Standardised Monitoring and Assessment of Relief and Transitions (SMART) Survey in PINS ER-2 (Dadu & Jamshoro)

Final Report

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RSPN

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Executive Summary

Study Background and Objectives

The Programme for Improved Nutrition in Sindh (PINS) is a four-year-long health and nutrition intervention of the European Union (EU). This project is being implemented to complement the efforts of the Government of Sindh's Accelerated Action Plan (AAP) for Reduction of Malnutrition and Stunting in 10 districts of the province. The districts targeted are: Dadu, Jamshoro, Thatta, Sujawal, Matiari, Tando Allah Yar, Tando Muhammad Khan, Larkana, Qamber Shahdadkot and Shikarpur.

PINS is designed with an overall objective "to sustainably improve the nutritional status of children under five years of age and pregnant and lactating women in Sindh, in line with the second target indicator of the Sustainable Development Goals (SDG) No. 2." The Programme comprises three Expected Results (ERs):

- ER-1: Improved capacity of the Government of Sindh and other stakeholders regarding nutrition-related policy/strategy development, coordination, implementation, adaptive research, data collection, analysis, and communication;
- ER-2: Treatment of malnutrition in health facilities supported by an outreach programme to screen children, a referral system for their follow-up, and a Behavior Change Communication (BCC) programme for improved childcare, sanitation, and feeding practices **(nutrition-specific)**;
- ER-3: Improved community-level WASH (infrastructure and BCC) and nutrition-sensitive food production systems adapted to climate change in rural areas **(nutrition-sensitive).**

EU has awarded the Nutrition Specific Component (ER-2) of PINS for Dadu and Jamshoro to RSPN. RSPN is the coordinator for this project in the specified districts, working in consortium with Thardeep Rural Development Programme (TRDP) and People's Primary Health Care Initiatives (PPHI) Sindh as its implementing partners. The primary target beneficiaries of this project are Under-Five Children and Pregnant and Lactating Women (PLWs) of District Dadu and Jamshoro.

AASA Consulting (Pvt.) Limited was commissioned to conduct a Standardised Monitoring and Assessment of Relief and Transitions (SMART) Survey in the RSPN-led districts of Dadu and Jamshoro, led under the PINS ER-2 component. The Survey aimed to assess the baseline situation of under-nutrition and underlying risk factors that contribute to malnutrition. The study findings will serve as a primary reference to measure the programme's impact via subsequent mid-line and end-line studies.

The Survey's overall objective was to estimate the prevalence of Severely Acute Malnourishment (SAM) and Global Acute Malnutrition (GAM) in children under 5, the maternal nutritional status and the morbidity in the targeted districts focusing on the following thematic areas:

- Estimation of the prevalence of acute malnutrition (including bilateral oedema) in children 6 – 59 months;
- Estimation of the prevalence of Wasting, Stunting and Underweight in children aged 6 – 59 months;
- Estimation of the prevalence of malnutrition on Mid-Upper Arm Circumference (MUAC) <21 cm in Pregnant and Lactating Women (PLW);
- Assessment of the Infant and Young Child Feeding (IYCF) practices among children aged 0 – 23 months, including breastfeeding and complementary feeding practices;
- Estimation of the morbidity rates (for Diarrhea, ARI, Fever and other common childhood illnesses) in children 0 – 59 months of age;
- Update of key mother health and nutrition indicators

Survey Approach and Methodology

The survey's methodology and design are informed by the standardized SMART survey's guidelines and manuals. A two-stage stratified cluster sampling technique was adopted for sampling. A total of 60 and 50

primary selection units (PSUs)/clusters were chosen from Jamshoro and Dadu, respectively, using ENA software for the survey based on the population figures provided by RSPN.

The field work was conducted between December 2021 and January 2022 collecting data from a total of 1,631 households (827 and 804 households in Dadu and Jamshoro districts, respectively), including 2,437 under-five children (1,212 and 1,225 in Jamshoro and Dadu districts, respectively) in line with the sample size estimation provided by the ENA software.

A CAPI-based structured questionnaire was administered for the household survey aligned with the survey objectives. All women of reproductive age (15 – 49 years) including pregnant and lactating women/mothers and children under five years of age in the sample households were included in the survey. Children estimated with MUAC less than 115 mm were referred to the relevant OTP sites by the survey field teams.

Major Findings of the SMART Survey

The key findings from the household survey are summarily presented below:

Background Characteristics of Women of Reproductive Age (15 – 49 Years) Surveyed

A total of 2,795 women of reproductive age (WRAs) were surveyed in the sample households across both survey districts (Dadu: 1,502; Jamshoro: 1,293). ~9% of women were pregnant, and ~28% were lactating.

Mid-upper arm circumference was measured for all women included in the survey to assess their nutritional status. Only ~8% of women are estimated to be malnourished. Dadu district reported a higher prevalence of malnourished women (~9%) than the Jamshoro district (~7%). In addition, only ~3% of pregnant and lactating women are estimated to be malnourished. The proportion of malnourished PLWs is slightly higher in the Dadu district (~3%) than in the Jamshoro district (~2%).

Concerning the use of iron-folic acid (IFA), fewer than a quarter (~24%) of PLWs (Dadu: ~18%; Jamshoro: ~29%) affirmed receiving iron-folic acid tablets/supplements in the last one month. Overall, the use of IFA is reported considerably less in pregnant women (~5%) compared with lactating women (~30%) in both districts.

Only ~6% of mothers knew at least 5 infant and young child feeding (IYCF)/nutrition messages in both districts (Dadu: 5%; Jamshoro: 5.7%). However, around 27% of mothers were aware of at least two danger signs for seeking care immediately. The percentage was considerably higher in Jamshoro (~33%) than Dadu (~22%).

Nutrition Status of Children Aged 6 – 59 Months Surveyed

The survey reveals that around 35% of children aged 6 – 59 months are underweight (weight for age – exceeding minus two standard deviations), where the prevalence is slightly higher in the Jamshoro district (35.3%) than in the Dadu district (34.6%).

Children's stunting prevalence (height for age – exceeding minus two standard deviations) is around 50% in both survey districts (50.1% in Dadu and 50.0% in Jamshoro). However, the wasting prevalence (weight for height – exceeding minus two standard deviations) is 12.2%, with a slightly higher majority of children in the Dadu district (12.7%) than the Jamshoro district (11.7%).

The gender-disaggregation of the nutrition indicators shows that stunting prevalence is higher among boys (52.8%) than girls (47.2%) across both districts. Whereas wasting prevalence is slightly higher in girls (12.5%) than boys (12%). District variations are noted in wasting prevalence mainly, where more boys (12.6%) than girls (10.9%) are wasted in Jamshoro, and more girls (14.2%) than boys (11.4%) are wasted in Dadu.

In terms of severe malnourishment, 9.7% of children are severely underweight (exceeding minus three standard deviations), 4% are severely wasted (exceeding minus three standard deviations), and 23% are severely stunted (exceeding minus three standard deviations) across the survey districts.

Overall, the proportion of severely malnourished children is slightly higher in the Dadu district than in the Jamshoro district. 10.6%, 23.4% and 4.9% of children are severely underweight, stunted and wasted in Dadu compared with 8.9%, 22.7%, and 2.6% in Jamshoro. The gender-disaggregated findings show that more girls (4.6%) than boys (3%) suffer from severe wasting, whereas more boys (~25%) than girls (20.9%) suffer from severe stunting in both districts.

According to the MUAC measurement, 7% of children suffer from severe acute malnourishment and are severely wasted. The proportion of severely wasted children is higher in Dadu (8.5%) than in Jamshoro (5.4%). Gender-wise breakdown of the results also shows that more girls (8.2%) than boys (5.8%) suffer from malnourishment as per the MUAC.

Furthermore, mild bilateral oedema was reported in less than one per cent of surveyed children overall. However, more incidences were reported in the Dadu district (1%) than in the Jamshoro district (0.3%). Gender-disaggregated findings indicate that oedema is relatively higher in girls (0.8%) than boys (0.5%).

Child Vaccination and Illness

Child Vaccination: The survey data collection coincided with the rollout of the recent government-led MR & Polio Campaign of November 15th, 2021, in Pakistan. However, the survey aimed to estimate polio and measles vaccination rates before the campaign's rollout as its baseline in Dadu and Jamshoro.

Within this context, the survey questionnaire distinctly asked mothers if the child had received polio drops and measles vaccination before the campaign rollout. The findings show that ~95% of children aged 0 – 59 months had received polio vaccination (before the campaign rollout) – 93% in Dadu and 96% in Jamshoro. Nearly 56% of children obtained the polio drops soon after birth. However, 3% of children have not received their polio drops yet (Dadu: 4%; Jamshoro: ~2%).

Around 87% of children aged 9 – 59 months were confirmed to have received a measles vaccination, based on the vaccination card (30%) or mother's recall (57%). The exhibit also indicates that around 84% of children were vaccinated before the government's MR campaign. The prevalence of measles vaccinated children remained at the same level (~84%) in both districts.

Vitamin A Supplementation: Close to 88% of children in the age bracket of 6 – 59 months had obtained vitamin-A supplementation in the last six months, as confirmed by their vaccination card (23%), or mothers' recall (65%). Both districts' prevalence remains approximately similar (Dadu: 87.6%; Jamshoro: 88.4%).

Deworming Drug Receipt: Furthermore, nearly 31% of children in the age bracket of 12 – 59 months had received deworming/anthelmintic drugs in the last six months (confirmed based on mother's recall (18%) or the vaccination card (12%)). Children given deworming drugs are relatively lower in the Dadu district (27.3%) than in the Jamshoro district (33.5%).

Illness Incidences and Care-seeking Behaviours: Overall, 18.1% of children under five years of age had experienced an episode of diarrhoea, 21.7% had acute respiratory infection (ARI) symptoms and 13.4% had fever during the past two weeks preceding the survey. Prevalence of fever and diarrhoea were recorded as being higher in Jamshoro (fever: ~17%; diarrhoea: ~19%) than Dadu (fever: 10%; diarrhoea: ~17%). Whereas the incidences of ARI were higher in Dadu (~23%) than in Jamshoro (~20%).

Approximately 86% of children who suffered from diarrhoea sought treatment (Dadu: ~83%; Jamshoro: ~85%). Overall, a majority (~73%) of children received treatment from public/private health facility doctors. Approximately 8% and 23% of children were administered only zinc syrup or only ORS, respectively. Fewer than a quarter of children (24%) received a combination of ORS and zinc syrup, which is deemed significantly effective in reducing symptom severity and duration of diarrhoea.

A majority of children who experienced ARI and fever also received treatment (~84% and ~88%, respectively) for their illnesses. The incidence of children receiving treatment is relatively higher in the Jamshoro district (ARI: ~88%; fever: 89%) than in the Dadu district (ARI: ~81%; fever: 86%). Antibiotic drugs (syrup/injection) were mainly administered to treat ARI/fever in both districts, primarily with a doctor's advice.

Infant and Young Child Feeding (IYCF)

Among IYCF practices, only programme-relevant indicators of exclusive breastfeeding among infants aged 0 – 6 months and minimum acceptable diet among the children of 6 – 23 months of age bracket were estimated.

Exclusively breastfed children (0 – 6 months) prevalence is 50.9% (46.2% in Dadu and 58.2% in Jamshoro). Around 31% of children received a minimum acceptable diet, based on the food groups consumed during the previous day or night. The proportion of MAD receiving children is higher in Dadu (~35%) than in Jamshoro (~27%). Compared with boys, MAD prevalence is higher among girls in Jamshoro district (girls: ~29%; boys: ~25%), however, relatively lower in Dadu district (girls~29%; boys: ~40%).

Conclusion

To conclude the findings of the SMART Survey, the following summarizes the current status of survey areas:

1. 35% of children aged 6 – 59 months are underweight – 34.6% in the Dadu district and 35.3% in the Jamshoro district;
2. 50% of children aged 6 – 59 months are stunted – 50.1% in the Dadu district and 50% in the Jamshoro district;
3. 12.2% of children aged 6 – 59 months are wasted – 12.7% in the Dadu district and 11.7% in the Jamshoro district;
4. ~51% of infants aged 0 – 6 months are exclusively breastfed – around 50% in the Dadu district and 33% in the Jamshoro district;
5. 31% of children receive the minimum acceptable diet (~35% in the Dadu district and ~27% in the Jamshoro district);
6. Around ~27% of mothers of under-five children are knowledgeable about at least two danger signs for seeking care immediately (~22% in the Dadu district and ~33% in the Jamshoro district);
7. Approximately ~6% of mothers of under-five children are knowledgeable about at least five nutrition/IYCF messages (5.2% in the Dadu district and 5.7% in the Jamshoro district);
8. Around 88% of children aged 6 – 59 months have received Vitamin-A supplementation in the last six months in both districts;
9. Around 84% of children aged 9 – 59 months have received measles vaccination (verified by either immunization card or mother's recall) in both districts.
10. Around 31% of children aged 12 – 59 months have received the deworming drug in the last six months. In the Dadu district, the prevalence of children who received deworming drugs comprises ~27%, and in the Jamshoro district comprises ~34%.
11. ~18% of children under five years old suffered from diarrhoea. Dadu and Jamshoro's comparative estimates are ~17% and ~19%, respectively;
12. ~13% of children under five years old suffered from fever (without cough or rash). Dadu and Jamshoro's comparative estimates are ~10% and ~17%, respectively;
13. ~22% of children under five years old suffered from ARI. Dadu and Jamshoro's comparative estimates are ~23% and ~20%, respectively;
14. The prevalence of malnutrition among all WRAs surveyed is ~8% - ~9% in the Dadu district and ~7% in the Jamshoro district.
15. The prevalence of malnutrition among PLWs is 2.7% – ~3% in the Dadu district and ~2% in the Jamshoro district.
16. The percentage of PLWs who received iron-folic acid supplementation during the last month is ~24% (~18% in Dadu and 29% in Jamshoro).

17. Around 74% of mothers also reported using institutional/formal health facilities for child delivery. The prevalence of mothers who used institutional facilities during their last pregnancy comprises ~69% in Dadu and ~80% in Jamshoro.

ACKNOWLEDGEMENTS

AASA Consulting is pleased to present this SMART Survey Report for the Programme for Improved Nutrition in Sindh - Nutrition Specific Component (PINS ER-2) in the Jamshoro and Dadu districts.

This study is a crucial milestone in understanding the current nutrition condition in Jamshoro and Dadu to determine a guideline to the implementation for improved nutrition interventions in the districts. This assignment sets the threshold for conducting subsequent end-line evaluation and measuring programme achievements at the PINS closure.

I want to extend my appreciation and thanks to the Rural Support Programmes Network's project team, and in particular, to Bashir Anjum (Specialist Social Sector), Mr. Khurram Shahzad (M&E Specialist), Dr. Shahmeen Nazar (Project Coordinator) and Ms. Rimsha Taj (M&E Officer) for their assistance and facilitation during this assignment's execution and field support.

We are also grateful to Mr. Haroon Jamal (Chief Statistician) and Mr. Minhajuddin Siddiqui (Database Manager) for working closely with us to ensure that the project is completed successfully, and Dr. Abdur Rehman Peerzado (Public Health/Nutrition Specialist) for the technical review of the report.

I also want to extend my appreciation to AASA Consulting's in-house team for their contribution, especially Mr. Riaz Hussain, Birjis Jaleel, Ms. Komal Hakim Ali, Mr. Syed Junaid Shahid, and Mr. Muhammad Safdar, and our field staff personnel, especially Mr. Hizbullah Tunio, without whose tireless efforts this study would not have been completed.

Thanks are due to the respondents who gave us their valuable time and shared their views on an issue of national significance. Without their participation, it would not have been possible to paint a complete and accurate picture of the nutrition and health situation in Dadu and Jamshoro.

