Nutrition Survey

among U5 Children and Women of Childbearing Age in Three Districts in Hajjah Governorate, Yemen

July 2011

unicef

Nutrition Survey

among U5 Children and Women of Childbearing Age in Three Districts in Hajjah Governorate, Yemen

July 2011

Ministry of Public Health and Population
Primary Health Care Sector
Family Health general Directorate
Nutrition Department

United Nations Children's Fund (Yemen)

ACKNOWLEDGEMENTS

This report describes the nutritional status and some of the reasons behind that among displaced and local families specially children and mothers in the districts of Haradh, Mustaba, and Bakeel Almir. Though the idea had come originally to help involved actors in identifying outcomes of inputs aimed at addressing malnutrition among displaced families, it has added to our learning the knowledge about nutritional status of local families, which has shown up to be not much better.

The survey was done in July 2011, at that time the political crisis was very tight and findings have clearly shown us the devastating impact of such crises on civilians. The results, also, have explained some of the reasons behind such widespread malnutrition status among children and mothers, which confirms the well known fact that addressing malnutrition is a multi-sectoral issue involving multiple sectors and organizations whom must collaborate and harmonize inputs to deliver a comprehensive package of services and support, and not to forget the crucial role of local community in making any intervention come to a success. It is also needed to deal with malnutrition pre-disposing factors in order to prevent the children falling into the vicious circle of malnutrition.

Ministry of Public Health and Population would like to express its sincere thanks to the many people involved in this survey and report writing, to mention UNICEF and WFP and their technical officers who immensely contributed to the findings and related recommendations. Special thanks to Prof. Abdul Wahed Al Serouri and Mr. Nagib Abdulbaqi for their day to day hard work on data verification, analysis and report writing. Thanks to Dr. Ali Jahhaf, Dr. Agostino Munyiri, Dr. Wisam Al Timimi, Dr. Saja Farouk and Dr. Rajia Sharhan for their thorough review and contributions.

Special thanks also go to the technical nutrition teams in MOPH&P - Nutrition Department, Hajjah Governorate Health Office, Harad District Health Office and to Islamic Relief - Harad office.

Deep appreciation goes to the data collection teams, field supervisors, team leaders, enumerators, data entry team and all health workers who participated in and made this survey such a successful effort.

Last but not least, we would like to thank all individuals mainly women and under five girls and boys, households and communities in Harad, Bakeel Al-Meer and Mustaba districts who made themselves available to participate in this survey and provided full insight of their lives.

Dr. Majid Al Jonaid

Deputy Minister for PHC Sector, MOPH&P

LIST OF ACRONYMS

ARI	Acute Respiratory Infection
CI	Confidence Interval
CMAM	Community Management of Acute Malnutrition
ENA	Emergency Nutrition Assessment
FCS	Food Consumption Score
FGD	Focus Group Discussion
FHS	Family Health Survey
GAM	Global Acute Malnutrition
Hb	Haemoglobin
HAZ	Height for Age Z-scores
IDP	Internally Displaced People
IYCF	Infant and Young Child Feeding
IUGR	Intra Uterine Growth Retardation
MAM	Moderate Acute Malnutrition
MICS	Multiple Indicators Cluster Survey
MNP	Multiple micronutrient powder
MoPHP	Ministry of Public Health and Population
MUAC	Mid-Upper Arm Circumference
NC	Nutrition Cluster
NGO	Non-Governmental Organization
OTP	Out-patient Therapeutic Programme
PPS	Probability Proportionate to Sizes
SAM	Severe Acute Malnutrition
SWF	Social Welfare Fund
SD	Standard Deviation
SFP	Supplementary Feeding Programme
SMART	Standardized Monitoring and Assessment of Relief and Transition
SOWC	THE STATE OF THE WORLD'S CHILDREN
U5	Under-five
UNICEF	United Nations Children's Fund
WASH	Water Sanitation and Hygiene
WAZ	Weight for Age Z-scores
WFP	World Food Programme
WHO	World Health Organization
WHZ	Weight for Height Z-scores

TABLE OF CONTENTS

ACKNOWLEDGEMENTS i

LIST OF ACRONYMS iv

TABLE OF CONTENTS v

EXECUTIVE SUMMARY 1

1. INTRODUCTION 4

1.1. SURVEY AREA AND POPULATION 4

1.2. SERVICES AVAILABLE AND ASSISTANCE RECEIVED BY THE POPULATION 4

1.3. SURVEY OBJECTIVES 4

1.3.1. General Objectives 4

1.3.2. Specific Objectives 5

1.4. RATIONALE FOR THE SURVEY 5

2. METHODOLOGY 6

2.1. SAMPLING 6

2.2. THE DATA COLLECTION METHODS 7

2.3. TRAINING AND SUPERVISION 7

2.4. PILOT TESTING AND REVISION OF THE SURVEY TOOLS 8

2.5. FIELD WORK AND QUALITY CONTROL 8

2.6. VARIABLES MEASURED 8

2.6.1 U5 Children 8

2.6.2 Women in child-bearing age: 9

2.6.3 Family 9

2.6.4 Household 9

2.7. DATA MANAGEMENT AND OFFICE WORK 10

2.8. DATA ANALYSIS 10

2.9. DEFINITIONS OF MALNUTRITION AND ANAEMIA PREVALENCE 10

2.9.1. Definitions used for nutrition status in U5 children 10

2.9.2. Definitions used for nutritional status in women in child bearing age 12

2.9.3. Definitions used for anaemia in women in child bearing age 12

2.10. DEFINITIONS USED IN FOOD INSECURITY FOOD DIVERSIFICATION 12

2.10.1. Definition of Household Food Consumption Group 12

2.10.2. Definition of food diversification 13

3. RESULTS 14
3.1. UNDER 5 CHILDREN 14
3.1.1. CHARACTERISTICS OF THE POPULATION SAMPLE GROUPS 14
3.1.2. ANTHROPOMETRIC RESULTS 15
3.1.3. CHILDREN'S HEALTH 20
3.1.4. INFANT AND YOUNG CHILD FEEDING (IYCF) PRACTICES 21
3.2. WOMEN OF CHILD BEARING AGE 23
3.2.1. MALNUTRITION AND INTRA UTERINE GROWTH RETARDATION BY MUAC FOR AGE Z-SCORES 23
3.2.2. ANAEMIA IN WOMEN OF CHILD BEARING AGE 24
3.3. HOUSEHOLD FOOD INSECURITY, ACCESSIBILITY AND COPING STRATEGIES 25
3.3.1. FOOD INSECURITY 25
3.3.2. FOOD ACCESSIBILITY 26
3.3.3. COPING STRATEGIES 27
3.3.4. GENERAL FOOD DISTRBURION 27
3.3.5. THERAPUTIC AND SUPPLEMENTARY FOOD DISTRBURION 28
3.4. WATER, SANITATION, AND HYGIENE (WASH) 29
4. DISCUSSION 31
4.1. NUTRITIONAL STATUS OF U5 CHILDREN 31
4.1.1. Prevalence of malnutrition 31
4.1.2. Malnutrition prevalence among IDPs and host population 32
4.1.3. Malnutrition and child age 34
4.1.4. Malnutrition by gender 35
4.1.5. Malnutrition by mother's literacy 35
4.2. CHILDREN'S HEALTH 35
4.2.1. Childhood Morbidity 35
4.2.2. Measles vaccination 37
4.2.3. Vitamin A supplementation 38
4.3. INFANT AND YOUNG CHILD FEEDING (IYCF) PRACTICES 39
4.3.1. Ever breastfed 39
4.3.2. Early initiation of breast feeding 39
4.3.3. Pre-lacteal feeding 40
4.3.4. Exclusive breast feeding 40
4.3.5. Bottle feeding 40
4.3.6. Food diversification 40
4.4. WOMEN OF CHILD BEARING AGE 41
4.4.1. Malnutrition among pregnant and non-pregnant women 41
4.4.2. Anaemia a mong pregnant and non-pregnant women 42

4.5. HOUSEHOLD FOOD INSECURITY, ACCESSIBILITY AND COPING STRATEGIES 42
4.5.1. Food insecurity 42
4.5.2. Food accessibility 43
4.5.3. Coping strategies 44
4.5.4. General food distribution 45
4.5.5. Therapeutic and supplementary food distribution 47
4.6. WATER, SANITATION, AND HYGIENE (WASH) 48
5. SUMMARY OF FINDINGS 50
6. RECOMMENDATIONS 52
7. ANNEXES 55
ANNEX 1: Nutrition Survey Team 55
ANNEX 2: Map of the survey area 57
ANNEX 3: Assignment of clusters 58
ANNEX 4: Questionnaires 59
I. Household questionnaire 59
II. Family questionnaire 65
III. Woman Questionnaire 75
IV. Child Questionnaire 82

EXECUTIVE SUMMARY

In June 2011, MoPHP with the support of UNICEF, WFP , WHO and on behalf of the Nutrition Cluster conducted a Nutrition survey amongst U5 children and women of child bearing age. The survey was conducted in Harad, Bakeel Al-Meer and Mustaba Districts of Hajjah Governorate, Yemen and targeted IDPs and host communities. The survey was prompted by an observation of high rates of relapses and admissions of children with malnutrition by MSFE in spite of the nutrition and food security interventions are already in place. The survey objectives were to determine the prevalence of malnutrition among children under-five and pregnant mothers in addition to prevalence of anaemia among childbearing age women along with an in depth understanding of the underlying causes

The survey was a population-based, cross-sectional, two stage cluster sample survey applying quantitative and qualitative data collection techniques. A total of 1231 households were surveyed and anthropometric measurements and health data collected on 1470 children between 0 - 59 months of age. Also, MUAC and hemoglobin were measured for 1592 women of child bearing age. Two other questionnaires were also administered: one about family food security and one on household characteristics.

