

SMART

NUTRITION SURVEY

DISTRICT Qambar Shahdad Kot

Sindh Province - September, 2023



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1. List of Acronyms

AAH	Action Against Hunger Canada
ACF	Action Contre la Faim
ANC	Antenatal Care
CMAM	Community Management of Acute Malnutrition
CDR	Crude Death Rate
CI	Confidence Interval
DEO	Data Entry Operator
EBF	Exclusive Breastfeeding
EPI	Expanded Program on Immunization
GAM	Global Acute Malnutrition
IYCF	Infant and Young Child Feeding
IPC	Infection Prevention and Control
MAD	Minimally Acceptable Diet
MAM	Moderate Acute Malnutrition
MDD	Minimum Dietary Diversity
MIYCF	Maternal & Infant Young Child Feeding
MUAC	Mid-Upper Arm Circumference
NNS	National Nutrition Survey
NGO	Non-Governmental Organization
PLW	Pregnant and Lactating Women
PPS	Probability Proportion to Size
SAM	Severe Acute Malnutrition
SMART	Standardized Monitoring and Assessment of Relief and Transitions
U5DR	Under 5 Death Rate
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation, and Hygiene
WHZ	Weight-for-Height Z-score

2. Executive Summary

The SMART Nutrition Survey of Qambar Shahdadkot was conducted in collaboration with UNICEF with the support of Himmat consulting under the technical supervision of Actions Against Hunger Canada. The survey aimed to address the lack of nutritional data available for children under five years and Pregnant and Lactating Women (PLWs) in District Qambar Shahdadkot. The findings of the survey will be used to scale up interventions, design new programs, identify gaps, and advocate for necessary changes in health and nutrition policy.

The objectives of the SMART survey included measuring the prevalence of wasting and stunting in children aged 6-59 months, assessing the Maternal & Infant Young Child Feeding (MIYCF) practices for children aged 0-23 months, determining the coverage of nutrition services for children under five and PLWs, evaluating food security and livelihood situation, assessing household food consumption, determining the urgency of the situation, and comparing data with previous surveys. Additionally, the survey aimed to determine mortality rates, coverage of child health services, prevalence of diarrhea among children, coverage of antenatal care and iron-folic acid supplementation, access to safe water supply and sanitation facilities, and availability and use of hygiene facilities.

The survey covered both rural and urban populations in the Qambar Shahdadkot district, with a two-stage cluster sampling technique applied for sampling and data collection. The sample size was calculated based on parameters related to malnutrition and mortality rates, taking into account the prevalence of Global Acute Malnutrition (GAM) and estimated death rates. The sampling procedure involved the selection of clusters and households using probability proportion to size and systematic random sampling techniques. The division of clusters into smaller segments was done to facilitate the line listing process and ensure timely completion of the survey. In total, 62 clusters were selected for the survey.

Overall, the SMART Nutrition Survey of Qambar Shahdadkot aimed to provide comprehensive data on the nutrition and health status of children under five years and PLWs, as well as related factors such as food security, access to healthcare services, and sanitation facilities. The findings will inform targeted interventions and policy changes to improve the nutritional well-being of the population in district Qambar Shahdadkot.

Key findings of Nutritional status of Children and mothers

The SMART Nutrition Survey conducted in District Qambar Shahdadkot in September 2023 provides valuable insights into the anthropometry and nutritional status of children, as well as the demographic profile of households in the district. A total of 555 households were successfully surveyed, representing approximately 100% of the households visited. In terms of anthropometry, a total of 650 children (307 boys, 334 girls) were assessed for their nutritional status, z score for 09 children shows out of range therefore, result is based on 641 children. The prevalence of **Wasting amongst children under 5 years of age-Global Acute Malnutrition (GAM)** based on the Weight for Height (W/H) Z-score **was found to be 22.0%**; 23.1% in males and 21.0% in females, indicating a high level of malnutrition based on WHO standards¹.

¹ WHO Classification of wasting: <2.5%: very low, 2.5 to <5%: low, 5 to <10%: medium, 10 to <15%: high, ≥15%: very high

A total of **14.6% of Pregnant and Lactating Women (PLW)** were found to be acutely malnourished in the district which is a determinant of birth outcomes and infant/child nutritional status. Amongst the causal factors, the most alarming was the **Minimum Dietary Diversity-Women (MDD-W) were 76.7%** of the PLWs scored medium to low scores on the said indicator. The responses on the **Food Insecurity Experience Scale (FIES)** also depicts the causal routes where **63.1%** of the respondents experienced moderate and severe hunger.

The key indicator of **Minimum Dietary Diversity for 6–23 months (MDD)** shows that only **9.4%** of the target have access to the standard recommended food groups.

Key findings against the selective indicators for demographic and nutrition status of children of 6-59 months are summarized in the table below:

Table 1: Summary Findings of District Qambar Shahdadkot

Indicator	Finding
Demographic	
Total Population (Mid-Interval)	3,791
Total No. of HHs Assessed	555
% of under five children	19.2%
Average Number of Persons per Household	6.8
Nutrition Status of Children 6 – 59 Months	
Global Acute Malnutrition (WHZ) (<-2 z-score and/or oedema)	22.0 % (18.7 – 25.8 95% CI)
Male	23.1 % (17.6 – 29.7 95% CI)
Female	21.0 % (17.2 – 25.3 95% CI)
Severe Acute Malnutrition (SAM) WHZ (<-3 z-score and/or oedema)	6.6 % (4.6 – 9.3 95% CI)
Male	8.5 % (5.4 – 13.1 95% CI)
Female	4.8 % (2.8 – 8.0 95% CI)
Moderate Acute Malnutrition (MAM) WHZ (<-2 z-score and >=-3 z-score, no oedema)	15.4 % (12.8 – 18.5 95% CI)
Male	14.7 % (10.7 – 19.8 95% CI)
Female	16.2 % (12.8 – 20.2 95% CI)
Oedema	0.0%
GAM [MUAC] (< 125 mm and/or oedema)	11.5 % (8.8 – 15.0 95% C.I.)
SAM [MUAC] (< 115 mm and/or oedema)	5.1 % (3.4– 7.6 95% C.I.)
MAM [MUAC] (< 125 mm and >= 115 mm, no oedema)	6.5 % (4.7 – 8.8 95% C.I.)
Prevalence of combined GAM (WHZ <-2 and/or MUAC < 125 mm and/or oedema)	25.5 % (21.8 – 29.6 95% C.I.)

Indicator	Finding
Prevalence of combined SAM (WHZ < -3 and/or MUAC < 115 mm and/or oedema)	8.8 % (6.5 – 11.7 95% C.I.)
Stunting [HAZ] Prevalence of stunting (<-2 z-score)	44.7 % (40.0 – 49.6 95% C.I.)
<i>Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)</i>	<i>27.8 %</i> (24.0 – 32.0 95% C.I.)
<i>Prevalence of severe stunting (<-3 z-score)</i>	<i>16.9 %</i> (13.7 - 20.7 95% C.I.)
Underweight [WAZ] Prevalence of underweight (<-2 z-score)	35.9 % (30.4 – 41.9 95% C.I.)

Global Acute malnutrition (GAM): Assessment of the Qambar Shahdaddkot population through SMART Nutrition Survey in September 2023 revealed high rates of malnutrition among children aged 6 to 59 months, with 22.0%² affected by Global Acute Malnutrition (GAM) and 6.6% by Severe Acute Malnutrition (SAM). Stunting affected 44.7% of children, and 35.9% were underweight. GAM by MUAC 11.5% (CI 8.8 – 15.0) and SAM by MUAC was 5.1% (CI 3.4- 7.6).

Underweight: The prevalence of **underweight**³ among children aged 6-59 months was 35.9%, with severe underweight affecting 10.2% of the children. Both boys and girls were nearly equally at risk of malnutrition (p-value 0.525).

Stunting, an indicator of chronic malnutrition, was found in 44.7%⁴ of the surveyed children. Boys had a slightly higher prevalence of stunting compared to girls, although the difference was not statistically significant (p-value. 0.777).

The severity of malnutrition among children aged 6-59 months was classified as "Very High" for wasting, critical for underweight, and very high for stunting.

Nutrition Trends Analysis

The overall trend across these surveys shows positive improvements in nutritional indicators for children in QSK. There are some declines in wasting, underweight and stunting rates, however the underlying indicators of the district are still imposing a threat to the nutritional status of the district.

Table 2 Malnutrition Trends in past 5 years

Qambar Shahdaddkot

² WHO/UNICEF classification of wasting: <2.5%: very low, 2.5 to <5%: low, 5 to <10%: medium, 10 to <15%: high, ≥15%: very high

³WHO Classification of Underweight: Low - <10%, Medium – 10-19.9%, High -20-29.9%, Alarming/Critical -> 30%

⁴ WHO Classification of stunting: <2.5%: very low, 2.5 to <10%: low, 10 to <20%: medium, 20 to <30%: high, ≥30%: very high

Indicators	NNS 2018	MICS-2018-19	SMART 2023
Global Acute Malnutrition	27.5	22.2%	22.0%
Underweight	47.2%	39.0%	35.9%
Stunting	49.3%	45.0%	44.7%

Retrospective Mortality

The provided information includes data on retrospective mortality rates and causes of death within a given population. The Crude Death Rate (CDR), which represents the total number of deaths per 10,000 people, is reported at 0.16% with a confidence interval ranging from (0.08 -0.34).

The Under 5 death rate (U5DR), focusing specifically on deaths of children under the age of five, data provides further details on mortality rates, and was 0.13 in Qambar Shahdadkot. The CDR was broken down by sex and age groups. For males, the CDR was reported at 0.23% with a confidence interval of 0.10-0.56; Females have a slightly lower CDR of 0.09%, with a confidence interval of 0.02-0.37. Design effect implies that male ratio is higher in sex specific mortalities in district Qambar Shahdadkot compared to females.

Majority of the deaths (71.4%) were caused by illness; while injury/trauma and unknown cases accounted for the remaining 14.3% deaths respectively. Data shows that 100% deaths occurred in current location.

Overall, the mortality rates, including the Crude Death Rate and Under 5 death rates⁵, are below the established public health emergency thresholds, suggesting that the population's mortality and child mortality rates are not of significant concern from a public health standpoint.

Recommendations

To address the high rates of malnutrition in Qambar Shahdadkot, a comprehensive approach is recommended. This includes implementing Therapeutic Feeding Programs for Severe Acute Malnutrition (SAM) and Global Acute Malnutrition (GAM), establishing Supplementary Feeding Programs, and conducting community-based nutrition education. Strengthening healthcare services, particularly early detection and treatment, is crucial. Water, Sanitation, and Hygiene (WASH) initiatives should be prioritized alongside gender-responsive programs, focusing on empowering women. A robust monitoring and evaluation system is essential, along with collaboration and advocacy for policy changes. Research and innovation should guide interventions, and community engagement must be central to planning and implementation, ensuring cultural relevance and sustainability. This multi-sectoral approach aims to not only address immediate malnutrition concerns but also tackle underlying factors contributing to the issue for lasting impact. Regular assessments and adaptations based on feedback and changing circumstances are integral to program success.

In addressing the elevated mortality risks, it is imperative to strengthen the overall healthcare system in QSK and increase the number of health care providers which is currently lower as compared to the population. This can be achieved by investing in healthcare infrastructure, training healthcare workers, and improving access to essential medical services. Given the higher crude death rate (CDR) among males and the under 5 death rate (U5DR), gender-specific healthcare initiatives should be considered

⁵ South Asia CDR baseline 0.22, CDR Emergency threshold 00.40), U5DR baseline 0.46, U5DR Emergency threshold (0.90)

to bridge this gap. Efforts should focus on reducing maternal and child mortality through improved maternal and child health services, including antenatal and postnatal care and improve access to quality MNCH services closer to the communities. Collaboration between local health authorities, non-governmental organizations, and international agencies is vital to ensure a coordinated and effective response to both the malnutrition crisis and the high mortality risks in QSK.

3. Introduction

3.1. Qambar Shahdadkot – district at the glance

District Qambar Shahdadkot is situated in the north-west of Sindh, Pakistan. The district lies between 67° 10' to 68° 12' east longitude and 27° 26' 31" to 27° 58' 55" north latitude. It is bounded by district Larkana in the east, Baluchistan province in the north-west, district Shikarpur and Jacobabad in the north-east and district Dadu in the south. According to historical records, Shahdadkot was founded around 1713. It was a major town on the route between Larkana and Gandawah¹. Kalhoru dynasty ruled this area from 1700 to 1783 and the Talpur dynasty ruled from 1783-1843. However, the Talpurs were overthrown by the British East India Company, led by General Charles James Napier⁶.



Figure 1: Maps of District Qambar Shahdadkot⁷

⁶ <https://reliefweb.int/report/pakistan/pakistan-emergency-situational-analysis-district-kamber-shahdadkot-july-2014>

⁷<https://www.politicpk.com/Qambar-Shahdadkot-district-uc-ward-list-mna-mpa-seats>

3.2. Demography and Population

At the time of the 2017 census, Qambar Shahdadkot district had a population of 1,337,857, of which 680,567 were males and 657,290 females. The rural population was 941,232 (70.34%) and urban 396,803 (29.66%). The literacy rate is 38.08%: 48.59% for males and 27.28% for females⁸.

3.3. Economy & Livelihoods

Qambar Shahdadkot is an agro-based economy where most of the income is generated from agriculture and daily wage labour. The population in these districts/areas has been experiencing drought (mild to severe) for the past few years and drought conditions were aggravated August-December 2018. The current episode of drought has adversely affected the livelihoods, mainly agriculture based, of the rural population in these districts/areas. The drought adversely affected food/cereals production and livestock – the core assets of the communities in these districts/areas – and subsequently affected livelihoods and the food security situation⁹.