Zohair Ashir
Chief Executive

List of Exhibits

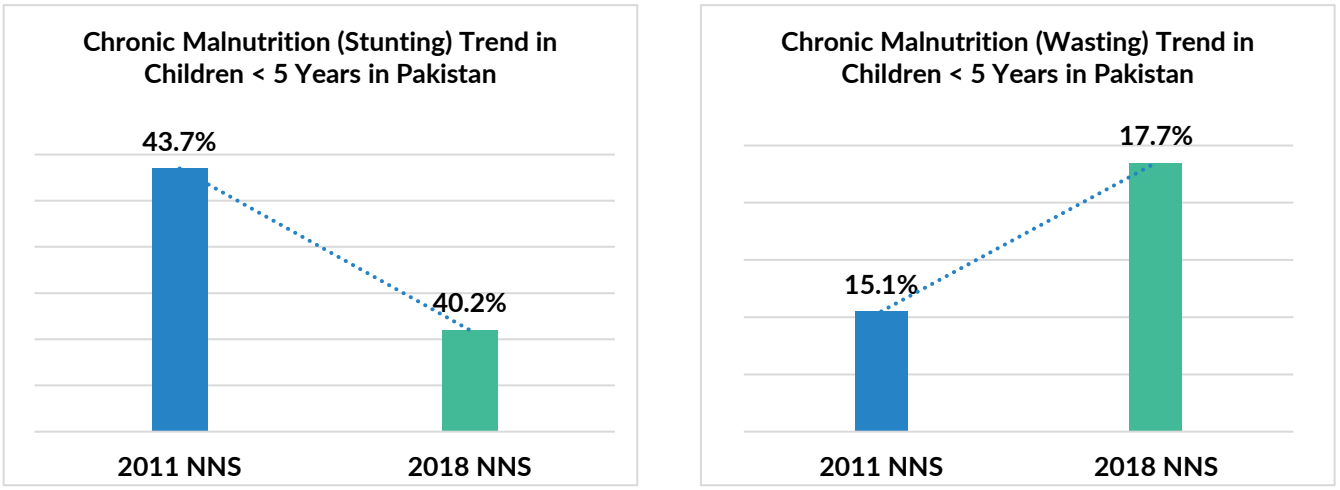
Acronyms

ACF	Action Against Hunger
ARI	Acute Respiratory Infection
BCC	Behavior Change Communication
CMAM	Community Management of Acute Malnutrition
COVID-19	Coronavirus Disease - 2019
ENA	Emergency Nutrition Assessment
ER	Expected Result
GAM	Global Acute Malnutrition
HAZ	Height for Age
IYCF	Infant and Young Child Feeding
LHW	Lady Health Worker
MAD	Minimum Acceptable Diet
MDD	Minimum Dietary Diversity
MGRS	Multicenter Growth Reference Study
MICS	Multiple Indicator Cluster Survey
MMF	Minimum Meal Frequency
MNCH	Mother and Child Health
MNP	Micro Nutrient Powder
MR	Measles-Rubella
MUAC	Mid Upper Arm Circumference
NNS	National Nutrition Survey
NRR	Non-Response Rate
ORS	Oral Rehydration Salts
OTP	Outpatient Therapeutic
PBS	Pakistan Bureau of Statistics
PINS	Programme for Improved Nutrition in Sindh
PLW	Pregnant and Lactating Women
PPHI	People's Primary Healthcare Initiatives
RSPN	Rural Support Programmes Network
RUTF	Ready-to-use Therapeutic Food
SAM	Severely Acute Malnutrition
SD	Standard Deviation
SDG	Sustainable Development Goal
SMART	Standardised Monitoring and Assessment of Relief and Transitions
TRDP	Thardeep Rural Development Program
UKAID	United Kingdom Agency for International Development
UNICEF	United Nations International Children's Emergency Fund
U5	Under-five
WASH	Water, Sanitation and Hygiene
WAZ	Weight for Age
WHO	World Health Organization
WRA	Women of Reproductive Age

1.0 Background

According to the National Nutrition Survey 2018 (2018 NNS), 18.3% of households in Pakistan face food insecurity. National stunting is 40.2%; with a higher prevalence in boys at 40.9%[1]. Stunting was higher in children aged 18 to 23 months and lowest among young infants aged 0 to 5 months. Moreover, 17.7% of children suffer from wasting, which is higher percentage in rural areas. Boys are more likely to suffer from wasting (18.4%), and in this case, younger infants aged 0 to 5 months are more commonly affected. Prior national nutrition surveys conducted in 2011 and 2018 shows a clear upward trend of wasting/acute malnutrition rates, while stunting has declined steadily.

Exhibit 1.1
Malnutrition Trend in Children <5 Years in Pakistan

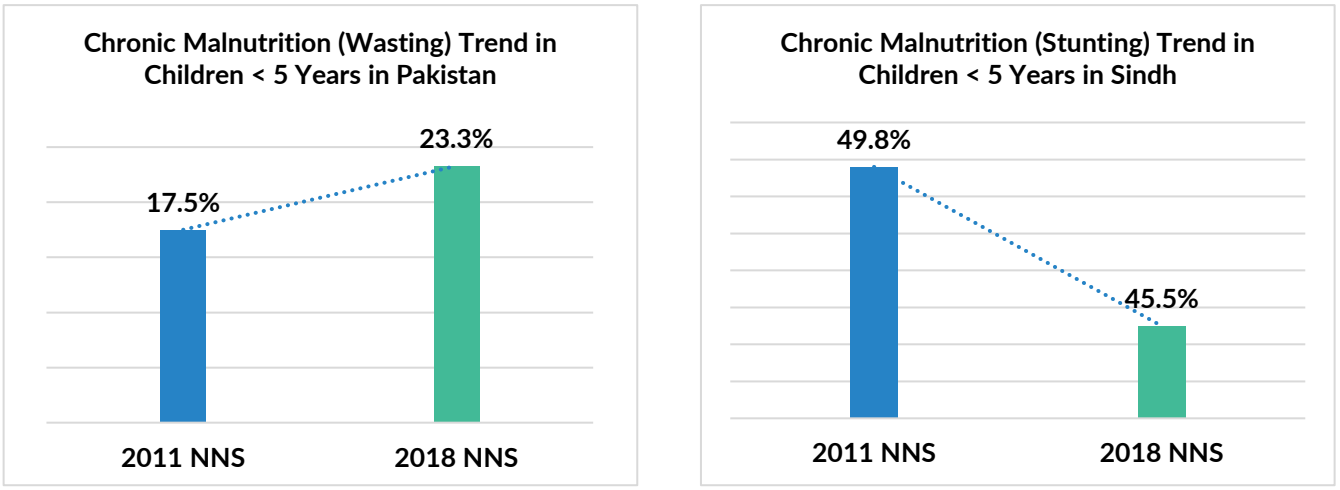


Source: National Nutrition Survey Reports, 2011 and 2018

Nutrition Situation in Sindh

The NNS 2018 reveals that in Sindh, nearly 46% of children are chronically malnourished or stunted, while 23% of children are acutely malnourished or wasted. Exhibits 1.2 illustrates trends in children's malnutrition status in the province from the recent two national nutrition surveys. Stunting prevalence has plummeted over the years (from 49.8% to 45.5%). However, the wasting prevalence has significantly risen (from 17.5% to 23.3%) in the region and currently is at the highest level in the country compared with other provinces.

Exhibit 1.2
Malnutrition Trend in Children <5 Years in Sindh



Source: National Nutrition Survey Reports, 2011 and 2018

[1] Ministry of National Health Services, Regulations & Coordination, Government of Pakistan and UNICEF. (2020). National Nutrition Survey 2018. https://www.unicef.org/pakistan/reports/national-nutrition-survey-2018-full-report-3-volumes-key-findings-report

Nutrition Situation in Dadu and Jamshoro

According to the NNS 2018, 35% of under-five children are underweight in the district of Dadu, while the percentage is even higher, at 43.4%, in Jamshoro.

49.2% of children under the age of 5 are stunted in Dadu, and only slightly fewer are stunted in Jamshoro, at 45.5%. It is alarming to note that the prevalence of stunted children in Dadu is even higher than the provincial average.

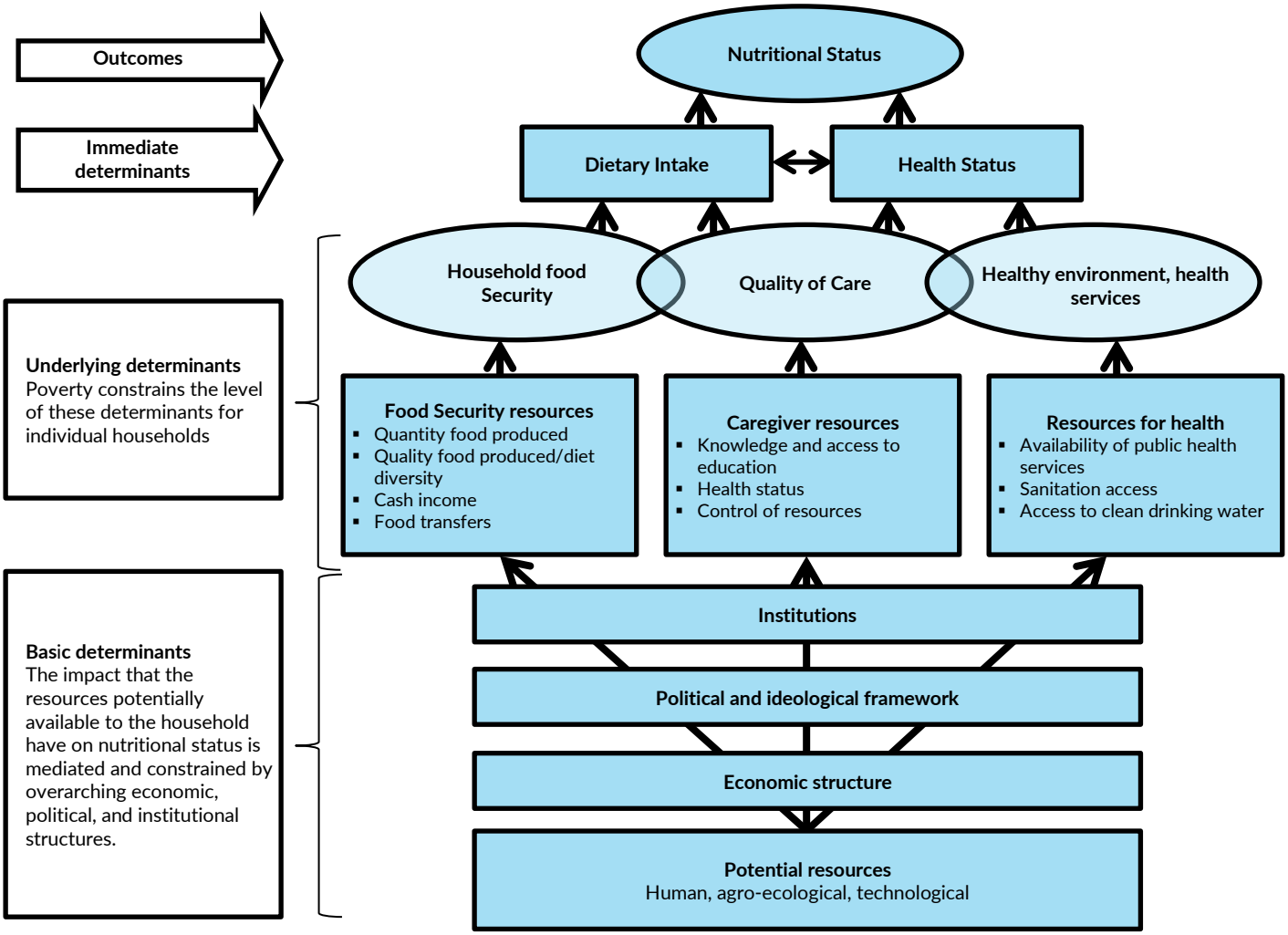
Concerning the prevalence of acute malnutrition, in Dadu, 19.2% of children are affected by wasting. In comparison, 23.7% of children face wasting in Jamshoro.

2018 NNS also reports that women of reproductive age in Dadu are underweight at a rate of 19.5% and 28.2% in Jamshoro. Women affected by undernutrition are more likely to have children who suffer from stunting and wasting, perpetuating the cycle of poverty and undernutrition[2].

Underlying Causes of Malnourishment

UNICEF's under-nutrition framework illustrated in Exhibit 1.3 shows that malnutrition status of the population is generally linked to lack of access to quality food, care, health services and a healthy environment[3].

Exhibit 1.3 Causal Pathway of Under - Nutrition



[2] Ozaltin E, Hill K, Subramanian SV. Association of maternal stature with offspring mortality, underweight, and stunting in low- to middle-income countries. JAMA. 2010 Apr 21. https://pubmed.ncbi.nlm.nih.gov/20407060/

[3] Division of Women and Child Health, Aga Khan University (AKU) and Institute of Development Studies (IDS). (2015). Sindh Province Report: Nutrition Political Economy, Pakistan. Department for International Development (DFID)-funded Maximising the Quality of Scaling up Nutrition Programmes (MQSUN) project. http://www.heart-resources.org/wp-content/uploads/2015/02/Sindh-Province-Report-Nutrition-Political-Economy-Pakistan.pdf

Around 43% of the population in Sindh lives in poverty for a multitude of reasons (from economic and political instability to lack of education to institutional inequality). According to 2018 NNS, approximately 26% of households in Dadu are severely food insecure, and 10.7% are moderately food insecure. Similarly, in Jamshoro, 21.5% of households are severely food insecure, and 12.2% are moderately food insecure.

The levels of minimum meal frequency, minimum acceptable diet and minimum meal diversity for infants aged 6 to 23 months are very low. The 2018 NNS reports that the percentage of children receiving minimum dietary diversity in Dadu is a minuscule 5.5%, while Jamshoro's is only slightly higher at 6.6%. The percentage of children provided the minimum meal frequency in Dadu is again exceedingly low at 1.7%. Jamshoro is higher at 19.2%, which is still a concerningly low amount.

The lowest percentages are found in children receiving the minimum acceptable diet. In Dadu, it is non-existent, with the percentage being 0.0%. Again, Jamshoro has a slightly higher proportion, which is still a mere 1.5%.

Concerning the poor situation of maternal and child care in the region, around ~81% and 85% of mothers received no post-natal health checks/visits in Dadu and Jamshoro, respectively, according to the 2019 Sindh Multiple Indicator Cluster Survey[4]. More than half (~60%) of infants under six months of age were not exclusively breastfed in Jamshoro and 42% in Dadu, reported in the 2018 NNS, significantly influencing child growth and nutrition aspects.

The prevalence of water, sanitation, and hygiene (WASH) practices also require attention. In Dadu, 11.8% of households don't have access to improved water sources, while more households have this problem in Jamshoro, at 29.6%. Dadu has 19.7% without access to these facilities when it comes to improved sanitation facilities. In Jamshoro, it is 15.9%. In addition, there is still a lack of awareness around handwashing practices in these districts. In Dadu, only 69.7% practice hand washing before feeding their child, while only 57.7% do so after handling diapers/faeces. In Jamshoro, the amount is below half for both, with 45.6% washing before feeding a child and 45.5% after handling a diaper/faeces.

Battling Malnutrition: Bringing about a change or impact on the nutrition indicators of stunting, wasting, and underweight requires maintaining the trajectory of improved delivery of support to the communities. The challenges of malnutrition and its drivers are also multi-dimensional. They require inter-sectoral collaborative efforts and coordination by multiple sectors in the province and at the district level, such as Health, Education, Water Sanitation & Hygiene, Agriculture, Livestock, Fisheries, Social Protection and Food and execute nutrition-specific and nutrition-sensitive components to combat malnutrition holistically.

[4] Bureau of Statistics, Planning and Development Board, Government for Sindh. (2020). Sindh Multiple Indicator Cluster Survey 2018-2019, Survey Findings Report. Available at: http://sindhbos.gov.pk/wp-content/uploads/2021/03/Sindh-MICS-2018-19-Final-SFR.pdf

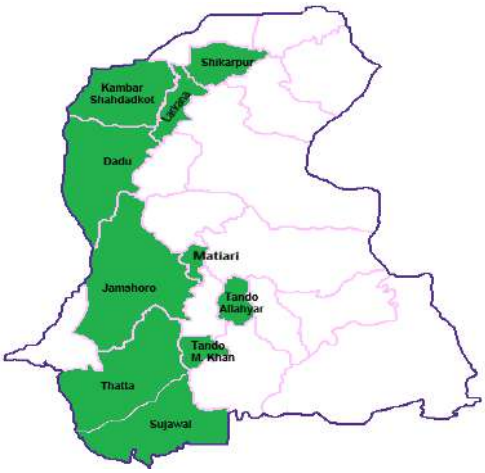
2.0 Programme for Improved Nutrition in Sindh (PINS) and SMART Survey

PINS is a four-year long intervention. The overall objective of the programme is to "sustainably improve the nutritional status of children under five years of age and of pregnant and lactating women in Sindh, in line with the second target indicator of the Sustainable Development Goal (SDG) No. 2". It is being implemented in Dadu, Tando Allah Yar, Tando Muhammad Khan, Jamshoro, Matiari, Thatta, Sujawal, Kamber Shahdadkot, and Shikarpur.