FINDINGS

The findings show a GAM rate (Based on WHO 2006 Growth Standards) of 31.4% [95% C.I 29.0 – 33.7] and SAM 9.1% [95% C.I: 7.6-10.5] which is twice the WHO critical emergency threshold for immediate emergency interventions. Furthermore, the survey found underweight prevalence of 48.3% [95% CI 45.6-50.9] and stunting of 43.6% [95% CI 40.9-46.4]. The GAM and underweight prevalence is higher than the national average (15.0 %, 43.0% respectively) which may indicates an increased vulnerability in the survey areas. GAM prevalence was found to be significantly higher among children under two years of age (43.9% vs. 28.9%), which may be related to poor IYCF practices. However, underweight and stunting are significantly higher among U2 children, indicating the importance of early treatment of acute malnutrition. Consistent with the findings of last national Family Health Survey 2003, the prevalence of GAM found in this survey was highest among males. Mothers illiteracy was found to be significantly associated with children stunting. SAM rates were significantly higher among IDPs than host population (10.8 vs.7.2%).

The prevalence of diarrhea was found to be significantly higher among IDPs where one in two children reported to have diarrhea during past two weeks and significantly associated with malnutrition. Delivery of primary health care services exemplified by measles and vitamin A coverage was 79.4% and 65.5% respectively. Diarrhea, fever, and ARI were found to be less among those who received Vitamin A supplementation, however such association was only statistically significant with fever.

Only one in five children were exclusively breastfed (with higher prevalence of wasting among non-exclusive breastfed), only 15% of women had initiated breastfeeding within one hour of delivery, 26% had used pre-lacteal feeding, 12% used bottle, and less than one in four of those aged 6-23 months received appropriate complimentary food.

Of the 1,592 women of child bearing age sampled 23% were pregnant and around half of them was at severe to moderate risk of intra-uterine growth retardation and 37.8% had moderately to severe anemia.

On food insecurity, more than half of the surveyed families were food insecure and more than one fifth were severely food insecure according to Food Consumption Score cut-off points with significantly higher food insecurity among IDPs. The prevalence of stunting was found to be significantly higher among food insecure households. Furthermore, about half of the families were forced to reduce meals size/number, more than one third slept hungry, and 14.6% remained unfed the whole day with significantly higher food inaccessibility among IDPs. Malnutrition was significantly higher among pregnant women with poor access to food as indicated by food vanished totally from the household.

It was noted that households adopt a wide range of coping strategies in efforts to cover their food gaps; up to three fourths of the surveyed families are using one or more of the following coping strategies e.g. buying food on credit, selling assets to buy food, decreased expenditure on education/health, with significant association between selling assets to buy food and reducing expenditures on health/education and GAM. Moreover, among pregnant women higher prevalence of malnutrition was found among those buying food on credit.

General food distribution by WFP targeted mainly IDPs with 82% coverage; the majority of respondents reported receiving food at least twice during last three months. Food insecurity was found to be much higher among those who are receiving food ration indicating proper targeting. Furthermore, IDPs who are not receiving ration were found to be at much higher risk of food insecurity. Pregnant and non-pregnant women who are receiving ration within the last three months have significantly less prevalence of malnutrition. The prevalence of anaemia amongst pregnant and non-pregnant women was found to be less among those receiving food ration however, this was only significant for non-pregnant women.

In spite of high prevalence of child malnutrition only about one out of five SAM cases are currently on supplementary and/or therapeutic feeding with higher percent among IDPs compared to host communities (31.5% vs.8.7%). Such low coverage may be related to the very low total number of operational OTPs and health facilities in the three districts and limited outreach activities..

In this survey it was found that a higher percent of children with diarrhoea was amongst households that reported fetching water from protected sources in camps and outside camps as their source of drinking water compared to those who reported other source e.g. wells, springs etc. (50.4% vs. 44.5% respectively). In addition diarrhoea was also significantly inversely associated with human excreta and garbage disposal with lower diarrhoea prevalence among those who had no toilets and amongst those disposing garbage in the open. Further investigations are needed to determine the underlying causes of this inverse relationship through undertaking a comprehensive analysis of the WASH sector in the surveyed areas.

RECOMMENDATIONS

1. Expand the Community-based Management of Severe Acute Malnutrition to include management of moderate acute malnutrition through establishment of OTPs in all operational health facilities along with setting up outreach/ mobile services.
2. Address the health, IYCF, food security and Water, Sanitation and Hygiene (WASH) underlying causes of acute malnutrition. Prioritize the period from preconception till 24 months (1000 day window of opportunity) for emergency nutrition interventions due to the highly disproportionate rates of acute malnutrition in this age group.
3. Strengthen and institutionalize capacity for routine nutrition surveillance activities into government and community structures

4. Expand the supplementary feeding programmes to include host communities, the moderately acute malnourished children, pregnant women and women of child bearing age women.
5. Distribute multiple micronutrient powders (MNP) to all households with children aged 6-59 months and multiple micronutrient supplements for pregnant and lactating women
6. Strengthen routine immunization (especially measles vaccination) and vitamin A supplementation services for both IDPs and host community children to reach the target of above 90% and 80% respectively.
7. Design a multi-sectoral, integrated response to address the underlying causes of malnutrition that includes water, sanitation, health, education, food security and social protection
8. Regularly monitor the health and food security situation of the IDPs as well as host population until rates of SAM declines to levels below 5%.
9. In the few of important – though it is peculiar- WASH related findings of this survey; undertake a comprehensive analysis of the WASH sector with special focus on household WASH practices to determine the underlying causes of this inverse relationship.
10. Provide/maintain food assistance to all IDPs through general food distribution. The amount should be increased, and local preferences –as possible- should be considered. Consider targeting the host communities with food assistance. Pilot replacing classical "food aid" approaches, with new "food assistance" approaches e.g. cash/vouchers for work, vocational training, generating employment opportunities and conditional cash transfers.
11. WASH cluster partners should consider the following; a) Improving water surveillance and water safety at all levels (water-trucking chain, point of delivery, transportation, storage containers and safe container with narrow neck). b) Undertaking vector control campaigns to neutralize the sanitary risks. c) Upgrading latrine/ toilet standards. d) Scaling up hygiene promotion campaigns through innovative participatory approach.

1. INTRODUCTION

With the eruption of the sixth war in August 2009, large number of families fled their homes in Sa'ada Governorate to safer areas in the neighbouring governorates – of Al-Jawf, Amran and Hajjah. However, high IDP concentrations are observed in the three districts of Hajjah – Harad, Bakeel Al-Meer and Mustaba. This situation has put an enormous toll on the basic services in the three districts in Hajjah governorate.

1.1. SURVEY AREA AND POPULATION

Table 1.1 gives the estimated 2011 population of the three survey districts: Harad, Bakeel Al-Meer, and Mustaba as well as the IDPs in Al Mazrak camp. The estimated 2011 population of the three districts is shown in table 1.