3.4. Survey Justification

The national nutrition survey NNS 2018 indicated (27.5%) Global Acute Malnutrition (GAM) prevalence of under 5-year children of district Qambar Shahdadkot. There was a high risk of further deterioration of health and nutrition status, access and availability of nutrition services due to the potential impact of food insecurity and malnutrition. However, there was a lack of nutritional data available for children under five years and Pregnant and lactating women (PLWs). The Department of Health, District Qambar Shahdadkot, decided to conduct a SMART Nutrition Survey in collaboration with UNICEF and with the support of Himmat Consulting under the technical supervision of Action Against Hunger (AAH) Canada.

The survey findings will be used to scale up the intervention, initiation of new program design, identification of gaps and advocate for any necessary changes in health and nutrition policy. During Survey Implementation necessary technical guidelines recommended by UNICEF, Nutrition Directorate and Action Against Hunger Technical Advisor were followed.

3.5. Survey Objectives

The purpose of the current assignment was to design and conduct a survey in the selected districts of Sindh, and contribute to the ongoing interventions on strengthening the nutrition information system, early warning as well as disaster risk reduction. A district-level SMART survey was an extension of

⁸ https://en.wikipedia.org/wiki/Qambar_Shahdadkot_District

⁹ <https://reliefweb.int/report/pakistan/pakistan-emergency-situational-analysis-district-kamber-shahdadkot-july-2014>

the recently conducted NNS 2018, which provides first-ever district-level nutrition and food security data.

The objectives of the SMART surveys were following:

- 1) The main objective of the survey is to assess the nutrition and food security indicators
- 2) To measure the prevalence of wasting and stunting in children aged 6-59 months and wasting among pregnant and lactating women (PLW).
- 3) To assess the MIYCF practices for children aged 0-23 months
- 4) To determine the coverage of preventive and curative nutrition services for children under five years of age, and pregnant and lactating women (PLW)
- 5) To determine the food security and livelihood situation in in proposed districts
- 6) To assess household food consumption (quantity and quality).
- 7) To assess the urgency of the situation and how it may evolve in the future by comparing data with previous surveys.

Health

- 1) To determine retrospective crude mortality rate (CMR) and under five mortality rates (U5MR).
- 2) To determine the coverage of child health services (Immunization/measles vaccination, vitamin A supplementation, common childhood illness and deworming.
- 3) Prevalence of diarrhea among children aged 6-59 months, and determine use of oral rehydration salt (ORS) and/or zinc during diarrhea episodes in children aged 6-59 months
- 4) To determine enrolment into antenatal care and coverage of iron-folic acid supplementation in pregnant women

WASH

- 1) To determine the population's access to, and use of safe water supply including distance to facility and quality of water
- 2) To determine the population's access to sanitation facilities including issues of safety and privacy of the facilities
- 3) To determine the population's access to hygiene facilities and availability and use of soap.

3.6. Survey Area

The study area of the Qambar Shahdadkot district included both rural and urban population; 70.34% rural and 29.66% urban¹⁰. Village wise population data was collected from the Expanded Program on immunization EPI for cluster identification using ENA software (version 11th Jan 2020).

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[https://en.wikipedia.org/wiki/Qambar_Shahdadkot_District#:~:text=The%20rural%20population%20was%20941%2C232,and%20urban%20396%2C803%20\(29.66%25\).](https://en.wikipedia.org/wiki/Qambar_Shahdadkot_District#:~:text=The%20rural%20population%20was%20941%2C232,and%20urban%20396%2C803%20(29.66%25).)

4. Methodology

4.1. Type of Survey

A population representative cross-sectional household survey following Standardized Monitoring and Assessment of Relief and Transitions (SMART) methodology was designed. Two stage cluster sampling technique was applied for sampling (identification of clusters/households) and data collection. During implementation of survey Infection Prevention and Control (IPC) measures were being followed.

4.2. Sample size calculation

The sample size was designed to achieve reasonable precision for estimating acute malnutrition as well as mortality separately. All calculations were made using ENA for SMART software (version Jan 11th 2020). The parameters and rationale considered for sample size calculations in two different contexts: anthropometry (related to malnutrition) and mortality rates.

For the anthropometric parameters, the prevalence of Global Acute Malnutrition (GAM) in Qambar Shahdadkot is estimated at 27.5% (NNS-2018). The desired precision set at 5, and 1.5 design effect used to account for heterogeneity in nutritional status within district. The sample size for children aged 6-59 is calculated to be 500, and the average household size is determined to be 7. Additionally, the percentage of the population represented by children under 5 is 14.8%, and a non-response rate of 3% was anticipated.

For the mortality parameters, the estimated death rate was 0.16 (0.08 – 0.34 95% CI) deaths per 10,000 populations per day, and a design effect of 1.5 was applied based on SMART recommendations for cluster sampling. The recall period for mortality data collection was 10 days, with a memorable recall event considered to be the 1st May (Labor Day). The sample size for the population was calculated to be 15,39,433 and the average household size was 7. The anticipated non-response rate was 3%, resulting in a calculated number of individuals (1850) and households (273) to be included in the sample. These parameters and rationale were crucial for determining appropriate sample sizes, ensuring accurate representation and precision in the collected data. They provided a foundation for conducting studies and assessments related to anthropometry and mortality rates. (See Table 2 below):

Table 3: Parameters and rationale

Anthro / Mortality Parameters	Updated parameters	Rationale
Estimate Prevalence	27.5	Global Acute Malnutrition (GAM)-% (NNS 2017-18)
Desired Precision	5	As per SMART Manual Suggested
Design Effect	1.5	A design effect of 1.5 was used. This is based on the assumption that there is some level of heterogeneity in the nutritional status within the districts.
Sample Size (Children 6-59)	500	Calculated by ENA software
Average HH Size	7	Based on Census Data 2017
% of U5s	14.8	Population Census Pakistan-2017 district tables
% of NRR	3	Non-response
Household to be included	553	Calculated by ENA software
Estimate death rate	0.30	Taken from country level Mortality rate (6.736) 2023 and divided in 10,000/day
Desired Precision	0.3	+/- desired precision per 10,000/day
Design Effect	1.5	As per SMART recommendation for Cluster Sampling
Recall Period in days	127	1 st May,2023 (Labor Day)
Average HH Size	7	Based on Census Data 2017
% of NRR	3	Anticipated non response rate
Population to be included	1850	Calculated by ENA software
Household to be included	273	Calculated by ENA software
Total Clusters	62	9 HHs per team per day

*Recall period has to be adjusted during analysis based on the actual survey data collection period and therefore, there might be slightly differ from the initial protocol assumed recall period.

4.3. Selection of Clusters and households

Two stage sampling procedure was applied to conduct the SMART survey. In the **first stage**, a cluster or a primary sampling unit (PSU) was selected. A list of villages/clusters with updated population was used to select the sample of clusters by uploading the list in ENA (version Jan, 11 2020) software. In the **second stage** basic sampling unit (BSU) comprising of households present in the sampled cluster were mapped and line listed. The selection of households was then done through a systematic random sampling technique.

In some cases, villages/clusters population was large in size or widely dispersed or scattered, making it difficult for the team to perform line listing and complete the target on time. In order to achieve the target and reduce burden of line listing, segmentation process was followed. In this process, village population was divided into smaller (min 50 and max 150HH) equal or unequal segments, based on existing structures (block, sub-blocks, mosque, temples, river, canals, & rail line) and one segment was randomly selected. The selection of segment to represent the cluster was done through application of Probability Proportion to Size (PPS) methodology based on the population size of the households. The clusters were distributed to allow each team to complete one cluster per day.

During the preliminary household listing and observatory visits, it was evident that not all mothers could partake in the survey throughout the day due to their work commitments. However, by scheduling survey team visits between 07:00 AM to 01:00 PM and again from 03:00 PM to 07:00 PM, it was observed that a majority of mothers could participate. To accommodate this, the data collection plan and office hours were adjusted, allowing for a longer break during lunch. It's important to note that stringent security procedures were implemented during the survey.

Each team calculated the number of households they could survey per cluster per day at various locations, considering travel time and the time required to select and survey households. They found that each team could feasibly visit and complete questionnaires for 9 households per day in each cluster.

Table 4 Calculation of HH coverage/day/team

Calculation of HH coverage/day/team		
Event/Activity	Time to dedicate	Total time remaining
Time per day for field work including lunch and refreshment/prayer break	7:00 -19:00=720 min	720 min
Travel time (including travel time, round trip)	60 min X 2 trip =120 min	720-120=600min
Lunch and prayer break	13:00-15:00= 120 min	600-120= 480 min
Average time allocated for households' interview by one interviewer (Interview + Travel time between household	35 min+ 5 min= 40 min	All indicators may not require to collect from all households except demo, food security and WASH. For instance, almost two third of slum's households have no child meaning that team need less time for these households. For the household having children, measurer assistant will move to the next households after completing measurement in previous HH.
Total number of HH's to be covered by each team per day (with one interviewers)	480 min/50 min per HH=9.6 households	
Total number of HH's to be covered by each team per day (with two interviewers)	9 households*6 teams= 54 households	

An average of 540 households per day, which equates to 54 households per day, were interviewed, totaling approximately 56 clusters. This goal was achieved within the allotted 10-day timeframe. Clusters and backup clusters were allocated using ENA software. The reserve clusters (RC) would only be activated if more than 10% of the planned clusters couldn't be included for any reason.

4.4. Training of Field Data Collection Teams

The training was conducted in district Larkana for 6 data collection teams, each consisting of a supervisor and two data collectors. Same team of Larkana was taken on board for Qambar Shahdadkot survey. The training content covered various modules, including household information, mothers/care-takers data, child nutrition and immunization status, and child's current health. The implementation modalities and ethical considerations were also discussed.



Figure 2 Ms. Gul, SMART Survey Consultant, explaining processes and procedures to the joint teams of Qambar Shahdadkot and Larkana

The training was conducted over six days, and included theoretical and practical components. The training was delivered by a team of professionals, including SMART experts, and public health consultants.

Pre and post-tests were conducted to assess participants' knowledge gain, and a standardization test was performed to evaluate their anthropometric measurement skills. The results of the pre and post-tests showed a significant improvement in knowledge among participants. The Qambar Shahdadkot team collectively obtained 157/315 (49.8%) marks in the pre-test, while in post-test they scored 235/315 (74.6%) marks, showing an overall improvement of 30%. The capacity enhancement of participants anthropometric measurement skills was also assessed through standardization tests on training day 4 and 6. Overall, the training program successfully built the capacity of the field teams to

collect quality data. With the completion of the training and standardization exercises, the teams proceeded for data collection in the field.

4.5. List of indicators

Bilateral Pitting Oedema: was assessed by applying a moderate thumb pressure on BOTH feet for three seconds. If oedema is present, a shallow pit will remain after releasing pressure from the feet. Only children with bilateral oedema (oedema on both feet) are diagnosed positive for nutritional Oedema. Supervisor confirmed all cases of oedema. However, no oedema case found during the assessment.

Crude mortality rate (CDR): One of the primary goals of humanitarian response to a humanitarian crisis is the prevention and reduction of mortality. The CDR is a metric frequently used to gauge the severity of a humanitarian crisis. It is defined as the number of deaths from all causes per 10,000 people per day over a specified period of time. It is calculated from the following formula:

$$\text{CDR} = \text{Number of deaths} / (\text{mid-interval population} / 10,000) \times \text{time interval} = \text{deaths} / 10,000 / \text{day}$$

Under 5 death rate (U5DR): U5DR is defined as the number of deaths among children under five from all causes per 10,000 people per day over a specific period of time. It is calculated from the following formula:

$$\text{U5DR} = \text{Number of under 5 deaths} / (\text{mid-interval population} / 10,000) \times \text{time interval} = \text{under 5 deaths} / 10,000 / \text{day}$$
 j) Diarrhea was assessed through two weeks recall period. Diarrhea is defined as passage of three or more loose or liquid stools in a day in children aged 6-59 months. k)

Use of ORS/zinc during a diarrhea episode: The interviewer was asked the mother/caregiver of the child if he/she received ORS sachets and/or zinc during a diarrhea episode. An ORS sachet and a zinc pill were shown when asked to recall.

Measles vaccination in children 9-59 months: Measles vaccination were assessed among children aged 9-59 months by checking for the measles vaccine on the EPI card if available or by asking the caregiver to recall if no EPI card is available.

Vitamin A Supplementation in children 6-59 months: Vitamin A supplementation was assessed among children aged 6-59 months by checking the EPI card if available or by asking the caregiver to recall if no EPI card is available.

Case definitions Infant and Young Child Feeding practices: Only few important IYCF indicators were used to calculate them are detailed below.

Exclusively breastfed for the first two days after birth: Percentage of children born in the last 23 months who were fed exclusively with breast milk for the first two days after birth Children born in the last 24 months who were fed exclusively with breast milk for the first two days after birth Children born in the last 24 months

Early Initiation of breastfeeding: Proportion of children born in the last 24 months who were breastfed within one hour of birth. Children born in the last 24 months who were put to the breast within one hour after birth Children born in the last 24 months

Exclusive breastfeeding under 6 months: Percentage of infants 0–5 months of age who were fed exclusively with breast milk during the previous day
Infants 0-5 months of age who received only breast milk during the previous day
Infants 0-5 months of age

Bottle feeding: Proportion of children 0–23 months of age who are fed with a bottle. Children 0–23 months of age who were fed with a bottle during the previous day
Children 0–23 months of age

Minimum dietary diversity: Percentage of children 6–23 months of age who consumed foods and beverages from at least five out of eight defined food groups during the previous day. The eight food groups used for tabulation of this indicator are:

1. Breast milk;
2. Grains, roots, tubers and plantains;
3. Pulses (beans, peas, lentils), nuts and seeds;
4. Dairy products (milk, infant formula, yogurt, cheese);
5. Flesh foods (meat, fish, poultry, organ meats);
6. Eggs;
7. Vitamin-A rich fruits and vegetables; and
8. Other fruits and vegetables.

