, Girls 7305) aged 06-59 months were assessed for their nutritional status by using anthropometric measurements. Table below is showing the age and sex distribution of the sampled children. The age of the child was recorded based on child immunization cards where available and in case these were not available, local area event calendars were preferred.

**TABLE 1: AGE AND SEX DISTRIBUTION**

AGE (months)	Boys		Girls		Total		Ratio
	No.	%	No.	%	No.	%	Boy: Girl
6-17	1734	51.9	1604	48.1	3338	22.6	1.1
18-29	1747	49.1	1812	50.9	3559	24.1	1.0
30-41	1804	49.7	1831	50.3	3635	24.6	1.0
42-53	1546	50.4	1503	49.6	3049	20.6	1.0
54-59	635	53.3	555	46.7	1190	8.1	1.1
<b>Total</b>	<b>7466</b>	<b>50.6</b>	<b>7305</b>	<b>49.4</b>	<b>14771</b>	<b>100</b>	1.0

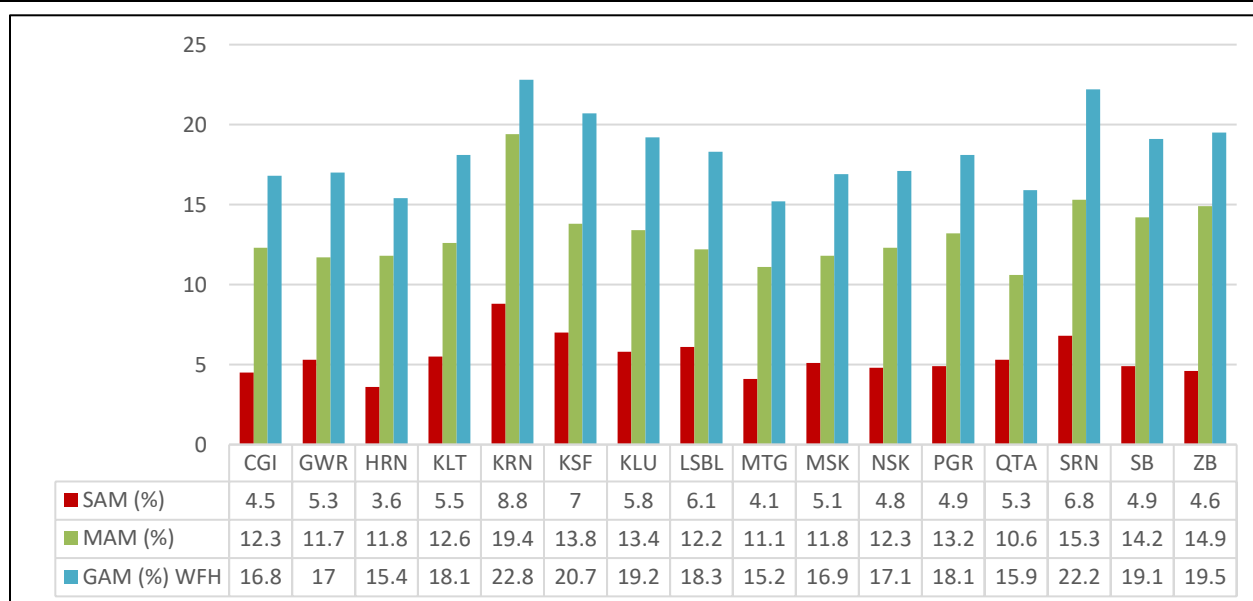
### 9.2.2 PREVALENCE OF ACUTE MALNUTRITION BASED ON WEIGHT-FOR-HEIGHT Z-SCORES (AND/OR OEDEMA) & BY SEX

As per WHO (World Health Organization) standards, the global database on the growth and malnutrition of a child, uses a Z-score cut-off point of <-2 SD to classify low weight-for-age, low height-for-age and low weight-for-height as moderate and severe malnutrition. The data extracted and is mentioned in the below table is based on the findings of this survey, where children were assessed through anthropometric measurements for their nutritional status. The prevalence of global acute malnutrition i.e. GAM (<-2 z-score and/or oedema) was recorded as 18.2%. Prevalence of severe acute malnutrition (SAM) recorded as 5.4% and for moderate cases it is 12.8%. The GAM rate is above the emergency/critical level of 15% according to the WHO classification. The prevalence of GAM for boys (22.8%) was higher than girls (15.9%).

As per district wise data, high GAM (<-2 z-score and/or oedema) rates were recorded in districts Kharan (22.8%), Sherani (22.2%), Killa Saifullah (20.7%) and Zhob (19.5%). GAM rates in all the surveyed districts are well above the emergency level of 15% per WHO classification.

**TABLE 2: DISTRICT WISE PREVALENCE OF ACUTE MALNUTRITION BASED ON WEIGHT-FOR-HEIGHT Z-SCORES (AND/OR OEDEMA)**

District (s)	Severe Acute Malnutrition (%)	Moderate Acute Malnutrition (%)	GAM (%)
Chaghi	4.5	12.3	16.8
Gawadar	5.3	11.7	17.0
Harnai	3.6	11.8	15.4
Kalat	5.5	12.6	18.1
<b>Kharan</b>	<b>8.8</b>	<b>14.1</b>	<b>22.8</b>
Killa Saifullah	7.0	13.8	20.7
Kohlu	5.8	13.4	19.2
Lasbella	6.1	12.2	18.3
Mastung	4.1	11.1	15.2
Musa Khail	5.1	11.8	16.9
Nushki	4.8	12.3	17.1
Panjgur	4.9	13.2	18.0
Quetta	5.3	10.6	15.9
<b>Sherani</b>	<b>6.8</b>	<b>15.3</b>	<b>22.2</b>
Sibi	4.9	14.2	19.1
Zhob	4.6	14.9	19.5



**Figure 59: District wise rates based on weight for height z – scores**

[CGI – Chaghi, GWR – Gawadar, HRN – Harnai, KLT – Kalat, KRN – Kharan, KSF – Killa Saifullah, KLU – Kohlu, LSBL – Lasbella, MTG – Mastung, MSK – Musakhel, NSK – Nushki, PGR – Panjgur, QTA – Quetta, SRN – Sherani, SB – Sibi, ZB – Zhob]

### 9.2.3 PREVALENCE OF ACUTE MALNUTRITION BY AGE, BASED ON WEIGHT-FOR-HEIGHT Z-SCORES AND/OR OEDEMA

For estimating the prevalence of acute malnutrition by age, the data was gathered and the results are mentioned in the table below. According to age distribution, the SAM (8.0%) rate was highest in 06-17 months and MAM (16.7%) was recorded as highest among age group 6-17 months. The prevalence of oedema is 0.5%.

**TABLE 3: PREVALENCE OF ACUTE MALNUTRITION BY AGE, BASED ON WEIGHT-FOR-HEIGHT Z-SCORES AND/OR OEDEMA**

Age (mon)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	3299	263	8.0%	552	16.7%	2462	74.6%	16	0.5%
18-29	3508	217	6.2%	519	14.8%	2754	78.5%	18	0.5%
30-41	3615	135	3.7%	397	11.0%	3064	84.8%	19	0.5%
42-53	3037	83	2.7%	281	9.3%	2660	87.6%	13	0.4%
54-59	1178	31	2.6%	136	11.5%	1009	85.7%	2	0.2%
<b>Total</b>	14637	729	5.0%	1885	12.9%	11949	81.6%	68	0.5%

### 9.2.4 DISTRIBUTION OF ACUTE MALNUTRITION AND OEDEMA BASED ON WEIGHT-FOR-HEIGHT Z-SCORES

Protein-energy malnutrition is a nutritional deficiency resulting from either inadequate energy (caloric) or protein intake. It includes marasmus or kwashiorkor. Marasmus is characterized by wasting of muscles and subcutaneous fat, usually caused due to low energy intake. Kwashiorkor affects mainly children and is characterized by oedema, caused due to low protein intake<sup>3</sup>. Table 4 is presenting that 4.2% of the children were reported as the cases of marasmus without oedema and 0.7% of the cases were reported as for kwashiorkor during this survey.

**TABLE 4: DISTRIBUTION OF ACUTE MALNUTRITION AND OEDEMA BASED ON WEIGHT-FOR-HEIGHT Z-SCORES**

	<-3 z-score	>=-3 z-score
<b>Oedema present</b>	Marasmic kwashiorkor No. 3 (0.0 %)	Kwashiorkor No. 124 (0.7 %)
<b>Oedema absent</b>	Marasmic No. 719 (4.2 %)	Not severely malnourished No. 16209 (95.8 %)

<sup>3</sup> Onis M de, Monteiro C, Clugston G. The worldwide magnitude of protein-energy malnutrition: an overview from the WHO Global Database on Child Growth. BULLETIN OF THE WORLD HEALTH ORGANIZATION. 1993. 71(6):

## 9.2.5 PREVALENCE OF ACUTE MALNUTRITION BASED ON MUAC CUT OFFS (AND/OR OEDEMA) AND BY SEX

Mid-upper arm circumference (MUAC) measurement is a useful tool for assessing the nutritional status of a child. This measurement is easy to perform and require a simple, colour-coded measuring band and recognized as a rapid screening tool for admission into nutrition programmes for children between 6-59 months<sup>4</sup>. MUAC measurement of less than 125mm indicates that a child is suffering from moderate acute malnutrition. MUAC measurement under 115mm, indicates that the child is suffering from severe acute malnutrition. The findings for prevalence of acute malnutrition based on MUAC are mentioned in Tables 5. The given data indicates that, 15.1% reported as GAM, of which 4.7% (3.7 – 5.0 95% C.I.) are SAM (MUAC <115mm) and 10.4% (8.4 – 12.9 95% C.I.) are MAM (MUAC<125mm) cases. GAM rates are higher in boys (8.5%) as compared to that for girls (6.6%)

**TABLE 5: DISTRICT WISE PREVALENCE OF ACUTE MALNUTRITION BASED ON MUAC CUT OFF'S (AND/OR OEDEMA)**

District (s)	Severe Acute Malnutrition (%)	Moderate Acute Malnutrition (%)	GAM (%) MUAC
Chaghi	4.7	10.4	15.1
Gawadar	4.3	10.6	14.9
Harnai	5.6	9.0	14.6
Kalat	4.8	11.6	16.4
Kharan	7.5	11.9	19.4
Killa Saifullah	5.4	13.5	18.9
Kohlu	4.9	11.9	16.8
Lasbella	5.0	11.8	16.8
Mastung	4.6	9.2	13.8
Musa Khail	4.5	12.1	16.6
Nushki	4.1	12.5	16.6
Panjgur	4.3	13.0	17.3
Quetta	5.0	9.4	14.4
Sherani	5.8	14.0	19.8
Sibi	4.7	11.4	16.1
Zhob	4.6	13.6	18.2

As per district wise data, based on MUAC high GAM rates were recorded in districts Sherani (19.8%), Kharan (19.4%), Killa Saifullah (18.9%) and Zhob (18.2%).