Table 1.1 Estimated 2011 population of the three survey districts

District	Population	U5	P/LW
Harad	113,490	23,039	5,413
Bakeel-Al-Meer	26,334	5,346	1,256
Mustaba	51,611	10,477	2,462
IDPs in Al Mazrak camp	18,806	3,761	940
Total	**210,241**	**42,623**	**10,071**

1.2. SERVICES AVAILABLE AND ASSISTANCE RECEIVED BY THE POPULATION

When the conflict started, Ministry of Health (MOPHP) and UNICEF jointly programmed nutrition responses to vulnerable population by establishing TFC in Mazraq 1. These facilities were later handed over to MSF Spain (MSFE) who was able to scale up their operations to cover all of the three camps in Hajjah and those living outside these camps as well as the IDP concentrations in Mustaba district. MSFE's current interventions comprise TFC at Mazraq hospital and mobile OTPs in the three camps. MSFE has deployed trained experts – expats and local recruits – to extend services to the affected population.

Several aid agencies (e.g. UNICEF, WHO, WFP, MSF Spain (MSFE), MDM etc.) are delivering humanitarian assistance in the three districts as access to IDPs is still possible. While most of them are housed in three defined camps (some live outside these camps) in the Harad – Mazraq 1, 2, and 3, some also live with host communities in the other two districts.

1.3. SURVEY OBJECTIVES

1.3.1. General Objectives

- To establish prevalence and determinants of malnutrition among children under-five and pregnant as well as expectant mothers in Harad, Bakeel Al-Meer and Mustaba Districts of Hajjah Governorate, Yemen by applying UNICEF's causality framework/WHO nutrition survey guidelines
- To identify appropriate interventions to correct malnutrition in those populations

1.3.2. Specific Objectives

- To assess prevalence of underweight, wasting and stunting among children under-five years of age in IDP camps and host communities
- To assess prevalence of acute malnutrition among pregnant and lactating women as well as women of child-bearing age through MUAC
- To assess prevalence of anaemia among pregnant vs. non-pregnant (including lactating women) among women of child-bearing age through HemoCue technique
- To identify underlying causes affecting health and nutrition of IDPs and residents (quantitative and qualitative methods) with a particular focus on infant and young child feeding practices for initiating corrective actions

1.4. RATIONALE FOR THE SURVEY

In spite of the nutrition responses that are perceived as adequate enough to address the prevailing malnutrition in Harad; MSFE that lead such response in the field raises concerns since they have continued to receive high number of malnourished children in their facilities and in most cases the children tend to take longer than expected period to recover (100 days vs. expected 45 days) in spite of the low rate of defaults. Further MSFE has noted high number of relapses with compromised health and nutrition condition. During January- December 2010, total exits accounted for 2,964 children against 3,052 total SAM admissions to MSFE services.

WHO observations can offer a proxy for MSFE observations. They have reported high incidence of anaemia among pregnant women in Camp 1 which is in spite of improved general food distribution and that pregnant women continue receiving iron to protect against anaemia.

2. METHODOLOGY

The survey was designed to estimate the prevalence and identify determinants of malnutrition among children under-five, and women at childbearing age in IDPs and host communities in districts of Harad, Mustaba and Bakeel Al-Meer in Hajjah governorates. It was designed to provide with independent representative estimates with acceptable precision for the anthropometrical described nutritional status and anaemia.

It is population-based, cross-sectional, two stage cluster survey. Two strata represent IDPs and host villages/zones were separately sampled using one merged frame. The IDPs frame was the first frame prepared using available data provided by UNICEF, CSSW and some other NGOs offices working in Harad. After selecting the IDPs clusters, host villages and zones were selected

2.1. SAMPLING

The appropriate sample size is determined using probability proportionate to population size (PPS) with the finite population correction factor (fpc) using Open Epi Info 2.3 software[1] and the following equation for each stratum:

$$n = [DEFF*Np(1-p)]/ [(d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p)])$$

Where:

n= sample size N= population size

p=Hypothesized % frequency of outcome factor in the population

d= Confidence limits z= Z value DEFF= Design effect

Before determining the number of families in each stratum, numbers of children and women were calculated separately with expected Global Acute Malnutrition (GAM) of 30% and anaemia of 40 percent among children and women respectively with absolute precision of 5%, confidence level of 95%, and design effect of 2. The minimum sample size calculated was 614 children and 690 women in each stratum. These numbers were converted to numbers of families using rates of 1.5 and 1.32 for children and women respectively and 5% was added as a rejection rate. We used the highest sample size calculated based on anaemia among women which is 549 families in each stratum.

It was decided that sampled families to be divided into 30 clusters in each stratum that resulted in 19 families in each cluster with new total of 570 families in each stratum. However, after selecting the cluster sites, verification visits were arranged to those sites to make sure about the population size that is appropriate with designed sampling we found that it was difficult to find 30 host clusters (because of very few host population settings were actually found on the ground during the sample selection and verification period), so that the number of host clusters was reduced to 24 with 23 families in each which resulted in 552 host families. The total numbers of families is 1122 in both strata.

The two strata clusters are drawn in the first stage from one merged frame. PPS selection manner was followed for clustering IDPs sample. Each village drawn for IDPs was surveyed for host regardless of the population size. The selection of families within villages of clusters in the second stage was made following random walking method that is well indicated to team

[1] Dean AG, Sullivan KM, Soe MM. OpenEpi: Open Source Epidemiologic Statistics for Public Health, Version 2.3. www.OpenEpi.com, updated 2009/20/05, accessed 2011/11/04.

heads and field technical supervisors.

2.2. THE DATA COLLECTION METHODS

Both quantitative and qualitative methods of data collection were followed i.e. questionnaires and focus group discussion. Four different questionnaires were designed for house, family, woman and child. The data collected using questionnaires are:

1. *House questionnaire*: e.g. inhabitant size, residents characteristics, fuel used for cooking, source of drinking water, sanitation, hygiene, house properties.
2. *Family questionnaire*: e.g. family size, income sources, and food security information that includes access to food, coping strategies, food aids and feeding diversification.
3. *Woman questionnaire*: e.g. MUAC, Haemoglobin (using HemoCue technique) measurements, education status, special habits (includes smoking and *Qat* (*Katha edulis*) and *Shamma* (grilled tobacco) chewing), social and physiological status, number and outcome of pregnancies, and initiation of breastfeeding of her spring during the last 24 months.
4. *Child questionnaire*: e.g. age, height, weight, MUAC, oedema, suffering from diarrhoea, ARI, and fever within the last 2 weeks, suspected or confirmed measles during the last three months, feeding status that includes breastfeeding and complementary feeding, therapeutic and supplementary feeding assistance, vitamin A supplementation, and measles vaccination.

In addition to above mentioned four questionnaires, 54 focus group discussion sessions held (27 female sessions and 27 male sessions) in all survey sites. The discussions were focusing on feeding practices of children and mothers, health and health services, food security that includes food availability, access to food, coping mechanisms, and prices of some of the common food commodities.

2.3. TRAINING AND SUPERVISION

The training was conducted for all survey team members based on the duties of each. Enumerators and team heads were trained on the questionnaires, approaching the community, data quality and common possible errors in surveys, maintaining the survey tools etc.

Two separate sessions were given for anthropometry and for identifying the date of birth and ages using the Hijri calendar with calendar of events (e.g. Big Eid: Greater Bairam, Small Eid: Lesser Bairam, Holy Ramadan: fasting month etc.) and Gregorian calendars.

In parallel there were two different trainings, the focus group discussion (FGD)that include approaching the community, PRA, working with community, directing the discussion of the groups, and the focus group discussion guidelines. The other parallel training was on haemoglobin measuring using HemoCue device.

Before conducting the pre-test survey, all equipment and enumerators' skills were double checked to ensure consistency of the anthropometrical measurement using ENA for SMART.

Prior to the start of the data collection phase, an orientation and sensitization session for community leaders gathered from survey sites was arranged. It included presentation of the survey objectives and the mission of the whole survey team, and roles expected from leaders as well as clarification about expectation may be raised by communities.

2.4. PILOT TESTING AND REVISION OF THE SURVEY TOOLS

Before the commencement of the actual survey, tools and methods were pre-tested and revised. One day pre-test survey was conducted, that includes all parts and data collection methods. This helped to ensure that the interviewers understood the questions and were able to follow the interview/data collection procedures as outlined in the survey protocol and during training. It also helped in having feedback about to what extent interviewees understood questions. Based on the pre-test survey outcomes and standardization that has been done during the training, one female team member has been excluded since it did not reach the quality level required.

All members met the next day to review and discuss the findings of the pre-test, logistic issues, questionnaires, difficulties based on the pre-test survey etc. Based on this pre-test and discussions, questionnaires and forms were finalized.

2.5. FIELD WORK AND QUALITY CONTROL

Nine teams- two females each-, five team heads, five female HemoCue measurers, two field technical supervisors, and two male and female teams for focus group discussion together with the survey technical coordinator finalized the data collection phase in period from 16- 28 June:2011.