Minimum meal frequency: Proportion of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more.

- Minimum meal frequency for non-breastfed children [6-23 months] [≥ 4 full meals]
- Minimum meal frequency for breastfed children [6-8 months] [≥ 2 full meals]
- Minimum meal frequency for breastfed children [9-23 months] [≥ 3 full meals]

Minimum acceptable diet: Percentage of children 6–23 months of age who consumed a minimum acceptable diet during the previous day

4.6. Data analysis and review process

To ensure data accuracy and precision, the data collected from the field was consistently reviewed on daily basis and at multiple levels.

At the field level, anthropometry, mortality and data submitted in cluster control forms in hard form was reviewed by the monitors before data entry by the DEOs, for cleaning any logical errors. The plausibility analysis was then run by SMART Nutrition expert using ENA software and shared with AAH Regional Advisor for review and endorsement. The result of plausibility analysis was shared with AAH on daily basis before teams proceeded to the next clusters.

Feedback provided to the monitors for correction of errors identified through field verification after revisits. The process of data collection and data output was also reviewed several times during the field activities by joint monitoring team of UNICEF, AAH and Himmat for taking necessary actions to ensure data quality.

4.7. Standardization Test

Based on satisfactory performance of data collectors recruited in district Qambar Shahdadkot for SMART Nutrition survey were taken onboard in district Qambar Shahdadkot. Training on anthropometric techniques and basic concepts of SMART survey were delivered by SMART experts.

4.8. Monitoring and Supportive Supervision

UNICEF monitoring team, ensured the quality of data collection processes with support of UNICEF, ACF and Himat through closed and continued monitoring and supportive supervision. Stakeholders discussed observations made during the monitoring visits and provided feedback to the teams to further improve data collection process. Following are glimpses of training and field activities relating to SMART Nutrition Survey in Qambar Shahdadkot district.



Figure 3 Participants with Trainers, Facilitators and Monitors, Qambar Shahdadkot and Larkana

5. Survey Findings

5.1. Household Characteristics and Demographic Profile

SMART Nutrition Survey in Qambar covered a total of 555 households. All of these households were successfully surveyed, which accounts for approximately 100% of the total households visited.

Table 5. Achieved Sample Size of the SMART Survey in QSK

Overall Sample size achievement					
Clusters achievement			# of children recorded		
Clusters achieved	Households achieved	Children achieved	Children 0-59 months	Children 6-59 months	Children 0-23 months
100%	100%	130%	680	650	261

5.2. Nutritional status of children 6-59 months

The overall plausibility score of district Qambar was 3% which positively implies the quality of the survey under excellent category. Children were weighed removing of all clothes to the nearest 100g (0.1 kg) by using a SECA electronic scale. The children who can easily stand are asked to stand on the weighing scale and their weight is recorded. In a situation when the children cannot stand, the double weighing method is applied. The prevalence of Global Acute Malnutrition (GAM) in District Qambar based on weight for height z-score/and or oedema was 22.0% (18.7 – 25.8 95% C.I), and the prevalence of Severe Acute Malnutrition (SAM) was 6.6% (4.6 – 9.3 95% C.I.). The overall GAM¹¹ prevalence is indicative of high malnutrition based on the WHO standards. Analysis of gender shows no significant difference of malnutrition among both groups (p-value: <0.567), both are at equal risk of malnutrition with the prevalence of 23.1 % (17.6 – 29.7 95% C.I.), and 21.0% (17.2 – 25.3 95% C.I.) respectively.

Table 6: Prevalence of acute malnutrition based on (Wasting) weight-for-height z-scores (and/or oedema) and by Boys vs Girls

	All n = 641	Boys n = 307	Girls n = 334	P value
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(141) 22.0 % (18.7 - 25.8 95% C.I.)	(71) 23.1 % (17.6 - 29.7 95% C.I.)	(70) 21.0 % (17.2 - 25.3 95% C.I.)	0.567
Prevalence of moderate malnutrition (<-2 z-score and >=3 z-score, no oedema)	(99) 15.4 % (12.8 - 18.5 95% C.I.)	(45) 14.7 % (10.7 - 19.8 95% C.I.)	(54) 16.2 % (12.8 - 20.2 95% C.I.)	0.612
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(42) 6.6 % (4.6 - 9.3 95% C.I.)	(26) 8.5 % (5.4 - 13.1 95% C.I.)	(16) 4.8 % (2.8 - 8.0 95% C.I.)	0.629

¹¹ WHO/UNICEF Cut Off Points wasting using Z-Score (-2 Z scores in populations: <2.5% - very low; 2.5- <5%, - Low; 5<10% - Medium; 10<15% -High; >15%-very High)

The prevalence of oedema is 0.0 %

5.3. Prevalence of acute malnutrition by age, based on WHZ scores and/or oedema

Prevalence of acute malnutrition by age, based on weight-for-height z-scores data shows that, severe wasting was more prevalent in 6-17 months children than other age group, similarly in moderate wasting was most commonly prevalent in the same age group.

Table 7:Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	162	14	8.6	30	18.5	118	72.8	0	0.0
18-29	146	13	8.9	22	15.1	111	76.0	0	0.0
30-41	151	8	5.3	16	10.6	127	84.1	0	0.0
42-53	147	6	4.1	24	16.3	117	79.6	0	0.0
54-59	35	1	2.9	7	20.0	27	77.1	0	0.0
Total	641	42	6.6	99	15.4	500	78.0	0	0.0

The table given below presents the distribution of acute malnutrition and oedema, on the basis of weight-for-height z-scores. None of the surveyed children had oedema. 7.5% marasmus cases found without clinical presence of oedema.

Table 8: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor. 0 (0.0 %)	Kwashiorkor. 0 (0.0 %)
Oedema absent	Marasmic No. 49 (7.5 %)	Not severely malnourished. 601 (92.5 %)

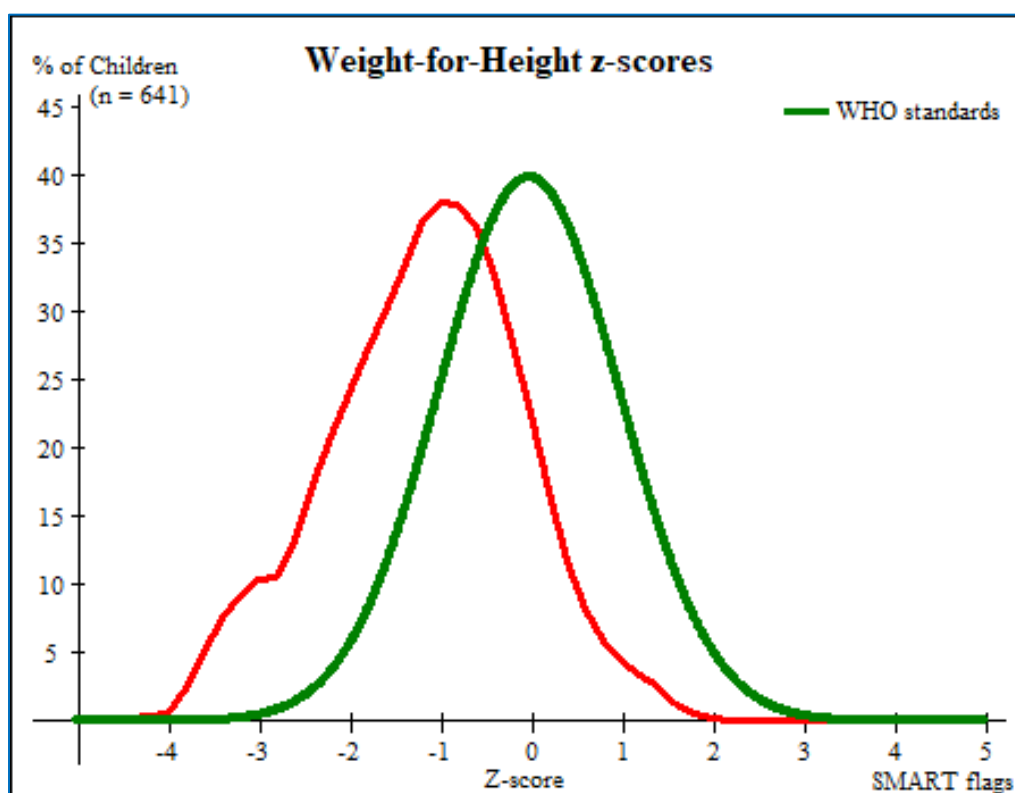


Figure 4: Gaussian Curve Weight-for-Height z score

The above figure shows the comparison of nutrition status of the 6 to 59 months in district Qambar Shahdadkot and the reference population. The green curve represents the reference population while the red curve represents the surveyed population. The figure shows a significant shift to the left for the reference population which implies that malnourished children are more in surveyed population as compared to reference population.

5.4. Prevalence of acute malnutrition (Wasting) by Boys vs Girls based on MUAC cut offs (and/or oedema)

MUAC can be used as a proxy indicator of wasting and it is also found to be the good indicator for death. MUAC (<11.5 cm for children 6-59 months), is considered a high mortality risk and is a criterion for admission of outpatient therapeutic or patients treated for severe acute malnutrition. A MUAC reading of 11.5 cm to <12.5 cm is considered as moderate acute malnutrition. As shown in the table below, prevalence of Global malnutrition was 11.5%. The prevalence of GAM according to MUAC among boys was 11.8%, as compared to girls which was 11.3%; however, this difference was not statistically significant (p value 0.067). The prevalence of severe acute malnutrition was 5.1%.

Table 9: Prevalence of Acute Malnutrition (Wasting) by Boys vs Girls Based on MUAC cut offs (and/or oedema)

	All n = 650	Boys n = 313	Girls n = 337	P value
Prevalence of global malnutrition (< 125 mm and/or oedema)	(75) 11.5 % (8.8 - 15.0 95% C.I.)	(37) 11.8 % (8.1 - 16.9 95% C.I.)	(38) 11.3 % (7.9 - 15.9 95% C.I.)	0.067
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(42) 6.5 % (4.7 - 8.8 95% C.I.)	(21) 6.7 % (4.0 - 11.0 95% C.I.)	(21) 6.2 % (4.1 - 9.4 95% C.I.)	0.865
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(33) 5.1 % (3.4 - 7.6 95% C.I.)	(16) 5.1 % (3.1 - 8.4 95% C.I.)	(17) 5.0 % (2.9 - 8.7 95% C.I.)	0.957

5.5. Prevalence of acute malnutrition by age groups, based on MUAC cut off and/or oedema

Further analysis was performed based on prevalence of acute malnutrition by MUAC based on age as indicated in Table 9. Children in age groups 6-17 months, and moderate was found in the same age group than children 18-29 months and the reason could be in appropriate feeding practices and food insecurity.

Table 10: Prevalence of acute malnutrition by age groups, based on MUAC cut off and/or oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 mm and < 125 mm)		Normal (>= 125 mm)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	165	19	11.5	21	12.7	125	75.8	0	0.0
18-29	150	8	5.3	13	8.7	129	86.0	0	0.0
30-41	152	5	3.3	4	2.6	143	94.1	0	0.0

42-53	148	1	0.7	3	2.0	144	97.3	0	0.0
54-59	35	0	0.0	1	2.9	34	97.1	0	0.0
Total	650	33	5.1	42	6.5	575	88.5	0	0.0

5.6. Prevalence of combined GAM and SAM based on WHZ and MUAC cut offs

The table below presents the prevalence of combined Global Acute Malnutrition (cGAM) 25.5 % (20.6 – 2.1 95% C.I.), and Severe Acute Malnutrition (SAM) 8.8 % (6.5 – 11.7 95% C.I.) based on different anthropometric indicators, namely Weight-for-Height Z-score (WHZ) and Mid-Upper Arm Circumference (MUAC) cut-offs, as well as the presence of edema. The data is categorized by gender, with the total number of participants (n) being 650, out of which 313 are boys and 337 are girls.

The data shows the proportion of children experiencing both GAM and SAM based on the defined anthropometric criteria. It appears that the prevalence of GAM and SAM is slightly higher among boys compared to girls, but the difference is not statistically significant as indicated by the P-values (0.392 and 0.524).

Table 11: Prevalence of combined GAM and SAM based on WHZ and MUAC cut offs (Boys vs Girls)

	All n = 650	Boys n = 313	Girls n = 337	P value
Prevalence of combined GAM	(166) 25.5 %	(85) 27.2 %	(81) 24.0 %	0.392
(WHZ <-2 and/or MUAC < 125 mm and/or oedema)	(21.8 - 29.6 95% C.I.)	(21.4 - 33.8 95% C.I.)	(20.2 - 28.4 95% C.I.)	
Prevalence of combined SAM	(57) 8.8 %	(30) 9.6 %	(27) 8.0 %	0.524
(WHZ < -3 and/or MUAC < 115 mm and/or oedema)	(6.5 - 11.7 95% C.I.)	(6.4 - 14.1 95% C.I.)	(5.3 - 11.9 95% C.I.)	

*With SMART or WHO flags a missing MUAC/WHZ or not plausible WHZ value is considered as normal when the other value is available

The table given below presents details of children having GAM and SAM, with respect to the criteria for GAM and SAM, like MUAC value and weight for height.

Table 12: Distribution of children according to criteria for combined GAM and SAM

	GAM		SAM	
	no.	%	no.	%
MUAC	25	3.8	15	2.3
WHZ	91	14.0	24	3.7
Both	50	7.7	18	2.8
Edema	0	0.0	0	0.0
Total	166	25.5	57	8.8

5.7. Prevalence of underweight based on weight-for-age z-scores by sex

Underweight is defined as low weight for age relative to NCHS and WHO reference median. Children with weight for age less than -2 SD in relation to a reference child are classified as underweight while those with less than -3 SD are classified as severe underweight. The prevalence of underweight among children under 6 to 59 months in district Qambar Shahdadkot was 35.9% (30.4 – 41.9 95% C.I.), while those who were severely underweight was 10.2% (7.9 – 13.1 95% C.I.). Analysis by sex shows no significant difference in boys and girls ($P < 0.525$); both genders are at equal risk of malnutrition with prevalence of 37.6% (30.9 – 44.8 95% C.I.), and 34.4% (27.6 – 42.0 95% C.I.) respectively.