<sup>4</sup> <http://www.unsystem.org>

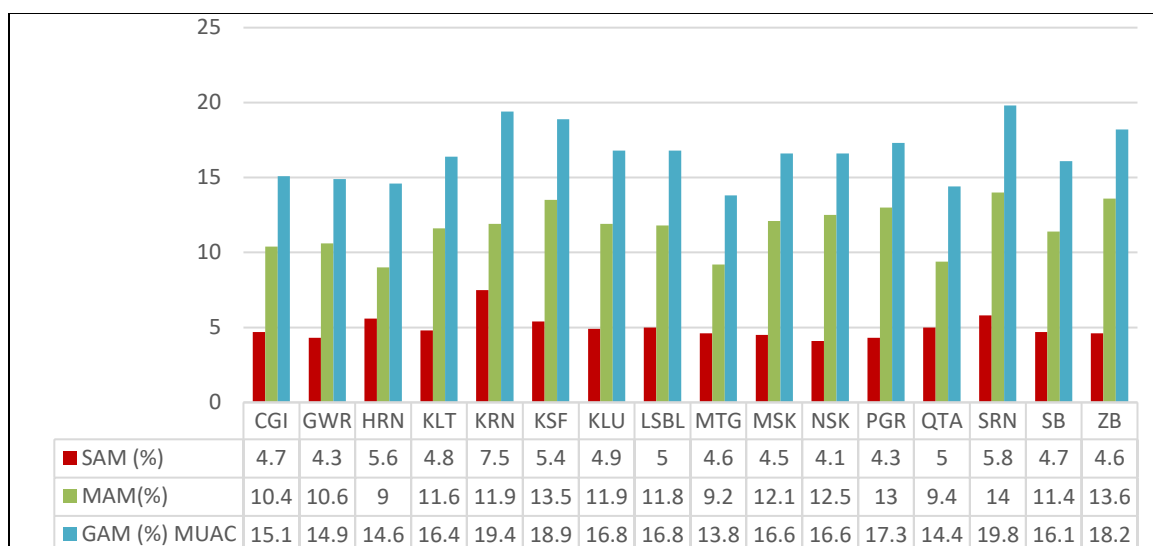


Figure 60: District wise rates based on MUAC Cut-offs

[CGI – Chaghi, GWR – Gawadar, HRN – Hernai, KLT – Kalat, KRN – Kharan, KSF – Killa Saifullah, KLU – Kohlu, LSBL – Lasbella, MTG – Mastung, MSK – Musakhel, NSK – Nushki, PGR – Panjgur, QTA – Quetta, SRN – Sherani, SB – Sibi, ZB – Zhob]

## 9.2.6 PREVALENCE OF ACUTE MALNUTRITION BY AGE, BASED ON MUAC CUT OFFS AND/OR OEDEMA

According to age distribution the results given in the table shows significant findings, SAM (10.5%) recorded as highest in age groups 06-17 months. 20.6% cases were recorded as MAM in the same age group.

TABLE 6: PREVALENCE OF ACUTE MALNUTRITION BY AGE, BASED ON MUAC CUT OFF'S AND/OR OEDEMA

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 mm and < 125 mm)		Normal (> = 125 mm)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	3345	352	10.5%	689	20.6%	2304	68.9%	16	0.5%
18-29	3559	185	5.2%	545	15.3%	2829	79.5%	18	0.5%
30-41	3635	79	2.2%	291	8.0%	3265	89.8%	19	0.5%
42-53	3049	36	1.2%	150	4.9%	2863	93.9%	13	0.4%
54-59	1189	22	1.9%	59	5.0%	1108	93.2%	2	0.2%
<b>Total</b>	<b>14777</b>	<b>674</b>	<b>4.6%</b>	<b>1734</b>	<b>11.7%</b>	<b>12363</b>	<b>83.7%</b>	<b>68</b>	<b>0.5%</b>

## 9.2.7 PREVALENCE OF UNDERWEIGHT BASED ON WEIGHT-FOR-AGE Z-SCORES BY SEX

Weight for age takes into account both acute and chronic malnutrition. Children with weight for age below -2 standard deviations are underweight. Children with weight for age lower than -3 SD are considered as severely underweight<sup>5</sup>. 36.0% of children 6-59 months are underweight, of which 13.4% are severely underweight. Rates are higher in boys (39.0% are severely underweight) as compared to the girls (32.2% are severely underweight). Table below is showing the district wise prevalence of underweight and severe underweight in children 06-59 months of age. Rates are higher in districts Kharan (51.6%), Kohlu (49.9%), Zhob (49.7%), Kalat (48.6%) and Sibi (47.1%). Prevalence is higher in boys as compared with girls.

**TABLE 7: PREVALENCE OF UNDERWEIGHT BASED ON WEIGHT-FOR-AGE Z-SCORES BY SEX**

District (s)	Underweight	Severe underweight	Boys	Girls
Chaghi	35.7	13.4	15.1	11.7
Gawadar	38.1	11.9	14.9	8.8
Harnai	36	12.5	13.8	11.2
Kalat	48.6	21.3	26	17.4
Kharan	51.6	15.7	18.9	12.6
Killa Saifullah	38.8	15.5	18	12.7
Kohlu	49.9	21.8	26	17.3
Lasbella	40.9	13.7	14.2	13.2
Mastung	44.1	13.7	13.1	14.3
Musa Khail	44.9	16.5	15.4	17.8
Nushki	38.2	12.5	12.7	12.4
Panjgur	33.5	10.8	15.1	6.6
Quetta	37.3	8.2	7.4	9
Sherani	42.2	17.3	19.6	14.9
Sibi	47.1	18.4	19.5	17.1
Zhob	49.7	28.8	26	31.7

<sup>5</sup> [http://www.who.int/childgrowth/standards/Technical\\_report.pdf](http://www.who.int/childgrowth/standards/Technical_report.pdf)



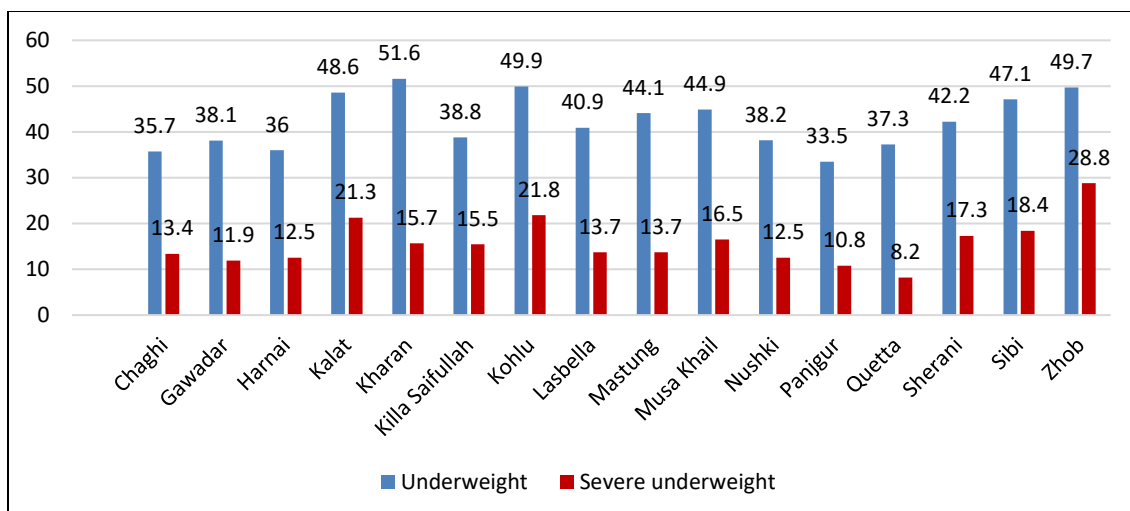


Figure 61: District wise prevalence of underweight & severe underweight

## 9.2.8 PREVALENCE OF UNDERWEIGHT BY AGE, BASED ON WEIGHT-FOR-AGE Z-SCORES

Below table is showing the results for the prevalence of underweight in different age groups. Cases for severe underweight are higher amongst the children aged 18-29 months i.e. 19.6% and for moderate underweight the cases are higher amongst children 42-53 months of age i.e. 29.5%.

TABLE 8: PREVALENCE OF UNDERWEIGHT BY AGE, BASED ON WEIGHT-FOR-AGE Z-SCORES

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score )		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	3300	488	14.8%	815	24.7%	1997	60.5%	16	0.5%
18-29	3514	687	19.6%	900	25.6%	1927	54.8%	18	0.5%
30-41	3602	624	17.3%	945	26.2%	2033	56.4%	19	0.5%
42-53	3019	427	14.1%	890	29.5%	1702	56.4%	13	0.4%
54-59	1184	117	9.9%	328	27.7%	739	62.4%	2	0.2%
<b>Total</b>	14619	2343	16.0%	3878	26.5%	8398	57.4%	68	0.5%

### 9.2.9 PREVALENCE OF STUNTING (CHRONIC MALNUTRITION) BASED ON HEIGHT-FOR-AGE Z-SCORES AND BY SEX

Stunting is chronic malnutrition and occurs due to long term food scarcity and can be moderate and severe<sup>6</sup>. Below -3SD refers to severely stunted and below -2SD are moderately stunted cases<sup>7</sup>. The rate for stunting is 47.1 % (42.1 – 51.9 95% C.I.) and is well above the WHO threshold for stunting which is set as 40%. Severe stunting is recorded as 18.3% and the prevalence for moderate stunting is 28.8%. Considering the rates as per sex distribution, it is revealed that boys are severely stunted with the rate of 50.7% as compared to the girls, i.e. 43.3%.

Table below is showing the district wise prevalence of stunting in children 06-59 months of age. Rates for all the districts are well above the threshold of WHO and are higher in districts Muskhail (58.8%), Kohlu (57.8%), Mastung (57.8%), Kalat (55.1%) and Zhob (55.0%). Prevalence is higher in boys as compared with girls

**TABLE 9: DISTRICT WISE PREVALENCE OF STUNTING BASED ON HEIGHT-FOR-AGE Z-SCORES AND BY SEX**

District (s)	Stunting	Severe Stunting	Moderate Stunting	Boys	Girls
Chaghi	47.1	17.9	29.2	50.8	43.3
Gawadar	43.3	17.6	25.7	45.1	41.4
Harnai	44.6	22.2	22.4	44.4	44.8
Kalat	55.1	29.6	25.5	61.7	49.3
Kharan	49.1	20.3	28.8	52.8	45.6
Killa Saifullah	48.4	22.8	25.6	50.1	46.6
Kohlu	57.8	31.6	26.2	61.3	54
Lasbella	46.6	20.9	25.8	47.1	46.2
Mastung	57.8	28.6	29.2	60.8	54.8
Musa Khail	58.8	26.9	31.9	58.3	59.4
Nushki	44.1	16.4	27.7	44.5	43.5
Panjgur	41.5	12.2	29.3	52.9	30.2
Quetta	47.1	25.6	21.5	53.4	40.0
Sherani	51.4	22.6	28.9	52.9	50.0
Sibi	53.1	24.6	28.5	59.3	46.5

<sup>6</sup> <http://unicef.in/Whatwedo/10/Stunting>

<sup>17</sup> [http://www.unicef.org/infobycountry/stats\\_popup2.html](http://www.unicef.org/infobycountry/stats_popup2.html)

Zhob	55.0	34.0	21.0	55.0	55.0
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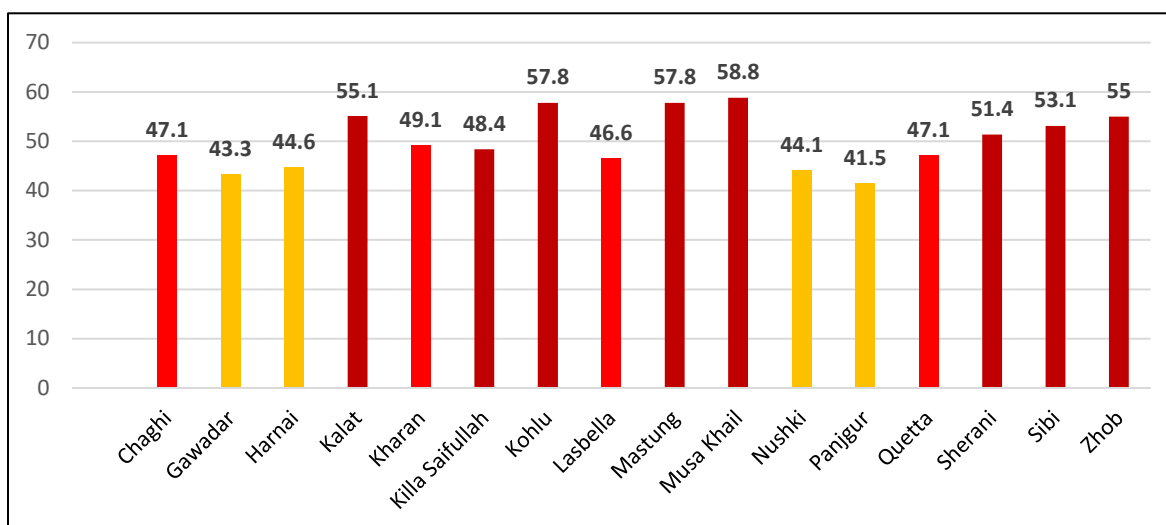


Figure 62: District wise prevalence of Stunting

### 9.2.10 PREVALENCE OF STUNTING BY AGE BASED ON HEIGHT-FOR-AGE Z-SCORES

There are findings against the rates of stunting by age distribution. Rates are found higher in the age groups from 18-29 months. 29.0% of children in 18-29 months' age groups are found severely stunted. Moderate stunting is higher in 18-29 months' age group and is 28.8%.