For culture and social considerations, the contact with families for the purpose of anthropometrical and haemoglobin measurement was done by female members. Field questionnaires are reviewed in the site by team heads with random selection check by field supervisors. For each severely acute malnourished child and severely anaemic women, a referral form was filled and signed by the team head.

Throughout the field work, rigorous quality control measures were adopted. Team heads check questionnaires at end of day, identify errors and make sure enumerators correct before signing off. Technical supervisors checked every tenth questionnaire, identified errors and returned them to team heads for discussion and follow-up. At the end of the day, each team head was requested to fill and submit the cluster report on a daily basis together with the filled questionnaires. Each team head also filled and submitted the data quality sheet that included some anthropometrical readings which were immediately entered and analysed using ENA for SMART software (e.g. for plausibility checks on digital preference). Each team was informed before the next new day about the quality of the data of the previous day.

Every night, there was a meeting of the coordinator, field supervisors, and team heads as well as the data entry team when possible to review the work done on that day, discuss common errors, avoid recurrences, and to plan for the next day.

2.6. VARIABLES MEASURED

The following are the main variables that were collected:

2.6.1 U5 Children

- Anthropometric measurements on children under-five:
  - Age
  - Sex
  - Height

- Weight
- Oedema

- Health indicators (in children)
  - Morbidity during last two weeks: diarrhoea, ARI, fever,
  - Measles during last three months
  - Measles vaccination
  - Vitamin A supplementation

- Infant and Young Child Feeding Practices
- Supplementary and/or therapeutic feeding

2.6.2 Women in child-bearing age:

- MUAC
- Haemoglobin level by HaemoCue technique
- Educational Status
- Special habits
  - Cigarette smoking
  - Hubble-bubble
  - Qat chewing
  - *Shamma* using
- Pregnancy and lactation
- Breast feeding practices

2.6.3 Family

- Year left home
- Main source of income
- Food accessibility
- Coping strategies
- Diet diversity
- Receiving Food ration

2.6.4 Household

- Household characteristics
- Water

- Sanitation
- Fuel
- Garbage disposal

2.7. DATA MANAGEMENT AND OFFICE WORK

Data entry took place in a previously prepared double auto-checked Excel format sheets simultaneous with the data collection process. Data was entered the day after it was collected in the field. This allowed for the data to be immediately available for cleaning and analysis the day after data collection was finished. Potentially problematic entries were then double checked by the encoders by referring to the hard copy questionnaires. Data cleaning was carried out in MS Excel by sorting records to filter out extreme values and to check logical errors. Consistency checks were run to detect and correct data entry errors.

The first step of the data cleaning was the verification about the uniqueness of the numbers of the four questionnaires and the correctness of the logical relatedness between these questionnaires to assure smooth linking between variables from different data sheets during the tabulation work. Questions that includes significant number of the answer "others" were reviewed for coding. This includes questions about house type, drinking water sources and family income sources.

Interpretation of anthropometrical measures using WHO Child Growth Standards was made and introduced to the child data sheet to identify flagged records and recheck the entered data of birth date or age, height, weight and MUAC.

Finally, after finishing the field work and data entry, data was re-checked for data entry quality by the Consultant where randomly selected 5% of all questionnaires were tested for errors and inconsistencies related to missing entries and feasibility/outliers. Percentage of mistakes in all checked questionnaires did not exceed 1%.

2.8. DATA ANALYSIS

The final clean data set was imported into the SPSS program (version 18.0; SPSS, Chicago IL USA). Data analysis was conducted in both Anthro and SPSS. Anthro was used to calculate nutrition z-scores for children based on the anthropometric measurements, using WHO standards as the reference value. Children with extreme z-score values were flagged off from the anthropometric analysis. These results were then fed back into the integrated SPSS database and analyzed along with all other variables, including those on child health, food security etc. Data from women, household, family questionnaires were also analysed using the SPSS program.

Frequency distributions were performed on all key indicators to examine frequency of responses as well as to check for missing values. Cross tabulations were performed to examine relationships between binary variables. Chi-square tests and T-tests –as appropriate- were then performed to observe significance of the relationships between key variables.

2.9. DEFINITIONS OF MALNUTRITION AND ANAEMIA PREVALENCE

2.9.1. Definitions used for nutrition status in U5 children

In this nutrition survey the three forms of traditionally known as protein energy malnutrition are

defined independently as shown in Table 1. The WHO 2006 reference was used for purposes of comparison with other data and for interpreting and analyzing the results for acute malnutrition in the emergency context given the widely accepted thresholds for analysis based on the 2006 WHO growth standards.

Table 2. 1 Cut-off points and terminology used in classifying acute and chronic malnutrition in under 5 children based on 2006 WHO Growth Standards

Indicator	*Z Score*	*Oedema*
Weight for Height		
Global Acute Malnutrition (GAM/Wasted)	< -2 SD	Present
Moderate Acute Malnutrition (MAM)	<-2 to ≥-3 SD	Absent
Severe Acute Malnutrition (SAM)	< -3 SD &/or Oedema	Present
Height for Age		
Stunting	< -2 SD	
Moderately Stunted	< -2 and ≥-3 SD	
Severely Stunted	< -3 SD	
Weight for Age		
Underweight	< -2 SD	
Moderately Underweight	< -2 and ≥-3 SD	
Severely Underweight	< -3 SD	
MUAC for Age		
Global Acute Malnutrition (GAM/Wasted) by MUAC for Age	< -2 SD	
Moderate Acute Malnutrition (MAM) by MUAC for Age	<-2 to ≥-3 SD	
Severe Acute Malnutrition (SAM) by MUAC for Age	< -3 SD	

Outliers/ SMART flags were excluded. Table 2.2 gives the Mean z-scores, Design Effects and excluded subjects.

Table 2.2: 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	1417	-1.47±1.49	2.00	26	27
Weight-for-Age	1440	-1.94±1.36	2.00	15	15
Height-for-Age	1405	-1.56±2.34	2.00	49	16

* contains for WHZ and WAZ the children with oedema.

2.9.2. Definitions used for nutritional status in women in child bearing age

Definition of nutritional status by MUAC for pregnant and non-pregnant[2] women is shown in Table 2.3

Table 2.3 Cut-off Points for defining Nutritional status (MUAC) among pregnant and non-pregnant women

Category	***Severe IUGR risk***	***Moderate IUGR risk***	***Moderate to server IUGR risk***
Adult females >15 years	<16.0 cm	16.0 to <18.5 cm	<18.5 cm
Pregnant Women	<20.7cm	20.7 to <23.0cm	<23.0cm

2.9.3. Definitions used for anaemia in women in child bearing age

For anaemia among women, WHO Hb thresholds[3] used to define as shown in Table 2.4

Table 2.4 Cut-off Points for defining Anaemia among pregnant and non-pregnant women

Category	***Severe anaemia***	***Moderate anaemia***	***Moderate to server anaemia***
Adult females >15 years	<8.0 g/dl	8.0-10.9 g/d	< 10.9 g/dl
Pregnant Women	<7.0 g/dl	7.0-9.9 g/dl	< 9.9 g/dl)

2.10. DEFINITIONS USED IN FOOD INSECURITY FOOD DIVERSIFICATION

2.10.1. Definition of Household Food Consumption Group

In this survey household heads were asked to recall the kinds and frequency of food that were consumed during the previous seven days. This entailed remembering how many days they ate

[2] Collins S (1996). Using MUAC to assess sever adult malnutrition during famine. J Am. Med Ass.: 276 (5): 391-395

[3] World Health Organization. 2001. Iron Deficiency Anaemia: Assessment, Prevention, and Control. A guide for programme managers. WHO/NHD/01.3

each of the different food groups and what the main sources of these foods were. As discussed in more detail in the analysis section, a Food Consumption Score (FCS)[4] was calculated for each household using the information on the types and frequency of food reported consumed. In the FCS calculation food groups are weighted according to their nutritional density. Based on empirical evidence in different regions, WFP has defined cut-off points for the calculated food consumption score that allow for differentiation of households into "poor" and "borderline" food "acceptable" food consumption categories. For Yemen, households with a food consumption score less than 28.5 are regarded to have "poor" food consumption, and this reflects the fact that they do not eat staple and vegetables on a daily basis. Households with a food consumption score between 28.5 and 42 are considered to have "borderline" food consumption. Meanwhile households with a food consumption score greater than 42 are considered to have "acceptable" food consumption (Table 2.5).