Table 13: Prevalence of underweight based on weight-for-age z-scores by Boys vs Girls

	All n = 637	Boys n = 306	Girls n = 331	P value
Prevalence of underweight (<-2 z-score)	(229) 35.9 % (30.4 - 41.9 95% C.I.)	(115) 37.6 % (30.9 - 44.8 95% C.I.)	(114) 34.4 % (27.6 - 42.0 95% C.I.)	0.525
Prevalence of moderate underweight (<-2 z-score and ≥-3 z-score)	(164) 25.7 % (21.4 - 30.6 95% C.I.)	(86) 28.1 % (22.5 - 34.5 95% C.I.)	(78) 23.6 % (19.0 - 28.8 95% C.I.)	0.250
Prevalence of severe underweight (<-3 z-score)	(65) 10.2 % (7.9 - 13.1 95% C.I.)	(29) 9.5 % (6.8 - 13.1 95% C.I.)	(36) 10.9 % (7.2 - 16.0 95% C.I.)	0.606

The table given below presents the prevalence of underweight by age, based on weight for age z-scores. As shown in Table 13, the highest proportion of severe underweight children was in age group 54-59 months (17.1%), followed by 11.8% in 6-17 months age group. For moderate underweight, the highest proportion of children was in age group 30-41 months (32.4%).

Table 14: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (≥-3 and <-2 z- score)		Normal (≥ -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	161	19	11.8	33	20.5	109	67.7	0	0.0
18-29	146	13	8.9	38	26.0	95	65.1	0	0.0

30-41	148	15	10.1	48	32.4	85	57.4	0	0.0
42-53	147	12	8.2	38	25.9	97	66.0	0	0.0
54-59	35	6	17.1	7	20.0	22	62.9	0	0.0
Total	637	65	10.2	164	25.7	408	64.1	0	0.0

5.8. Prevalence of stunting based on height-for-age z-scores by sex

Stunting is an indicator of chronic (long-term) malnutrition which is mainly due to long term food deprivation, deficiency of micronutrients, recurrent illness and other socio-economic factors that affect normal growth. WHO defines height-for-age less than -2 SD from median height age reference population. Inadequate infant young child feeding and maternal under nutrition results in childhood stunting. Stunting is associated with impaired neurocognitive development, a risk maker of non-communicable diseases and reduced productivity later in life. Height for age z-score was 44.7 % (40.0 – 49.6 95% C.I.); findings suggested that this rate classified as very high¹². Stunting was higher among boys 45.4% (38.6 – 52.4 95% C.I.) than girls 44.1% (38.2 – 50.2 95% C.I.). However, the p-value 0.777 shows that difference was not statistically significant.

¹²WHO/UNICEF Cut Off Points for stunting using Z-Score (-2 Z scores in populations:<2.5% - Very low; 2.5-<10% - Low; 10-<20% - Medium; 20- <30% - High; >30% - Very High)

Table 15: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 615	Boys n = 293	Girls n = 322	P value
Prevalence of stunting (<-2 z-score)	(275) 44.7 % (40.0 - 49.6 95% C.I.)	(133) 45.4 % (38.6 - 52.4 95% C.I.)	(142) 44.1 % (38.2 - 50.2 95% C.I.)	0.777
Prevalence of moderate stunting (<-2 z-score and ≥-3 z-score)	(171) 27.8 % (24.0 - 32.0 95% C.I.)	(85) 29.0 % (23.5 - 35.2 95% C.I.)	(86) 26.7 % (21.6 - 32.5 95% C.I.)	0.567
Prevalence of severe stunting (<-3 z-score)	(104) 16.9 % (13.7 - 20.7 95% C.I.)	(48) 16.4 % (12.4 - 21.4 95% C.I.)	(56) 17.4 % (13.0 - 22.9 95% C.I.)	0.765

The table given below presents the prevalence of stunting by age, based on height for age z-scores. As shown in Table 15, the highest proportion of severe stunting was in 30-41 months old children (21.5%), followed by 26.1% in 18-29 months age group. For moderate stunting, the highest proportion of children was in age group 18-29 months (32.1%).

Table 16: Prevalence of stunting by age based on height-for-age z-scores

		Severe stunting (<-3 z-score)		Moderate stunting (≥-3 and <-2 z-score)		Normal (≥ -2 z score)	
Age (mo)	Total no.	No.	%	No.	%	No.	%
6-17	155	20	12.9	36	23.2	99	63.9
18-29	140	27	19.3	45	32.1	68	48.6
30-41	144	31	21.5	41	28.5	72	50.0
42-53	142	22	15.5	41	28.9	79	55.6
54-59	34	4	11.8	8	23.5	22	64.7
Total	615	104	16.9	171	27.8	340	55.3

The table below presents data related to z-scores, design effects, and excluded subjects for three different indicators: Weight-for-Height, Weight-for-Age, and Height-for-Age. Z-scores are measures of how far a child's anthropometric measurement deviates from the standard reference population, with z-scores less than -2 indicating malnutrition. The z-scores for Weight-for-Height (WHZ) and Weight-for-Age (WAZ) were not available for children with edema, which could be due to the difficulty in accurately measuring weight and height in such cases.

The mean z-scores provide an overview of the nutritional status of the subjects, with negative values indicating that, on average, the children in the study have lower measurements compared to the standard reference population. Overall, the data highlights the prevalence of malnutrition among the subjects and emphasizes the importance of monitoring and addressing nutritional status in this population.

Table 17: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores ± SD	Design Effect (z- score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	641	-1.16±1.05	1.18	0	9
Weight-for-Age	637	-1.83±0.94	2.28	0	13
Height-for-Age	615	-1.87±1.18	1.44	0	35

* Contains for WHZ and WAZ the children with edema

5.9. Prevalence of overweight based on WHZ and by sex (no oedema)

Overweight or obesity defined as weight-for-height Z score >+2SD from the median according to WHO growth reference standards 2006. Findings show that prevalence was 0.00%. Results also imply that severe overweight findings were not found in any of the group.

Table 18: Prevalence of overweight based on WHZ and by sex (no oedema)

	All n = 641	Boys n = 307	Girls n = 334
Prevalence of overweight (WHZ > 2)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)
Prevalence of severe overweight (WHZ > 3)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

5.10. Severity of malnutrition among children aged 6-59 months

The survey provides information on the severity of malnutrition among children aged 6-59 months, based on the WHO/UNICEF classification from 2018. The findings reveal a worrisome situation regarding malnutrition among children aged 6-59 months. The prevalence of wasting and stunting falls under very high category, and underweight indicating alarming situation,

Table 19: Severity of malnutrition among children aged 6-59 months

Indicators	Prevalence	Severity
Wasting [WHZ]	22.0%	Very High
Overweight [WHZ]	0.0%	Very low
Stunting [HAZ]	44.7%	Very High
Underweight [WAZ]	35.9%	* Alarming/Critical

The Findings of the survey are explained as under:

Wasting: Findings indicate that a sizeable proportion of children in this age group suffer from wasting, which refers to a low weight-for-height ratio. The prevalence of 22.0% suggests a concerning level of malnutrition in terms of wasting considered Very High.

Over Weight: According to the data, there were no cases of overweight children in this age group. This finding suggests that the prevalence of overweight is extremely low among children aged 6-59 months.

Stunting: The data indicates that a considerable percentage (44.7%¹³) of children suffer from stunting. Stunting refers to a low height-for-age ratio and reflects chronic malnutrition. The high prevalence suggests a concerning level of stunting among children in this age group considered very high.

Underweight: The prevalence of underweight children is 35.9%, indicating a Critical level of undernutrition in terms of weight-for-age. The severity is categorized as "Alarming," which needs to be addressed, considered high

These findings underscore the need for interventions and policies aimed at addressing malnutrition and improving the nutritional status of children in this age group.

Combined GAM and SAM based on WHZ score and MUAC data;

Data shows that prevalence of wasting based on MUAC tool and WHZ score show high number of cases reported in data. The GAM prevalence was 25.5% recorded and SAM prevalence was 8.8% still under low to medium level category.

5.11. Retrospective Mortality

Based on the information collected, the overall Crude Death Rate (CDR) is 0.16%, with a range of CI 0.08 – 0.34%. This means that out of the total population, a small percentage of people have died within the given period. The CDR is a measure of the total number of deaths in a population, usually expressed per 1,000 or 10,000 people.

In comparison, the Under 5 death rate (U5DR) is lower at 0.13% death/10,000/day. The U5DR specifically focuses on deaths of children under the age of five. This rate indicates the number of deaths among children under five years old per 10,000 children per day.

It is mentioned that both the CDR (0.16) and U5DR (0.13) are well below the public health emergency thresholds of 1 and 2 deaths/10,000/day, respectively. These thresholds serve as indicators to monitor the severity of a public health situation. In this case, the death rates are below the thresholds, suggesting that the overall mortality and child mortality rates are not alarming from a public health perspective. Household level questions were asked to determine the cause of each death, under the broad categories of illness or injury/trauma. Majority of the deaths (71.4%) were caused by illness; while injury/trauma and unknown cases accounted for the remaining 14.3% deaths respectively. Data shows that 100% deaths occurred in current location.

¹³ WHO/UNICEF Classification of stunting: <2.5%: very low, 2.5 to <10%: low, 10 to <20%: medium, 20 to <30%: high, ≥30%: very high

Table 20: Retrospective Mortality

	Crude Death Rate (95% CI)	Design Effect
Overall	0.16 (0.08-0.34)	1
Sex		
Male	0.23 (0.10-0.56)	1
Female	0.09 (0.02-0.37)	1
Years		
Under 5 Children (0-4 years)	0.13 (0.02-0.95)	1
Cause of death	%	Location of death %
1] Unknown	14.3	1] In current location 100
2] Injury/Traumatic	14.3	
3] Illness	71.4	

* (1st May 2023/Labor Day] was used as the beginning of the mortality recall period. All household members present during recall period adjusted for in and out-migration.

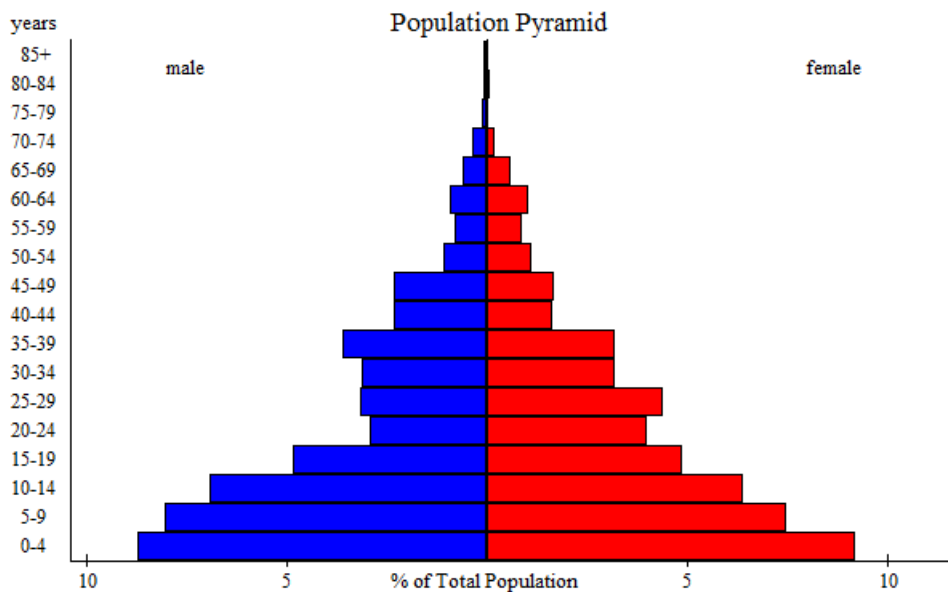


Figure 5 Population Pyramid of mortality data

Population pyramid data implies that, mortality ratio in male specifically was found higher than females in district Qambar Shahdadkot.

5.12. Maternal Health and Nutrition Status

5.12.1. Maternal Nutrition Status

Pregnancy and breastfeeding are times when the body requires more nutrients, relying less on its reserves if the nutrient intake doesn't increase. Instead, the body adjusts by enhancing how it absorbs and uses nutrients. However, insufficient nutrient intake during these phases can negatively impact both the mother and the developing child.

During pregnancy, the recommended nutrient intake rises to support the fetus's growth and development. Similarly, breastfeeding demands extra energy, protein, and nutrients for milk production. Inadequate nutrient intake during breastfeeding can result in nutrient deficiencies for the mother, reduced milk production, and hindered infant growth and development.

It's crucial to monitor the nutritional well-being of pregnant and breastfeeding women to safeguard their health and that of their infants. The Mid-Upper Arm Circumference (MUAC) measurement serves as one method to assess nutritional status in specific settings. MUAC offers a simple way to identify acute malnutrition in adults, including pregnant and breastfeeding women. However, it's important to note that MUAC alone doesn't offer a comprehensive evaluation of overall nutritional status, and other measurements and factors should be taken into consideration.

The following table displays the physiological status of women of reproductive age interviewed. It illustrates the percentages of women currently pregnant, breastfeeding, not pregnant and not breastfeeding, and those who are both pregnant and breastfeeding. 25.9% of women are currently pregnant (Table 20). MUAC measurement is frequently used as an indicator of nutritional status, and a measurement below 21 cm suggests a higher risk of malnutrition. Data indicates that among 343 pregnant and breastfeeding women, 14.6% were identified as malnourished in district Qambar based on MUAC criteria of <21.0 cm.