TABLE 10: PREVALENCE OF STUNTING BY AGE BASED ON HEIGHT-FOR-AGE Z-SCORES

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	3254	472	14.5%	816	25.1%	1966	60.4%
18-29	3422	991	29.0%	984	28.8%	1447	42.3%
30-41	3514	976	27.8%	965	27.5%	1573	44.8%
42-53	2978	748	25.1%	792	26.6%	1438	48.3%
54-59	1176	192	16.3%	306	26.0%	678	57.7%
<b>Total</b>	14344	3379	23.6%	3863	26.9%	7102	49.5%

### 9.2.11 MORTALITY (RESULTS (RETROSPECTIVE OVER 01 YEAR (365 DAYS) PRIOR TO INTERVIEW)

With a recall period of 365 days (01 Year), the CMR (Crude Mortality Rate) was recorded as 0.3 deaths/10,000 persons/day. The U5 mortality rate was 0.7 deaths/10,000 children under five years/day in the district. The crude and the U5 mortality rates were below the emergency

thresholds defined as per the WHO criteria i.e. emergency threshold of <2deaths/10,000/day for U5 mortality rate and <1 death/10,000/day for crude mortality rate<sup>8</sup>. Results of the mortality are shown below in table 11 & 12.

**Table 11: Crude and Under 05 Mortality Rates (Provincial)**

CMR (total deaths/10,000 people / day): 0.3
U5MR (deaths in children under five/10,000 children under five / day): 0.77

**Table 12: Crude and Under 05 Mortality Rates (District Wise)**

	<b>U5 Mortality</b>	<b>Crude Mortality</b>
Quetta	0.43	0.27
Kalat	0.69	0.32
Chaghi	0.76	0.31
Gawadar	1.06	0.26
Hernai	0.61	0.16
Kharan	0.98	0.24
Killa Saifullah	0.73	0.48
Kohlu	1.84	0.50
Lasbella	0.43	0.31
Musakhel	0.80	0.17
Mastung	0.88	0.34
Nushki	0.53	0.21
Panjgur	0.50	0.46
Sherani	0.92	0.35
Sibi	0.54	1.08
Zhob	0.86	0.36

The data collected for considering the causes of deaths amongst children 5 years of during the recall period and of the recorded deaths reported in the communities 15% were caused by ARI (Acute Respiratory Infection) - Cough. 15% were due to diarrheal diseases and 12% of the deaths reported due to fever could also be considered as cases of ARI because it is also characterized by fever and is a leading cause of deaths amongst children under 05 years of age. Other causes also contributed about 24% in the deaths for children under 05 years of age.

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<sup>8</sup> Checchi F, Roberts L: Interpreting and using mortality data in humanitarian emergencies: A primer for non-epidemiologists. Overseas Development Institute; 2005

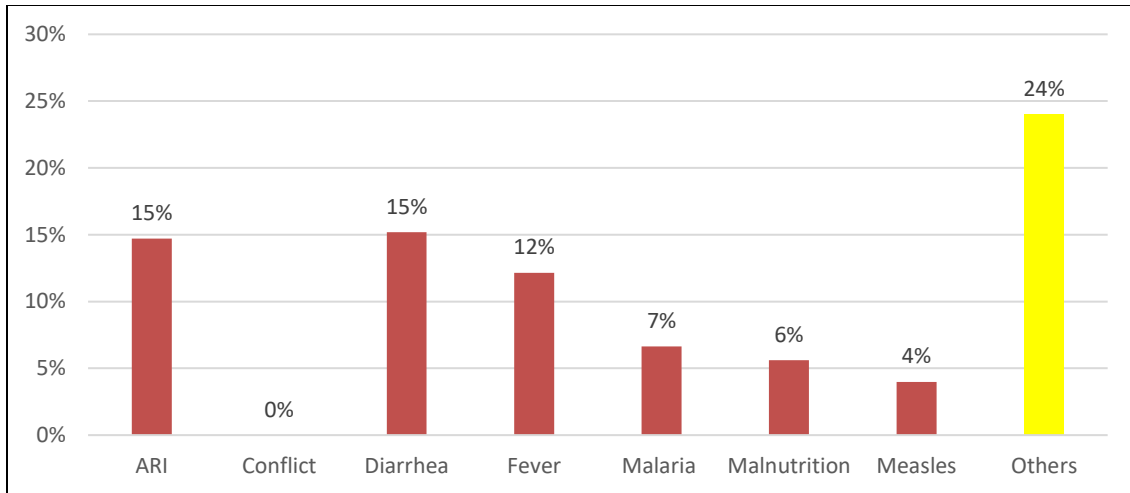


Figure 63: Causes of deaths in Children U5

### 9.2.12 MORBIDITY (CHILD ILLNESSES) IN THE LAST 02 WEEKS

For acquiring information in illnesses happened during the last 02 weeks prior to the data collection, questions were asked from the mothers/caregivers of 12,331 children U5 years of age. Results showed that 68% of children were reportedly sick in the two weeks prior to the survey. The common illnesses reported in the last 02 weeks prior to the data collection were ARI/cough (11%), diarrhoea (17%) and fever (18%). 1% cases were reported for malaria but the cases for fever could also be of ARI, malaria or other infections.

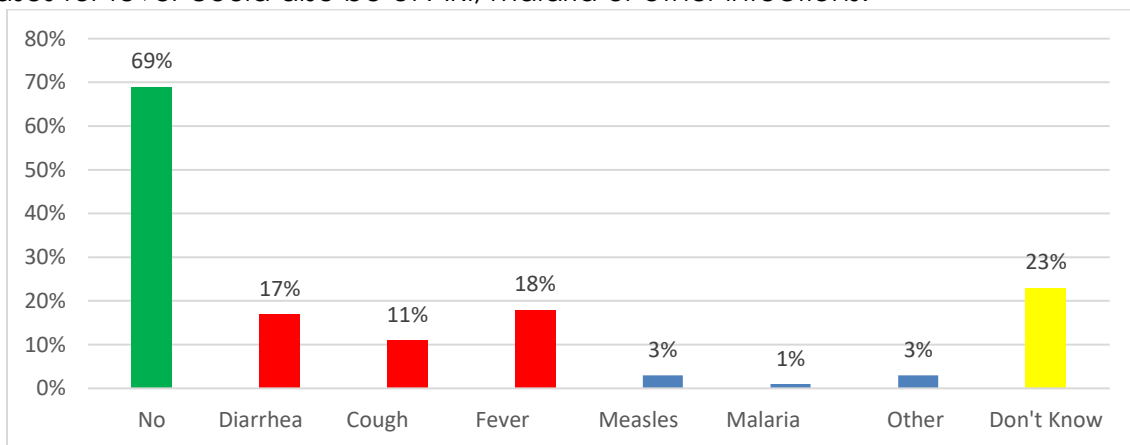


Figure 64: Morbidity (Illnesses) data

Health seeking behaviour of the respondents was assessed by inquiring them, what they did when the child was sick. 63% responded that the children suffered from the illnesses were brought to a government or private sector health facility for management & treatment of the illnesses.

### 9.2.13 VITAMIN A COVERAGE

Vitamin A administration was also assessed during this survey. Vitamin A coverage for children 06 to 59 months old was recorded on mother's recall. 39.3% of the children aged 06-59 months were given vitamin A capsules or drop during the last 06 months.

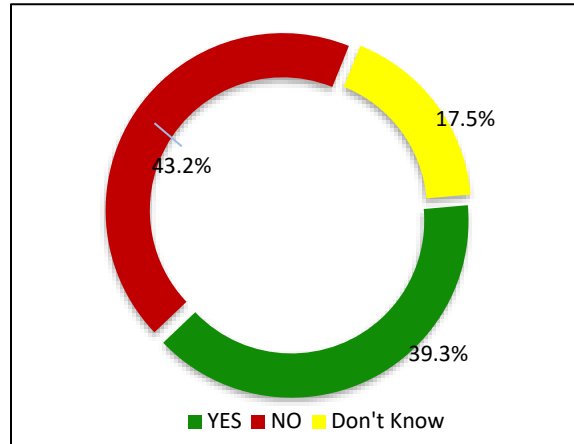


Figure 65: Vitamin A Coverage

Considering the districts data for Vitamin A coverage, it was revealed that in district Nushki was on top with the coverage of 76.2%, whereas the lowest coverage was recorded as 13.4% in in district Musakhel.

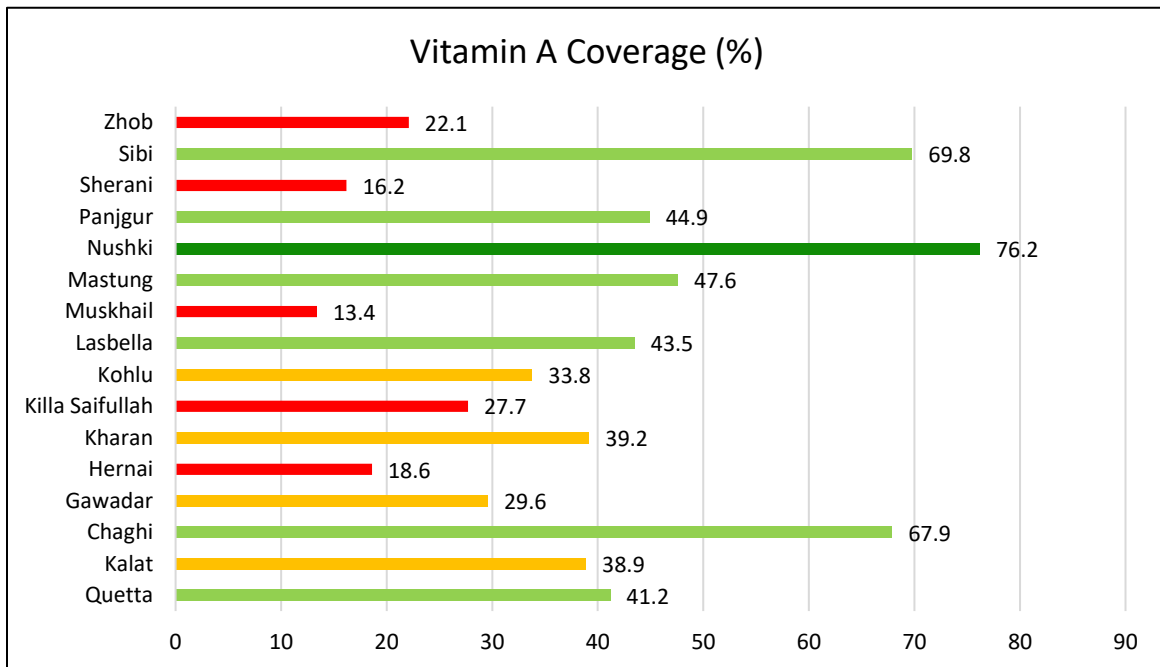


Figure 66: District Wise Coverage for Vitamin A

## 9.2.14 INFANT AND YOUNG CHILD FEEDING (IYCF)

Adequate nutrition is vital for child health and development. The period from birth up to two years of age is mostly important because of the rapid growth and brain development that occurs during this time. During this survey mothers and caregivers having a child between ages of 0-23 months were interviewed for assessing the Infant Young Child Feeding Practices. IYCF indicators included in this survey are early initiation of breastfeeding, exclusive breastfeeding up to six months of age, continued breastfeeding at one year, introduction of solid, semi-solid, or soft foods, minimum dietary diversity and minimum meal frequency.