Table 2.5: Definition of Household Food Consumption Group according to Food Consumption Score cut points

Food insecurity	***Household Food Consumption Group***	***Food Consumption Score cut points***
Food insecure	Poor	0-28.5
	Borderline	28.5-42
Food secure	Acceptable	> 42

2.10.2. Definition of food diversification

Regarding food diversification this survey assessed few selected IYCF standard indicators from FANTA 2007[5] and was calculated by using the Minimum Dietary Diversity Indicator definition for the 6-23 months age group which is the proportion of children 6-23 months of age who receive food from 4 or more food groups during the previous day (Table 2.6).

Table 2.6: Definition of food diversification through using the Minimum Dietary Diversity Indicator

Food diversification Group	***Minimum Dietary Diversity Indicator cut points***
Poor	< 4
Good	≥4

[4] WFP. Food consumption score. Interagency Workshop Report WFP – FAO. Measures of Food Consumption - Harmonizing Methodologies. Rome, 9 - 10 April 2008

[5] FANTA; Generating indicators of appropriate feeding of children 6 through 23 months from the KPC 2000+; by Mary Arimond and Marie T. Ruel, November, 2003

3. RESULTS

The overall characteristics of the sample population are shown in Table 3.1.

Table 3.1 The total Sampled population group

Category	Families % (n)	U5 Children % (n)	Women child bearing age % (n)	Household % (n)
IDPs	55.2 (679)	52.8 (775)	54.3 (865)	**1028**
Host	44.8 (552)	47.2 (695)	45.7 (727)	
Total	100 (1231)	100 (1470)	100 (1592)	

3.1. UNDER 5 CHILDREN

The analysis for this part is performed on 1450 U5 children of them 763 are IDPs and 687 are host populations. Twenty children were excluded as there age goes beyond 59 months.

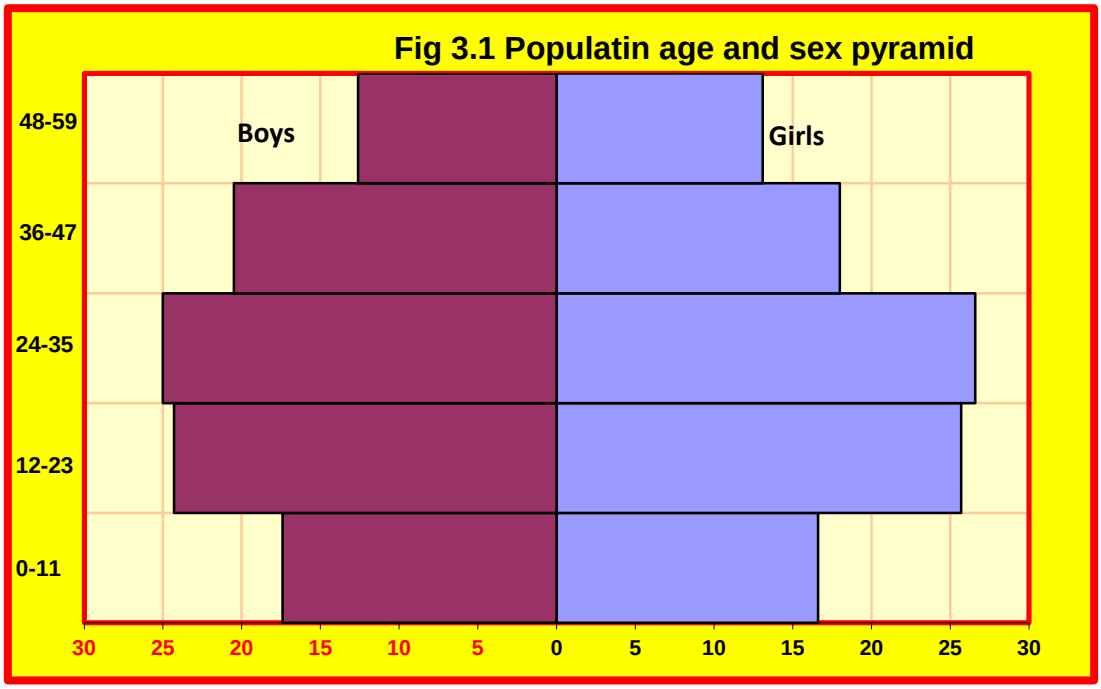
3.1.1. CHARACTERISTICS OF THE POPULATION SAMPLE GROUPS

The age distribution of the measured children is presented on the table 3.1.1 below. The sex ratio indicates that boys and girls were equally represented and there was no bias in terms of sampling girls or boys.

Table 3.1.1: Distribution of age and sex of sample

Age groups by months	***Boys***		***Girls***		***Total***		***Ratio***
	no.	***%***	***no.***	***%***	***no.***	***%***	***Boy : girl***
< 6	57	7.5	48	7.0	105	7.2	1.2
6-11	78	10.2	66	9.6	144	9.9	1.2
12-23	186	24.3	177	25.8	363	25.0	1.1
24-35	192	25.1	183	26.7	375	25.9	1.1
36-47	157	20.5	124	18.1	281	19.4	1.3
48-59	94	12.3	88	12.8	182	12.6	1.1
Total	**764**	**100**	**686**	**100**	**1450**	**100**	**1.1**

The U5 population age and sex pyramid shows that half of the samples are in age groups 12-35 months (Fig 3.1). Younger children (0-11 months) and older children (48-59 months) were slightly less represented as accounted for 17.1 percent and 12.6 percent respectively of all the sampled children.



3.1.2. ANTHROPOMETRIC RESULTS

Valid anthropometric and health data was obtained from a total of 1450 U5 children months of age (see methodology section for data exclusions).

3.1.2.1.Acute malnutrition based on weight-for-height z-scores

The overall prevalence of global, moderate and severe acute malnutrition based on weight-for-height z-scores (and/or oedema) and individual group prevalence's are shown in table 3.1.2

Although prevalence of GAM does not differ between IDP and host population (P>0.05), severe wasting is significantly higher among IDPs than host population: 10.8:7.2% respectively (X^2 7.1 p< 0.05, df 2).

Table 3. 1.2: Prevalence of acute malnutrition based on weight-for-height z-scores and/or oedema (WHO 2006 Growth Standards) by resident group

Indicator	All (n = 1417)	IDPs* (n = 739)	Host (n = 678)
Prevalence of global acute malnutrition (<-2 z-score and/or oedema)	31.4% (445) (95% C.I.: 29.0-33.7)	31.4% (232) (95% C.I.: 27.7-34.7)	31.4% (213) (95% C.I.: 27.7-35.0)
Prevalence of moderate acute malnutrition (<-2 z-score and >=-3 z-score, no oedema)	22.3% (316) (95% C.I.: 20.2-24.4)	20.6% (152) (95% C.I.: 17.8-23.3)	24.2% (164) (95% C.I.: 21.0-27.3)
Prevalence of severe acute malnutrition (<-3 z-score and/or oedema)	9.1% (129) (95% C.I: 7.6-10.5)	10.8% (80) (95% C.I.: 8.4-12.9)	7.2% (49) (95% C.I.: 5.4-9.2)

* Significance difference (P< 0.05)

The prevalence of oedema is only 0.6% and the number of cases is 8, seven of them, among IDPs.

The prevalence of acute malnutrition by sex is given in table 3.1.3. Wasting is significantly highly prevalent among boys (X^2 13.7, P < 0.01, df 2).

Table 3.1.3: Prevalence of acute malnutrition based on weight-for-height z-scores and/or oedema (WHO 2006 Growth Standards) by sex

Indicator	Boys* (n = 744)	Girls (n = 673)
Prevalence of global acute malnutrition (<-2 z-score and/or oedema)	34.8% (259) (95% C.I.: 31.3-38.3)	27.6% (186) (95% C.I.: 24.5-30.9)
Prevalence of moderate acute malnutrition (<-2 z-score and >=-3 z-score, no oedema)	23.2% (173) (95% C.I.: 20.3-26.0)	21.2% (143) (95% C.I.: 18.1-24.4)
Prevalence of severe acute malnutrition (<-3 z-score and/or oedema)	11.6% (86) (95% C.I.: 9.0-13.8)	6.4% (43) (95% C.I.: 4.6-8.1)

* Significance difference (P< 0.01)

The breakdown of acute malnutrition by age based on weight-for-height z-scores and/or oedema is given in table 3.1.4. The difference between groups is highly significant (X^2 28.9, P < 0.01, df 10) with the highest prevalence in under 2 years age group.