Table 21. Physiological Status of Women of Reproductive Age and Malnutrition Status

Current Physiological status	N	n	%	CI 95%	
Currently lactating	343	250	72.8	67.95	77.32
Currently pregnant	343	89	25.9	21.59	30.83
Pregnant & lactating	343	4	1.17	0.45	2.96
Malnutrition Status of PLWs					
Women currently malnourished (MUAC <210 mm)	343	50	14.6	11.24	18.70

5.12.2. Women's Education Status

Table below shows the women's education status, among the 555 women surveyed, 9.55% (with a CI of 7.38% to 12.28%) had received primary education. This indicates that a negligible proportion had completed education up to the primary level, about 4.32% (with a CI of 2.92% to 6.35%) had completed secondary education. This percentage signifies a smaller subset of the surveyed population attained education up to the secondary level. A substantial majority, approximately 83.9% (with a CI of 80.6% to 86.7%), had never been to school. This indicates that a significant portion of the surveyed women did not have any formal education. A very small percentage, 1.62% (CI: 0.86% to 3.05%), had

achieved education up to higher secondary level, and an even smaller percentage, 0.54% (CI: 0.18% to 1.58%), had graduated.

Table 22. Women’s Education Status

Education Status	N	n	%	CI 95%	
Primary	555	53	9.55	7.38	12.28
Secondary	555	24	4.32	2.92	6.35
Never been to School	555	466	83.9	80.6	86.7
Higher Secondary	555	9	1.62	0.86	3.05
Graduation	555	3	0.54	0.18	1.58

5.12.3. Access to Antenatal Care (ANC) Services

Iron/Folic Acid Supplementation during Pregnancy: Approximately 80.6% of the surveyed women received iron/folic acid supplementation during their pregnancies, indicating a relatively high coverage of this essential prenatal care. This suggests a substantial adherence to recommended supplementation, potentially contributing to improved maternal and fetal health. **Family Planning Methods Knowledge:** Around 50.3% of the respondents exhibited knowledge regarding family planning methods. While this suggests a moderate awareness level, efforts might be needed to increase awareness and education on various family planning options, potentially leading to better reproductive health choices. **Support from Family Members during Pregnancy-Lactation Period:** Roughly 59.0% of the surveyed women reported feeling supported by their family members during the pregnancy and lactation period. Adequate familial support during these crucial stages can positively impact maternal mental health and overall well-being.

Place of Last Delivery: The data reveals different settings for childbirth. Approximately 34.7% of women delivered in a hospital, while 11.9% delivered at home and a small percentage (4.9%) relied on traditional birth attendants (Dai/TBA). Encouragingly, a significant proportion chose hospitals for delivery, which is favorable for access to skilled birth attendants and potentially safer birthing conditions.

Access to Health Facilities (HFs): The data shows that around 46.3% of the respondents had access to health facilities within a 5 km radius, while 53.6% had to travel more than 6 km for healthcare services. Improving access by reducing travel distances could positively impact maternal and child health outcomes, ensuring timely care and interventions

Recollection of Maternal, Infant, and Young Child Feeding MIYCF Key Messages: A notable 87.1% of the surveyed women were able to recall MICYF key messages, highlighting the effectiveness of messaging dissemination. These messages were primarily sourced from community health workers (CHWs)/lady health workers (LHWs), followed by doctors/nurses, family friends, and the media/radio.

Overall, the data indicates both positive aspects, such as high awareness of key messages and supplementation, as well as areas for potential improvement, like enhancing family planning knowledge and ensuring better access to healthcare facilities for pregnant women. Efforts to reinforce education and support networks could further enhance maternal and child health outcomes in the community.

Table 23. Women accessing to maternal services

Access to Maternal services	N	n	%	95% CI	
Iron/folic acid supplementation during pregnancy	541	436	80.6	77.0	83.7
Family Planning methods knowledge	552	277	50.3	46.0	54.34
Women felt supported from family members during pregnancy-lactation period	542	320	59.0	54.8	63.10
Place of last Delivery-Dai/TBA	536	26	4.9	3.33	7.01
Place of last Delivery-Hospital	536	186	34.7	30.7	38.8
Place of last Delivery-Home	536	64	11.9	9.4	14.9
Access to HFs <5 km	552	256	46.3	42.4	50.5
>6 Km	552	296	53.6	49.45	57.74
Women can recall MICYF Key Messages	542	472	87.1	83.9	89.7
Sources of Key Messages (CHWs/LHWs)	472	27	5.72	3.93	8.13
Sources of Key Messages (Doctors/Nurses)	472	75	15.89	12.87	19.46
Sources of Key Messages (Family Friend)	472	369	78.18	74.23	81.67
Sources of Key Messages (Media/Radio)	472	1	0.21	0.04	1.19

Compliance of IFA Tablets

A very small proportion, approximately 0.18%, responded with "Don't Know," indicating uncertainty or lack of information regarding the consumption of IFA tablets. A significant portion, 37.9%, reported not consuming IFA tablets. This suggests that a considerable percentage of the surveyed population does not take these supplements.

Around 0.36% responded with "Not Applicable," possibly indicating that the question did not apply to them due to various reasons (e.g., not being in a certain demographic, not prescribed by a healthcare provider, etc.). 3.6% reported partial consumption of IFA tablets, indicating that a small fraction consumes them but not consistently or fully according to the recommended guidelines. The majority, 57.9%, reported consuming IFA tablets, suggesting that a significant portion of the surveyed population adheres to the recommended intake of these supplements.

Overall, the data indicates that while a majority reported consuming IFA tablets, there's still a notable percentage that either does not consume them or consumes them only partially. Encouraging consistent and widespread adherence to IFA tablet consumption among the population could be beneficial for addressing nutritional deficiencies, especially during periods like pregnancy where these supplements are recommended to support maternal and fetal health.

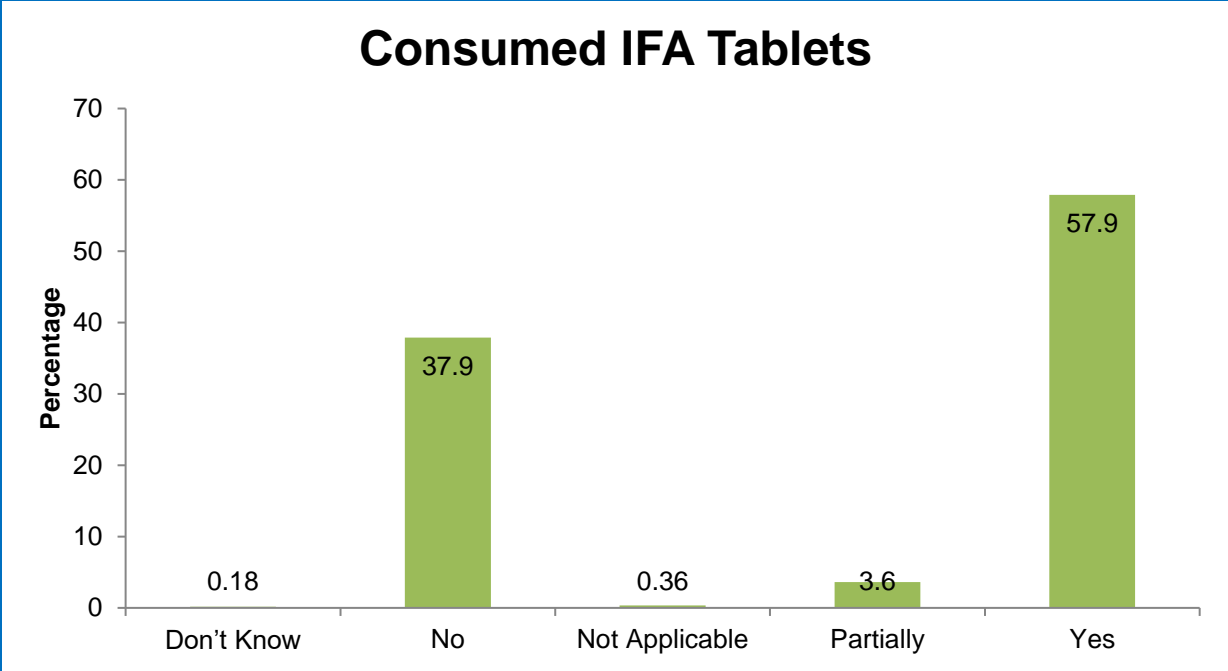


Figure 6 Consume IFA Supplement

Table 24 Health and Child Immunization

Health and Child Immunization				
Indicators	N	n	Percent	95% CI Value
Deworming Coverage –Children 12-59 m	564	127	22.5%	(19.13-26.19)
Vitamin-A Coverage-Children 6 59 m	650	418	64.3%	(60.55-67.90)
Measles with Card 9-59 m	616	136	22.1%	(18.86-25.56)
Measles with Recall 9-59 m	616	243	39.5%	(35.56-43.43)
Number of Diarrhea Episodes				
0-4 Episodes	567	92.05	89.64	93.93
5-8 Episodes	39	6.33	4.67	8.54
>9 Episodes	10	1.62	0.88	2.96
Diarrhea Treatment with Zinc or ORS 0-59 m	199	103	51.8%	(44.58-58.88)

Deworming Coverage among Children aged 12-59 months: The deworming coverage for this age group stands at 22.5%. This indicates that a relatively low proportion of children in the district have received deworming treatment. Addressing this could be crucial as deworming is essential for the management and prevention of parasitic infections in children.

Vitamin-A Coverage among Children aged 6-59 months: The coverage for Vitamin-A supplementation among children falls at 64.3%. While this suggests a moderate level of coverage, there's room for improvement to ensure more children receive this vital supplement, which plays a significant role in supporting immune function and overall health.

Measles Vaccination Coverage with Card (9-59 months) and Recall: The measles vaccination coverage based on card records stands at 22.1%, whereas the coverage based on recall is higher at 39.5%. These numbers indicate discrepancies between documented vaccination records and the recall of receiving the measles vaccine. Efforts might be needed to improve documentation and awareness regarding measles vaccination to bridge this gap.

Diarrheal Episodes Frequency: 0-4 Episodes: Among the surveyed individuals, 567 reported experiencing between 0 to 4 episodes of diarrhea. This group constitutes the majority, accounting for approximately 92.05% of the respondents. 5-8 Episodes: 39 individuals reported encountering 5 to 8 episodes of diarrhea. This group represents around 6.33% of the respondents. >9 Episodes: A total of 10 individuals reported more than 9 episodes of diarrhea. This group makes up about 1.62% of the respondents.

Diarrhea Treatment with Zinc or ORS (0-59 months): Around 51.8% of children suffering from diarrhea received treatment with Zinc or Oral Rehydration Solution (ORS). While this percentage is relatively good, ensuring that more children have access to these essential treatments during diarrheal episodes is critical for reducing morbidity and mortality associated with diarrhea.

In summary, the data for district Qambar indicates varied coverage rates for different health interventions among children. It highlights areas that require attention and potential improvement, such as enhancing deworming coverage, increasing Vitamin-A supplementation, improving measles vaccination documentation, and further promoting the use of Zinc or ORS for diarrhea treatment among children. Addressing these gaps can significantly contribute to improving child health outcomes in the district. These data points suggest that the majority of surveyed individuals experienced relatively few diarrhea episodes (between 0 to 4 episodes), while smaller subsets encountered moderate (5 to 8 episodes) or a higher frequency (>9 episodes) of diarrhea. This distribution indicates varying degrees of diarrheal episodes among the surveyed population, with the majority facing fewer occurrences, but a notable minority experiencing a higher number of episodes, which might necessitate further attention or intervention.

5.13. Mother's Knowledge Regarding Family Planning

5.13.1. Opinion regarding Duration of Exclusive Breastfeeding:

0-2 Months: Only 3 mothers, constituting about 0.63% of the respondents, believe that exclusive breastfeeding should last for 0-2 months.

0-4 Months: 53 mothers, approximately 11.21% of respondents, hold the opinion that exclusive breastfeeding should continue for 0-4 months.

0-6 Months: The majority, consisting of 417 mothers/women (around 88.16% of respondents), believe that exclusive breastfeeding should be practiced for 0-6 months. This aligns with the recommended duration of exclusive breastfeeding by health authorities.

This data suggests that a significant majority of surveyed mothers are aware and endorse the recommended practice of exclusive breastfeeding for the first 6 months of an infant's life.

5.13.2. Age to Stop Breastfeeding:

Before 6 Months: Only 2 mothers, accounting for 0.36% of respondents, believe breastfeeding should stop before 6 months.

After 6 Months: 1 mother, approximately 0.18% of respondents, supports breastfeeding after 6 months.

10-12 Months to >23 Months: The data shows an increasing trend in the number of mothers who believe breastfeeding should continue beyond 6 months. Notably, the majority of respondents (441 mothers, around 80.1%) agree that breastfeeding should continue for 18 months or more.

This suggests a prevalent understanding among surveyed mothers that breastfeeding should extend beyond 6 months, with a significant portion supporting breastfeeding for an extended period, aligning with recommendations for prolonged breastfeeding.

5.13.3. Frequency of breastfeeding:

- 11 times, 0-5 times, 6-10 times: The data indicates the knowledge regarding frequency of breastfeeding among respondents.
- 0-5 times: Approximately 14.6% of mothers recommend breastfeed 0-5 times a day.
- 6-10 times: About 48.5% of mothers recommend breastfeed 6-10 times a day.

This data shows a varied distribution in breastfeeding frequency among surveyed mothers, with nearly half of them breastfeeding 6-10 times a day, indicating a substantial adherence to recommended breastfeeding frequency.