### 9.2.14.1 BREAST FEEDING PRACTICES & KNOWLEDGE

Results under this heading are encouraging and showed that 94.9% of the respondents had ever breastfed their children. 4.5% responded as NO and 0.6% responded that they do not know. Reasons explored for not breastfeeding and the teams discovered that 56.0% of the mothers responded that breast milk is not enough for the child, this needs to be addressed through an effective behaviour change communication strategy. 17.1% of the respondents told that the mothers were sick at that time and in 16.9% cases child refused to be breastfed. 42.2% of them responded that breast milk is not enough for the child. Findings revealed lack of awareness amongst the mothers.

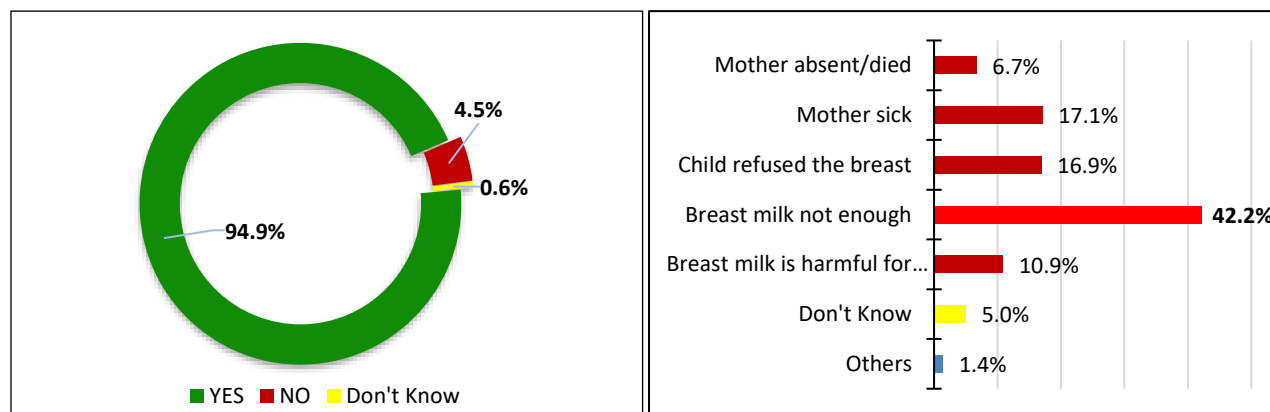


Figure 67: Children ever breastfed

Figure 68: Reasons for not breastfeeding

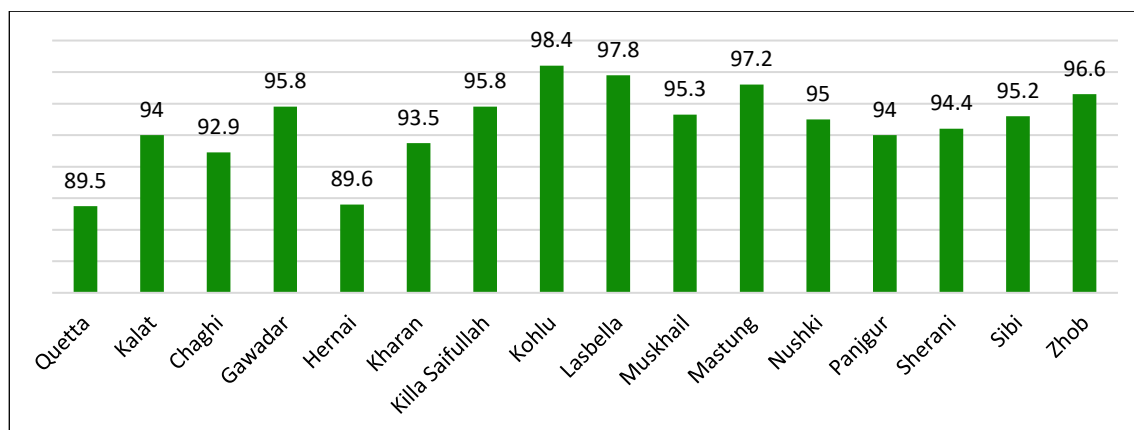


Figure 69: District wise data for children ever breastfed

In response to the question related to the early initiation of breastfeeding, the results revealed that 67.6% initiated breastfeeding within the first hour of life, whereas 17.3% children were breastfed within 24 hours and 8.6% took even longer.

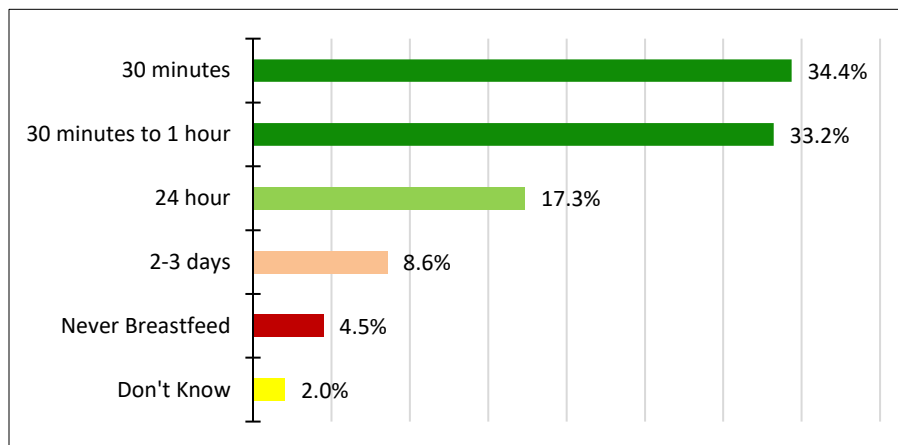


Figure 70: Early Initiation of breast feeding

Colostrum (the first milk), contains antibodies and nutrients required to support the new born during this period. Enumerators asked the respondents for giving the colostrum to the new-born soon after the birth. It was revealed that 85.3% of the respondents answered "YES" which is encouraging and could be used as an opportunity for improving the practices of IYCF in the districts. Only 12.8% of the respondents responded as "NO".

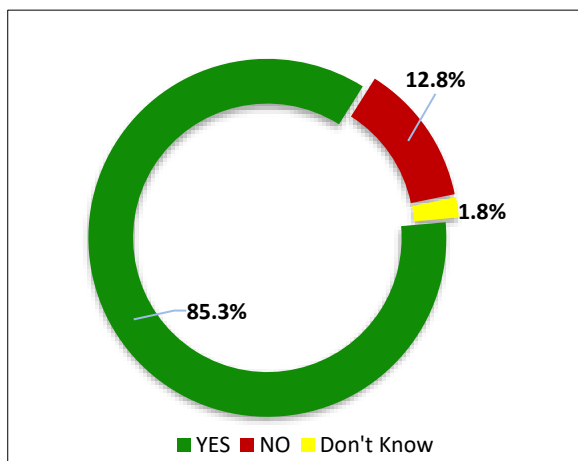


Figure 71: Use of Colostrum

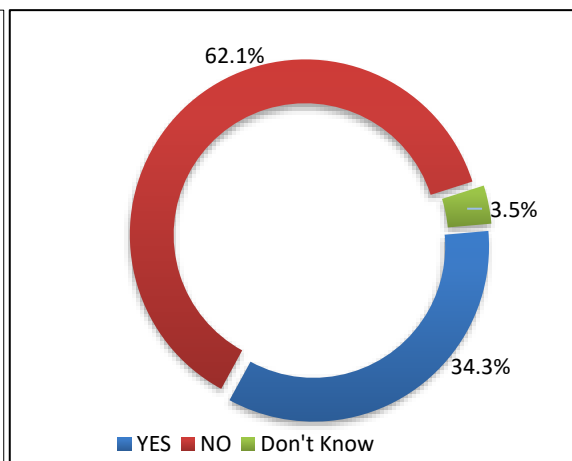


Figure 72: Exclusive Breastfeeding

Exclusive breastfeeding – that is the infant only receives breast milk without any additional food or drink, not even water from 0-6 months of age. Exclusive breastfeeding reduces infant



mortality due to common childhood illnesses such as diarrhoea or pneumonia, and helps for a quicker recovery during illness<sup>9</sup>. During this survey, it was revealed that only 34.3% of the mothers practiced exclusive breastfeeding and 62.1% of the respondents responded as NO.

District wise data for the exclusive breastfeeding practices revealed that rates were high in districts Killa Saifullah (57%), Gawadar (49.9%), Lasbella (49.1%), Kohlu (48.9%) and Quetta (44.8%) – Musakhel, Nushki and Mastung were found the lowest with the rates 7.8%, 12.4% and 13.8%, respectively.

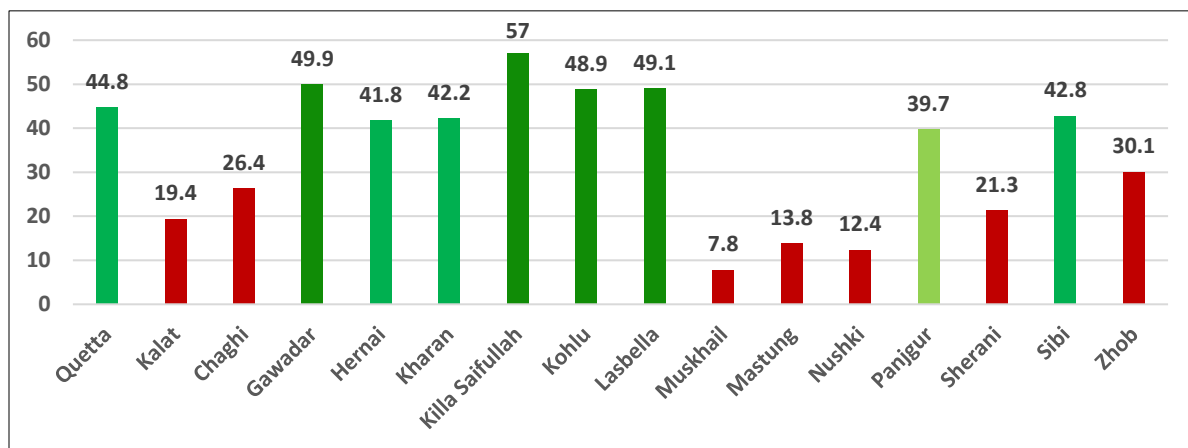


Figure 73: District wise Exclusive Breastfeeding rates

Enumerators asked the respondents about the age of the child at which they stopped breastfeeding – It was revealed that practices under this question are not appropriate as 27.3% responded that they stopped breastfeeding below 06 months of age and only 16.6% responded that they stopped breastfeeding between 19-24 months and above 24 months of age.

41.5% mothers responded that they breastfed their children 07 to 12 times during the last 24 hours, 10.8% breastfed from 13 to 18 times and only 1.5% responded as 19 and above times. 26.6% respondents said that they breastfed their children 0-6 times during the last 24 hours.