Table 3.1.4: Prevalence of acute malnutrition based on weight-for-height z-scores and/or oedema (WHO 2006 Growth Standards) by age group

		Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Global malnutrition (<-2 z-score and/or oedema)	
Age* (months)	***Total no.***	***No.***	***%***	***No.***	***%***	***No.***	***%***
< 6	105	9	9.0	26	26.0	35	35.0
6-11	144	24	17.5	40	29.2	64	46.7
12-23	363	38	10.6	71	19.8	109	30.4
24-35	375	22	5.9	87	23.5	109	29.4
36-47	281	22	7.9	62	22.3	84	30.2
48-59	182	14	8.1	30	17.4	44	25.6

* Significance difference (P< 0.01)

3.1.2.2.Underweight prevalence based on weight-for-age z-scores

The overall prevalence of severe and moderate underweight based on weight-for-age z-scores and individual group prevalence's are shown in table 3.1.5. Although IDPs have slightly higher figures than host population, the difference is statistically insignificant (P>0.05)**.**

Table 3.1.5: Prevalence of underweight based on weight-for-age z-scores (WHO 2006 Growth Standards) by resident group

Indicator	All (n = 1440)	IDPs (n = 754)	Host (n = 686)
Prevalence of underweight (<-2 z-score)	48.3% (696) (95% C.I.: 45.6-50.9)	48.9% (369) (95% C.I.: 45.4-52.6)	47.5% (326) (95% C.I.: 43.7-51.5)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	28.0% (404) (95% C.I.: 25.7-30.2)	28.0% (211) (95% C.I.: 25.2-31.3)	28.0% (192) (95% C.I.: 25.1-31.8)
Prevalence of severe underweight (<-3 z-score)	20.3% (292) (95% C.I: 18.2-22.4)	21.0% (158) (95% C.I.: 18.3-23.8)	19.5% (134) (95% C.I.: 16.5-22.3)

The breakdown of underweight by sex based on weight-for-age z-scores is given in table 3.1.6. Although the underweight is more prevalent in males than females , the difference is nearly approaching the statistical significant (x^2 5.7, P=0.059, df 2). However, by combining the severe and moderate underweight as one group, the difference between boys and girls become statistically significant (x^2 4.7, P<0.05, df 1).

Table 3.1.6: Prevalence of underweight based on weight-for-age z-scores (WHO 2006 Growth Standards) by sex

Indicator	Boys (n = 755)	Girls (n = 685)
Prevalence of underweight* **(<-2 z-score)**	51.0% (385) (95% C.I.: 47.4-54.8)	45.3% (310) (95% C.I.: 41.7-49.1)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	28.7% (217) (95% C.I.: 25.7-32.4)	27.2% (186) (95% C.I.: 23.9-30.3)
Prevalence of severe underweight (<-3 z-score)	22.3% (168) (95% C.I.: 19.5-25.2)	18.1% (124) (95% C.I.: 15.4-21.1)

* Significance difference (P< 0.05)

Table 3.1.7 gives the prevalence of underweight by age. Although, underweight seems to progressively increasing with age, this is statistically insignificant (P>0.05). Nevertheless, by combining the severe and moderate underweight as one group, the difference between age groups become statistically significant (x^2 12.3, P<0.05, df 5).

Table 3.1.7: Prevalence underweight based on weight-for-age z-scores (WHO 2006 Growth Standards) by age group

		Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Underweight* malnutrition (<-2 z-score)	
Age* (months)	***Total no.***	***No.***	***%***	***No.***	***%***	***No.***	***%***
< 6	105	17	16.3	24	23.1	41	39.4
6-11	144	27	18.9	36	25.2	63	44.1
12-23	363	72	19.9	96	26.6	168	46.5
24-35	375	71	19.0	103	27.5	174	46.5
36-47	281	64	22.9	91	32.5	155	55.4
48-59	182	41	23.0	53	29.8	94	52.8

* Significance difference (P< 0.05)

3.1.2.3.Stunting Malnutrition based on height-for-age z-scores

The overall prevalence of severe and moderate stunting based on height-for-age z-scores and individual group prevalence's are shown in table 3.1.8. Although IDPs have slightly higher prevalence than host , the difference is statistically insignificant (P > 0.05).

Table 3.1.8: Prevalence of stunting based on height-for-age z-scores (WHO 2006 Growth Standards) by resident group

Indicator	All (n = 1405)	IDPs (n = 736)	Host (n = 669)
Prevalence of stunting (<-2 z-score)	43.6% (613) (95% C.I.: 40.9-46.4)	45.5% (335) (95% C.I.: 41.9-49.3)	41.6% (278) (95% C.I.: 38.1-45.3)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	20.8% (292) (95% C.I.: 18.6-23.0)	21.2% (156) (95% C.I.: 18.2-24.3)	20.3% (136) (95% C.I.: 17.3-23.6)
Prevalence of severe stunting (<-3 z-score)	22.8% (321) (95% C.I: 20.6-25.2)	24.3% (179) (95% C.I.: 21.3-27.7)	21.2% (142) (95% C.I.: 18.1-24.4)

Table 3.1.9 gives the prevalence of stunting by sex. Although stunting is also slightly higher among males, the difference is statistically insignificant (P > 0.05).

Table 3.1.9: Prevalence of stunting based on height-for-age z-scores (WHO 2006 Growth Standards) by sex

Indicator	Boys (n = 737)	Girls (n = 669)
Prevalence of stunting (<-2 z-score)	45.5% (334) (95% C.I.: 42.1-49.0)	41.7% (279) (95% C.I.: 38.1-45.6)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	21.6% (159) (95% C.I.: 18.4-24.6)	19.9% (133) (95% C.I.: 16.6-22.9)
Prevalence of severe stunting (<-3 z-score)	23.8% (175) (95% C.I.: 19.5-25.2)	21.8% (146) (95% C.I.: 18.8-25.0)

The breakdown of underweight by age group based on weight-for-age z-scores is given in table

3.1.10. Stunting has been noticed to be increasing remarkably after the first year and progress with age. Such difference between groups is highly significant (X^2 29.6, P < 0.0001, df 10).

Table 3.1.10: Prevalence of stunting based on height-for-age z-scores (WHO 2006 Growth Standards) by age group

		Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Stunting malnutrition (<-2 z-score)	
Age* (months)	***Total no.***	***No.***	***%***	***No.***	***%***	***No.***	***%***
< 6	105	8	8.2	11	11.3	19	19.6
6-11	144	17	12.5	11	8.1	28	20.6
12-23	363	77	22.1	87	25.0	164	47.1
24-35	375	96	25.9	72	19.4	168	45.3
36-47	281	80	28.6	68	24.3	148	52.9
48-59	182	43	24.9	43	24.9	86	49.7

* Significance difference (P< 0.0001)

3.1.3. CHILDREN'S HEALTH

3.1.3.1.Overall morbidity

Two thirds of the children suffer from one or more of the three morbidities (diarrhoea, ARI, fever) in the two weeks prior to interview. The overall morbidity is significantly higher among IDPs than host population: 51%:45% respectively (X^2 11.6, P < 0.001, df 1).

3.1.3.2.Symptoms breakdown

The overall prevalence of symptoms and individual group prevalence's are shown in table 3.1.10. Although all morbidities are commoner among the IDPs (except for measles), diarrhea is the only significantly higher morbidity among IDPs

Table 3.1.10: Symptom breakdown in the U5 children in the two weeks* prior to interview by resident group

Indicator	All (n=1450)	IDPs (n=763)	Host (n=687)	Significance level
Diarrhoea*	47.4% (687)	52.6% (400)	41.8% (287)	x^2: 16.9, P< 0.0001, df 1.
ARI	43.1% (625)	44.3 (338)%	41.8% (287)	P >0.05
Fever	54.6% (791)	55.7 (425)%	53.3 (366)%	P >0.05
Measles	4.0% (58)	3.6% (27)	4.5% (31)	P >0.05

** Except for measles in the prior 3 months*

3.1.3.3.Measles vaccination

Table 3.1.11 shows that measles vaccination is higher among IDPs (x^2 : 8.4, P< 0.01, df 2).

Table 3.1.11: Measles vaccination (by card/recall) in the 9-59 months children by resident group

Indicator	All (n=1215)	IDPs* (634)	Host (581)
Measles vaccination	79.4% (965)	82.6% (524)	75.9% (441)

* Significance difference (P< 0.01)

3.1.3.4.Vitamin A supplementation

Vitamin A supplementation is also significantly higher among IDPs than host population: x^2 : 8.7, P< 0.01, df 1 (Table 3.1.12).