Table 25 Mother’s Knowledge Regarding Family Planning

Mother’s Knowledge Regarding Family Planning			
Indicators	n	Percent	95% CI Value
Opinion regarding duration of Exclusive Breastfed			
0-2 Months	3	0.63	0.22-1.85
0-4 Months	53	11.21	8.67-14.3
0-6 Months	417	88.16	84.94- 90.77
Age to stop breastfeeding			
Before 6 Months	2	0.36	0.10-1.32
After 6 Months	1	0.18	0.03-1.02
10-12 Months	18	3.27	2.08-5.11
13-15 Months	15	2.73	1.66-4.45
16-18 Months	27	4.91	3.40-7.05
18-21 Months	43	7.82	5.86-10.37
>23 Months	441	80.1	76.6-83.3
Frequency of breastfeeding			
>11 times	212	38.8	34.8-42.9
0-5 times	80	14.6	11.9-17.8
6-10 times	254	48.5	42.3-50.7

5.14. Infant and Young Child Feeding-IYCF Key indicators

Table 26. MIYCF Key Indicators

S No	IYCF indicators ¹⁴			CI value
	Indicators	Frequency	Percent	
1	Child Ever breastfed-EvBF (0-23 m)	279 (289)	96.5%	93.7-98.2
2	Early initiation of breastfeeding (EIBF) (0-23 m)	155 (289)	53.6%	47.70- 49.49
3	Exclusively breastfed for the first two days after birth-(EBF2D) (0-24 m)	192 (289)	66.4%	60.67- 71.86
4	Exclusive breastfeeding under six months (EBF) 0-5 m	28 (56)	50.0%	36.3 – 63.6
5	Continued breastfeeding 12–23 months (CBF) 12 - 23 m	50 (148)	33.8%	26.2-42.01
6	Introduction of solid, semisolid or soft foods 6–8 months (ISSSF) 6-8 m	16 (33)	48.4%	30.8-66.4
7	Minimum dietary diversity 6–23 months (MDD)	22 (233)	9.4%	6.01-13.95
8	Minimum meal frequency 6–23 months (MMF)	23 (233)	9.9%	6.36-14.44
9	Minimum acceptable diet 6–23 months (MAD)	15 (233)	6.5%	3.65-10.40
10	Egg and/or flesh food consumption 6–23 months (EFF)	23 (233)	9.87%	6.36-14.44
11	Bottle feeding 0–23 months (BoF)	136 (289)	47.1%	41.1-52.9

Ever breastfed (EvBF) (0-24 months):

96.5% of children surveyed (out of 289) have been breastfed at some point between birth and 24 months. This high percentage indicates a strong prevalence of breastfeeding initiation among the surveyed children.

Early initiation of breastfeeding (EIBF) (0-24 months):

Only 53.6% of children (out of 289) received early initiation of breastfeeding within the first hour after birth. This percentage, while more than half, indicates a scope for improvement in ensuring prompt breastfeeding initiation after delivery, as recommended by health guidelines along with colostrum feeding secreted in the first 2-3 days.

Exclusively breastfed for the first two days after birth (EBF2D) (0-24 months):

Approximately 66.4% of children (out of 289) were exclusively breastfed for the first two days after birth. This percentage suggests a reasonable adherence to exclusive breastfeeding in the immediate postpartum period.

Exclusive breastfeeding under six months (EBF) (0-5 months):

¹⁴ <https://iris.who.int/bitstream/handle/10665/340706/9789240018389-eng.pdf?sequence=1>

Only 50.0% of children (out of 56) were exclusively breastfed from 0-5 months. This indicates a lower adherence to exclusive breastfeeding guidelines for the first six months of life, highlighting the need for promoting and supporting exclusive breastfeeding during this critical period.

Continued breastfeeding 12–23 months (CBF) (12-23 months):

Around 33.8% of children (out of 148) continued breastfeeding between the ages of 12 to 23 months. This percentage indicates a moderate but not high continuation of breastfeeding into the second year of life.

Introduction of solid, semisolid or soft foods (ISSSF) (6-8 months):

Approximately 48.4% of children (out of 33) were introduced to solid, semisolid, or soft foods between 6-8 months. This percentage suggests that less than half of the surveyed children received complementary foods within the recommended timeframe.

Minimum dietary diversity (MDD) (6–23 months), Minimum meal frequency (MMF) (6–23 months), Minimum acceptable diet (MAD) (6–23 months), Egg and/or flesh food consumption (EFF) (6–23 months): These indicators show low percentages ranging from 6.5% to 9.9%, highlighting a significant gap in achieving minimum dietary diversity, meal frequency, acceptable diet, and consumption of egg/flesh foods among children aged 6-23 months.

Bottle feeding (BoF) (0–23 months):

47.1% of children (out of 289) were reported to have been fed using bottles between the ages of 0-23 months. This percentage suggests a substantial reliance on bottle feeding for infants and young children, which may have implications for feeding practices and health outcomes.

Table 27 Reasons for Stop Breastfeeding

Reasons for Stop Breastfeeding	n	%	95% CI
Became Pregnant	33	49.2	36.8-61.7
Mother Ill/weak	9	13.4	6.33-23.9
Child ill	4	5.97	1.65-14.5
Child Weak	2	2.99	0.36-10.37
Working women	2	2.99	0.36-10.37

Among the individuals surveyed, 49.2% cited becoming pregnant as the reason for stopping breastfeeding. This reason suggests that subsequent pregnancies may have influenced the decision to discontinue breastfeeding, possibly due to concerns about managing multiple children or health considerations related to pregnancy and breastfeeding simultaneously. Only 5.97% of respondents reported stopping breastfeeding due to their child falling ill. This indicates that a small fraction of mothers might have ceased breastfeeding because of concerns about their child's health, possibly related to perceptions about breastfeeding and illness or advice from healthcare providers. A very low percentage, around 2.99%, cited the child's weakness as a reason for stopping breastfeeding. This reason might indicate concerns about the child's health or development, leading to the decision to discontinue breastfeeding.

Approximately 13.4% mentioned maternal illness or weakness as a reason for stopping breastfeeding. This suggests that a notable portion of women might have ceased breastfeeding due to their own health issues or physical challenges, which could impact their ability to breastfeed. Only 2.99% of respondents mentioned returning to work as a reason for stopping breastfeeding. This reason indicates that a small fraction of mothers might have stopped breastfeeding due to work-related commitments or challenges in balancing work and breastfeeding responsibilities.

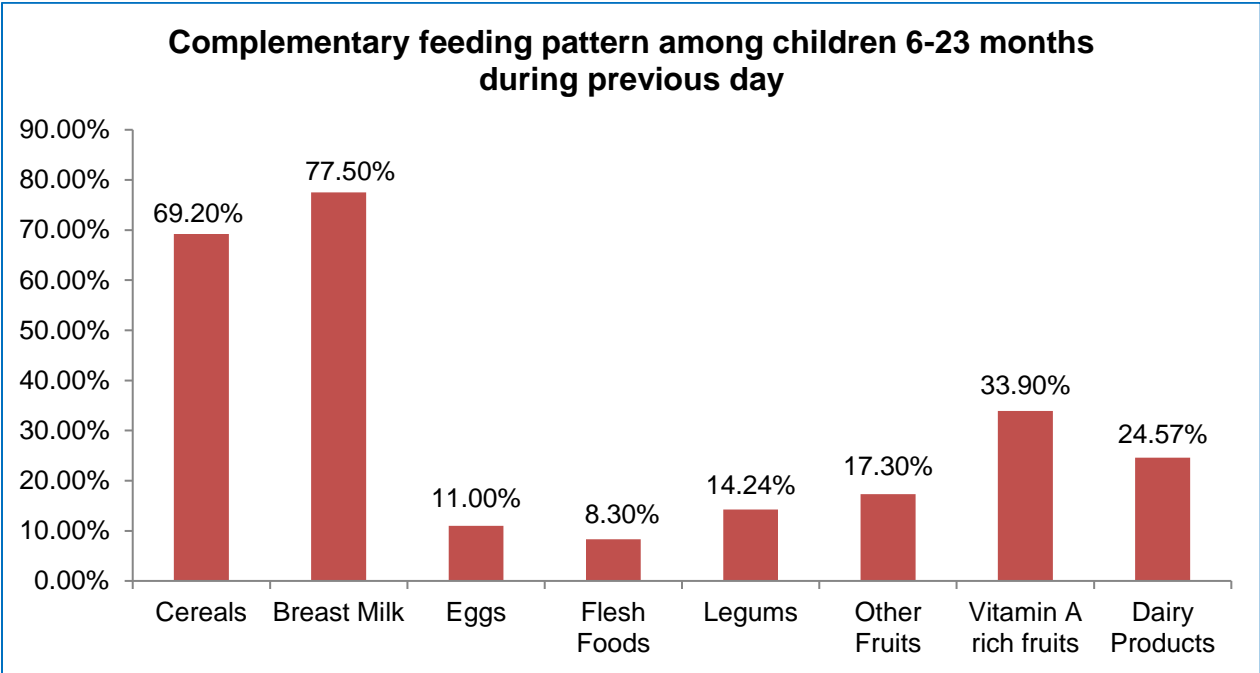


Figure 7. Complementary feeding pattern among children 6-23 months

Cereals (69.20%): A significant portion of infants or young children (69.20%) are being introduced to cereals as part of their complementary feeding. Cereals often serve as one of the primary foods introduced due to their easy digestibility and nutrient content.

Breast Milk (77.50%): While not a complementary food per se, the high percentage (77.50%) likely indicates that breastfeeding continues alongside the introduction of complementary foods. Breast milk remains an essential source of nutrition and continues to be a significant part of an infant's diet during the complementary feeding period.

Eggs (11.00%) and Flesh Foods (8.30%): Relatively lower percentages indicate that fewer infants or young children are being introduced to eggs and flesh foods (such as meat or fish) as part of their complementary diet. These foods are important sources of protein and essential nutrients, and their relatively lower introduction rates suggest potential gaps in varied protein sources in the diet.

Legumes (14.24%): Legumes are a good source of protein, and a proportion of infants or young children are being introduced to them. However, the percentage indicates that there is still room for improvement in introducing legumes as part of complementary feeding practices.

Other Fruits (17.30%) and **Vitamin A Rich Fruits** (33.90%): These percentages suggest that a moderate proportion of infants or young children are being introduced to other fruits, including those rich in vitamin A. These fruits can contribute essential vitamins and minerals to a child's diet.

Dairy Products (24.57%): The percentage indicates that a relatively lower proportion of infants or young children are being introduced to dairy products. These products, such as yogurt or cheese, are essential sources of calcium and other nutrients necessary for growth and development.

5.15. WASH

5.15.1. Access to drinking water source: The below data shows the respondents access to the water point from their home

This section provides information on the main source of drinking water and the time it takes to cover the distance from the house to the main source of water. It provides an overview of the distribution of households based on the time it takes to access the main source of drinking water.

No time (within the house): Out of 555 respondents, only 11 individuals, accounting for 1.98%, reported spending no time within the house. This suggests a very small portion of the surveyed population does not spend any time at home.

1-10 minutes: 34.7% of the respondents (193 out of 555) spend 1-10 minutes within the house. This indicates a significant percentage of individuals have very brief periods spent at home.

11-30 minutes: Almost a quarter (23.6%) responded reported to have the water source is 11-30 minutes away from their homes.

More than 30 minutes: 39.6% of individuals (220 out of 555) spend more than 30 minutes within the house. This suggests a sizable portion of the surveyed population spends a substantial amount of time indoors.

Overall, the data provides insights into the duration individuals spend within the house for different time intervals, indicating various patterns of time spent indoors among the surveyed population, from very brief periods to more extended durations.

Table 28 Time to cover the distance from house to main source of water

Duration	N	N	%	95% CI	
1-10 mints	555	193	34.7	30.9	38.8
>30 mints	555	220	39.6	35.6	43.7
11-30 mints	555	131	23.6	20.2	27.3
No time (within the house)	555	11	1.98	1.11	3.51

Hand pumps/Borehole: Among 555 respondents, 55.5% reported using hand pumps or boreholes as their primary source of drinking water. Hand pumps and boreholes are common water sources in many areas and provide accessible groundwater.

Public tap/Standpipe: Approximately 37.8% of respondents reported utilizing public taps or standpipes as their source of drinking water. These sources often distribute treated or piped water to the public, usually from a centralized system.

Piped Connection to House: Only 3.78% of respondents reported having a piped connection to their house for drinking water. This indicates a smaller percentage of individuals with direct, piped access to water within their homes, suggesting infrastructure limitations or a lack of availability of this service.

Water Seller: A small percentage, 2.34%, reported obtaining drinking water from a water seller. This method usually involves purchasing water from commercial entities or vendors who sell treated or purified water.

Protected Spring: A very minimal percentage, 0.36%, reported using a protected spring as their source of drinking water. Protected springs are natural water sources that have been safeguarded against contamination to provide safer drinking water.

Table 29. Sources of Drinking Water

Sources of Drinking Water			
Indicators	Frequency	Percent	CI value
Hand pumps/borehole	308 (555)	55.5%	(51.34-59.50)
Public tap/standpipe	210 (555)	37.8%	(33.90-41.90)
Piped Connection to house	21(555)	3.78%	(2.49-5.72)
Water Seller	13(555)	2.34%	(1.37-3.7)
Protected Spring	2(555)	0.36%	(0.10-1.30)

Water Treatment: No Treatment: Among 555 respondents, 542 individuals (approximately 97.6%) reported not treating their water. This high percentage suggests a prevalent lack of water treatment practices within the surveyed population, potentially leading to increased risks of waterborne diseases or contamination issues.

Don't Know: Only 13 respondents, accounting for 2.34%, indicated they don't know about water treatment. This indicates a small fraction of individuals unsure or lacking information about water treatment practices.

Household Water Collection: By Adult Females: 76.4% of households (424 out of 555) reported adult females collecting household water. This suggests that a majority of water collection responsibilities fall upon adult females within these households.

5.15.2. Hygiene Practices:

Adequate Privacy in Toilet Facilities: 68.3% (377 out of 552) reported having adequate privacy in toilet facilities, indicating a substantial portion of surveyed households having satisfactory privacy arrangements in their toilets.