<sup>9</sup> [http://www.who.int/nutrition/topics/exclusive\\_breastfeeding/en/](http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/)

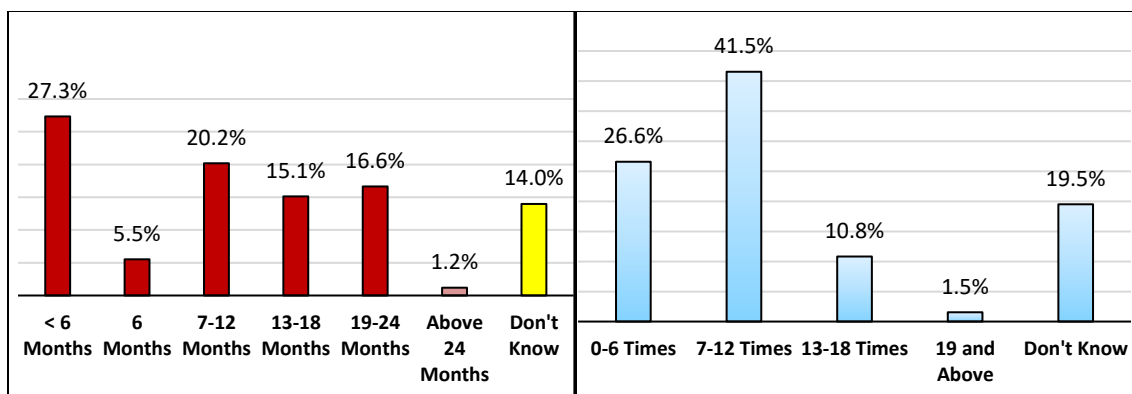


Figure 74: Frequency of Breastfeeding

Figure 75: Age for stopping Breastfeeding

In response to the question about the present status of breastfeeding, 80.7% responded that they are still breastfeeding their children and the remaining 18.6% stopped breast feeding.

### 9.2.15 KNOWLEDGE

To assess the knowledge of the mothers/caregivers regarding exclusive breast feeding, the enumerators asked, for how long a mother should give only breast milk/ exclusive BF? and in response 44.0% of the mothers said that a child should be exclusively breast fed for at least six months, 2.5% mother stated less than 6 months, 20.8% quoted 7-12 months while 26.6% cited 12 and above months.

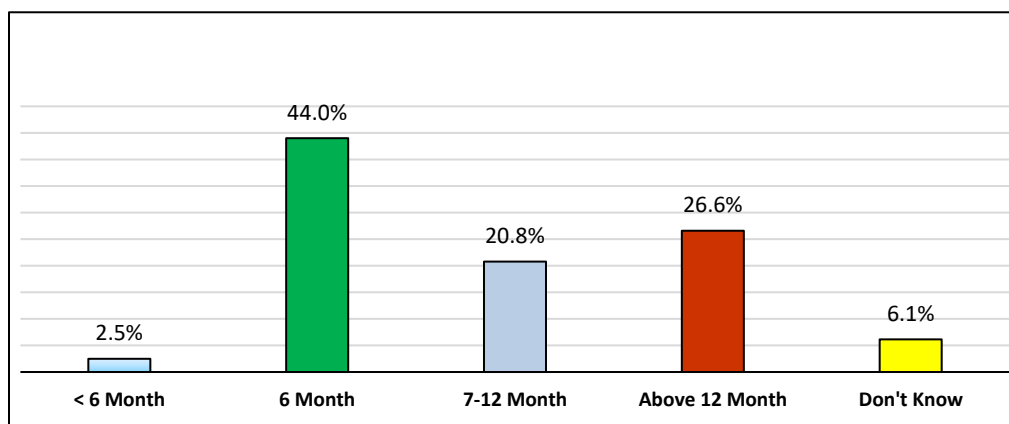


Figure 76: Knowledge about exclusive breast feeding

Apart from the duration of exclusive breastfeeding mothers/caregivers were asked, whether a child should be breastfed exclusively up to 06 months or not – 33.3% of them responded as YES – rates were found high in districts Panjgur (80.1%), Kalat (75.6%) and Chaghi (63.9%) – considering the rate for Quetta, the capital of the province comprising of mostly urban population, it is quite low i.e. only 30.8% - Knowledge of the respondents was found lowest in district Killa Saifullah district i.e. only 3.9%.

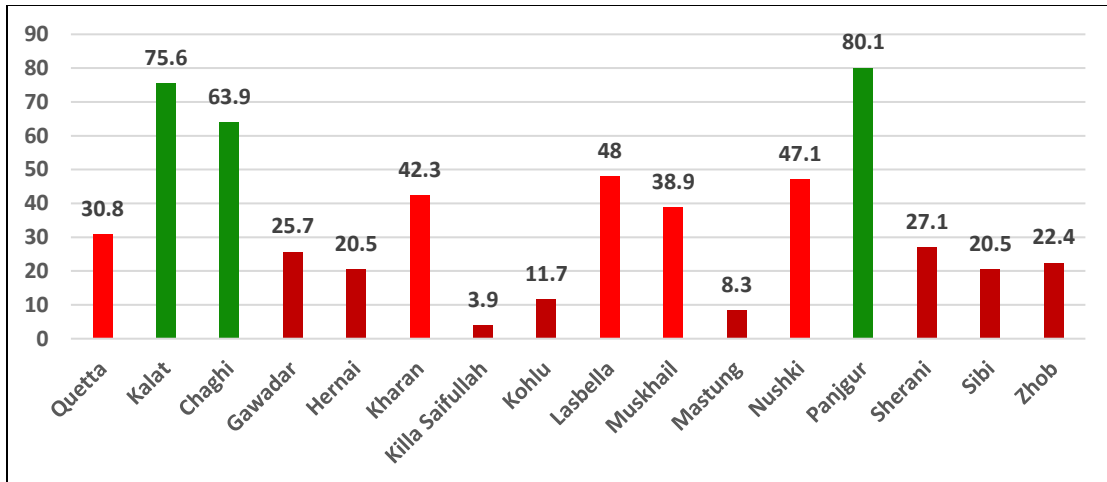


Figure 77: Knowledge about exclusive breast feeding

Considering figure 19, it was revealed that rates for practices were higher in comparison with the knowledge for exclusive breastfeeding for some of the districts – this may be due to the cultural norms and practices in the communities. Behaviour change communication and awareness raising campaigns are required to enhance the knowledge of the communities to further improve the practices. For Kalat and Panjgur rates for knowledge were high, whereas the practices were found low. In Killa Saifullah Knowledge was low but the practices were found high.

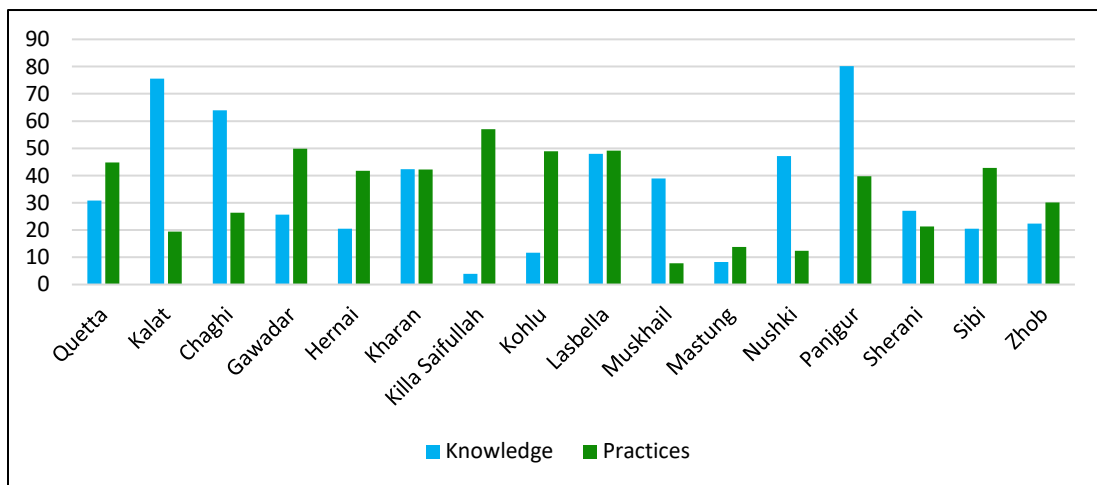


Figure 78: Knowledge Vs Practices - exclusive breast feeding

Mothers and caregivers were asked that within the first six months of life, should a mother/caregiver give something else including water in addition to breast-milk? 57.3% of the mothers/caregivers responded as “NO”.

## 9.2.16 COMPLEMENTARY FEEDING

### 9.2.16.1 PRACTICES

Timely initiation of complementary feeding is important for fulfilling the child food requirements and helps the child in progressive growth. During this survey regarding the introduction of solid, semi solid and soft food, 29.9% of the mothers/caregivers responded that they started complementary feeding at 06 month, 31.6% of the respondents started complementary feeding between 07 - 12 months of age. Early start of complementary feeding before 6 months was reported as 6.5%.

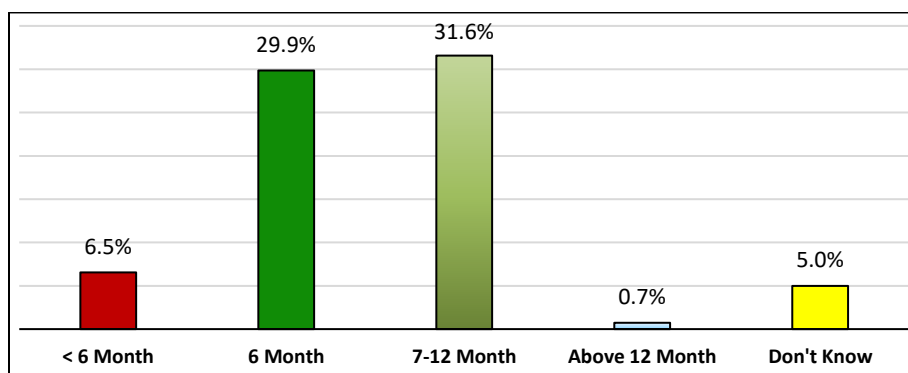


Figure 79: Age for starting complementary feeding

Looking into the district wise data for timely initiation of complementary feeding, it was revealed that districts Nushki (62.3%), Gawadar (48%) and Panjgur (46.9%) were on the higher side, while lower rates recorded for Hernai (1.0%), Kohlu (7.6%) and Kalat (23.4%).

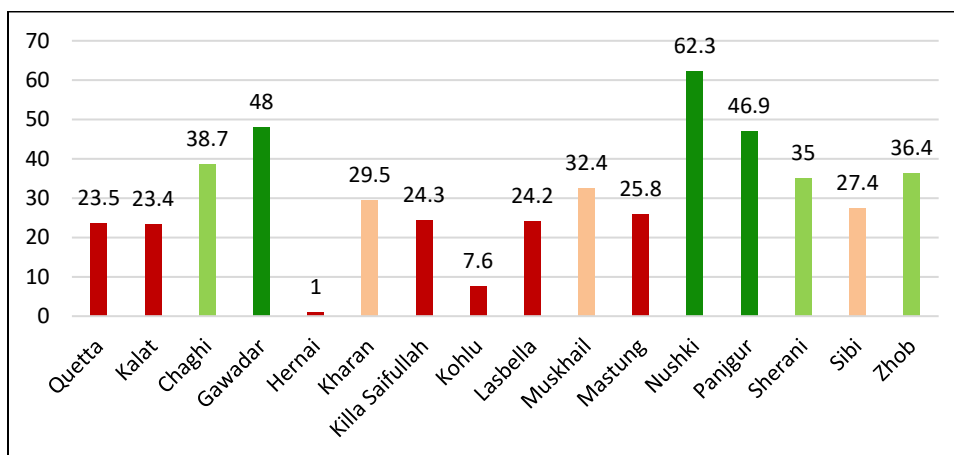


Figure 80: District wise data - Initiation complementary feeding (%)

Minimum meal frequency is an indicator quantifying the number of meals served to a child during the complementary feeding period. During this survey, the mothers & caregivers

were asked about the meal frequency and it was found that 79.8% infants from age 06 to 08 months were receiving 0-06 times meals daily.