The programme is led by the Rural Support Programmes Network (RSPN) in consortium with several implementing and technical partners. It envisions to achieve three Expected Results (ERs) in the targeted UCs:

- ER-1: Improved capacity of the Government of Sindh and other stakeholders regarding nutrition-related policy/strategy development, coordination, implementation, adaptive research, data collection, analysis, and communication;
- ER-2: Treatment of malnutrition in health facilities supported by an outreach programme to screen children, a referral system for their follow-up, and a Behavior Change Communication (BCC) programme for improved childcare, sanitation, and feeding practices **(nutrition specific)**;
- ER-3: Improved community-level WASH (infrastructure and BCC) and nutrition-sensitive food production systems adapted to climate change in rural areas **(nutrition sensitive).**

Exhibit 2.1
Geographic Coverage of PINS



Initially, Nutrition Specific (ER-2) component of PINS was to be implemented by an ACF led consortium in the districts of Dadu and Jamshoro. ACF was unable to operate in these particular districts due to some unavoidable circumstance. Therefore, the European Union approached RSPN to take the lead in implementing this proposed action in Dadu and Jamshoro. RSPN, in collaboration with its implementing partners; Thardeep Rural Development Program (TRDP) and People's Primary Healthcare Initiatives (PPHI) is now implementing the Nutrition Specific (ER-2) in these districts.

The programme being implemented is intended to provide 100% availability of treatment for Severely Acute Malnutrition (SAM) children (with or without complications) with an expected uptake of 90% against expected caseload across these target districts. The outreach and prevention activities of PINS ER-2 partners started working in LHW non-covered locations. The intervention aims to reach 80% of the target population within the region. The interventions are being targeted at children (6 to 59 months of age), Pregnant and Lactating Women (PLW) in order to improve the nutrition status and feeding practices of children. The interventions will cover the 1000-day window of opportunity, awareness on exclusive breastfeeding, complimentary feeding of children (6 to 23 months of age) and supporting proper feeding practices of children till they reach the age of 5 years old.

2.1 Survey Overview and Objectives

In August 2021, the RSPN awarded a third-party consulting contract to AASA Consulting for undertaking the Standardised Monitoring and Assessment of Relief and Transitions (SMART) Survey in the targeted districts

of Dadu and Jamshoro led by the RSPN under the PINS ER-2 component. The survey aimed to assess the baseline situation of under-nutrition and underlying risks factors that contribute to malnutrition

The assignment is designed as an integrated nutrition Standardised Monitoring and Assessment of Relief and Transitions (SMART) survey being implemented at the programme start to estimate the prevalence of malnourishment in children under 5, the maternal nutritional status and the morbidity in the targeted districts. The findings will serve as a primary reference to measure the programme's impact via subsequent mid-line and end-line studies.

The overall study objectives have been revised and updated in the project inception phase. The study focuses on the coverage of the following thematic areas while excluding the subject areas related to household food security, livelihood and dietary diversity as they are already covered extensively in the PINS-ER3 baseline and midline studies:

- Estimation of the prevalence of acute malnutrition (including bilateral oedema) in children 6 to 59 months;
- Estimation of the prevalence of Wasting, Stunting and Underweight in children aged 6 to 59 months;
- Estimation of the prevalence of malnutrition on Mid-Upper Arm Circumference (MUAC) <21 cm in Pregnant and Lactating Women (PLW);
- Assessment of the Infant and Young Child Feeding (IYCF) practices among children aged 0 to 23 months, including breastfeeding and complementary feeding practices;
- Estimation of the morbidity rates (for Diarrhea, ARI, Fever and other common childhood illnesses) in children 0 to 59 months of age;
- Update of key mother health and nutrition indicators.

Exhibit 2.2 lists the specific results indicators covered in the study.

Exhibit 2.2
Selected PINS ER-2 Programmatic Indicators Covered in the SMART Survey

#	
1	Percentage of under-five (U5) children with wasting (weight for height <-2 standard deviations)
2	Prevalence of under-five (U5) children with stunting (height for age <-2 standard deviations)
3	Percentage of infants 0 to 6 months who are exclusively breastfed
4	Percentage of children 6 to 23 months receiving a minimum acceptable diet in addition to milk
5	Percentage of pregnant & lactating Women receiving iron folic acid supplementation
6	Percentage of primary caregivers of U5 who know at least 2 danger signs for seeking care immediately
7	Proportion of PLWs* who know at least 5 nutrition/IYCF key messages
Additional Indicators Covered in the Survey	
Child Health and Morbidity	
8	Prevalence of children 6-59 months who received Vitamin-A supplementation in last six months
9	Prevalence of children 9-59 months who completed Measles immunization (verified by both immunization card and/or caregiver's recall)
10	Prevalence of children 12-59 months who received Deworming in last six months
11	Prevalence of Diarrhoea among children 0-59 months based on two weeks recall period
12	Prevalence of Fever (without cough and rash) among children 0-59 months based on two weeks recall period
13	Prevalence of ARI among children 0-59 months based on two weeks recall period
Women Health and Nutrition	

14	Prevalence of malnutrition among all Women of Reproductive Age (15-49 years) based on MUAC <210mm
15	Prevalence of Malnutrition among PLWs based on MUAC <210mm
16	Skilled attendant delivery prevalence

***Note:** The survey reports on the overall proportion of primary caregivers/mothers who know at least 5 nutrition/IYCF key messages

These baseline survey findings will serve as a primary reference to measure the programme's impact via the subsequent end line study to be implemented at the programme end.

The survey results will be leveraged to generate recommendations for addressing the malnutrition situation and key health indicators in Dadu and Jamshoro through nutrition interventions and inform the programme's progress towards the project outcome.

2.2 Scope of Work

To meet the objectives of the survey, AASA Consulting had undertaken the following key activities:

- Development and finalisation of survey/data collection tools: the interview guide, questionnaire including data collection module for Android application software, and standardisation of anthropometry tool forms;
- Determination of the sampling methods and implementation of the sampling plan through random selection of clusters/villages/communities for the survey;
- Development of the operational manual for data collection, monitoring and supervision system, data quality control system;
- Recruitment of the data collectors and training;
- Administrative and operational arrangements for conducting the survey;
- Coordination with the Department of Health authorities to ensure proper communication is made to local and district authorities in the selected clusters and on the district level;
- Deploy field teams in each district and conduct data collection;
- Data cleaning and data analysis in the software(s);
- Development of the first draft of survey results; and
- Results presentation to the project management team and finalisation of survey reports (one consolidated report).

3.0 Survey Approach and Methodology

The following sub-sections provide a brief description of sampling frame, coverage and the strategy for selecting clusters or Primary Sampling Units. The methodology and design of this SMART survey are adopted from the standardised guidelines and manuals of ACF Canada. AASA Consulting executed the field work between December 2021 and January 2022, collecting data from a sample of 1,631 households in the targeted districts of Dadu and Jamshoro.

3.1 Study Design: Sampling Approach and Methodology

The survey followed a two-stage stratified cluster sampling technique using the SMART methodology where the survey area was large or the population was dispersed.

Stage-I sampling comprised the selection of clusters – primary sampling units with the help of ENA software from the targeted districts**.** Following the Pakistan Bureau of Statistics (PBS) criteria, it was planned to conduct 16 interviews from each selected cluster. Thus 50 and 60 clusters in Dadu and Jamshoro were required to achieve the necessary samples.

RSPN shared a list of the smallest administrative unit with the population data and a known name. The list contained names of the district, tehsil, UC, Revenue Village and settlement with the size of population and households. These data were entered in the ENA software to randomly select required clusters using the "Probability Proportional to Size Sampling Technique". The geographical unit for sampling was 'Revenue Village', the smallest administrative unit.

Stage-II sampling comprised the selection of households from the assigned clusters/revenue villages using systematic random sampling methods. A fixed number of households were the target to reach for each cluster. Sixteen households were approached to conduct interviews from each cluster. Clusters were divided into three hypothetical sections. The households' listing was carried out in all sections with the help of village/community leaders. Households were randomly selected from the list to conduct the survey. A skipping of five households was made after one successful interview (i.e., sixth household after the completion of each interview was selected for the survey).

Study Sample Size

The ENA software for the SMART survey (January 11th, 2020 version) was used for the sample size calculation based on the parameters described below.

- **Estimated Global Acute Malnutrition (GAM):** Values of estimated prevalence of malnutrition and household demographic indicators necessary to compute sample size were obtained from the findings of the National Nutrition Survey (NNS) conducted in 2018. As per the 2018 NNS, the GAM prevalence in Dadu and Jamshoro districts are 19.2% and 23.7%, respectively.
- **Precision:** The SMART Manual narrates; "In general, to meaningfully interpret Global Acute Malnutrition (GAM) estimate in a survey, a precision of +/- 3 percent should be sufficient in most cases, even if expected prevalence is low. If expected prevalence of GAM is higher, for example 15%-20%, the precision of 4% to 5% would likely be sufficient". Thus, based on this recommendation, a precision of 4 and 4.5 was used for the survey in Dadu and Jamshoro districts, respectively.
- **Design Effect:** In cluster sampling, the sample size calculated for simple or systematic random sampling is multiplied by a factor called the design effect to account for the heterogeneity between clusters in relation to the measured indicator. A design effect of 1.5 was used for sampling
- **Non-Response Rate (NRR):** The non-response household percentage accounts for households that could be absent or unreachable, refuse to be surveyed, or any other reason preventing survey teams from surveying a selected household. Generally, a factor of 7% is applied to adjust for non-response of households in the province.

The following Exhibit 3.1 summarizes values entered in the ENA software to estimate the optimal sample for the quantitative household survey. With these values of parameters, the software calculated **a sample of 825 and 800 households** and **608 and 560 under-five children** for the survey in Dadu and Jamshoro districts, respectively.

Exhibit 3.1
Sample Size Calculation for Nutrition Status Using ENA for SMART Software (January 11th, 2020 Version)

	Dadu	Jamshoro
Global Acute Malnutrition [GAM] Prevalence (reference: NNS 2018)	19.2	23.7
Population of Children Aged 0-59 Months (%) (reference: NNS 2018)	14.2	13.5
Average Family Size (reference: NNS 2018)	6.2	6.2
Desired Precision (+/-) (suggested by SMART Manual, 2017)	4.0	4.5
Design Effect	1.5	1.5
Non-Response Rate	7	7
Children Sample Size According to ENA Software	**608**	**560**
Household Sample Size According to ENA Software	**825**	**800**

Note: Sample size calculation screenshots from ENA software for SMART survey is attached as Annexure 1 of the document.

In correspondence with the sample size determined, a total of **1,631 households 2,437 under-five children** were surveyed in the districts, as illustrated in Exhibit 3.2.

Exhibit 3.2
Survey Area Coverage and Sample Realized

Survey District	Tehsil	Union Council	Revenue Villages Surveyed	Settlements Surveyed	Households Surveyed	Children Surveyed
Jamshoro	4	28	60	71	804	1,212
Dadu	4	49	50	81	827	1,225
Total	**8**	**77**	110	**152**	**1,631**	**2,437**

3.2 Study Population

In the selected sample household, one currently married woman having children (less than five years) was chosen for the enumeration through a structured CAPI-based questionnaire.

All women of reproductive age (WRAs) between 15 and 49 years were surveyed in the sample households, including pregnant and lactating women (PLWs). MUAC measurements were taken to estimate the malnutrition prevalence. Consumption of Iron and folic acid supplementation among PLWs and prevalence of skilled attendant delivery was also inquired.

The survey included **all children aged 0 – 59 months** in the sample households. Anthropometric measurements (weight, height/length, mid-upper arm circumference (MUAC)) and bilateral oedema were measured for children of 6 – 59 months. Infant and young child feeding (IYCF) indicators, such as exclusive breastfeeding minimum acceptable diet, were assessed for children aged 0 – 23 months.

Essential child health indicators related to routine immunization and vitamin A supplementation were also explored, along with morbidity incidence among children in the relevant age group and knowledge and practice of health-seeking behaviours of mothers.

3.3 Data Collection Procedures

The following steps were taken during the field work:

a) Introductory meetings were conducted with Accelerated Action Plan – Department of Health Government of Sindh and Implementing Partners of RSPN requesting support during the fieldwork. The objective and timing of the survey were also discussed during those meetings.

b) The local events calendar was finalized with community leaders of the selected villages.

c) One survey team was deployed for data collection in each selected cluster/village shortlisted by the ENA software.

d) Field supervisors were tasked to identify three starting points in a cluster to deploy each of the three teams.

e) Field supervisors met with community elders of the village and made a list of households' surrounding the respective starting point in the village for random selection.

f) A total of 16 interviews were conducted from each cluster/revenue village.

g) Enumerators made a skipping of five households after targeting one household.

h) Field supervisors and enumerators were informed about routes and the number of households to be targeted from each cluster. A cluster control form was also maintained.

i) Field supervisors used to calibrate their measurement scales daily before starting the field activities in the morning.

j) Children identified with acute malnutrition were referred to the nearest CMAM centre.

k) Data was entered into ENA for SMART daily & every morning, feedback was given to each team before departure to the next day data collection.

4.0 Major Findings of Household Survey

This section of the report documents findings of the SMART household survey in the targeted districts.

The questionnaire administered in the survey (attached as Annexure 2 of the document) mainly covered the following modules:

- Characteristics of women aged 15 – 49 years in sample households in terms of demography, education, health and reproduction status;
- Anthropometric measurement of children aged 6 – 59 months in sample households;
- State of Child Health and Illness;
- Provision of Ready-to-use Therapeutic Food (RUTF) to Severe Acute Malnourished (SAM) children and Micronutrient Powder (MNP) to Moderate Acute Malnourished (MAM) and normal children;
- Infant and Young Child Feeding Practices in sample households.

Following subsections briefly describe the information gathered in the survey.

4.1 Background Characteristics of WRAs Surveyed

The characteristics of women of reproductive age between 15 – 49 years (WRAs) surveyed in the sample households are tabulated for this section.

Exhibit 4.1 collates information regarding age, educational achievement and marital status of WRAs in districts covered in the survey. Close to 70% of women are illiterate, while 12% recorded having education up to the primary level. Comparatively, the literacy ratio is higher in Jamshoro district (34%) than in Dadu (28%). Moreover, close to 7% of surveyed women mentioned having more than ten years of schooling (matric) in the Jamshoro district. In contrast, close to 4% of women of Dadu district reported having more than matric level of education.

Exhibit 4.1
Demographic Indicators of Women (aged 15-49 Years) Surveyed
[Percentages]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of Women Surveyed		2,795	1,502	1,293
Age	15-25 Years	46.4	48.3	44.1
	26-40 Years	41.5	38.5	45.0
	41-49 Years	12.1	13.2	10.9
Marital Status	Single	26.2	28.9	23.1
	Married	72.2	69.6	75.1
	Others	1.6	1.5	1.8
Level of Education Obtained	Illiterate	69.3	72.1	66.1
	Less than Primary	4.6	4.8	4.5
	Primary	11.8	11.6	12.0
	Above Primary, less than Matric	5.6	4.8	6.6
	Matric	3.4	3.0	3.9
	Above Matric	5.2	3.8	6.9

Source: RSPN Household Survey 2021

Exhibit 4.2 summarizes the reproductive features of surveyed women. With an average number of 3 live births and one under-five child, most (74%) women reported using formal or institutional health facilities for child delivery. Close to 80% of women of Jamshoro district reported using institutional health facilities for child delivery, while the comparative percentage in Dadu is 69%.