Open Defecation Practice: Approximately 20.7% (115 out of 555) reported open defecation practices. This suggests that a notable fraction of the surveyed population engages in open defecation, which poses sanitation and health risks.

Affordability of Soap: Among 131 households, 85 (53.1%) reported that they cannot afford soap. This indicates that a significant portion of households surveyed face challenges in affording soap, which is crucial for maintaining proper hygiene and sanitation.

Table 30. Water, Sanitation and Hygiene (WASH) Practices

	n/N	%	95% CI
Water Treatment			
Don't Know	13(555)	2.34%	(1.37 – 3.97)
No treatment	542(555)	97.6%	(96.0 - 98.6)
Household water collection by adult Females	424 (555)	76.4%	(72.69-79.74)
Adequate privacy in toilet facilities	377 (552)	68.3%	(64.30-72.04)
Open Defecation Practice	115 (555)	20.7%	(11.25-17.00)
Household water collection by adult Male	102 (555)	18.4%	(15.38-21.81)
Soap available	424 (555)	76.4%	(72.69-79.74)
Soap not available	131(555)	23.6%	(20.0-27.31)
Households cannot afford soap	85 (131)	53.1%	(42.7-63.22)

5.15.3. Sanitation

Household's Toilet Facilities

The table below shows the distribution of household toilet facilities among the surveyed population. It indicates that a majority of households (75.5%) have their own household latrine, signifying a relatively high percentage with private sanitation facilities within their dwellings. However, there are other notable practices observed: a portion of households resort to open defecation (13.8%), indicating a significant proportion lacking access to proper toilet facilities. Additionally, smaller percentages are utilizing shared latrines (7.39%), communal latrines (0.54%), or even using a corner within the house (2.70%) as alternatives to having a dedicated household latrine.

Table 31. Household's Toilet Facilities

	n	%	95% CI
Household latrine	419	75.5%	71.7-78.8
Open defecation	77	13.8%	11.2-17.0
Shared Latrine	41	7.39%	5.49-9.87
Corner in the house	15	2.70%	1.64-4.41
Communal Latrine	3	0.54%	0.18-1.58

Among those practicing open defecation, the primary reason reported is the absence of a latrine, with approximately 61.8% citing this as the cause. This highlights a lack of access to proper sanitation facilities, indicating an urgent need for improved infrastructure. Other factors contributing to open defecation include challenges related to inadequate lighting at night (10.91%), feelings of tired (3.64%), and the latrine being situated too far away (2.42%).

Table 32. Reason for Open Defecation

Reason for Open Defecation	n	%	95% CI
No Latrine	102	61.8%	53.9-69.2
Too dark at night	18	10.91	6.59- 16.6
Too tired	6	3.64	1.35-7.75
Latrine is too far	4	2.42	0.66-6.09

5.16. Food Security

5.16.1. Minimum Dietary Diversity (MDD-W)

It is a measure that assesses whether women consume a variety of foods from various food groups in their diets.

High Minimum Dietary Diversity:

Among 790 surveyed women, 159 individuals, constituting 20.1%, fall under the category of high dietary diversity. This indicates that approximately one-fifth of the women have a diverse diet, consuming a variety of foods from different food groups.

Medium Minimum Dietary Diversity:

289 women, accounting for 36.5% of the respondents, are categorized under medium dietary diversity. This suggests that over one-third of the surveyed women have a moderately diverse diet, but there is room for improvement to include a wider range of foods in their regular consumption.

Low Minimum Dietary Diversity:

The majority of surveyed women, approximately 43.2% (342 out of 790), fall into the category of low dietary diversity. This indicates that almost half of the women have a diet that lacks diversity, potentially indicating a limited intake of various food groups.

Overall, the data highlights that a significant portion of surveyed women have either medium or low dietary diversity, with a considerable percentage falling into the low diversity category. This suggests that efforts might be necessary to promote and encourage a more varied intake of foods from different food groups among women to ensure a more balanced and nutritious diet. Improving dietary diversity can contribute to better overall health outcomes and nutritional status among women.

Table 33. Food Security Key indicators

Minimum Dietary Diversity-Women (MDD-W)			
Indicators	Frequency	Percent	CI value 95%
High	159 (790)	20.1%	(17.48-23.06)
Medium	289 (790)	36.5%	(33.30-40.0)
Low	342 (790)	43.2%	(39.8 – 46.7)

The data provided relates to food insecurity experiences and coping strategies among a surveyed population. Here's an interpretation of the information:

5.16.2. Food Insecurity Experience Scale (FIES)

None/Light Hunger: Among 555 respondents, 30.8% reported experiencing none or light levels of hunger. This indicates that just under one-third of the surveyed population reported minimal or no food insecurity experiences.

Moderate Hunger: Approximately 21.6% of respondents reported experiencing moderate hunger, suggesting a significant but not the majority portion faced a more significant level of food insecurity.

Severe Hunger: The largest group, at 47.5%, reported experiencing severe hunger. This percentage signifies that nearly half of the surveyed population faced severe food insecurity experiences, indicating a concerning level of inadequate access to food.

Table 34 Food Insecurity Experience Scale (FIES)

Food Insecurity Experience Scale (FIES) ¹⁵			
	n (N)	%	95% CI
None/Light Hunger	171 (555)	30.8%	(27.11-34.77)
Moderate Hunger	120 (555)	21.6%	(18.40-25.24)
Severe Hunger	264 (555)	47.5%	(43.44-51.72)
Reduced Coping Strategy Index (rCSI) ¹⁶			
High Coping	279 (555)	50.27%	(46.12-54.41)
Medium	91 (555)	16.4%	(13.50-18.71)
No or Low Coping	185 (555)	33.33%	(29.54- 37.36)

5.16.3. Reduced Coping Strategy Index (rCSI):

High Coping: Around 50.27% of respondents reported using high coping strategies, indicating that half of the surveyed population used considerable efforts to cope with food insecurity. This could include various strategies such as borrowing money, reducing food portion sizes, or skipping meals.

¹⁵ 0-1 score: None or light hunger, 2-3 scores,: Moderate hunger, 4-6 scores: Severe hunger

¹⁶ No or low coping (CSI= 0-3), medium (CSI = 4-9, high coping (CSI ≥10).

Medium Coping: Approximately 16.4% reported employing medium coping strategies, indicating a smaller but still notable proportion of the population attempting to cope with food insecurity.

No or Low Coping: A total of 33.33% reported having no or low coping strategies. This group did not face difficulties in addressing or mitigating the effects of food insecurity, potentially indicating a sufficient resources or support to manage food-related challenges.

Overall, the data demonstrates a significant prevalence of severe hunger experiences among the surveyed population, with nearly half reporting severe levels of food insecurity. Additionally, while half of the respondents reported employing high coping strategies, a notable portion faced challenges in coping with food insecurity.

6. Discussion

The survey findings revealed that Global Acute Malnutrition (GAM) prevalence based on WHZ among children 6-59 months found “Very High” in QSK (22.0%). The overall combined GAM [cGAM] prevalence found 25.5% [21.8 - 29.6 95% C.I.] with a combined SAM (cSAM) rate of 8.8% [6.5 - 11.7 95% C.I.] There was statistically no significant difference found in cGAM and cSAM [P=0.392, 0.524]. The cGAM and cSAM is an aggregated indicator which provides overall acute malnutrition prevalence based on WHZ and/or MUAC and/or Oedema altogether.

Looking at combined prevalence, it is clear that the cGAM and cSAM rates were notably different by WHZ and MUAC which suggests that use of only MUAC or only WHZ based rates might lead to under estimation as well as of caseload when it comes to programming. Therefore, it is recommended to use cGAM estimate from routinely reported population-representative nutrition surveys globally, in addition to WHZ and MUAC, to enable context-specific decision-making, caseload calculation and Joint Response Planning.

The data demonstrates a significant prevalence of severe hunger experiences among the surveyed population, with nearly half reporting severe levels of food insecurity. Additionally, while half of the respondents reported employing high coping strategies, a notable portion faced challenges in coping with food insecurity. Some IYCF practices such as breastfeeding initiation and exclusive breastfeeding for the first two days after birth showed relatively higher adherence, there are areas of concern, including suboptimal exclusive breastfeeding for the recommended duration, delayed introduction of complementary foods, and low compliance with minimum dietary diversity and meal frequency guidelines. Addressing these gaps is crucial for ensuring optimal nutrition and healthy growth among infants and young children.

Overall, the interpretation of these percentages suggests that while some complementary foods like cereals and breast milk are widely introduced, there might be areas for improvement in introducing a more diverse range of nutrient-rich foods, including flesh foods, legumes, dairy products, and other fruits, to ensure a well-rounded and balanced diet for infants and young children during the complementary feeding period. The data suggests that among the surveyed group, the most common reason for stopping breastfeeding was becoming pregnant, followed by maternal health issues. Other reasons such as child illness, weakness, and work-related factors were less frequently cited. These insights can help tailor support and interventions to address specific concerns or barriers that lead to the discontinuation of breastfeeding among mothers.

The nutritional indicators for Qambar Shahdadt district across various surveys (SMART 2014, NNS 2018, MICS 2018-19, and SMART 2023) reveal a mixed but concerning picture of the region's nutritional status. The prevalence of Global Acute Malnutrition seems to have fluctuated, initially recorded at 13.8% in 2014, peaking to 27.5% in 2018, and then improving slightly to 22.0% in 2023. However, despite this recent improvement, it still remains higher than the initial 2014 figure. Likewise, the rates of underweight individuals, although showing a decreasing trend from 47.2% in 2018 to 35.9% in 2023, reflect persistently high levels of malnutrition over the years. Stunting, a chronic form of malnutrition, has demonstrated a relatively stable pattern, hovering around 45-49% over the various surveys. While there appears to be a slight decline in stunting rates from previous years, the prevalence remains alarmingly high, indicating a significant ongoing issue. These figures collectively highlight the persistent challenges of malnutrition, especially under-nutrition, within Qambar Shahdadt district. Addressing these concerns requires sustained interventions focused on improving nutrition, healthcare access, and socio-economic conditions to ensure the well-being and healthy development of the population, especially children, in this region.

Table 35 Comparative Analysis of Surveys with SMART Nutrition Survey Nutrition Indicators

Qambar Shahdadt				
Indicators	SMART 2014	NNS 2018	MICS-2018-19	SMART 2023
Global Acute Malnutrition	13.8%	27.5	22.2%	22.0%
Underweight	29.0%	47.2%	39.0%	35.9%
Stunting	48.40%	49.3%	45.0%	44.7%

Main Contributing factors of high malnutrition and Food insecurity

According to the According to the latest Integrated Food Security Phase Classification Acute Malnutrition (IPC, 2021 & 2022) Sindh is already marked with a high prevalence of food insecurity, malnutrition and poverty. However, the major shocks which had a considerable impact on the children and maternal health.

High inflation: Food inflation, and hike in fuel prices in last two years, which have adverse impacts on the purchasing power of the population and their access to food, particularly for poor and middle-income groups, for some time. The Consumer Price Index (CPI) inflation data released by the Pakistan Bureau of Statistics (PBS) in 2023 shows, that CPI inflation (General) in Pakistan increased by 30.9%.

Rain flood 2020: Pakistan have caused widespread flooding and landslides across the country and up to 33 million people have been affected by the floods including 14 districts of Sindh labeled as 'calamity-hit'¹⁷. Which badly affect the livelihood sources and agriculture land. According to IPC 2022, overall, 58% of the surveyed households reported a reduction in their income from their main source of livelihood due to multiple crises/shocks. Around 85% of surveyed farming households faced crop production difficulties¹⁸.

¹⁷ Government of Pakistan 2022

¹⁸ IPC Sindh December 2022

7. Recommendations

Based on the findings of the SMART Nutrition Survey in Qambar Shahdadkot, Sindh in 2023, the following recommendations and action plan are proposed for policy makers to address the identified issues:

Indicators	Areas	Actions
Malnutrition and Nutritional Status of Children	Enhance Support	Nutritional Focus on nutritional education and interventions during pregnancy and lactation to ensure adequate intake of essential nutrients. Implement community-based programs promoting diversified diets and adequate supplementation, especially among pregnant and breastfeeding women, to address malnutrition issues.
	Promote Opportunities	Education Address the high percentage of women with no formal education by providing accessible and inclusive educational opportunities. Implement initiatives to encourage and facilitate primary and secondary education enrollment for women and girls, fostering awareness about the benefits of education for maternal and child health.
	Strengthen Care Services	Antenatal Despite good coverage of iron/folic acid supplementation, efforts are needed to enhance family planning knowledge and ensure continuous support from family members during pregnancy and lactation. Strengthen outreach programs to raise awareness about family planning options, encourage familial support, and educate on the importance of skilled delivery attendants to increase hospital deliveries.
	Improve Healthcare Facilities	Access to Address the geographical barriers by improving access to healthcare facilities within a 5 km radius. Implement strategies to reduce travel distances, possibly by establishing additional health facilities or mobile clinics, ensuring timely access to maternal and child healthcare services.
	Increase Consumption	IFA Tablet Despite a majority consuming IFA tablets, a significant portion either does not consume them or consumes them partially. Implement targeted educational campaigns emphasizing the importance of consistent IFA tablet intake during pregnancy to address nutritional deficiencies.
Enhance Interventions	Child Health Strengthen deworming campaigns to increase coverage among children aged 12-59 months. Improve documentation and awareness around measles vaccination to bridge the gap between card-based records and recall.	