Table 3.1.12: Vitamin supplementation in the U5 children resident group

Indicator	All (n=1372)	IDPs* (719)	Host (653)
Vitamin supplementation	65.5% (899)	69.1% (497)	61.6% (402)

* Significance difference (P< 0.01)

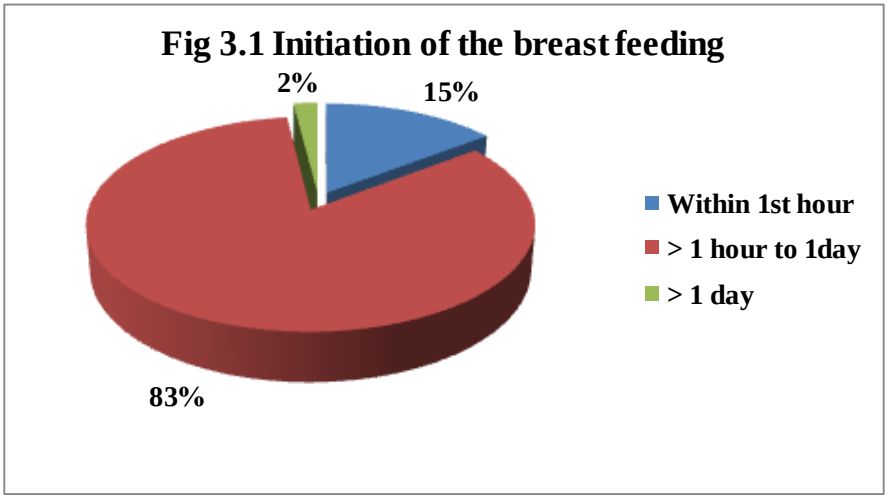
3.1.4. INFANT AND YOUNG CHILD FEEDING (IYCF) PRACTICES

3.1.4.1. Ever breast fed

More than 90 percent of U5 children had ever breastfed.

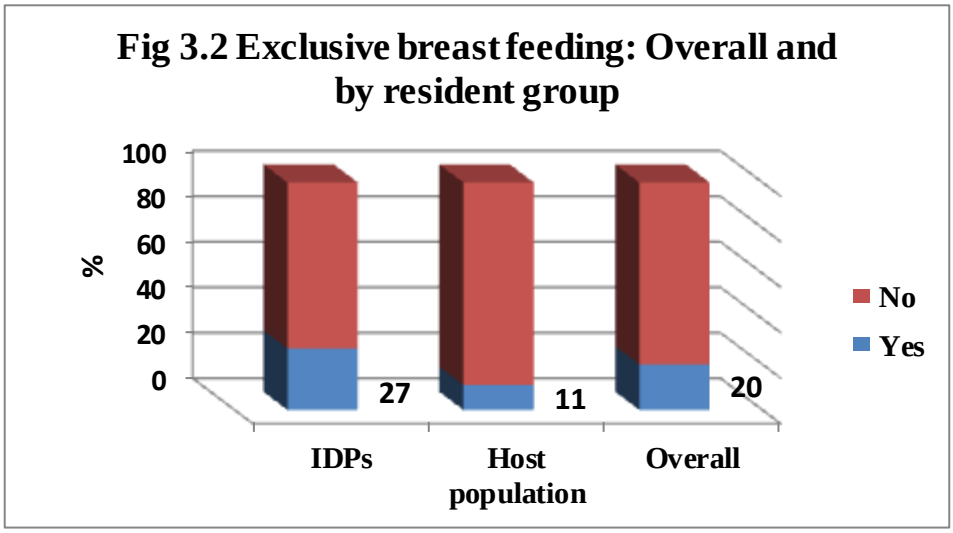
3.1.4.2.Early initiation of breast feeding

On average only 15 percent of women who delivered were likely to initiate breastfeeding within the first hour after delivery (Fig 3.1). Initiation of the breast feeding within the first hours is less among IDPs compared to host population: 9.8% vs. 20.0% respectively (X^2: 12.6 P< 0.01, df 2).



3.1.4.3.Exclusive breast feeding

Fig 3.2 shows that among children below six months, one in five children is on exclusive breastfeeding. Among IDPs more children are breast fed compared to host population. However, the difference is not significant.



3.1.4.4.Pre-lacteal feeding

Pre-lacteal feeding (e.g. infant formula sweetened water, ghee/butter) was practiced in 26% of cases (Fig 3.3) especially among host population where around one third of children receive pre-lacteal feeding before breastfeeding compared to one fifth among IDPs (X^2: 7.8 P< 0.01, df 1).

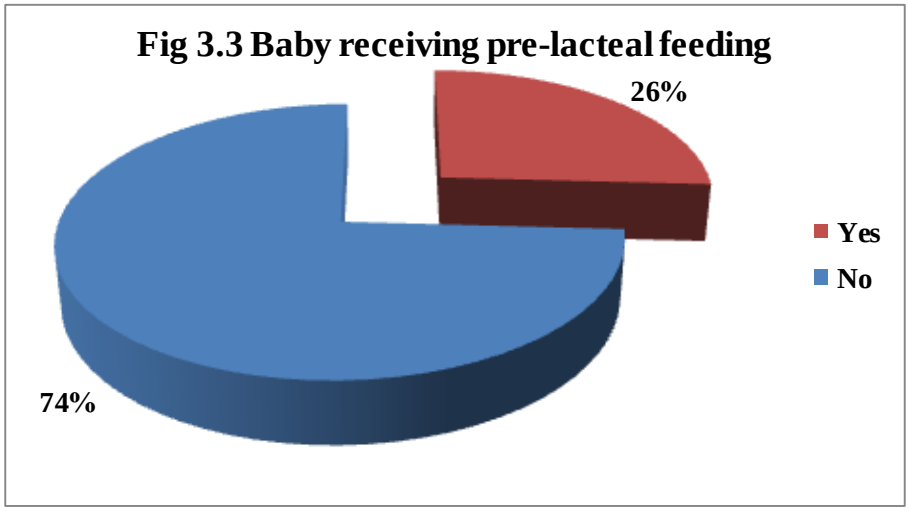
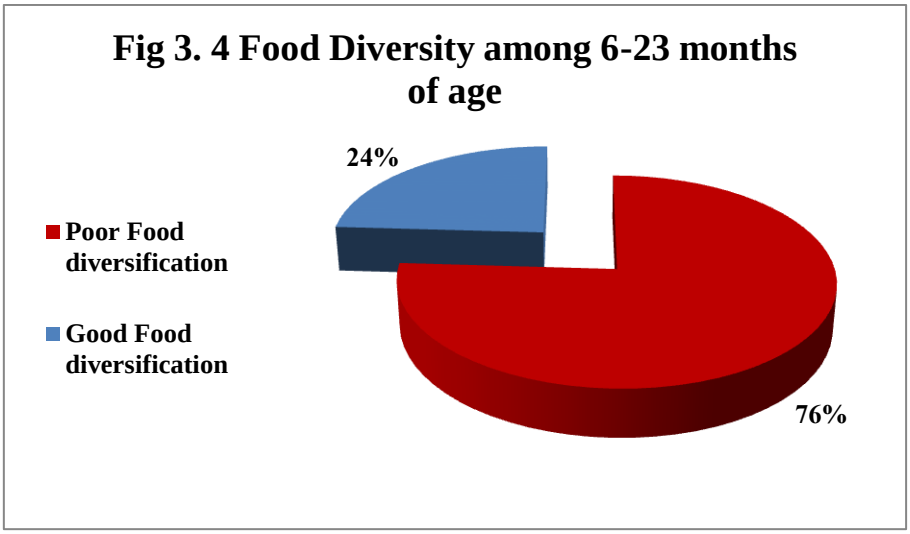


Fig 3.4 shows that less than one in 4 children of age 6-23 months age is receiving 4 or more food group i.e. good food diversification.



Twelve percent of children were offering complementary feeding through bottle**.**

3.2. WOMEN OF CHILD BEARING AGE

3.2.1. MALNUTRITION AND INTRA UTERINE GROWTH RETARDATION BY MUAC FOR AGE Z-SCORES

Of the 1,592 women of child bearing age sampled 23% were pregnant. The overall prevalence of moderate and severe Intra Uterine Growth Retardation (IUGR) risk based on MUAC and individual group prevalence's are shown in table 3.2.1. Host population have higher risk than IDPs. Although the difference is statistically not significant (X^2 5.1, P >0.05, df 2). Nevertheless, when combining the severe and moderate risks, the IUGR risk becomes significantly higher among host population (X^2 5.1, P <0.05, df:1).