Exhibit 4.2
Information on Reproduction Status of Women (aged 15 – 49 Years) Surveyed
[At the Time of Household Survey]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of Women Surveyed		2,795	1,502	1,293
Number of Pregnant Women		252	118	134
Pregnant women (%)		9.0	7.9	10.4
Number of Lactating Women		790	409	381
Women-Breast Feeding/Lactating (%)		28.3	27.2	29.5
Live Births	Average Number	3	4	3
Children aged 0-59 months	Average Number	1	1	1
Child Delivery at Health Facility (%)	Institutional	74.2	68.9	79.9
	Traditional/informal	25.8	31.1	20.1

Source: RSPN Household Survey 2021
Note: Doctor, nurse, community midwife, lady health worker, lady health visitor are included in the Institutional Sources of Child Delivery, while Traditional or informal Sources include traditional dai, birth attendant, Community health worker and Family members or relatives.

The nutritional status of women was assessed by measuring their Mid-Upper Arm Circumference (MUAC) during the household survey. According to the SMART methodology, women in the reproductive age (15-49 years) with a mid-upper arm circumference (MUAC) below 21cm are designated as malnourished.[5] Exhibit 4.3 summarizes around 9% and 7% of women surveyed are malnourished in Dadu and Jamshoro districts, respectively.

Exhibit 4.3
Malnutrition Status of Women (aged 15-49 Years) Surveyed
[According to Women MUAC]

	Both Survey Districts Combined	Survey Districts	
		Dadu	Jamshoro
Number of Women Surveyed	2,795	1,502	1,293
No Evidence of Malnourishment (%)	91.7	90.7	92.8
Malnourished Women based on MUAC <210mm (%)	8.3	9.3	7.2
Malnourished PLWs based on MUAC <21cm (%)	2.7	3.3	2.2
Source: RSPN Household Survey 2021			

Folic acid is vital for healthy bodily growth and development in everyone and is especially important for pregnant women. Folic acid is needed to help develop a baby's nervous system and neural tube early in pregnancy. Accordingly, information regarding Folic Acid usage is essential for all nutritional interventions. Exhibit 4.4 reports the reported consumption of iron-folic acid supplements by pregnant and lactating women (PLWs) in the sample households. Overall, close to 24% of PLWs (18% and 29% respectively in Dadu and Jamshoro districts) affirmed having the supplement. Nonetheless, the reported use is significantly low among pregnant women. Overall, less than 5% of pregnant women (~4% and 5% in Dadu and Jamshoro districts, respectively) stated the use of iron-folic acid.

Exhibit 4.4
Use of Iron-Folic Acid Supplement by Pregnant and Lactating Women

	Both Survey Districts Combined	Survey Districts	
		Dadu	Jamshoro
Number of Pregnant Women	252	118	134
% Of Pregnant Women Using Iron-Folic Acid	4.3	3.9	5.2
Number of Lactating Women	790	409	381

[5] https://www.indikit.net/indicator/34-prevalence-of-acute-malnutrition-among-women-muac.

% Of Lactating Women Using Iron-Folic Acid	29.6	22.5	37.3
Number of Pregnant and Lactating Women	1042	527	515
% of Pregnant and Lactating Women Using Iron-Folic Acid	23.5	18.2	28.9
Source: RSPN Household Survey 2021			

Women perception regarding their diet was also obtained through a small module in the survey. The specific question was phrased as "What do you think mothers should include in their diet during pregnancy or while breastfeeding their babies?" Exhibit 4.5 tabulates this information in descending order in terms of percentages. According to the Exhibit, the top five items are; Porridge, rice, bread, and food items prepared from these (18.6%), Fish or seafood (11.8%), Lentils (11.1%), cow, goat, chicken meat (9.1%), and Green leafy vegetables (8.3%).

Exhibit 4.5
Recommended Diet for Pregnant and Breastfeeding Women
[Perception of Mothers of Youngest Child in Household in Percentages]

	Both Survey Districts Combined	Survey Districts	
		Dadu	Jamshoro
Number of Respondents	1,624	823	801
Porridge, rice, bread, and food items prepared from these	18.6	18.6	18.5
Fish or seafood	11.8	13.1	10.5
Lentils (split chickpeas, yellow lentils, red lentils, and etc.)	11.1	12.2	10.0
Cow, goat, chicken meat	9.1	10.0	8.3
Green leafy vegetables	8.3	6.5	10.2
Other fruits and vegetables	8.3	8.0	8.6
Eggs	5.7	4.7	6.6
Liver, kidney, heart, or other organ meat	5.0	5.5	4.6
Sugary foods (chocolate, biscuits, candy, and etc.)	3.8	3.9	3.7
Dairy products (e.g., yoghurt, cheese, and food made of these)	3.7	3.3	4.1
Vitamin A containing vegetables (carrots, Pumpkin etc.)	3.5	3.2	3.7
Lassi	2.7	3.2	2.1
Vitamin A containing fruits (papaya, peach, apricot, etc.)	2.6	1.8	3.3
Oil, fats, butter, or food made of these	2.4	2.8	1.9
Beans, peas, nuts	1.4	1.7	1.2
Company-produced baby foods	0.7	0.7	0.7
Do not Know	2.7	2.7	3.8
Source: RSPN Household Survey 2021			

Women respondents were also enquired about the symptoms that they are aware of are dangerous for children under five and require immediate doctor attention. The question was framed as "What are the dangerous signs/symptoms in children under the age of five that should be checked by a doctor immediately". According to Exhibit 4.6, major danger signs include; Watery stools (21.6 %), Vomiting (19.5 %), Frequent illness or epidemic (9.2 %), Not getting hungry (7.7 %), and Less weight according to age (5.3%). Only ~5% of mothers did not know about the danger signs for seeking care immediately. No considerable inter-district differences are observed.

Exhibit 4.6
Dangerous Signs or Symptoms of Malnourishment in Children Under the Age of Five
[Perceptions of Mothers of Youngest Child in Household in Percentages]

	Both Survey Districts Combined	Survey District	
		Dadu	Jamshoro
Number of Respondents	1,624	823	801
Watery stools	21.6	20.9	22.4

Exhibit 4.6
Dangerous Signs or Symptoms of Malnourishment in Children Under the Age of Five
[Perceptions of Mothers of Youngest Child in Household in Percentages]

	Both Survey Districts Combined	Survey District	
		Dadu	Jamshoro
Vomiting	19.5	18.3	20.9
Frequent illness or epidemic	9.2	9.5	9.0
Not getting hungry	7.7	7.9	7.4
Less weight according to age	5.3	5.8	4.8
Less height according to weight	4.9	5.1	4.6
Less weight according to height	4.8	5.1	4.3
Irritability	4.4	4.5	4.3
The child feels tired	3.3	2.1	4.7
Other	3.3	3.4	3.2
Indigestion problems	2.6	2.9	2.3
Physically growth problems	2.5	2.8	2.3
It takes longer for the wound to heal	2.2	2.4	2.0
Feeling bloated stomach	1.9	2.2	1.6
Dry and rough skin	1.9	2.2	1.6
Do Not Know	4.9	4.9	4.8

Source: RSPN Household Survey 2021

4.2 Nutrition Status of Children Aged 6 – 59 Months Surveyed

This section includes a brief on two types of anthropometric measures for under-five children; measures estimated with the help of child age, weight and height and measurement of Mid Upper Arm Circumference (MUAC). The information on the evidence of the Children's Bilateral Oedema is also provided.

4.2.1 Underweight, Stunting and Wasting

Indicators of the nutritional status of children are calculated using growth standards published by the World Health Organization (WHO) in 2006[6]. These growth standards were generated through the WHO Multicenter Growth Reference Study (WHO, 2006)[7]. WHO child growth standards are used to assess the nutritional status of children worldwide, regardless of ethnicity, social and economic influences, or feeding practices. The nutritional status indices are expressed in standard deviation units from the Multicenter Growth Reference study median.

The RSPN-SMART survey collected data on the nutritional status of children in Dadu and Jamshoro districts by measuring the height and weight of all children under age 5 in sample households. These data allow the calculation of three standard indices: height-for-age, weight-for-height, and weight-for-age. These three nutritional indicators with the recommended cut-offs are briefly described as follows.

Weight-for-age is a composite index of height-for-age and weight-for-height. Children whose weight-for-age is below minus two standard deviations (-2 SD) from the reference population median are classified as underweight (prevalence). Children whose weight-for-age is below minus three standard deviations (-3 SD) from the reference median are considered severely underweight, while the difference between prevalence and severe malnutrition is termed moderate undernourishment.

The height-for-age index indicates linear growth retardation and cumulative growth deficits in children. Children whose height-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the WHO reference population are considered short for their age (stunted) or chronically malnourished. Children below minus three standard deviations from the reference median are considered severely stunted. Stunting reflects a failure to receive adequate nutrition over a long period and is affected by recurrent and

[6] World Health Organization. The WHO Child Growth Standards, 2006.http://www.who.int/childgrowth/en/
[7] World Health Organization. The WHO Multicenter Growth Reference Study (MGRS) 2006. http://www.who.int/childgrowth/mgrs/en/

chronic illness. Height-for-age, therefore, represents the long-term effects of malnutrition in a population and is not sensitive to recent, short-term changes in dietary intake. Moderate stunting is the difference between estimates of prevalence and severity.

The weight-for-height index measures body mass in relation to height or length and describes current nutritional status. Children with Z-scores below minus two standard deviations (-2 SD) from the reference population median are considered thin (wasted) or acutely malnourished. Wasting represents the failure to receive adequate nutrition in the period immediately preceding the survey and maybe the result of inadequate food intake or a recent episode of illness-causing loss of weight and the onset of malnutrition. Children with a weight-for-height index below minus three standard deviations (-3 SD) from the reference median are considered severely wasted, while moderate wasting is the difference between estimates of prevalence and severity.

The weight-for-height index also provides data on overweight and obesity. Children above two standard deviations (+2 SD) from the reference median are considered overweight or obese.

ENA (Emergency Nutrition Assessment) software is used to estimate Z-Scores for various nutritional indicators from the collected data on the weight and height of children under five. The software is recommended by the SMART (Standardized Monitoring and Assessment of Relief and Transitions) methodology[8]. It has automated functions for sample size calculations, sample selection, quality checks and standardization for anthropometry measurements.

Exhibit 4.7 furnishes estimates of undernourishment in children of sample households. The prevalence of malnourishment in children aged 6-59 months respectively in terms of underweight, stunting and wasting are estimated at 35%, 50%, and 12%. Comparatively, close to 10%, 23%, and 4% of children are severely undernourished. Moreover, less than one per cent of children were found overweight (obese). The Exhibit also reveals no obvious inter-districts dissimilarity in the estimated nutritional status.

Exhibit 4.7
Child Malnourishment in terms of Standard Nutritional Indicators
[Percentage of Undernourished Children Aged 6 – 59 Months]

	Both Survey Districts Combined	Survey Districts	
		Dadu	Jamshoro
Number of Children – Overall	2,100	1,033	1,067
Underweight – Weight for age			
Number of Children*	2,083	1,021	1,062
Prevalence	35.0	34.6	35.3
Moderate	25.3	24.0	26.5
Severe	9.7	10.6	8.9
Stunting – Height for Age			
Number of Children	2,100	1,033	1,067
Prevalence	50.0	50.1	50.0
Moderate	27.0	26.7	27.3
Severe	23.0	23.4	22.7
Wasting – Weight for Height			
Number of Children*	2,096	1,031	1,065
Prevalence	12.2	12.7	11.7
Moderate	8.4	7.8	9.1
Severe	3.8	4.9	2.6
Overweight – Weight for Height	0.5	0.2	0.7

[8] The SMART Methodology is an improved survey method that balances simplicity (for rapid assessment of acute emergencies) and technical soundness. It draws from the core elements of several methodologies with continuous upgrading informed by research and current best practices. https://smartmethodology.org/about-smart/

Source: RSPN Household Survey 2021
Note: *The total number of children as a base number was adjusted by the ENA software for estimating underweight and wasting due to outlier instances. Children with oedema cases were also excluded by the software to calculate underweight incidence.

The gender-disaggregated information on child malnutrition is displayed in Exhibits 4.7a and 4.7b for boys and girls, respectively. The Exhibit reveals mixed results regarding gender differences with respect to malnutrition. However, these exhibits generally expose that the prevalence of underweight, stunting and wasting among boys is higher than that of girls irrespective of districts.

Exhibit 4.7a
Child Malnourishment
[Percentage of Undernourished Children Aged 6 – 59 Months – BOYS]

	Both Survey Districts Combined	Survey Districts	
		Dadu	Jamshoro
Number of Boys – Overall	1,072	530	542
Underweight – Weight for age			
Number of Boys*	1,063	524	539
Prevalence	36.7	34.6	35.4
Moderate	27.8	24.0	26.5
Severe	8.9	10.6	8.9
Stunting – Height for Age			
Number of Boys	1,072	530	542
Prevalence	52.8	52.8	52.8
Moderate	27.7	27.2	28.2
Severe	25.1	25.7	24.5
Wasting – Weight for Height			
Number of Boys*	1,068	528	540
Prevalence	12.0	11.4	12.6
Moderate	9.0	7.6	10.4
Severe	3.0	3.8	2.2
Overweight – Weight for Height	0.8	0.6	1.1

Source: RSPN Household Survey 2021
Note: *The total number of children as a base number was adjusted by the ENA software for estimating underweight and wasting due to outlier instances. Children with oedema cases were also excluded by the software to calculate underweight incidence.

Exhibit 4.7b
Child Malnourishment
[Percentage of Undernourished Children Aged 6 – 59 Months – GIRLS]

	Both Survey Districts Combined	Survey Districts	
		Dadu	Jamshoro
Number of Girls – Overall	1,028	503	525
Underweight – Weight for age			
Number of Girls*	1,020	497	523
Prevalence	33.1	33.0	33.3
Moderate	22.6	20.5	24.7
Severe	10.5	12.5	8.6
Stunting – Height for Age			
Number of Girls	1,028	503	525
Prevalence	47.2	47.3	47.1
Moderate	26.3	26.2	26.3
Severe	20.9	21.1	20.8
Wasting – Weight for Height			
Number of Girls*	1,028	503	525
Prevalence	12.5	14.2	10.9

Moderate	7.9	8.0	7.8
Severe	4.6	6.2	3.0
Overweight – Weight for Height	0.0	0.0	0.0

Source: RSPN Household Survey 2021

Note: *The total number of children as a base number was adjusted by the ENA software for estimating underweight and wasting due to outlier instances. Children with oedema cases were also excluded by the software to calculate underweight incidence.

It is also attempting to compare the study estimates of malnourishment with the findings of earlier national and provincial level studies in the sample districts. National Nutrition Survey (NNS, 2018) and Multiple Indicator Cluster Survey (MICS, 2019) provide nutrition indices. Nonetheless, it is imperative to note that findings are not strictly comparable due to the differences in study objectives, sampling and coverage. Exhibit 4.8 furnishes the comparative estimates of malnutrition. Generally, by looking at the Exhibit, it emerges that RSPN-SMART estimates are quite close to the findings of NNS of 2018, while the estimates of 2019 MICS are substantially dissimilar to this study figures.