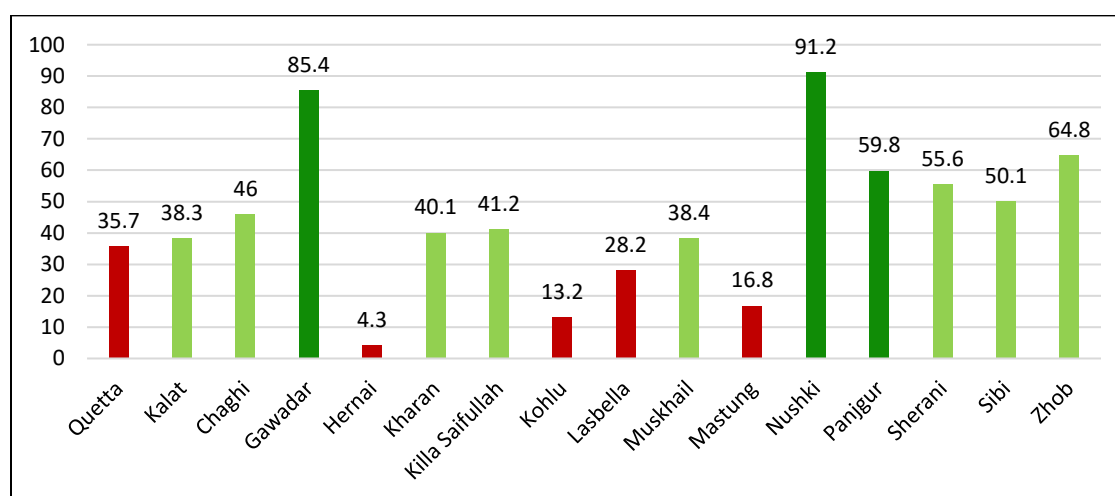
## 9.2.17 KNOWLEDGE

In the surveyed community, 42.5% of mothers know the appropriate age of initiating complementary food (which is 6 months).

**TABLE 13: KNOWLEDGE ABOUT INITIATION OF COMPLEMENTARY FEEDING**

Less than 06 months of age	06 months of age	over 07 months of age
5.0%	42.5%	44.9%

District wise data for timely initiation of complementary feeding revealed that knowledge level was high in Nushki (91.2%) and Gawadar (85.4%) districts – Lowest rates recorded for district Hernai i.e. 4.3% only.



**Figure 81: District wise data - Knowledge for Initiation of Complementary Feeding**

Considering figure 22, it was revealed that rates for knowledge was higher in comparison with the practices for timely initiation of complementary feeding for some of the districts – Behaviour change communication and awareness raising campaigns are required to enhance the knowledge of the communities to further improve the knowledge and practices. For Nushki and Gawadar rates for knowledge were high, whereas the practices were found low.

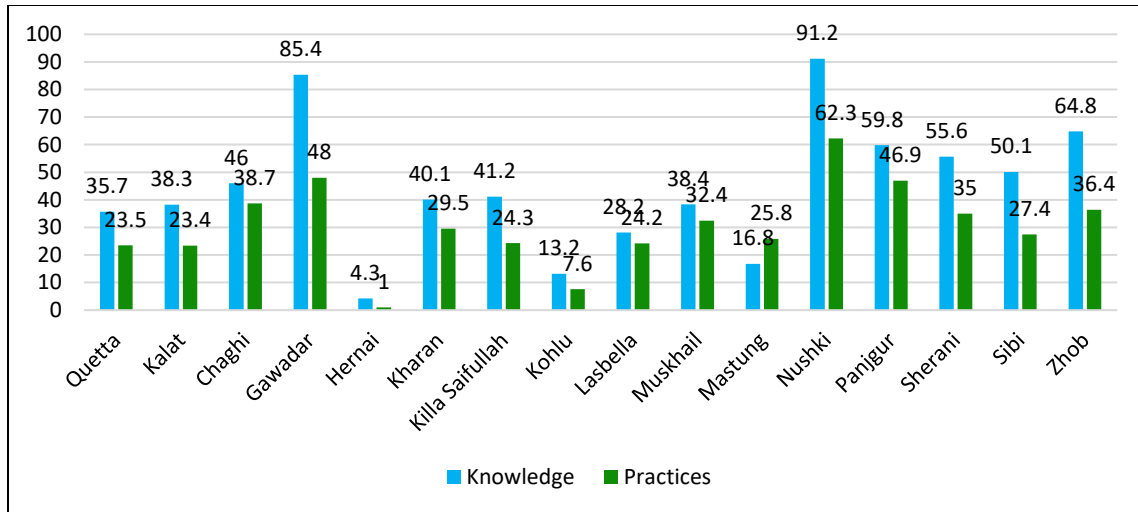


Figure 82: Knowledge Vs Practices – Initiation of Complementary Feeding

Keeping in view the status of the nutrition programs in the province and the coverage of lady health workers in the targeted districts, respondents were asked whether they received any messages on IYCF, if YES than by whom they received these messages. 77.6% of the mothers/caregivers responded that they received messages on IYCF from birth till 02 years of age. 30.8% of them responded that they heard these messages from the doctors working at the health facilities. 25.8% responded that they heard messages form family friends – this depicts the importance of support groups and community mobilization.

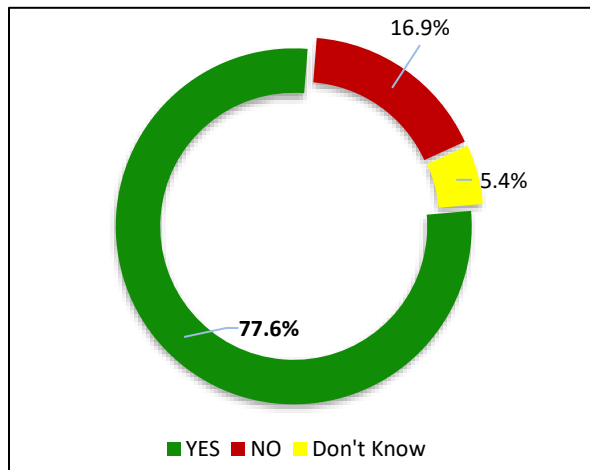


Figure 83: Heard IYCF messages

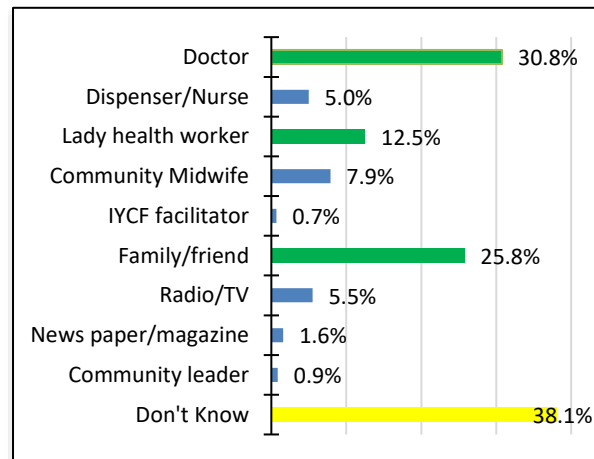


Figure 84: Source of IYCF messages

### 9.2.18 IODIZED SALT – KNOWLEDGE & PRACTICES

Iodine deficiency is one of the main cause of impaired cognitive development in children. Serious iodine deficiency during pregnancy can result in stillbirth, spontaneous abortion, and congenital abnormalities such as cretinism, a grave, irreversible form of mental retardation that affects people living in iodine-deficient areas. A simple, universally effective, attractive and incredibly cheap technical weapon for addressing iodine deficiency is the iodized salt<sup>10</sup>. During this survey 42.0% of the respondents were found aware about iodized salt, whereas Only 26.2% were using the iodized salt.

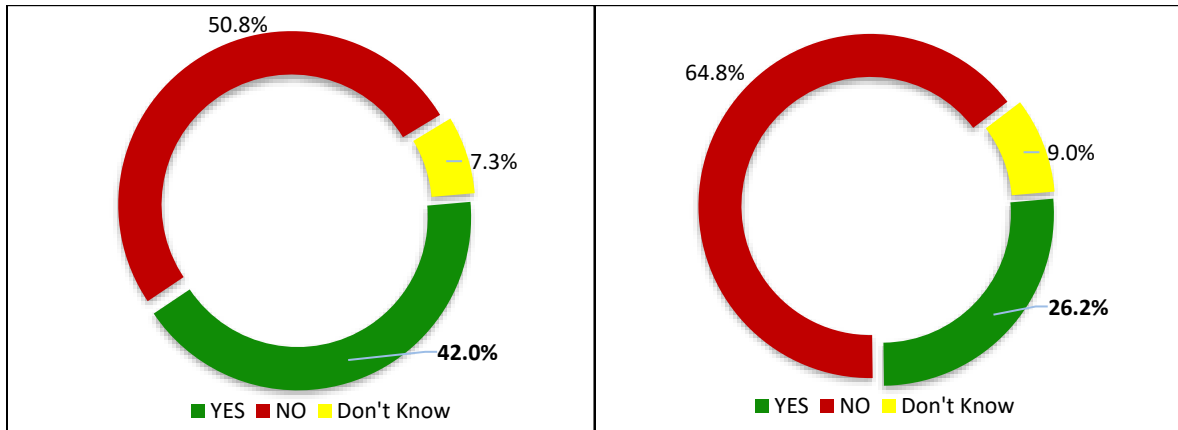


Figure 85: Using iodized salt

Figure 86: Awareness about iodized salt

For using the iodized salt at household level, the district wise data depicts that rates were highest in districts Panjgur (80.0%) and Nushki (74.9%) – Lowest rates recorded for districts Kohlu (7.0%), Musakhel (8.3%) and Hernai (15.5%).

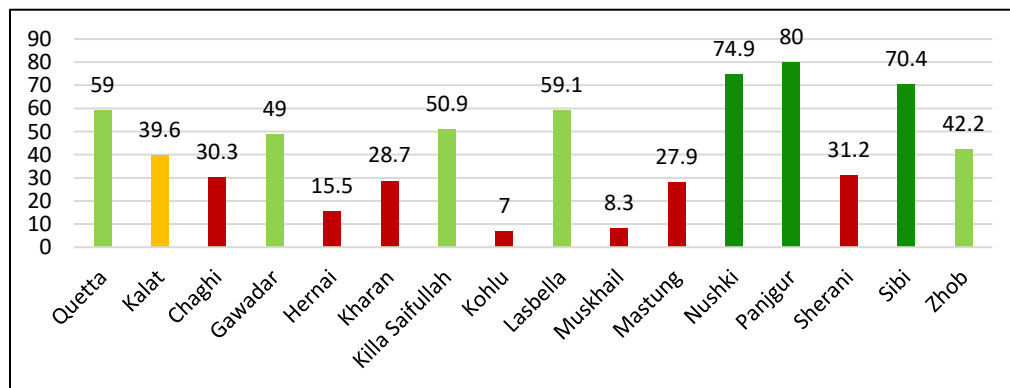


Figure 87: District wise data – Knowledge of iodized salt (%)

<sup>10</sup> <http://www.who.int/nutrition/topics/idd/en/>

District wise data for use of iodized salt at household level, revealed that knowledge level was high in Nushki (86.1%) and Panjgur (75.0%) districts – Lowest rates recorded for districts Hernai (3.6%), Kohlu (4.0%), Musakhel (5.1%) and Sherani (6.3%).