Child Health		Encourage broader coverage of Vitamin-A supplementation among children aged 6-59 months
	Diarrhea Management	Efforts should focus on increasing access to Zinc or ORS treatment for diarrhea among children to further reduce morbidity and mortality associated with diarrheal episodes. iCCM approach should be an effective model to treat diarrhea cases at community level
Food Security and Livelihood	Enhance Food Security Programs	Develop and implement targeted food security initiatives focusing on the most affected populations experiencing severe hunger. These programs should aim to increase access to nutritious food through subsidized food distribution, food banks, or community gardens, especially in areas with high reported food insecurity.
	Support Income Generation and Livelihood Opportunities	Create and strengthen programs that provide economic support, vocational training, and income-generating activities to vulnerable communities. Empowering individuals to earn a sustainable income can mitigate food insecurity by enhancing their purchasing power for food and other essential needs
	Strengthen Safety Nets and Social Support	Expand social safety net programs such as food assistance programs, cash transfers, or food vouchers targeted at households facing severe food insecurity. Strengthen community-based support systems to provide aid to those struggling to cope with food insecurity.
	Monitoring and Evaluation	Establish a robust monitoring and evaluation system to track the effectiveness and impact of food security programs regularly. Continuous assessment and feedback mechanisms will help in refining strategies and addressing evolving challenges effectively.
Water, Sanitation, and Hygiene (WASH)	Enhancing Access Infrastructure	Policy efforts should focus on expanding and improving water distribution systems to ensure equitable access to clean and potable water, especially within households. Initiatives should aim to reduce this gender gap, possibly by introducing community water supply schemes that minimize the need for individual household collection. Target interventions toward the primary reasons for open defecation such as the absence of latrines, lack of lighting at night, and distance from latrines. This may involve infrastructure development for better lighting, constructing latrines, and providing support for households to build their own sanitation facilities.
	Improving Sanitation and Hygiene	Policy interventions should prioritize providing access to proper sanitation facilities and promoting behavior change through awareness campaigns, aiming to eliminate open defecation.

	Improving Water Quality and Treatment		There is a critical need for education campaigns and infrastructure development to promote water treatment practices. Implement programs that educate communities about water treatment methods and support the installation of water treatment facilities in households or communities.
Nutrition Status of children	Nutrition Programs	Intervention	Implement comprehensive nutrition intervention programs focusing on addressing malnutrition among children. This could include supplementary feeding programs, nutrition education for caregivers, promotion of breastfeeding, and micronutrient supplementation to tackle GAM, SAM, stunting, and underweight.
	Community-based Nutrition Initiatives		Engage communities through participatory approaches to promote nutrition education, emphasize the importance of a balanced diet, and hygiene practices, and support local food production initiatives to increase food diversity and availability.

8. Annexures

8.1. Annex I: Sphere Standards CDR and U5DR Emergency Threshold Cut-offs by Region

Region	CDR Baseline	CDR Emergency Threshold	U5DR Baseline	U5DR Emergency Threshold
South Asia	0.22	0.40	0.46	0.90
East Asia and Pacific	0.19	0.40	0.15	0.30
Industrialised Countries	0.25	0.50	0.03	0.10
Developing Countries	0.22	0.40	0.44	0.90
Least developed countries	0.33	0.70	0.82	1.70
World	0.25	0.50	0.40	0.80

8.2. Annex II- Plausibility Report

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags* Unit	Excel.	Good	Accept	Problematic	Score
Flagged data	Incl %	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)		0	5	10	20	0 (1.4 %)
Overall Sex ratio	Incl p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)		0	2	4	10	0 (p=0.347)
Age ratio(6-29 vs 30-59)	Incl p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)		0	2	4	10	0 (p=0.198)
Dig pref score - weight	Incl #	0-7	8-12	13-20	> 20	
		0	2	4	10	0 (5)
Dig pref score - height	Incl #	0-7	8-12	13-20	> 20	
		0	2	4	10	2 (11)
Dig pref score - MUAC	Incl #	0-7	8-12	13-20	> 20	
		0	2	4	10	0 (7)
Standard Dev WHZ	Excl SD	<1.1	<1.15	<1.20	>=1.20	
.		and	and	and	or	
.	Excl SD	>0.9	>0.85	>0.80	<=0.80	
		0	5	10	20	0 (1.05)
Skewness WHZ	Excl #	<±0.2	<±0.4	<±0.6	>=±0.6	
		0	1	3	5	0 (-0.17)
Kurtosis WHZ	Excl #	<±0.2	<±0.4	<±0.6	>=±0.6	
		0	1	3	5	1 (-0.20)
Poisson dist WHZ-2	Excl p	>0.05	>0.01	>0.001	<=0.001	
		0	1	3	5	0 (p=0.153)
OVERALL SCORE WHZ =		0-9	10-14	15-24	>25	3 %
The overall score of this survey is 3 %, this is excellent						

8.3. Annex III Event Calendar

Month	EVENT CALENDAR 2018 TO 2023 (SINDH)										
	2018	2019		2020		2021		2022		2023	
Jan		1 Jan New Year's Day Wheat sowing Season (Dec-Jan)	55	1 Jan New Year's Day 29 Jan Basant Panchami Wheat sowing Season (Dec-Jan)	43	1 Jan New Year's Day 06 January- 01 Jamad ul sani Wheat sowing Season (Dec- Jan)	31	1 Jan New Year's Day 06 January- 01 Jamad ul sani Wheat sowing Season (Dec-Jan)	19	1 Jan New Year's Day 26 Jan Basant Panchami Wheat sowing Season (Dec- Jan)	7
Feb		5 Feb Kashmir Day 10 Feb Basant Panchami Lady finger (Jan-Mar) Dera Jaat Water melon (Feb-July) Apple (Feb-July)	54	5 Feb Kashmir Day Nokeen Saal Lady finger (Jan-Mar) Water melon (Feb-July) Apple (Feb-July) 21 feb shivratri	42	5 Feb Kashmir Day 16 Feb Basant Panchami 14 Feb-1st Rajab Lady finger (Jan-Mar)	30	5 Feb Kashmir Day 01 rajab Lady finger (Jan-Mar) Water melon (Feb-July) Apple (Feb-July)	18	5 Feb Kashmir Day 01 shaban 15 Feb- Bargah Dera jat kunday	6
Mar		4 Mar Shivaratri 21 Mar Holi 23 Mar Pakistan Day 21 march Dulhandi Bilot Mela Rabi Corp Harvesting	53	10 Mar Holi 10 march Dulhandi 23 Mar Pakistan Day 23 Mar Shab e-Meraj Rabi Corp Harvesting 10 march dulhandi	41	11 march shivratri 29 Mar Holi 12 March Shab e-Meraj 15 March- 01 Shaban 23 Mar Pakistan Day 29 march dulhandi Rabi Corp Harvesting	29	18 Mar Holi 23 Mar Pakistan Day 01 MArch Shab e-Meraj 29 march ramzan 23 Mar Shab e-Meraj Rabi Corp Harvesting	17	23 Mar Pakistan Day 08 Mar Holi Rabi Corp Harvesting	5
Apr		Sikandar Mela 3 Apr Shab e-Meraj 21 April Ridvan 19 Apr Good Friday 20 Apr Shab e-Barat Rabi Corp Harvesting	52	12 Apr Easter Monday 13 april besakhi Sikandar Mela 09 Apr Shab-e-Barat 30 Apr Buddha Purnima Rabi Corp Harvesting	40	04 Apr Easter Monday 14 Apr 1st ramzan Sikandar Mela Rabi Corp Harvesting Bargah	28	01 shawal Eid ul fitar (holi) 30 April 1st shawal Rabi Corp Harvesting Sikandar Mela	16	09 Apr Easter Monday 01 ramzan Sikandar Mela Rabi Corp Harvesting	4
May		1 May Labour Day 18 May Buddha Purnima 6 may Ramadan start	51	1 May Labour Day 16 may Ramadan start Budha punima 22 May 23-24 May Eid-ul-fitr	39	1 May Labour Day 19 May Buddha Purnima 12-13 May Eid-Ul-Fitr (Holi) 14 May- 1st Shawal	27	1 May Labour Day 28 may - 01 zilqad 01-02 May Eid-Ul-Fitr	15	01 shawal eidul fitar Urs Mela	3
June		5 Jun Eid-ul-Fitr 6 Jun Eid-ul-Fitr Holiday 7 Jun Eid-ul-Fitr Holiday Summer vacation	50		38	12 June- 1st Zilqad	26	29 june 1st zilqad	14	01 Zilhajj Heavy rainfall Storm 27 june football tournament 29 june Eid ul azha	2
July		1 Jul 1 Bank Holiday Monsoon Heavy Rain	49	1 July 1 Bank Holiday Monsoon Heavy Rain 31 Jul Eid al-Adha	37	1 Jul 1 Bank Holiday Monsoon Heavy Rain 12 july -1st Zilhajj 21 July Eid Ul Azha	25	28 july 1st Moharram 1st week of July heavy rain 10 Jul Eid al-Adha Lumpy Skin Disease animal	13	28 july 10 Moharram Lumpy Skin Disease animal	1

August	14 Aug Independence Day 18 Aug Imran Khan Selected 22 Aug Eid al-Adha 23 Aug Eid al-Adha Holiday 24 Aug Eid al-Adha Holiday Monsoon Heavy Rain 28 Aug- Akbar Bugti death anniversary	60	12 Aug Independence Day 13 Aug Eid al-Adha Holiday 15 August Hob 14 Aug Eid al-Adha Day 4 15 August Mischin 24 Aug Janmashtami Monsoon Heavy Rain 28 Aug- Akbar Bugti death anniversary	48	1 Aug Eid al-Adha Holiday 2 Aug Eid al-Adha Holiday 11 Aug Janmashtmi 14 Aug Independence Day 15 August Mischin 15 August Hob 29 Aug Ashura 30 Aug Ashura Holiday Monsoon Heavy Rain	36	14 Aug Independence Day 18 Aug Ashoor 15 August Mischin 15 August Hob 10 Aug- 1st Moharram Monsoon Heavy Rain	24	14 Aug Independence Day 27 August 1st safar 08 Aug Ashura 25 Aug flood 27 August- 1st Moharram 09 Aug Ashura Holiday Monsoon Heavy Rain 23 safar meethitikiyan (Tikray)	12	14 Aug Independence Day 27 August 1st safar 08 Aug Ashura 25 Aug flood 27 August- 1st Moharram 09 Aug Ashura Holiday Monsoon Heavy Rain 23 August Jammashmtmi	0
Sept	3 Sep Janmashtami Sep 23 Pashtun cultural day 6 Sep Defence Day 21 Sep Ashura Sep 7 Khatam-e-Nobuwwat day 22 Sep Ashura Holiday	59	6 Sep Defence Day 9 Sep Ashura Sep 23 Pashtun cultural day 10 Sep Ashura Holiday Sep 7 Khatam-e-Nobuwwat day	47	6 Sep Defence Day Sep 23 Pashtun cultural day Sep 7 Khatam-e-Nobuwwat day	35	6 Sep Defence Day 28 Sep Chelum 09 Sep- 1st Safar Sep 23 Pashtun cultural day Sep 7 Khatam-e-Nobuwwat day	23	6 Sep Defence Day 25 Sep 1st rabi-ul-awal 17 Sep Chelum Sep 23 Pashtun cultural day Sep 7 Khatam-e-Nobuwwat day	11		
Oct	17 Oct Durga Puja 19 Oct Dussehra 30 Oct Chelum Ghala Kishar 24 Oct Lateef Bhitai Urs	58	20 Oct Chelum 27 Oct Diwali/Deepavali 8 Oct Dussehra 13 Oct Lateef Bhitai Urs	46	8 Oct Chelum 23 Oct durga pooja 25 Oct Dussehra 30 Oct Eid Milad un-Nabi kharif Harvest season 1-3 Oct Lateef Bhitai Urs	34	20 Oct Birthday of Guru Ghala Kishar 27 Oct Diwali/Deepavali kharif Harvest season	22	3 Oct durga pooja 5 Oct dussehri 30 Oct Eid Milad un-Nabi 20 Oct rabi ul sani kharif Harvest season Ghala Kishar	10		
Nov	7 Nov Diwali/Deepavali 9 Nov Iqbal Day 21 Nov Eid Milad un-Nabi 23 Nov Guru Nanak's Birthday	57	9 Nov Iqbal Day 10 Nov Eid Milad un-Nabi 12 Nov Guru Nanak's Birthday	45	9 Nov Iqbal Day 14 Nov Diwali/Deepavali 28 Nov Giarhwin Sharief 30 Nov Guru Nanak's Birthday	33	9 Nov Iqbal Day 10 Nov Eid Milad un-Nabi 7 Nov- 1st Rabiul sani	21	9 Nov Iqbal Day 14 Nov Diwali/Deepavali 26 Nov 1st Jamadi ul awal Rabi ul sani	9		
Dec	19 Dec Giarhwin Sharief 25 Dec Quaid-e-Azam Day Pakhtun Culture Day 31 Dec New Year's Eve 22 Dec Benazeer death Anniversary	56	19 Dec Giarhwin Sharief 25 Dec Quaid-e-Azam Day Pakhtun Culture Day 31 Dec New Year's Eve 22 Dec Benazeer death Anniversary Winter vacation	44	19 Dec Giarhwin Sharief 25 Dec Quaid-e-Azam Day Pakhtun Culture Day 31 Dec New Year's Eve 22 Dec Benazeer death Anniversary winter vacation	32	19 Dec Giarhwin Sharief 25 Dec Quaid-e-Azam Day Pakhtun Culture Day 31 Dec New Year's Eve 22 Dec Benazeer death Anniversary winter vacation	20	19 Dec Giarhwin Sharief 25 Dec Quaid-e-Azam Day Pakhtun Culture Day 31 Dec New Year's Eve 22 Dec Benazeer death Anniversary winter vacation Rabi ul Awal	8		

8.4. Annex IV Cluster control Form

Line list HH #	Order of Visit	Name of HH	First Visit Outcome 1 = completed 2 = partly completed 3 = refused 4 = absent*	Number of eligible children (6-59 months)	Number of eligible children Measured (6-59 months)	Number of children under 2 (0-23 months)	HH needs to be revisited Yes or No	HH Re-visited Yes or No	Second Visit Outcome (If necessary) 1 = completed 2 = part completed 3 = refused 4 = absent	Comments
	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									