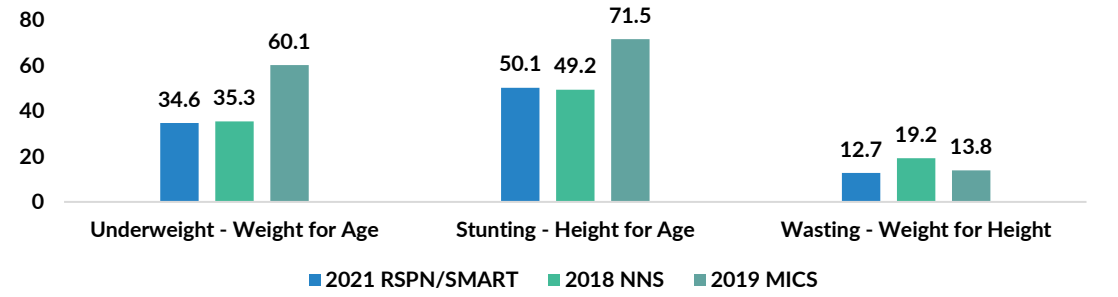
Exhibit 4.8

Comparative Estimates of Child Malnourishment

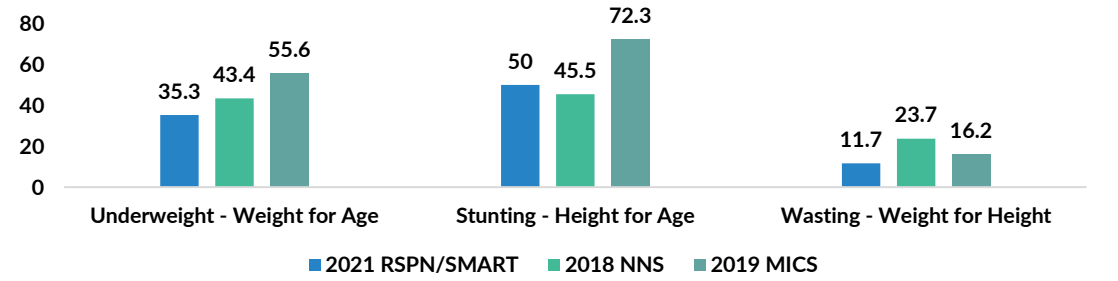
RSPN-SMART Survey 2021, National Nutrition Survey 2018 & Multiple Indicators Cluster Survey 2019

Percentage of Moderately Undernourished Children [Z-Score Below -2 SD]

Dadu District

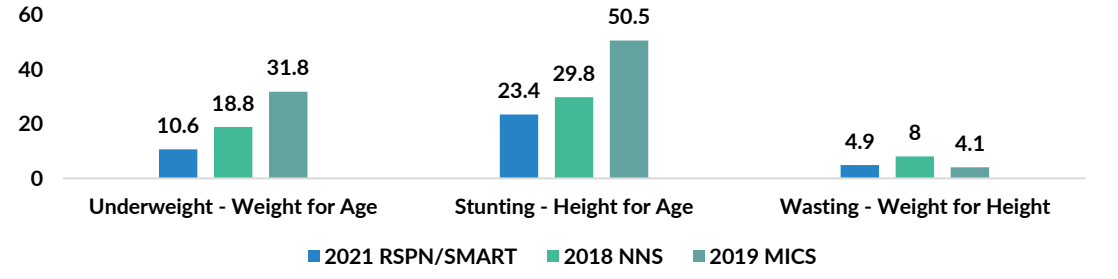


Jamshoro District



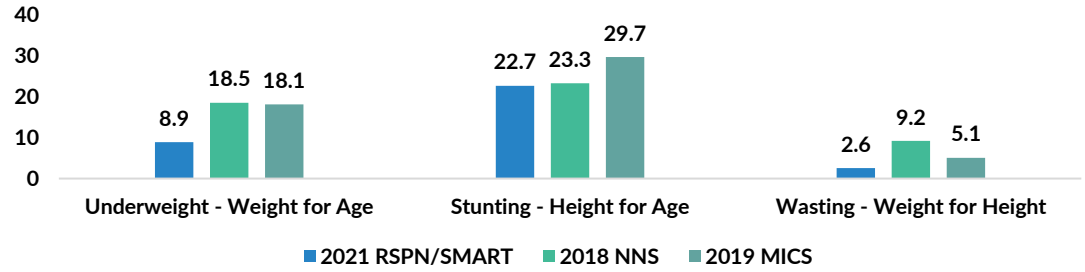
Percentage of Severely Undernourished Children [Z-Score Below -3 SD]

Dadu District



Jamshoro District

Exhibit 4.8
Comparative Estimates of Child Malnourishment
RSPN-SMART Survey 2021, National Nutrition Survey 2018 & Multiple Indicators Cluster Survey 2019



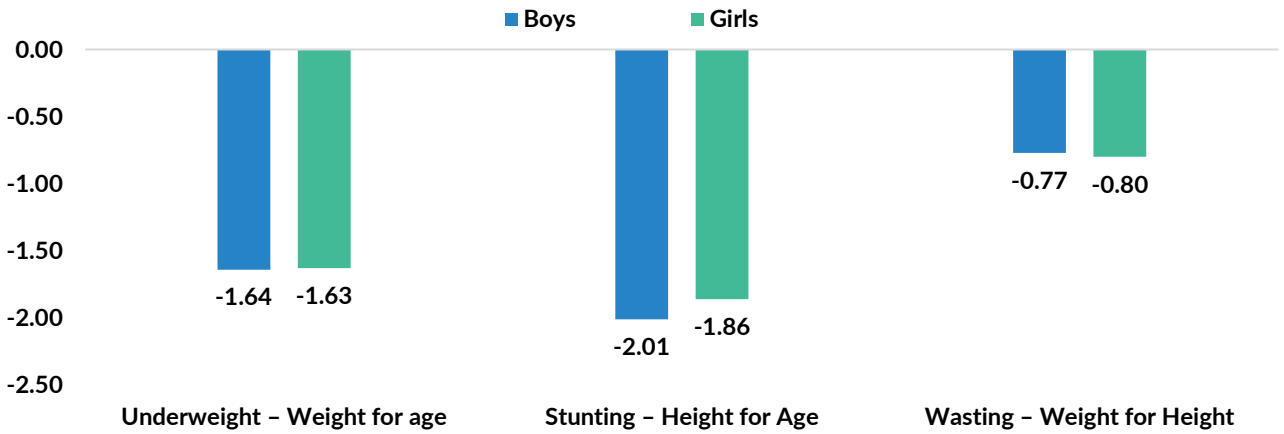
Sources: RSPN Household Survey (2021), NNS (2018), MICS (2019)

The means of the z-scores for the above nutritional indicators (height-for-age, weight-for-height, and weight-for-age) are also calculated as summary statistics representing the nutritional status of children in a population. These mean scores describe the nutritional status of the entire population of children without the use of a cut-off point. A mean Z-score of less than 0 (that is, a negative mean value for stunting, wasting, or underweight) suggests the downward shift in the entire sample population's nutritional status relative to the reference population (WHO- Multicenter Growth Reference Study median). The farther away the mean z-scores are from 0, the higher the prevalence of undernutrition. Exhibit 4.9 furnishes the average value of Z-scores. These scores were estimated using ENA software and applying data of sample children under five. It is worth highlighting an important observation evident in the Exhibit. The average Z-scores of Stunting reflects higher undernourishment of boys than girls (-2.01 versus -1.86).

Exhibit 4.9
Average Z-Scores of Nutritional Indicators

	Both Survey Districts Combined	Survey Districts	
		Dadu	Jamshoro
Number of Children	2,100	1,033	1,067
Underweight – Weight for age	-1.64	-1.63	-1.64
Stunting – Height for Age	-1.94	-1.92	-1.96
Wasting – Weight for Height	-.79	-.79	-.78
Boys	1,072	530	542
Underweight – Weight for age	-1.64	-1.62	-1.66
Stunting – Height for Age	-2.01	-2.02	-2.00
Wasting – Weight for Height	-.77	-.73	-.81
Girls	1,028	503	525
Underweight – Weight for age	-1.63	-1.64	-1.62
Stunting – Height for Age	-1.86	-1.81	-1.91
Wasting – Weight for Height	-.80	-.85	-.75

Gender Disaggregated Z-Score
(Both Survey Districts Combined)



Source: RSPN Household Survey 2021

4.2.2 MUAC Measure of Child Malnourishment

The Measurement of Mid Upper Arm Circumference (MUAC) is commonly used to indicate severe malnutrition and wasting in children. Following the standard steps as recommended in the Anthropometric Indicators Measurement Guide, MUAC was measured on the left arm of all under-five children in sample households. MUAC was recorded to the nearest 0.1cm. Three colours' classification scheme is applied on the RSPN-SMART survey collected data of MUAC for children[9].

- RED COLOUR: MUAC less than 11.5cm indicates Severe Acute Malnutrition (SAM).
- YELLOW COLOUR: MUAC of between 11.5cm and 12.5cm means that the child is at risk for severe acute malnutrition.
- GREEN COLOUR: MUAC over 12.5cm shows that the child is well nourished.

Exhibit 4.10 collates information on child malnourishment according to MUAC measurements. Close to 7% (6% and 8% respectively for Boys and Girls) children are estimated severe acute malnourished according to the MUAC tap classification. Three critical observations emerged from the Exhibit. The estimated prevalence of SAM as measured by MUAC is almost double compared with severe malnourishment in terms of wasting (weight-for-height). According to Exhibit 4.10, 3.5% of children are severely undernourished with a weight-for-height Z-score below -3 SD. Second, based on MUAC data, the malnourishment estimates show that incidences of SAM are generally high in girls; more boys are well-nourished than girls (73 versus 68). Third, the Exhibit also reveals that inter-district variation exists and the percentage of children with SAM are considerably high in the Dadu district (8.5 versus 5.4).

Exhibit 4.10
Percentage of Child Malnourishment Aged 6 – 59 Months According to MUAC Measure

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of Children – Overall		2,100	1,033	1,067
MUAC Tape Measure	<11.5cm (red)	**7.0**	**8.5**	**5.4**
	>=11.5 cm to <12.5 (yellow)	22.5	22.5	22.5
	>12.5 cm (green)	70.6	69.0	72.1
Number of Boys		1,072	530	542
MUAC Tape Measure	<11.5cm (red)	**5.8**	**6.6**	**5.0**
	>=11.5 cm to <12.5 (yellow)	21.3	21.5	21.0
	>12.5 cm (green)	72.9	71.9	74.0
Number of Girls		1,028	503	525
MUAC Tape Measure	<11.5cm (red)	**8.2**	**10.5**	**5.9**
	>=11.5 cm to <12.5 (yellow)	23.7	23.5	24.0
	>12.5 cm (green)	68.1	66.0	70.1

Source: RSPN Household Survey 2021

[9] https://motherchildnutrition.org/early-malnutrition-detection/detection-referral-children-with-acute-malnutrition/interpretation-of-muac-indicators.html

4.2.3 Children Bilateral Oedema

Swelling or oedema in both feet (bilateral oedema) is a sign of severe acute malnutrition (SAM). This form of malnutrition is also called Kwashiorkor. It can be categorized as Mild (oedema in both feet/ankles), Moderate (oedema in both feet plus lower legs, hands or lower arms) and Severe (generalized oedema including both feet, legs, hands, arms and face). During the survey, mild bilateral oedema among all children under five in sample households was investigated. The findings of this exercise are collated in Exhibit 4.11. The Exhibit suggests that oedema is in less than one per cent of surveyed children. Moreover, the incidence of having oedema is relatively higher among girls than boys in sample households.

Exhibit 4.11
Evidence of Children Aged 6 – 59 Months with Bilateral Oedema

		Both Survey Districts Combined	Survey District	
			Dadu	Jamshoro
Number of Children – Overall		2,100	1,033	1,067
Bilateral Oedema	**Evidence Found (%)**	**0.6**	**1.0**	**0.3**
	No Evidence (%)	99.4	99.0	99.7
Boys		1,072	530	542
Bilateral Oedema	**Evidence Found (%)**	**0.5**	**0.8**	**0.2**
	No Evidence (%)	99.5	99.2	99.8
Girls		1,028	503	525
Bilateral Oedema	**Evidence Found (%)**	**0.8**	**1.2**	**0.4**
	No Evidence (%)	99.2	98.8	99.6

Source: RSPN Household Survey 2021

4.3 Child Vaccination and Illness

The following sub-sections provides survey findings regarding the immunization status of children and the prevalence and treatment of the common childhood illnesses (diarrhoea, acute respiratory infection (ARI), and fever) in sample households.

4.3.1 Child Vaccination and Vitamin-A Supplementation

Exhibit 4.12 shows that nearly 95% of under-five children in sample households had received the polio drops as confirmed by their mothers (before the rollout of the recent Measles-Rubella (MR) and Polio Vaccination Campaign by the government)[10]. The exhibit also illustrates that close to 59% (55% and 62% in Dadu and Jamshoro districts) of children were given the polio vaccination soon after birth. Around 3% of children have not received their first vaccination yet in the survey districts.

Exhibit 4.12
Polio Vaccination [0-59 Months Age Cohort]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of children		2,396	1,195	1,201
	Soon after birth (%)	58.5	55.3	61.6

[10] The survey data collection coincided with the rollout of the recent government-sponsored MR & Polio Campaign of November 15th, 2021, in Pakistan. However, the survey aimed to estimate polio and measles vaccination coverage before the rollout of the mentioned campaign as its baseline in Dadu and Jamshoro. Therefore, the survey questionnaire distinctly asked mothers if the child had received polio drops and measles vaccination before the rollout of the said campaign. In light of this, the estimates indicate polio and measles vaccination coverage before the campaign execution.

First polio vaccine given to the child	Within first two weeks of the birth (%)	22.8	24.5	21.1
	After first two weeks of the birth (%)	10.7	11.9	9.5
	Has not yet received (%)	3.1	4.0	2.1
	Do not know (%)	5.0	4.5	5.6
Affirmed having polio drops (Prior to the recent Polio/MR Campaign of 15-11-2021)		94.6	93.3	95.9
Source: RSPN Household Survey 2021				

Exhibit 4.13 provides information regarding measles vaccination. Close to 87% of children aged 9 – 59 months were confirmed of receiving vaccination based on the vaccination card (30%) or mother's recall (57%)[11]. The exhibit also indicates that around 84% of children were vaccinated before the government's MR campaign.

Exhibit 4.13
Measles Vaccination [9-59 Months Age Cohort]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of children		2,055	1,015	1,040
Received Measles Vaccination	Received (confirmed by the Vaccination card) (%)	29.9	33.3	26.5
	Received (confirmed by caregiver recall) (%)	57.2	56.9	57.4
	Has not received (%)	9.7	7.6	11.7
	Not applicable (%)	2.6	1.8	3.4
	Refused to Answer (%)	0.1	0.2	0.0
	Do Not Know (%)	0.6	0.2	1.0
Affirmed vaccination (Prior to the recent MR/Polio campaign of 15-11-2021)		84.1	83.8	84.3
Source: RSPN Household Survey 2021				

In developing countries, where vitamin A deficiency is a public health problem, high-dose vitamin A supplementation is recommended in infants and children aged 6 – 59 months. The findings regarding Vitamin-A supplementation are furnished in Exhibit 4.14. Close to 88% of children obtained Vitamin-A supplements. The information about the supplementation was confirmed either through vaccination card (23%) or maternal/caregiver recall (65%).

Exhibit 4.14
Vitamin A Supplementation/Capsule [6-59 Months Age Cohort]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of children		2,127	1,040	1,087
Received Vitamin A supplementation /capsule in last six months	Received (confirmed by the Vaccination card) (%)	23.3	21.1	25.4
	Received (confirmed by caregiver recall) (%)	64.7	66.5	63.0
	Has not received (%)	10.3	11.3	9.5
	Not applicable (%)	0.5	0.3	0.7
	Refused to Answer (%)	0.1	0.1	0.1
	Do Not Know (%)	1.0	0.8	1.3
Source: RSPN Household Survey 2021				

[11] ibid

Soil-transmitted helminth infections are among the most common diseases in humans, caused by a group of parasites commonly referred to as worms. Those living in poverty are most vulnerable to infection, impairing nutritional status. Evidence shows that preventive chemotherapy, or the periodic large-scale administration of anthelminthic medicines to populations at risk, can dramatically reduce the burden of worms caused by soil-transmitted helminth infections.

The survey also enquired whether the child had received Deworming drugs in last six months. Exhibit 4.15 shows nearly 31% of children were given Deworming/ Anthelmintic drugs to children (confirmed based on the vaccination card (~12%) or mother's recall (~18%)).

Exhibit 4.15
Deworming/ Anthelmintic drugs
[12-59 Month Age Cohort]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of children		1,951	968	983
Received Deworming/ Anthelmintic drug in last six months	Received (confirmed by the Vaccination card) (%)	12.4	10.3	14.3
	Received (confirmed by caregiver recall) (%)	18.1	17.0	19.2
	Has not received (%)	63.0	67.6	58.6
	Do Not Know (%)	6.5	5.1	7.9

Source: RSPN Household Survey 2021

4.3.2 Diarrhoea

The information on diarrhoea for the RSPN-SMART survey was gathered by asking mothers whether their child had an episode of diarrhoea two weeks before the survey. If the mother answered positively, she was further asked what she had done to treat the diarrhoea: her feeding practices and any treatment, including the use of oral rehydration salts (ORS). The information on diarrhoea incidence and treatment pertains only to children born during the five years preceding the survey.

Exhibit 4.16 summarizes information regarding diarrhoea incidence, treatment methods and source of treatment. The survey data show that the prevalence of diarrhoea among children under age 5 is close to 18% (17.4% and 18.7% respectively for Dadu and Jamshoro districts). Approximately 86% of children were administered treatment during diarrhoea." Further, answering the question "What was administered to your child to treat diarrhoea?" the majority of mothers described the use of ORS and Zinc Syrup. It is noteworthy and encouraging that mothers of nearly 73% of children reported visits to the doctor to treat diarrhoea. Slight inter-district variations in responses do, however, exist.