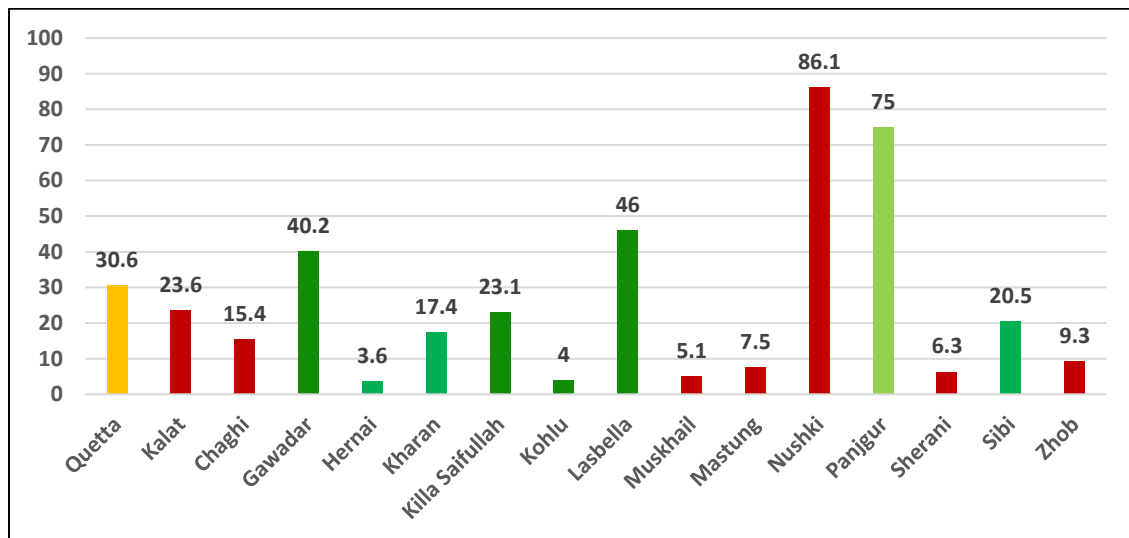


Figure 88: District wise data – Use of iodized salt (%)

Considering figure 29, it was revealed that rates for knowledge was higher in comparison with the practices for timely initiation of complementary feeding for some of the districts. For Nushki and Panjgur rates for knowledge and practices were almost same.

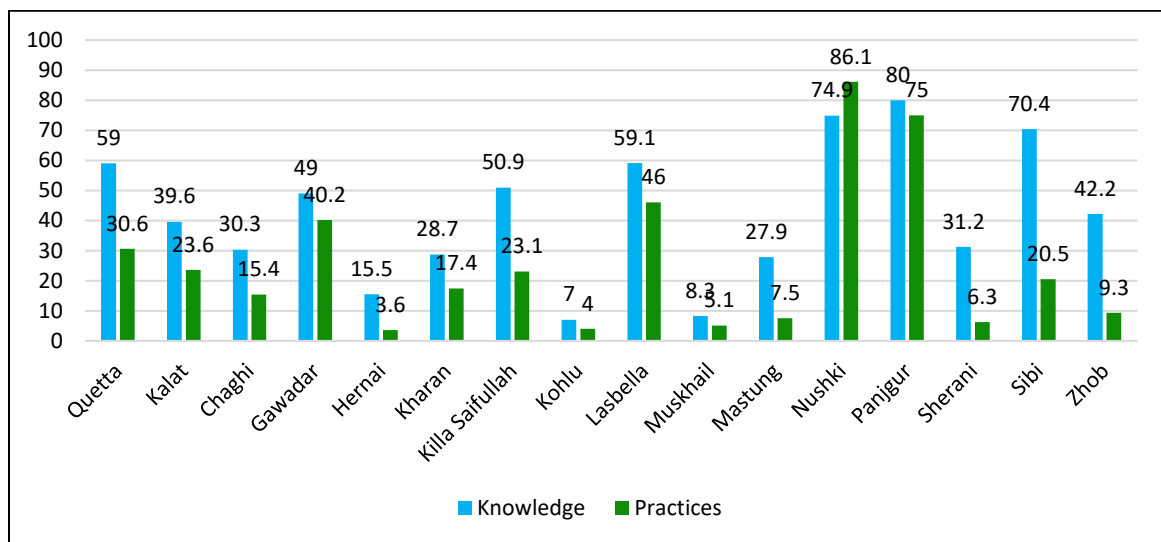
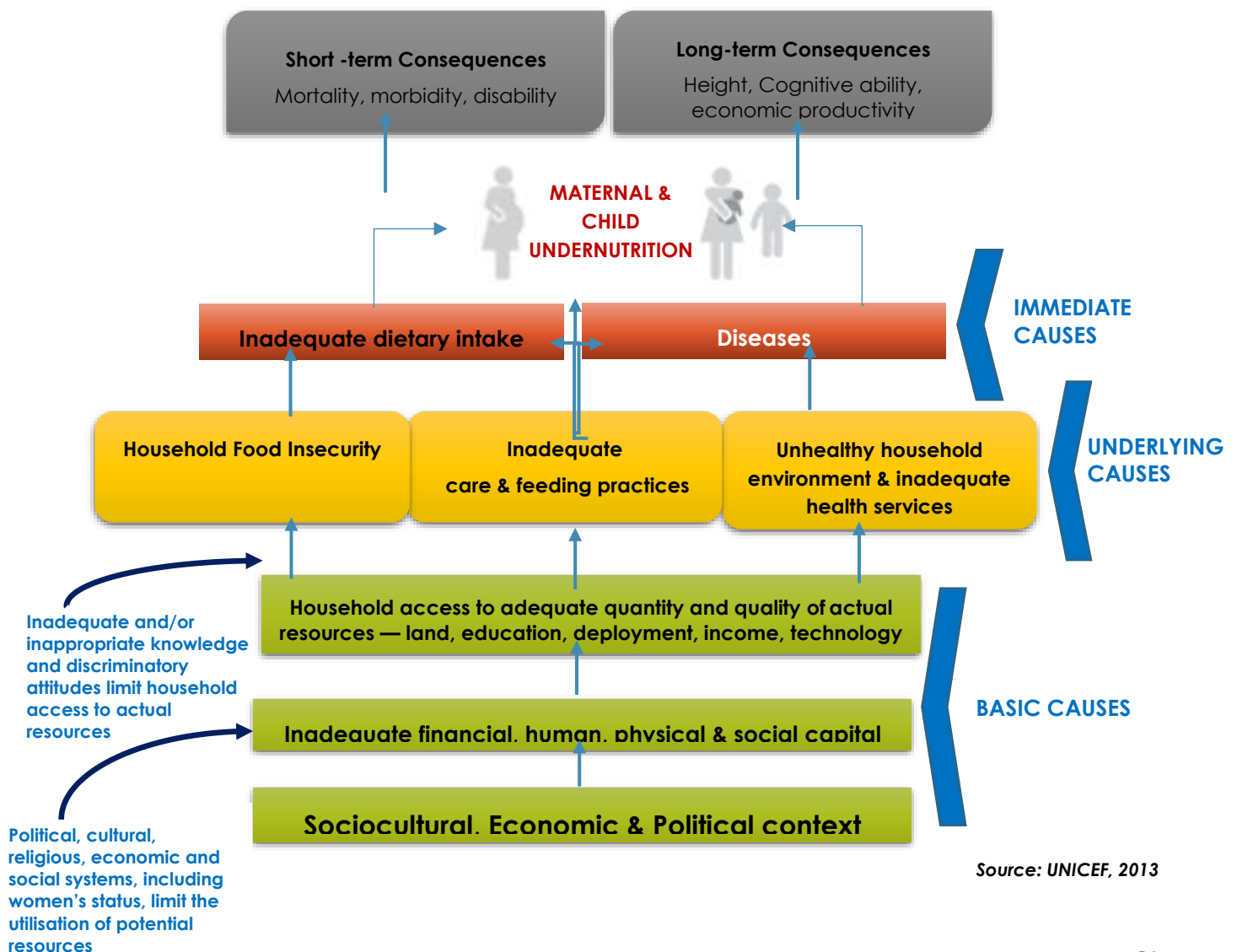


Figure 89: Knowledge Vs Practices – Iodized Salt



### 9.3 DISCUSSION

The findings of the survey undertaken in all districts provide a cumulative inference, which might be of great importance for policy makers; health program planners and managers as well as the community and civil society in terms of realization of the magnitude and intensity of nutrition related problems and its determinants. The situation of malnutrition is worse when assessing the nutritional status of children under 05 years of age. Based on weight and height, Global Acute Malnutrition (GAM) and Severe Acute Malnutrition (SAM) prevalence in 16 districts of Balochistan are 19.4 and 5.3 percent respectively. It was found that 47.1 percent of the children are stunted. For IYCF indicators the survey results revealed that only 34.3 percent children were exclusively breast fed. Early initiation of breastfeeding rate within 01 hour soon after delivery, was 67.6 percent. Keeping under consideration the given causal framework, it was revealed that most of the findings in these surveys are the contributing factors for malnutrition amongst children 05 years of age and pregnant & lactating mothers.



The data on average monthly income for Balochistan, from the HIES 2007/08, shows a significant gap in rural and urban income, while the average monthly income was Rs. 11,374.87 in Balochistan, in rural areas the average is only Rs. 9,364.52, as compared to the average of Rs. 16,913.03 in urban areas. The recent results show, proportion of 3.2% households were not working/unemployed in Balochistan in addition to 4 % migrant workers and 2.7% seasonal job seekers in Balochistan. Around 11% of the household respondents indicated that they had a monthly income of less than PKR. 5000 while almost 24% of the household respondents mentioned that they had a monthly income which ranged between PKR 5000 and PKR 15000. The average household size was found to be 09 persons. There are 33% households which are joint families along with 12% nuclear families with dependents in Balochistan province. The proportion of pregnant and lactating women in the entire surveyed population is 8.8% in addition to 0.8% women who were pregnant at the time of survey. The proportion of children aged  $\leq 02$  years of age was 7.2 % and that of children  $\leq 05$  years of age in the population was 18.6% whereas the proportion of children between 5 to 18 years of age is almost 10%. These proportions of population strata are economically dependent. The Government of Pakistan has committed to roll-out the localization of sustainable development goals and has affirmed its resolve to expedite progress on both allocation of resources and efficient management to attain the milestones set in the SDG framework. Sustainable Development Goal (SDG 1) is to end poverty in all its forms everywhere and the government of Pakistan is a signatory to the commitment made by the countries. However, reducing all forms of poverty is seemingly an uphill task keeping in view the existing situation of poverty and lack of sustenance in Balochistan.

Only 56.6% of the children between 5 to 18 years of age were found to attend a school which requires immediate attention. Around 77% of the children below 18 years of age were found without any legal identity document including form B or birth registration and 13.3 % households did not have information on identity documents. Out of the total children below 18 years of age, 11.3% were seen undergoing child labor practices. Sustainable Development Goal (SDG 4) is to ensure inclusive and equitable quality education and promote life-long learning. Over 66 % children in Balochistan are out of school<sup>11</sup>. Overall literacy rate in Pakistan is 58% which has been set as baseline for progress tracking in SDG-4<sup>12</sup>

During the survey, 80% mothers responded that they have not attended any school, only 8.3% shared that they had studied up to primary level, 1% from among the respondents had completed their studies higher than graduation level. Similarly, only 2.1% of the respondent women reported that they had completed their graduation. The province is characterized

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<sup>11</sup> Alif Ailaan calculations based on NEMIS 2012-13 and Population Projections by NIPS

<sup>12</sup> Knowledge Hub on SDGs- Lead Pakistan 2016

by low levels of progress in the country across all education indicators. The key indicator for attainment of the MDG goal on universal primary education is the Net enrollment ratio (NER). In the case of Balochistan the trend over the last four years in NER has been erratic and the overall pace of progress is too slow for the province to catch up with other regions. Furthermore, the increasing gender disparity evident in both the NER and GER is a worrisome trend. Completion rates in the province are generally poor, and an urgent policy response is required to address gender parity in urban and rural areas. Balochistan reportedly had 475 non-functional schools in 2007/08 according to the Annual Census Report. Almost all of the non-functional schools (99 percent) across all districts of Balochistan were primary schools (471 of 475 total). However, there is extreme variation in the province on the gender gap in non-functional schools.