Exhibit 4.16
Diarrhoea Incidence and Treatment [0-59 Month Age Cohort]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of children		2,396	1,195	1,201
Incidence (%) - Child suffered from diarrhoea [during past two weeks]		18.1	17.4	18.7
Percentage of Children Treated for Diarrhoea		85.7	82.7	88.4
Treatment Methods: [What was administered to your child to treat diarrhoea?]	**Only ORS (%)**	8.1	6.7	9.4
	Only zinc syrup (%)	23.0	16.7	28.9
	ORS and zinc syrup (%)	24.2	33.3	15.6
	Home-made nimcol (%)	1.6	0.8	2.3
	Homeopathic medicines (%)	7.7	10.0	5.5

	Home-made remedies (%)	12.1	16.7	7.8
	Some other medicine (%)	21.4	13.3	28.9
	Do Not Know (%)	2.0	2.5	1.6
Sources of Treatment: [From where did you receive the treatment for diarrhoea?]	Outpatient Therapeutic Clinic (%)	8.6	0.0	15.6
	Doctor (%)	73.2	78.1	69.3
	Lady Health Worker (%)	0.6	0.0	1.0
	Own/Family members (%)	11.8	15.5	8.9
	Health Staff/Worker (%)	0.6	0.0	1.0
	From Medical store (%)	3.5	4.5	2.6
	Do Not Know (%)	1.8	1.9	1.5
Source: RSPN Household Survey 2021				

4.3.3 Incidence and Treatment of Acute Respiratory Infection

Acute Respiratory Infections (ARIs) are a leading cause of childhood morbidity and mortality in Pakistan. ARIs respiratory infections kill more children under age five than any other infectious disease. Without early treatment for ARIs, children can die rapidly. Many deaths result from failure to take the child to a health centre quickly or from misdiagnosis by a health care worker[12].

Information on the incidence of Acute Respiratory Infection (ARI), including methods and sources, are collated in Exhibit 4.17. According to the Exhibit, close to 22% (23.4% and 19.9%, respectively, in Dadu and Jamshoro districts) of children had suffered from the ARI. More than 80% of infected children received the treatment. Mothers of the majority (~90%) of children described the use of antibiotic syrup or injection mainly with doctors' advice.

Exhibit 4.17
Incidence of Acute Respiratory Infection (ARI), Coughing with Fever
[0-59 Month Age Cohort]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of children		2,396	1,195	1,201
Child had cough with rapid or difficulty breathing AND a fever [during past two weeks]		21.7	23.4	19.9
Percentage of Children Treated for Acute Respiratory Infection (ARI)		84.2	81.1	87.9
Treatment Methods [What was administered to your child to treat ARI?]	Antibiotic syrup (%)	84.9	82.2	88.1
	Antibiotic injection (%)	5.0	4.7	5.5
	Home-made remedy (%)	3.8	4.7	2.8
	Herbal medicine (%)	0.8	0.8	0.9
	Others (%)	3.8	5.4	1.8
	Do Not Know (%)	1.7	2.3	0.9
Sources of Treatment	Outpatient Therapeutic Clinic (%)	9.8	0.9	19.5
	Doctor (%)	80.5	89.0	71.4
	Lady Health Worker (%)	0.7	0.0	1.4

[12] Pakistan Demographic and Health Survey, 2017-18, https://dhsprogram.com/pubs/pdf/FR354/FR354.pdf

[From where did you receive the treatment for ARI?]	Self/Family Members (%)	5.3	7.5	2.9
	Health Staff/Worker (%)	0.9	0.4	1.0
	From Medical Store (%)	1.4	0.9	1.9
	Do Not Know (%)	1.3	0.9	1.9
Source: Household Survey 2021				

4.3.4 Incidence and Treatment of Fever

Fever is a major manifestation of malaria and other acute respiratory infections in young children. Malaria and fever contribute to high levels of malnutrition and mortality. Close to 10% and 17% of children under age five in the Dadu and Jamshoro districts had a fever in the two weeks preceding the survey. Advice or treatment from a health facility or provider was sought for 88% of these children, while close to 86% received antibiotic drugs. The Exhibit also confirms that mothers of close to 82% of infected children sought doctors' advice.

Exhibit 4.18

Incidence of Fever BUT not Cough and Rash [0-59 Age Cohort]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of children		2,396	1,195	1,201
Child had a fever BUT NO cough and NO rash [during past two weeks]		13.4	10.0	16.9
Percentage of Children Treated for Fever		87.6	85.7	88.7
Treatment Methods [What was administered to your child to treat fever?]	Antibiotic Syrup (%)	77.4	81.1	75.3
	Antibiotic Injection (%)	8.9	3.8	11.8
	Home-made Remedy (%)	3.4	3.8	3.2
	Herbal Medicine (%)	0.7	0.0	1.1
	Other (%)	6.2	7.5	5.4
	Do Not Know (%)	3.4	3.8	3.2
Sources of Treatment [From where did you receive the treatment for fever?]	From Outpatient Therapeutic Clinic (%)	7.3	0.0	11.3
	From Doctor (%)	81.6	86.0	79.2
	From Lady Health Worker (%)	0.4	0.0	0.6
	From Own/Family Members (%)	6.9	11.6	4.4
	Health Staff/Worker (%)	1.2	1.2	1.3
	From Medical Store (%)	2.0	1.2	2.5
	Do Not Know (%)	0.4	0.0	0.6
Source: RSPN Household Survey 2021				

4.3.5 Treatment of the Micronutrient Malnutrition

According to the WHO report[13] about guidelines on food fortification with micronutrients, "more than 2 billion people in the world today suffer from micronutrient deficiencies caused largely by a dietary deficiency of vitamins and minerals. The public health importance of these deficiencies lies upon their magnitude and health consequences, especially in pregnant women and young children, as they affect fetal and child growth, cognitive development and resistance to infection. Although people in all population groups in all regions of the world may be affected, the most widespread and severe problems are usually found amongst resource-poor, food insecure and vulnerable households in developing countries".

Governments and NGOs take various measures to treat children in micronutrient malnutrition. The RSPN-SMART survey enquires about the incidence and practices of two widely used modes for managing nutritional deficiencies; Micro Nutrient Powder (MNP) and Ready-to-use Therapeutic Food (RUTF). The information provided by the survey will facilitate better management of the nutritional intervention.

Micronutrient powders (MNP) are used to fortify foods in settings where micronutrients are insufficient to promote optimal growth in children or pregnant women. MNP prevents micronutrient deficiencies, especially anaemia, improves the body's immune system, child's appetite, child's ability to learn and develop and makes

[13] https://www.who.int/nutrition/publications/guide_food_fortification_micronutrients.pdf?ua=1

a child strong and active. Similarly, RUTF gives malnourished children the vital nutrients they need to recover. The most well-known RUTF is a peanut-based paste served in a foil pouch. UNICEF uses RUTF to help the millions of children threatened by acute malnutrition worldwide. The peanut-based paste doesn't require refrigeration and stays fresh for two years. Best of all, no mixing with potentially contaminated water is required. It is estimated that 98% of children treated with RUTF were well-nourished after six months, and 96% were well-nourished after a year.

Exhibit 4.19 furnishes the incidence of using MNP and RUTF in the districts covered in the RSPN-SMART household survey, while Exhibits 4.20 and 4.21 summarize various features of using these remedial measures for treating acute malnutrition.

Exhibit 4.19 reveals that close to 10% of children are using MNP sachets irrespectively of districts, while very low incidence (2%-3%) is recorded in the case of RUTF.

Exhibit 4.19
Incidence of Use of Micronutrient Powder (MNP) and Ready-to-Use Therapeutic Food (RUTF) [0-59 Age Cohort]

	Both Survey Districts Combined	Survey Districts	
		Dadu	Jamshoro
Number of children	1,970	939	1031
MMP Sachet given to children in last 3 month [Percentage of children]	9.9	10.0	9.9
RUTF given to children in last 3 months [Percentage of children]	2.2	2.7	1.7

Source: RSPN Household Survey 2021

According to Exhibit 4.20, the prominent features which sample mothers of children using MNP include report.

The use of sachet was advised mostly by Community Health Workers (25.4%), LHW (23.8%) and Lady Health Visitor (19%). Only 12.7% of mothers confirmed the advice by doctors.

Close to 62% (53% and 71% respectively for Dadu and Jamshoro) of mothers among those who reported ever-use of MNP disclosed that their children are still using MNP sachet.

Lady Health Workers and Community Health Workers are the primary sources of MNP. Close to 37% and 21% of mothers recorded these sources in answering the probe "Where did you get the Sachet from?". During the treatment period of about four months, on average, 20 (26 and 14 in Dadu and Jamshoro respectively) sachets per month were given to the affected children.

Exhibit 4.20
Practice of Using Micronutrient Powder (MNP) Mothers who affirmed giving MNP sachet in the last three months [6-23 Month Age Cohort]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of children		63	32	31
MNP Sachet Advised by:	Doctor (%)	12.7	12.5	12.9
	Lady Health Worker (%)	23.8	25.0	22.6
	Lady Health Visitor	19.0	3.1	35.5
	Community Health Worker (%)	25.4	31.3	19.4
	Community midwife (%)	11.1	12.5	9.7
	Family members (%)	3.2	6.3	0.0

	Health Staff/Worker (%)	4.8	9.4	0.0
Currently Using MNP		61.9	53.1	71.0
MNP sachets in a month during the treatment period	Average Sachet	20	26	14
Sources for Getting MNP sachets [Where did you get MNP sachet from?]	OTP (%)	6.3	6.3	6.5
	Health facility (%)	1.6	3.1	0.0
	Doctor (%)	9.5	9.4	9.7
	Lady Health Worker (%)	36.5	31.3	41.9
	Lady Health Visitor (%)	6.3	0.0	12.9
	Community Health Worker (%)	20.6	21.9	19.4
	Community midwife	11.1	12.5	9.7
	Self /Family members (%)	1.6	3.1	0.0
	Health Staff/Worker (%)	6.3	12.5	0.0
Months MNP sachet given to children for Treatment	Average Months	4	4	4
Source: RSPN Household Survey 2021				

The prominent features of giving RUTF to children, which sample mothers report, are summarized in Exhibit 4.21.

The majority of children were provided RUTF on the advice of family members (28.2%) and Government health staff or workers (20.5%). However, close to 18% of children were given RUTF on the advice of doctors.

OTP is the main source of getting RUTF sachets. The mothers of close to 50% recorded this source in answering the probe "Where did you get the Sachet from?".

During the treatment period of about two months, 45 (59 and 23 in Dadu and Jamshoro respectively) sachets per month were given to the affected children on average.

Exhibit 4.21
Practice of Using Ready-to-Use Therapeutic Food (RUTF) Only those Mothers who affirmed giving RUTF in the last three months [6-59 Month Age Cohort]

		Both Survey Districts Combined	Survey Districts	
			Dadu	Jamshoro
Number of children		39	23	16
RUTF Advised by	Doctor (%)	17.9	8.7	31.3
	Lady Health Worker (%)	17.9	17.4	18.8
	Lady Health Visitor (%)	12.8	8.7	18.8
	Community Health Worker (%)	2.6	0.0	6.3
	Self/Family members (%)	28.2	34.8	18.8
	Government Health Staff/Worker (%)	20.5	30.4	6.3
	OTP (%)	48.7	56.5	37.5

Sources of Getting RUTF [Where did you get RUTF sachet from?]	Doctor (%)	10.3	8.7	12.5
	Lady Health Worker (%)	7.7	0.0	18.8
	Lady Health Visitor (%)	5.1	4.3	6.3
	Community Health Worker (%)	2.6	0.0	6.3
	Self/Family members (%)	7.7	4.3	12.5
	Government Health Staff/Worker (%)	17.9	26.1	6.3
RUTF sachets received in a month during treatment period?	Average Quantity	45	59	23
How long RUTF was Used?	Average Months	2	3	1
Child Recovery Status	Child is healthy now, and RUTF is stopped (%)	69.2	69.6	68.8
	Child is still receiving RUFT (%)	30.8	30.4	31.3
Source: RSPN Household Survey 2021				

4.4 Infant and Young Child Feeding

A dietary module was included in the RSPN-SMART survey questionnaire covering a range of semi-solid/solid food items and liquids. These food items are essential for a child's diet and adapted from the UNICEF/WHO IYCF module (2010)[14]. The mothers/caregivers of children in the age bracket of 6 – 23 months were the respondents of this section. They were instructed to report the use of the given food items based on the food intake of a child in the previous 24 hours (last day and night), along with the frequency of meal intake.

4.4.1 Minimum Acceptable Diet

The percentage of children 6 – 23 months of age who received a Minimum Acceptable Diet (MAD) during the previous day and night is one of the eight core indicators of infant and young child feeding practices (IYCF) that are essential to track multiple dimensions of the feeding of children. It is a composite indicator combining minimum dietary diversity standards (MDD) and minimum meal frequency (MMF). Thus, the index facilitates monitoring progress in both quantitative and qualitative dimensions of child diet.

Dietary diversity is a measure to estimate the consumption of adequate micro-nutrient density of foods among children. MDD for children 6 – 23 months is defined as the consumption of at least four food groups in the previous day and night. The following seven food groups are recommended by UNICEF for estimating MDD.

1. Grains, roots, and tubers
2. Legumes and nuts
3. Dairy products (milk, yogurt, cheese)
4. Flesh foods (meat, fish, poultry, organ meats)
5. Eggs
6. Vitamin A rich fruits
7. Other fruits and vegetables

According to WHO/UNICEF 2010 guidance, the calculation of this indicator is different for breastfed and non-breastfed children[15]. Thus, child status in terms of breastfeeding is also incorporated in the computation of MDD.

[14] Indicators for Assessing Infant and Young Child Feeding Practices (IYCF): Part II Measurement (2010) and Part III Country Profiles (2010), UNICEF/WHO.
[15] https://www.indikit.net/indicator/18-minimum-acceptable-diet-mad

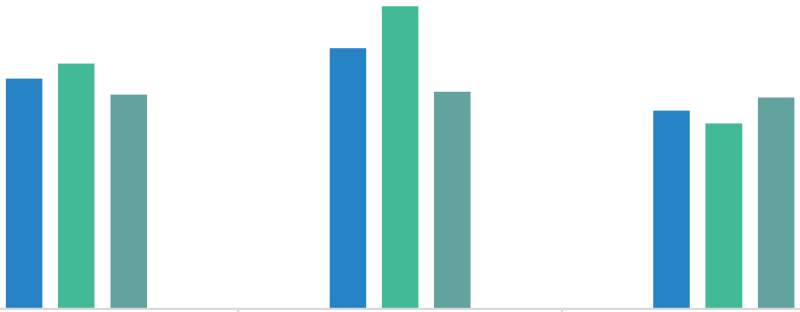
The second component of the MAD is the minimum meal frequency (MMF) which determines the minimum number of times children between 6 – 23 months of age receive solid, semi-solid, or soft foods (including milk feeds for non-breastfed children). The number of meals is an estimate to ensure that the child's energy needs are fulfilled. Similar to MDD, the status of child breastfeeding is also considered in the calculation of MMF.

Both indicators (minimum meal frequency and minimum dietary diversity) are combined to estimate the percentage of children who receive a minimum acceptable diet[16]. Exhibit 4.22 furnishes a gender-disaggregated summary of indicators of child diet (MDD, MMF and MAD) by survey districts.

Illustrated in Exhibit 4.22, close to 36% and 27% of children aged 6-23 months receive minimum dietary diversity in Dadu and Jamshoro districts, respectively. Interestingly, the percentage of boys having MDD is substantially higher in Dadu than in Jamshoro (36% versus 27%). It is also worth highlighting that the magnitude of MDD for boys is also significantly higher than the MDD for girls in the Dadu district (42% versus 30%). In terms of MMF, close to 40% to 50% of children, irrespective of gender and districts, have minimum meal frequency as recommended in the food diet (IYCF).

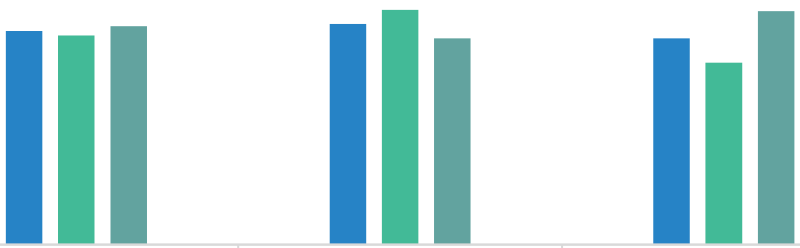
Exhibit 4.22
Percentage of children 6 – 23 Months of Age Having Minimum Dietary Diversity, Minimum Meal Frequency and Minimum Acceptable Diet

Minimum Dietary Diversity (MDD)



	Both Districts Combined	Dadu	Jamshoro
Overall	31.8	36.0	27.4
Boys	33.9	41.8	25.6
Girls	29.6	30.0	29.2

Minimum Meal Frequency (MMF)

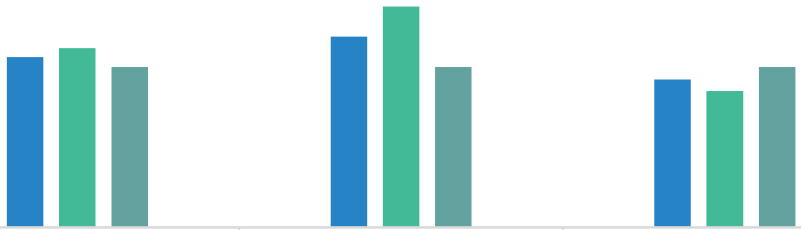


	Both Districts Combined	Dadu	Jamshoro
Overall	43.2	44.6	41.7
Boys	42.3	47.5	36.8
Girls	44.2	41.7	47.2

Minimum Acceptable Diet (MAD)

[16] The standard thresholds and calculation procedure of estimating MAD is well described at: https://www.indikit.net/document/61-brief-guidance-to-mad

Exhibit 4.22
Percentage of children 6 – 23 Months of Age Having
Minimum Dietary Diversity, Minimum Meal Frequency and Minimum Acceptable Diet



	Both Districts Combined	Dadu	Jamshoro
Overall	31.0	34.7	26.9
Boys	32.6	40.2	24.8
Girls	29.2	29.2	29.2

Source: RSPN Household Survey 2021

The estimates of minimum acceptable diet (MAD) disclose significant inter-district dissimilarities, as evident in Exhibit 4.22. Close to 35% of children are satisfying the requirement of MAD in the Dadu district, while the comparative percentage estimated for Jamshoro is 26.9%. Similarly, MAD estimates for boys and girls are quite different. Close to 40% of boys in Dadu receive a minimum acceptable diet compared to 29% of girls[17].

4.4.2 Diversity in Food Consumption

The main component of the MAD indicator of child diet is the diversity in food consumption. The Exhibit 4.23 gives an idea of how diverse is the consumption of food from the seven food groups recommended by UNICEF. According to the Exhibit, high diversity is evident in district Dadu as compared with Jamshoro district. Close to 50 and 33 percentages of children of Dadu and Jamshoro respectively affirmed having foods from four or more food groups.

Exhibit 4.23
Percentage of Food Group Consumed during previous day and night
[by Children 6-23 Months]

	Both Survey Districts Combined	Survey Districts	
		Dadu	JAMSHORO
Number of Children	465	242	223
Not Reported use of semi-solid/ solid food items and liquids during last day and night	13.8	7.4	20.6
Reported Consumption of Food Groups			
One Group Only	8.0	9.1	6.7
Two Groups	10.5	9.1	12.1
Three Groups	26.2	24.8	27.8
Four Groups	17.0	19.8	13.9
Five Groups	11.2	13.6	8.5

[17] RSPN-midline household survey was conducted in 10 districts of Sindh province, including districts Dadu and Jamshoro. The study was executed during November 2020 and June 2021. The estimates of the Minimum Acceptable Diet for both districts in the RSPN-Midline survey are substantially different compared with this study's findings. The estimated prevalence of MAD was 5.1 and 13.5, respectively, for Dadu and Jamshoro districts in the midline survey, while the magnitudes in this study (RSPN-SMART) are estimated as 34.7 and 26.9. Dietary diversity plays an essential role in determining the percentage of children having a minimum acceptable diet. The estimates of MDD are substantially high in the RSPN-SMART household survey compared with the RSPN-Midline survey. It is worth noting that the sample size of districts, survey methodology and most importantly the timing of the survey are dissimilar in both studies. The RSPN-Midline survey was conducted just after the first wave of COVID 2019.

Six Groups	7.7	10.3	4.9
All Seven Groups	5.6	5.8	5.4
Percentage of Households Using Four or More Food Groups for Children's Diet [Irrespective of child breastfeeding status]	41.5	49.5	32.7

Source: RSPN Household Survey 2021

Note: The prevalence of Exclusively Breastfed Children (0 – 6months) is 50.9% (46.2% in Dadu and 58.2% in Jamshoro)

5.0 Conclusion

This chapter summarizes the SMART survey findings with district disaggregation in Exhibit 5.1. Bringing about a change or impact on the nutrition outcomes requires a dedicated combination of nutrition-specific interventions under PINS ER-2 and nutrition-sensitive interventions under PINS ER-3 in the survey districts for achieving overall PINS targets and improvement in the population wellbeing.

Exhibit 5.1
Summary of SMART Survey Findings

INDICATORS

Selected PINS ER-2 Programmatic Indicators Findings Gathered in the SMART Survey	OVERALL	DADU	JAMSHORO
Percentage of U5 children with wasting (weight for height <-2 standard deviations)	12.2	12.7	11.7
Prevalence of U5 children with stunting (height for age <-2 standard deviations)	50.0	50.1	50.0
Percentage of infants 0 to 6 months who are exclusively breastfed	50.9	49.5	32.7
Percentage of children 6 to 23 months receiving a minimum acceptable diet in addition to milk	31.0	34.7	26.9
Percentage of pregnant & lactating Women receiving iron folic acid supplementation	23.5	18.2	28.9
Percentage of primary caregivers of U5 who know at least 2 danger signs for seeking care immediately	27.1	21.9	32.5
Proportion of PLWs* who know at least 5 nutrition/IYCF key messages	5.5	5.2	5.7

Child Health and Morbidity

Prevalence of children 6-59 months who received Vitamin-A supplementation in last six months	88.0	87.6	88.4
Prevalence of children 9-59 months who completed Measles immunization (verified by both immunization card and/or caregiver's recall)	84.1	83.8	84.3
Prevalence of children 12-59 months who received Deworming in last six months	30.5	27.3	33.5
Prevalence of Diarrhoea among children 0-59 months based on two weeks recall period	18.1	17.4	18.7
Prevalence of Fever (without cough and rash) among children 0-59 months based on two weeks recall period	13.4	10.0	16.9
Prevalence of ARI among children 0-59 months based on two weeks recall period	21.7	23.4	19.9

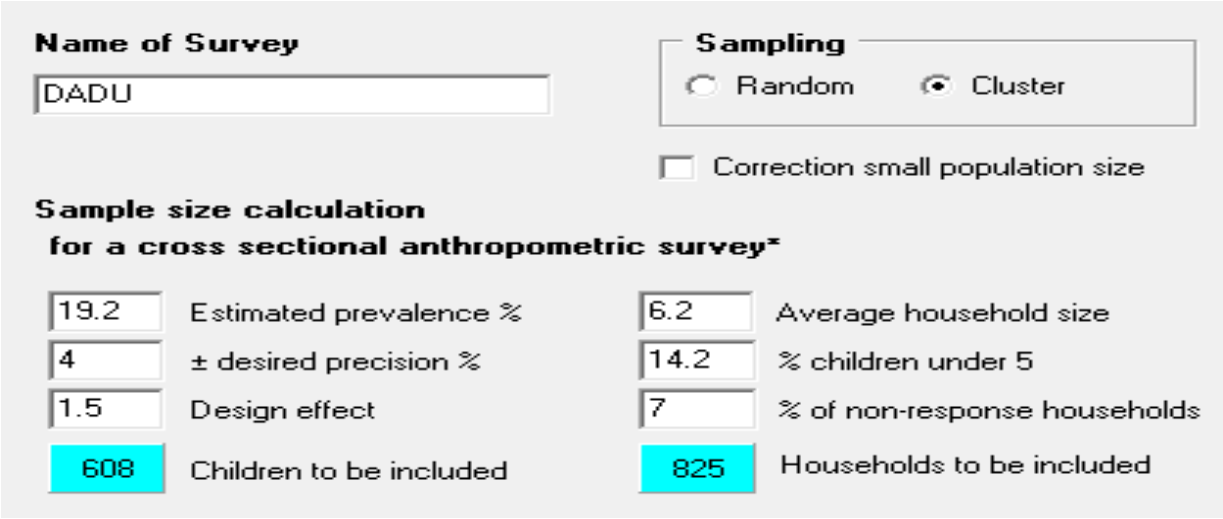
Women Health and Nutrition Indicators	OVERALL	DADU	JAMSHORO
Prevalence of malnutrition among all Women of Reproductive Age (15-49 years) based on MUAC <210mm	8.3	9.3	7.2
Prevalence of Malnutrition among PLWs based on MUAC <210mm	2.7	3.3	2.2
Prevalence of mothers who reported the use of institutional health facilities for child delivery	74.2	68.9	79.9

**Note:* *The survey reports on the overall proportion of primary caregivers/mothers who know at least 5 nutrition/IYCF key messages.*

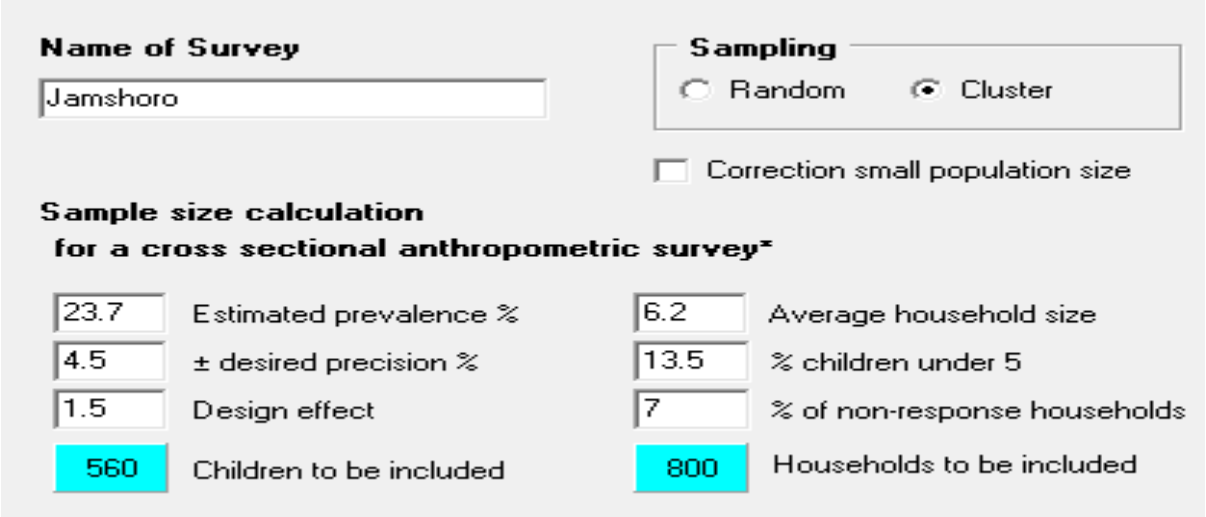
Annexures

Annexure 1: Screenshots of ENA software for Dadu and Jamshoro Districts [Values of Parameters and Sample Size]

District Dadu



District Jamshoro



Name of Selected Revenue-Villages Covered in RSPN-SMART Household Survey

District Dadu	District Jamshoro
Deh Palha	Deh Kotri
Deh Dhoro Dhamrio	Karo Kaho
Deh Jakhpari	Sonwalhar
Deh Pir Tarho	Dabhoon
Deh Shahani	Sonwalhar
Deh Kandi	Morho Jabal
Deh Khasa Chandia	Andhe-ji-kasi
Deh Sidhwah	Railo
Deh Dubi Raiti	Sonwalhar
Deh Buthi	Amri
Deh Bakhrani	laki
Dadu	Dahbari
Deh Lalhar	Bhutho
Deh Hasnani	Lakha
Deh Noro	Dahbari
Deh Phulji Raiti	Qubi
Deh Drigh Bala	Bhain
Deh Dirgh Hetheen	Unerpur
Deh vegaji Raiti	Arazi
Deh Shole Jageer	Chorlo
Deh Shori Jageer	Waincha
Deh Angai	Jhandyani
Deh Kharichh	Bubak
Deh Shah Hasan	Bag Yousif
Deh Jampur Panhwarki	Karampur
Deh Johi	Jhangara
Deh Dangar	Naig
Deh Sukhpur	Bhan
Deh Dur Muhammad	Karyani
Deh khanpur	Shah Garrah
Deh Khathri	Dal
Deh KurkatR	Wahur
Deh Gadehi	Desvi
Deh Qambar Jageer	Mole
Deh Miro Kalhoro	Babur Bund
Deh Fateh Pur	Kalo Khohar
Deh Rap Nari	Sari
Deh Beto	Gagiaro
Deh Faridabad	Pat Karchat
Deh chhalo	Beli Thap
Deh Gongo	Toko Baran
Deh Mureed Lakhair	
Deh Nau Goth	
Deh Roni	
Deh Nisoi	
Deh Hambar	
Deh Peroz Shah	
Deh Kolachi	
Deh Mangwani	
Deh Keriro	
Deh Thariri Muhabat	

Annexure 2: Household Survey Questionnaire

Introduction and Consent:
Assalam-o-alaikum.

My name is _____

At the moment, we are working on a project that aims to improve the dietary deficiencies and health of mothers and children. The purpose of visiting you is to gain insights regarding health of mothers and children, so that their dietary deficiencies and health standards may be improved.

This questionnaire will take approximately 45 minutes of your time. Some questions in this survey are of a personal nature, but we will ensure that all information you provide us is kept strictly confidential.

Participation in the survey is completely voluntary and you have the right to not answer any or all of the questions. However, we do hope that you will participate in this survey, since your opinion is of great importance to us. The information you provide will only be used to develop a research report.

You can ask any questions you may have regarding the survey. If you allow me, may I begin the survey now?