It is evident that the employment status and education level of a mother is directly associated with the nutritional status of her children. The findings of the NNS 2011 revealed that a mother's education level is closely associated with children's stunting, wasting and underweight status. Malnutrition in children was lower for those whose mothers had a higher education status

From the recent survey results, only 23% of respondents in Balochistan knew that vaginal bleeding during pregnancy was a danger sign and 6% of PLWs were found to know about three or more danger signs during pregnancy and almost 45% of the PLWs did not know about a single danger sign during pregnancy. Only 28.2% of the pregnant and lactating women indicated that they had availed ante-natal care during either their existing pregnancy or the previous one but only 7.8% of the women with existing pregnancies went four times or more for an ante-natal checkup. Only 20.8% of the respondents shared that they had received a Tetanus Injection during their existing or previous pregnancy. Out of those who had received TT vaccination, only 36% pregnant women had received 02 doses. Around 57.5% pregnant and lactating women in their last pregnancy had not received any iron or folic acid supplements. Majority i.e. 66.4% of the deliveries were attended by traditional birth attendants in Balochistan while just 6% were attended by a qualified doctor, 7.3% by a Nurse/LHV/midwife and only 8.5% by community midwives. Lady health workers attended 2.1% of the deliveries and 09% of the respondents added that their relatives assisted them during their last labor. Majority, 79% of the deliveries took place at home in addition to 3.4 % deliveries where women delivered at others' home. Only 18.4% of the women after delivery consulted for post-natal checkup. Around 7.8 % PLWs were found to be malnourished.

Pakistan has committed to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030 and to end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births. When respondents were asked about the danger signs in newborns, 18.5% considered convulsions as a danger sign and 63% of the respondent mothers said that fever in a new born is a danger sign. Almost 25% of the respondents thought that poor feeding/suckling is a danger sign.

Difficult breathing/fast breathing was considered a danger sign by 10% of the respondent mothers while 6.5% of the respondents felt that hypothermia was a danger sign. Only 12.5% of the respondents shared that early birth (prematurity) and low weight were danger signs. Around 16% shared that yellow discoloration of palms, soles and eyes was a danger sign, 11.4% considered a swollen abdomen as a danger sign, 7.8% considered unconsciousness a danger sign and 5.9% said redness or pus of the umbilical stump was a danger sign.

Seeking antenatal care during pregnancy is of great importance as it identifies risk factors. Unfortunately, there has been no improvement in the percentage of women seeking ANC since 2006-07. The PDHS 2006-07 data showed that 65.3% of pregnant women sought care during their last pregnancy while the NNS 2011 results found 62.0% sought ANC. Provincial data of women who sought care during their last pregnancy was found to be 66.5%, Sindh 61.6%, KP 55.7%, Balochistan 47.1%, AJK 80.8% and GB 80.0%. Antenatal care coverage in the province is extremely low at 14 percent and appears to have followed a decreasing trend over the last decade with large disparities between urban and rural areas. Overall only 17% of births in the province were attended by skilled professionals in 2009.

Across the districts, once again, there is significant variation in coverage between the districts and across the urban/rural divide, according to the PSLM. Highest overall ANC coverage was surprisingly found in Quetta at 33 percent (which has the highest number of LHWs). PSLM 2008/09 data on the prevalence of Skilled Birth Attendants (SBA) for the province shows a pattern almost exactly similar to the situation presented by the ante-natal care coverage data. Problems associated with delays in deciding to seek medical care, delay in reaching appropriate care, and delay in receiving care at health facilities stem from a lack of awareness, the absence of skilled birth attendants, and limited access to healthcare facilities, alongside inadequate provision of facilities. Facilities typically do not have trained personnel, emergency medicines, or functional equipment. With a sluggish pace of progress Pakistan is unlikely to attain the milestones set in SDG 03. The provincial government is expected to substantiate the delivery of services keeping in view the diversity of needs exhibited by the people in ethnic and geographical perspectives.

Only 32% of the children had a BCG scar while the rest of the 3% had no scar but BCG was given while 61% of the children had not received BCG. Similarly, 35% of children had not received polio drops and 7% households did not know about polio vaccination. Based on the card marking, out of the 25.5 % reportedly immunized for measles, only 2.6% of children 9 months and above were immunized for measles. Out of those who had reached 09 months and above, having vaccination card, 2.1% were not immunized for measles. Lack of knowledge about importance of vaccination (58%); lack of access to vaccination services (27%); denial to vaccinate children (10%); fear of side effects (7%) as well as absence of male family members at household to accompany (7%) are major reasons for lower proportions of child vaccination in Balochistan. The EPI estimates of 2011 suggest that only 43 percent of children from 12 to 23 months of age in the province had been fully immunized compared

with the national average of 78 percent. The percentage of children fully immunized against measles, between the ages of 12 to 23 months, was estimated at only 24 percent in 2008/09. In this case the national average of 51 percent is more than double the level of immunization coverage in Balochistan.

Family members in almost 21.7% of the households shared that they access water sources at a distant location requiring a walk of more than 30 minutes. Only 13.5% households shared they treat water for drinking purpose. Only 32.6% households use a flush to septic system type of toilet and only 6.7% use a flush to piped sewerage system. Around 25% of the households indicated that they had no choice but open defecation. According to the PSLM data, less than half (33 percent) of the population in the province of Balochistan had access to tap water supplied by the local government as a main source of drinking water in 2004/05 in 2008/09 this proportion had increased by 5 percentage points (to 38 percent). Based on PSLM data for 2007/08, the percentage of population in Balochistan with access to sanitation facilities remains extremely low at around 32 percent, nonetheless the prevalence of underground, covered or open drains have all improved. Again, urban residents benefit disproportionately from improvements in these facilities compared to rural residents in 2008 only 19 percent of urban residents were without access to any type of sanitation facility.

SDG 2 is to end hunger, achieve food security and improved nutrition and promote sustainable agriculture. By 2030, Pakistan is supposed to “end hunger and ensure access for all, especially for the poor and vulnerable, to nutritious and sufficient food the year round.” By signing on the SDGs, the government has committed to ending all forms of malnutrition under its commitment in SDG 2. In Balochistan food insecurity and lack of affordability are affecting the nutritional status of women. A little more than half 54% of the households were found to have low dietary diversity which meant they could consume only 3 food groups. In 23% households, there was an absolute shortage of food. In 18% of household women were found to eat less or did not eat at all as there was less food for children. Similarly, 24 % of the households had to sell assets to buy food for the family. In 16% of the total households surveyed there was at least one member who slept hungry and in 61 % of such households the frequency was 1-2 times while in 35 % households the member slept hungry 3 to 10 times. In 15% of the households there was at least one person who remained hungry for the whole day and night without food in the last 4 weeks since the survey was conducted.

## 9.4 CONCLUSION & RECOMMENDATIONS

Malnutrition is one of the most important health and welfare problems among infants and young children in Balochistan, resulting in serious health and economic consequences for both the individual and the family. These surveys revealed that the causes of acute malnutrition in the areas are multi-faceted, and to improve nutrition sustainably simultaneous action may be required in many ways.

**Based on the anthropometric findings there is a need to strengthen, expand and sustain the nutrition programme:** Strengthen the performance, increase the coverage and sustain the current nutrition programs to prevent an increase in acute malnutrition in the most vulnerable groups. Consider expanding the programme to additional districts.

Keeping in view the malnutrition situation, the role of the government is imperative and there is a need for large scale nutrition program covering all the districts to address both nutrition sensitive and specific aspects of malnutrition.

**There is an urgent need to develop and strengthen linkages amongst the various sectors for addressing malnutrition through multi-sectoral approaches.** Based on the findings, it is recommended to develop linkages amongst health, agriculture, livestock, local government, public health engineering, education and food for addressing malnutrition by implementing multi-sectoral programs including both nutrition specific and sensitive interventions.

**There is a need to allocate sufficient finances for nutrition programming in the province.** Currently the coverage in the province for nutrition programs is quite low and it is recommended to expand the program in all the districts covering all the union councils – For this funds allocation in the government budget is recommended for ensuring the provision of nutrition services based on equity model.

**Strengthen advocacy, social mobilization and communication strategies.** Addressing the various causes of child malnutrition depend on the active participation of many stakeholders at different levels, and strong multi-sectoral linkages. The results of these surveys need to capture the attention of decision makers and the public at large. It also needs to support the community-based behavioral change efforts through strengthening the communications skills of health workers both at community and health facility levels, and reinforcing their efforts through well targeted communication strategies.

**Strengthen the capacity of the health workforce through technical support for ensuring effective implementation of nutrition programmes.** Good IYCF practices can play an important role in the prevention of stunting in the long run and the survey findings regarding IYCF indicators were good in some areas. Keeping in view the findings for knowledge and practices related to exclusive breastfeeding, meal frequency etc, it is recommended to increase efforts to improve practices through the BCC component at the community levels. Based on the findings of this survey, it is recommended to further enhance the knowledge of the community based health workers and support the community based structures in effective counselling on IYCF practices in the communities for improved breastfeeding and complementary feeding practices.

**Strengthen water, sanitation and hygiene (WASH) programming.** It is of utmost importance that sources of clean and safe drinking water resources including springs and underground water reservoirs be explored, protected and made accessible to the local population. Awareness of households on protection of clean water reservoirs and supply systems as well as purification of water should be incorporated in health and nutrition programs.

Community must be mobilized to discourage the practices of open defecation (over 1 %) and to organize themselves to work on building and strengthening the sewerage system as well as treatment of sewerage either by external support or by cost sharing with the local government or provincial development programs. Hand washing practices must be improved highlighting the critical times when hands must be washed with soap and water.

**Support initiatives that enhance the food production and increase resilience through the diversification of income, like alternative income generating opportunities within the province.** Food insecurity and lack of affordability are grave concerns. Respondents from a significant number of households were found to fear non-availability of food due to lack of resources as well as lack of access to food they liked. Households also reported to have reduced intake of meals both in frequency and quantity. Around 54% of the households were found to have low dietary diversity which meant they could consume only 3 food groups and women in over 06% households had to eat less to spare food for children. This is linked with the overall income of the household, unless productivity improves the affordability of nutritiously balanced and consumption of diversely grouped food will remain an issue. Government may introduce food support programs, voucher schemes or provide subsidies for households with women and children requiring diversely modified food.

**Strengthen the health service delivery and education system through technical, logistical and financial support.** The long terms strategy of MNCH programs must have a focus on girl's education and health promotion activities must be tailored to benefit a larger proportion of the mothers and young women (78%) who never attended school. Knowledge on danger signs during pregnancy and danger signs in a newborns as well as skills required for the care of the newborn has to be improved along with health seeking behavior for safer pregnancy and delivery as well as post-natal care in order to attain significantly improved status of maternal and child health indicators including vaccination coverage, skilled birth attendance as well as post-natal care so that efforts towards milestones set in Sustainable Development Goal 3 could be set in direction.

The information on the importance of the skilled birth attendance at a proper health facility should be widely disseminated among pregnant women and newly -wed couples through MNCH programs discouraging the trend of assistance from traditional birth attendants and home based deliveries.

The coverage of vaccination in Balochistan requires significant improvement and measures must be taken to ensure that every child gets completely immunized through community mobilization and access to immunization services at their door steps. Dispelling the myths through community mobilization and awareness raising as well as access and quality of vaccination services must improve to reduce the vulnerability of children to vaccine preventable diseases.

Keeping in view the higher rates for ARI, fever and diarrhea cases amongst the children U5 and the higher number of deaths due to these diseases, integration is recommended for water & sanitation, health and nutrition interventions to ensure the prevention of water borne diseases and timely identification and referral of such cases to the health facilities for further management. It is also recommended to raise awareness amongst the communities, keeping in view the seasonality for ARI and diarrheal diseases

**Strengthen child protection initiatives.** Government and stakeholders must prioritize child protection. A significant number of children are out of school and over 11% of the households are seen to be engaged in child labor. The stakeholders are required to develop joint

program plans encompassing child birth registration child protection, and development initiatives such as education and healthcare.



## Conceptual framework for malnutrition – based on the findings