A: Geographical Location			
Longitude	[Automatic]	**Latitude**	[Automatic]
Cluster #		**Household #**	
Name of District (and Code)		**Name of *Tehsil* (and Code)**	
Name of Union Council (and Code)			
Name of Village/Settlement		**1. Urban 2. Rural**	
Complete Home Address			
Name of the Head of Household		1. **Male** **2. Female**	
CNIC No. of Head of Household	-	-	
	1—CNIC is Available	2—CNIC is not made	3— CNIC is lost
	4— The ID card is given to someone else	5— Refuse to provide NIC	
Name of the Respondent			
CNIC No. of the Respondent	-	-	
	1—CNIC is Available	2—CNIC is not made	3— CNIC is lost
	4— The ID card is given to someone else	5— Refuse to provide NIC	
Phone Number: (Note: Provide phone number of household head or any member of the household through which the respondent may be contacted.)			
Education level of Head of the Household	1—Grade 1; 2—Grade 2; 3—Grade 3; 4—Grade 4; 5—Grade 5; 6—Grade 6; 7—Grade 7; 8—Grade 8; 9—Grade 9; 10—Grade 10; 11—Grade 11; 12—Grade 12; 13—Undergraduate; 14—Masters; 15—Post Masters 16—Diploma; 17—Kacchi/Nursery 18-Illetrate		
Occupation of Head of Household	1—Government/semi government; 2—Private salaried; 3—Own Business; 4—Daily wage worker (Laboure); 5—Landlord self-cultivator; 6—Landlord self-cultivator & share cropper (Hari); 7—Contractor self-cultivator; 8—Landlord & Hari; 9—Landlord & Contractor; 10—Contractor & Hari; 11—Looking for work; 12—Do not want to work; 13—Retired;77—Refuse to answer		
Total number of children under 5 years of age (0-59 months)	Total Number_____	Male_____	Female_____
Total number of family members in the Household (Including children)	Total Number_____	Male_____	Female_____
Total number of WRA and PLW between 15 to 49 years	Total Number_____		

B: Survey Information			
Date of Interview	[Automatic]		
Interview Start Time	[Automatic]	**Interview End Time**	[Automatic]
Name of Enumerator (and Code)	[Automatic]	**Name of Supervisor (and Code)**	
Data Entry Clerk's Name and Sign:			

Section 1 - Women (15-49 years) and PLW Questionnaire													
Write Woman (15-49 years) ID Number – *start with the respondent*	**PL1**	**PL2**				**PL3**	**PL4**	**PL5**	**PL6**	**PL7**	**PL8**	**PL9**	**PL10**	**PL11**
	Name	**Age (in Years)** 98.Don't know				**Educational Status (code)**	**MUAC Measurement** (000 mm) (Note: Take the measurement of woman's left arm)	**Marital Status** (code)	**How many children have you given birth to so far?** (number)	**No. of Children (Less than 5 years)** (number) 66=Not Applicable	**Are you pregnant now?** **(Code)**	**Are you currently breastfeeding your Child?** (Code) (Note: Do not ask this question if woman do not have a child Less than 5 years)	**Have you received Iron Folic Acid (IFA) tablets?** (code)	**Who assisted with the delivery during your last pregnancy ?** (code)
		Total Age in Years	**Date of Birth**											
			Year	**Month**	**Day**									
1														
2														
3														
4														
5														

Question #	Codes
PL3	1—Grade 1; 2—Grade 2; 3—Grade 3; 4—Grade 4; 5—Grade 5; 6—Grade 6; 7—Grade 7; 8—Grade 8; 9—Grade 9; 10—Grade 10; 11—Grade 11; 12—Grade 12; 13—Undergraduate; 14—Masters; 15—Post Masters 16—Diploma; 17—Kacchi/Nursery 18-Illetrate
PL5	1—Married; 2—Single; **(Skip to PL5)** 3—Divorcee; 4—Widow/Widower; 5—Nikkah, but no rukhsati; 6—Separated; 7-Underage
PL8	1—Yes; 2—No; (Proceed to PL9); 77—Refuse to answer (Proceed to next woman of HH); 66—Not Applicable;
PL9	1—Yes; 2—No; (Proceed to PL10); 77—Refuse to answer (Proceed to next woman of HH); 66—Not Applicable
PL10	1—Yes; 2—No; 77—Refuse to answer (Proceed to next woman of HH); 66—Not Applicable
PL11	1—Doctor; 2—Nurse; 3—Community midwife (CMW); 4—Lady Health Worker (LHW); 5—Lady Health Visitor (LHV); 6—Dai/Traditional birth attendant; 7—Community health worker (CHW); 8—Family members/relatives; 9—No one; 77—Refuse to answer; 66—Not Applicable;

Section 2: Child Questionnaire 0-59 Months Anthropometric Measurement to be taken for Children Aged 6 – 59 Months										
Child ID (Start from the youngest)	**AM`1** **Name**	**AM2** **Sex** 1. Male 2. Female	**AM3** **Age** (Either use calendar or write age in total years. For members of age less than 5 years old, mention age in total months.) **98.** Don't know				**AM4** **Weight** (00.00 kg)	**AM5** **Height or length** (00.0 cm) (Note: Take the height of a child over 2 years old. Take the Length of a child under 2 years old) [Ensure the child is not wearing shoes while taking the measurement.]	**AM6** **Bilateral Oedema** 1. Yes 2. No	**AM7** **MUAC** (000 mm) (Note: Take the measurement of child's left arm) [Ensure that the child's arm is not covered with clothes while taking the measurement.]
			Total Age in Months	**Year**	**Month**	**Day**				
1										
2										
3										
4										
5										
6										
7										
8										

Section 2.1 Child Health and Morbidity						
Q#	**Enter the child's (6-59 months) ID number from Section-2**					
CH1	**Did the child [NAME] receive Vitamin A supplementation/capsule in last six months?** [Note: Show sample of Vitamin-A capsule used in last campaign] 1-Received as confirmed by vaccination card 2-Received as confirmed by caregiver recall 3-Has not received 66-Not Applicable 98-Don't know 77- Refuse to answer					
Q#	**Enter the child (12-59 months) ID Number from Section-2**					
CH2	**Did the child [NAME] receive Deworming/ Anthelmintic drug in last six months?** [Note: Show sample of Deworming drug used in last campaign] 1-Received as confirmed by vaccination card 2-Received as confirmed by caregiver recall 3-Has not received 66-Not Applicable 98-Don't know 77- Refuse to answer					
Q#	**Enter the child (9-59 months) ID Number from Section-2**					
CH3	**Has the child [NAME] received measles vaccination?** (On the upper right arm) [Note: Ask for vaccination card to verify if available] 1=Received as confirmed by vaccination card 2=Received as confirmed by caregiver recall 3=Has not received (Proceed to CH5) 66=Not Applicable (Proceed to CH5) 98=Don't know (Proceed to CH5) 77- Refuse to answer					
CH4	**Did your child (name) get vaccinated against measles in the campaign before the recent (15-11-2021) measles injection/vaccination campaign?** 1-Yes 2-No 66-Not Applicable					
Q#	**Enter the child (0-59 months) ID Number from Section-2**					
CH5	**Did the child [NAME] receive polio drops/vaccine during the last polio campaign?** 1-Received as confirmed by vaccination card 2-Received as confirmed by caregiver recall 3-Has not received 66-Not Applicable (Proceed to CH7) 98-Don't know (Proceed to CH7) 77-Refuse to answer (Proceed to CH7)					
CH6	**When was the first polio vaccine given to the child?** 1-Soon after birth 2-Within first two weeks of the child birth 3-After first two weeks of the child birth 4-Has not received 98-Don't know 77-Refuse to answer					

Q#	**Enter the child (0-59 months) ID Number from Section-2**					
CH7	**In the past two weeks, has your child [NAME] suffered from diarrhea?** 1-Yes (Proceed to CH8) 2-No (Proceed to CH11) 98-Don't know (Proceed to CH11) 77-Refuse to answer (Proceed to CH11) Note: Diarrhea is defined as the passage of three or more loose or liquid stools in a day					

Q#	Enter the child (0-59 months) ID Number from Section-2					
CH8	**Was any treatment administered to your child during diarrhea?** 1-Yes (Proceed to CH9) 2-No (Proceed to CH11) 98-Don't know 77-Refuse to answer					
CH9	**What was administered to your child to treat diarrhea?** 1-Only ORS; 2-Only zinc syrup; 3-ORS and zinc syrup; 4-Home-made nimcol; 5-Homeopathic medicines; 6-Herbal medicines (from Hakeem); 7-Home-made remedies; 8-Some other medicine; 98-Don't know 77-Refuse to answer					
CH10	**From where did you receive the treatment for diarrhea?** 1-From Outpatient therapeutic clinic/OTPs 2-From Some other health facility 3-From Doctor 4-From Lady Health Worker (LHW) 5-From Lady Health Visitor (LHV) 6-From Community Health Worker (CHW) 7-From Community midwife (CMW) 8-From Own/Family members 9-From Nurse 10-From Dai 11-From Government Health Staff/Worker 12-From Medical store 98-Don't know 77-Refuse to answer					
CH11	**In the past two weeks, has your child [NAME] had cough with rapid or difficulty breathing AND a fever?** 1-Yes (Proceed to CH12) 2-No (Proceed to CH15) 98-Don't know (Proceed to CH15) 77-Refuse to answer (Proceed to CH15)					
CH12	**Was any treatment administered to your child for coughing and fever/ARI?** 1-Yes (Proceed to CH13) 2-No (Proceed to CH15) 98-Don't know (Proceed to CH15) 77-Refuse to answer (Proceed to CH15)					
CH13	**What was administered to your child to treat coughing and fever/ARI?** 1-Antibiotic syrup 2-Antibiotic injection 3-Home-made remedy 4-Herbal medicine 5-Others (please specify_____) 98-Don't know 77-Refuse to answer					
CH14	**From where did you receive the treatment for coughing and fever/ARI?** 1-From Outpatient therapeutic clinic/OTPs 2-From some other health facility 3-From Doctor 4-From Lady Health Worker (LHW) 5-From Lady Health Visitor (LHV) 6-From Community Health Worker (CHW) 7-From Community midwife (CMW) 8-From own/Family members; 9-From Nurse;					

Q#	Enter the child (0-59 months) ID Number from Section-2					
	10-From Dai 11-From Government Health Staff/Worker 12-From Medical store 98-Don't know 77-Refuse to answer					
CH15	**In the past two weeks, has your child [NAME] had a fever BUT NO cough and NO rash?** 1-Yes (Proceed to CH16) 2-No (Proceed to Section3) 98-Don't know (Proceed to Section3) 77-Refuse to answer (Proceed to Section3)					
CH16	**Was any treatment administered to your child for fever?** 1-Yes (Proceed to CH17) 2-No (Proceed to Section 3) 98-Don't know 77-Refuse to answer					
CH17	**What was administered to your child to treat fever?** 1-Antibiotic syrup 2-antibiotic injection 3-Home-made remedy 4-Herbal medicine 5-Others (please specify_____) 98-Don't know 77-Refuse to answer					
CH18	**From where did you receive the treatment for fever?** 1-Outpatient therapeutic clinic/OTPs 2-From Some other health facility 3-From Doctor 4-From Lady Health Worker (LHW) 5-From Lady Health Visitor (LHV) 6-From Community Health Worker (CHW) 7-From Community midwife (CMW) 8-From own/Family members; 9-From Nurse 10-From Dai 11-From Government Health Staff/Worker 12-From Medical store 98-Don't know 77-Refuse to answer					

Section 3: Provision of Micronutrient Supplements (MNP and RUTF) to MAM and SAM Children Aged 6 – 59 Months		
MN1	**Did you give MNP sachet to your children in the last 3 months**	1. Yes (Proceed to MN2) 2. No (Proceed to MN7)

Q#	**Enter the child's ID number from Section-1** who received MNP sachets in the past 03 months					
MN2	**Who advised you to use MNP?** 1-Doctor 2-Lady Health Worker (LHW) 3-Lady Health Visitor (LHV) 4-Community Health Worker (CHW) 5-Community midwife (CMW) ; 6-by own/Family members; 7-Nurse 8-Dai 9-Government Health Staff/Worker					
MN3	**Are you currently using MNP for your children?** 1-Yes 2-No					
MN4	**How many MNP sachets did you receive in a month during the treatment period?** (quantity)					

MN5	**Where did you get MNP sachet from?** 1-From OTP 2-From Health facility 3-From Doctor 4-From Lady Health Worker (LHW) 5-From Lady Health Visitor (LHV) 6-From Community Health Worker (CHW) 7-From Community midwife (CMW) 8-From own/Family members; 9-From Nurse 10-From Government Health Staff/Worker 11-From Dai 12-From Medical store					
MN6	**How many months did you give MNP sachet to your children for?** (months)					

Note: Details of children of the respondent/mother of youngest child in the house who are severely malnourished and receiving RUTF.		
MN7	**Did you use RUTF for your children in the last 3 months?**	1. Yes (Proceed to MN8) 2. No (Proceed to Section 4)

Q#	**Enter the child's ID number from Section-1 who** received RUTF sachets in the past 03 months					
MN8	**Who advised you to use RUTF?** 1-Doctor 2-Lady Health Worker (LHW) 3-Lady Health Visitor (LHV) 4-Community Health Worker (CHW) 5-Community midwife (CMW) 6-by own/Family members; 7-Nurse; 8-Dai 9-Government Health Staff/Worker					
MN9	**Where did you get RUTF form? (code)** 1-From OTP 2-From Health facility; 3-From Doctor 4-From Lady Health Worker (LHW) 5-From Lady Health Visitor (LHV) 6-From Community Health Worker (CHW) 7-From Community midwife (CMW) ; 8-From own/Family members; 9-From Nurse; 10-From Dai 11-From Government Health Staff/Worker 12-From Medical store					
MN10	**How much RUTF did you receive?** (quantity)					
MN11	**For how long did you use RUTF for your children?** (months)					
MN12	**Has the child recovered from the severe acute malnutrition condition?** 1-Yes, the child is healthy now, and RUTF is stopped. 2-No, the child is still receiving RUFT. 3-The child was referred to nutrition stabilization center due to complications (e.g. difficulty in breathing, diarrhea, oedema) 4-The child was referred to another hospital for illnesses.					

Q#		**Section 4: Level of Awareness**	
LA-1	**What do you think mothers should include in their diet during pregnancy or while breastfeeding their babies?**	1	Porridge, rice, bread, and various food items prepared from these.
		2	Lentils (split chickpeas, yellow lentils, red lentils, and etc.)
		3	Cow, goat, chicken meat
		4	Liver, kidney, heart, or other organ meat
		5	Fish or seafood

	(Note: Tick all that apply. Enumerator to probe: "Anything else? Anything else?")	6	Vitamin A containing vegetables (carrots, white potatoes, pumpkins, etc.)
		7	Vitamin A containing fruits (papaya, peach, apricot, melon, etc.)
		8	Green leafy vegetables
		9	Other fruits and vegetables
		10	Eggs
		11	Company-produced baby foods (e.g., Cerelac)
		12	Lassi
		13	Dairy products (e.g., yoghurt, cheese, and food made of these)
		14	Beans, peas, nuts
		15	Oil, fats, butter, or food made of these
		16	Sugary foods (chocolate, biscuits, candy, and etc.)
LA-2	**What are the dangerous signs / symptoms in children under the age of five that should be seen by a doctor immediately?** (Note: Tick all that apply. Enumerator to probe: "Anything else? Anything else?")	1	Less weight according to height
		2	Less height according to weight
		3	Less weight according to age
		4	The child feels tired
		5	Frequent illness or epidemic
		6	It takes longer for the wound to heal
		7	Not getting hungry
		8	Vomiting
		9	Watery stools
		10	Irritability
		11	Indigestion problems
		12	Physically growth problems
		13	Dry and rough skin
		14	Feeling bloated stomach
			Others (please specify_____)
		98	Don't know

Q#	Section 5: Infant and Young Child Feeding Practices	Write PID No. of all children between (6 months-23 months)				
CD-1	**Has the child ever been breastfed or received breast milk in any way?** 1-Yes 2-No					
CD-2	**Have you breastfed the child with your first milk/colostrum (light yellow in color)?** 1-Yes 2-No					
CD-3	**Was the child given breast milk in the last 24 hours?** 1-Yes 2- No (Proceed to CD4					
CD-4	**If yes, during the past 24 hours how many times was the child breastfed?** (times)					

Q#	During the past 24 hours, what was the child fed other than the breast milk? And how many times?		Write PID No. of all children between (6 months-23 months)							
	#	Food items	1. Yes 2. No	No of times	1. Yes 2. No	No of times	1. Yes 2. No	No of times	1. Yes 2. No	No of times
CD-5	1	Porridge, rice, bread, and various food items prepared from these.								
	2	Lentils (split chickpeas, yellow lentils, red lentils, and etc.)								
	3	Cow, goat, chicken meat								

	4	Liver, kidney, heart, or other organ meat								
	5	Fish or seafood								
	6	Vitamin A containing vegetables (carrots, white potatoes, pumpkins, and etc.)								
	7	Vitamin A containing fruits (papaya, peach, apricot, melon, etc.)								
	8	Green leafy vegetables								
	9	Other fruits and vegetables								
	10	Eggs								
	11	Company-produced baby foods (e.g., Cerelac)								
	12	Lassi								
	13	Dairy products (e.g., yoghurt, cheese, and food made of these)								
	14	Beans, peas, nuts								
	15	Oil, fats, butter, or food made of these								
	16	Sugary foods (chocolate, biscuits, candy, and etc.)								

Q#	**During the past 24 hours, what else did you give the child to drink other than the breast milk? And how many times?**		**Write PID No. of all children between (6 months-23 months)**							
CD-6	**#**	**Liquids**	**1. Yes 2. No**	**No of times**	**1. Yes 2. No**	**No of times**	**1. Yes 2. No**	**No of times**	**1. Yes 2. No**	**No of times**
	1	Plain water								
	2	Infant formula milk								
	3	Milk such as tinned, powdered, or fresh milk								
	4	Juice or juice drinks								
	5	Clear broth								
	6	Lassi (liquidy yogurt)								
	7	Thin porridge								