Table 3.2.1: Prevalence of malnutrition among pregnant women based on MUAC by resident group

Indicator	All (n = 268)	IDPs (n = 162)	Host (n = 106)
Severe to moderate risk of IUGR * (MUAC: <23.0 cm)	46.7% (128) (95% C.I.: 40.9-53.3)	41.2% (68) (95% C.I.: 34.9-49.1)	55.0% (60) (95% C.I.: 44.1-65.0)
Moderate risk of IUGR (MUAC: 20.7 to <23.0 cm)	30.3% (83) (95% C.I.: 24.8-35.5)	26.7 % (44) (95% C.I.: 20.5-33.7)	35.8% (39) (95% C.I.: 26.6-47.3)
Severe risk of IUGR (MUAC: <20.7 cm)	16.4 % (45) (95% C.I: 12.7-20.9)	14.5% (24) (95% C.I.: 9.6-20.6)	19.3% (21) (95% C.I.: 11.7-27.4)

* Significance difference (P< 0.05)

Table 3.2.2 gives the prevalence of malnutrition among non-pregnant women in child bearing age based on MUAC by group. The three IUGRs (severe, moderate and combined risks) are generally higher among host community but such differences are statistically insignificant (P >0.05). However, when the two groups (severe and moderate) are combined the prevalence approaching significance (X^2 3.8, P =0.05, df:1).

Table 3.2.2: Prevalence of malnutrition among non-pregnant women of child bearing age based on MUAC by resident group

Indicator	All (n = 892)	IDPs (n = 476)	Host (n = 416)
Severe to moderate risk of IUGR* (MUAC: <16.0 cm)	5.6% (50) (95% C.I.: 4.2-7.1)	4.2% (20) (95% C.I.: 2.7-6.2)	7.2 % (30) (95% C.I.: 4.7-9.9)
Moderate risk of IUGR (MUAC: 16.0 to <18.5 cm)	1.7% (15) (95% C.I.: 0.9-2.6)	1.5 % (7) (95% C.I.: 0.6-2.8)	1.9% (8) (95% C.I.: 0.7-3.3)
Severe risk of IUGR (MUAC: <18.0 cm)	3.9 % (35) (95% C.I: 2.7-5.2)	2.7% (13) (95% C.I.: 1.5-4.3)	5.3% (22) (95% C.I.: 3.1-7.4)

* Significance difference (P=0.05)

3.2.2. ANAEMIA IN WOMEN OF CHILD BEARING AGE

The overall prevalence of moderate and severe anaemia and individual group prevalence's are shown in table 3.2.3**.** No significant difference in anaemia prevalence between the IDPs and host populations.

Table 3.2.3: Prevalence of anaemia among pregnant women by resident group

Indicator	All (n = 259)	IDPs (n = 156)	Host (n = 103)
Severe to moderate anaemia (Hb: < *9.9 g/dl*))	37.8% (98) (95% C.I.: 32.4-43.8)	37.2% (58) (95% C.I.: 28.8-44.7)	38.8% (40) (95% C.I.: 30.0-48.0)
Moderate anaemia (Hb: *7.0-9.9 g/dl*)	35.1% (91) (95% C.I.: 29.7-41.5)	34.6 % (54) (95% C.I.: 26.7-41.8)	35.9% (37) (95% C.I.: 25.6-44.6)
Severe anaemia (Hb: <*7.0 g/dl*)	2.7% (7) (95% C.I: 1.1-4.6)	2.6% (4) (95% C.I.: 0.6-5.5)	2.9% (3) (95% C.I.: 0.0-7.1)

Table 3.2.4 shows the prevalence of anaemia among non-pregnant women in child bearing age based by group. The host population have significantly higher prevalence than IDPs (X^2: 8.1, P <0.05, df 3).

Table 3.2.4: Prevalence of anaemia among non-pregnant women by resident group

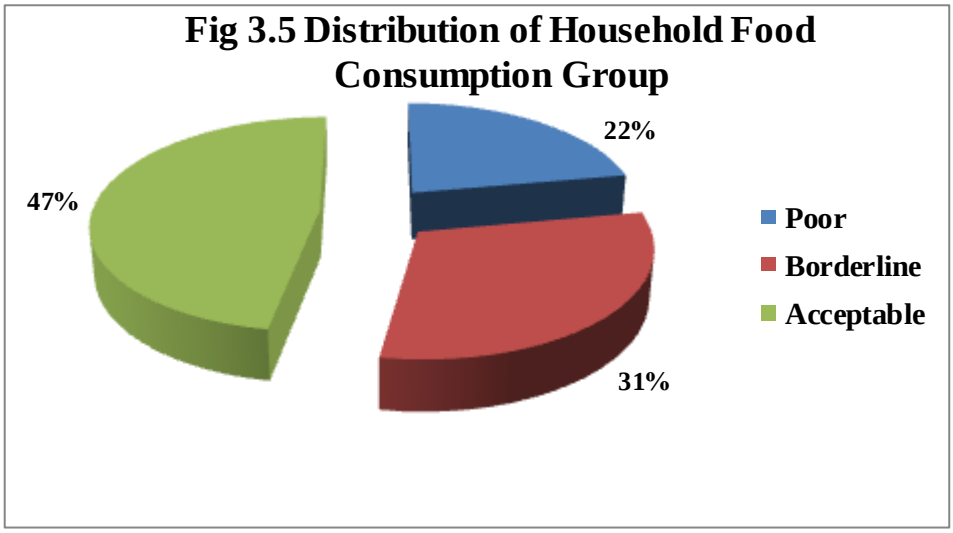
Indicator	All (n = 844)	IDPs* (n = 461)	Host (n = 383)
Severe to moderate anaemia (Hb: < *9.9 g/dl*))	38.3% (323) (95% C.I.: 35.0-41.4)	35.8% (165) (95% C.I.: 31.4-40.1)	41.3% (158) (95% C.I.: 36.5-46.5)
Moderate anaemia (Hb: *7.0-9.9 g/dl*)	35.7% (301) (95% C.I.: 32.5-38.8)	34.5% (159) (95% C.I.: 30.0-38.8)	37.1 % (142) (95% C.I.: 32.3-42.4)
Severe anaemia (Hb: <*7.0 g/dl*)	2.6% (22) (95% C.I: 1.5-3.7)	1.3% (6) (95% C.I.: 0.4-2.4)	4.2% (16) (95% C.I.: 2.4-6.2)

* Significance difference (P< 0.05)

3.3. HOUSEHOLD FOOD INSECURITY, ACCESSIBILITY AND COPING STRATEGIES

3.3.1. FOOD INSECURITY

Fig 3.5 shows that more than half of the families are food insecure (i.e. the poor and borderline groups in Food Consumption Groups) and more than one fifth are severely insecure (i.e. the poor group in Food Consumption Groups).



As shown in table 3.3.1, food insecurity (i.e. the poor and borderline groups in Food Consumption Groups) is significantly higher among IDPs than host population (X^2: 43.1, P <0.0001, df 1).

Table 3.3.1: Prevalence of food insecurity using the household Food Consumption Group by resident group

Indicator	All (n = 1215)	IDPs* (n = 670)	Host (n = 545)
Severely to moderately food insecure (Poor to Borderline in the household Food consumption score)	54.1% (657) (95% C.I.: 40.9-53.3)	62.5% (419) (95% C.I.: 59.0-66.3)	43.7% (238) (95% C.I.: 52.1-60.4)
Moderately food insecure (Borderline in the household Food consumption score)	31.9% (388) (95% C.I.: 24.8-35.5)	35.4 % (237) (95% C.I.: 31.8-39.0)	27.7% (151) (95% C.I.: 24.2-31.6)
Severely food insecure (Poor in the household Food consumption score)	22.1 % (269) (95% C.I: 12.7-20.9)	27.2% (182) (95% C.I.: 23.9-30.7)	16.0% (87) (95% C.I.: 13.2-19.1)

* Significance difference (P< 0.0001)

3.3.2. FOOD ACCESSIBILITY

Table 3.3.2 shows that the surveyed families having difficulties in accessing food as indicated by the fact that around half of the surveyed families were forced to reduce meals size/number, one third slept hungry, and 14.6% stayed unfed the whole day. The IDPs have statistically significant higher percentages of family members who have been forced to reduce the size of meals and who have been forced to stay unfed the whole day.

Table 3.3.2: Food accessibility by resident group

Indicator	All	IDPs	Host
Forced to reduce the size of meals*	53.6 (660)	56.8 (386)	49.5 (274)
Forced to reduce the number of meals	48.0 (591)	50.4 (342)	45.0 (249)
Forced to slept hungry	35.7 (440)	34.6 (235)	37.1 (205)
forced to stay whole day unfed*	14.6 (180)	16.8 (114)	12.0 (66)
Food is unavailable at home	34.7 (427)	34.6 (235)	34.7 (192)

* Significance difference (P< 0.01)

3.3.3. COPING STRATEGIES

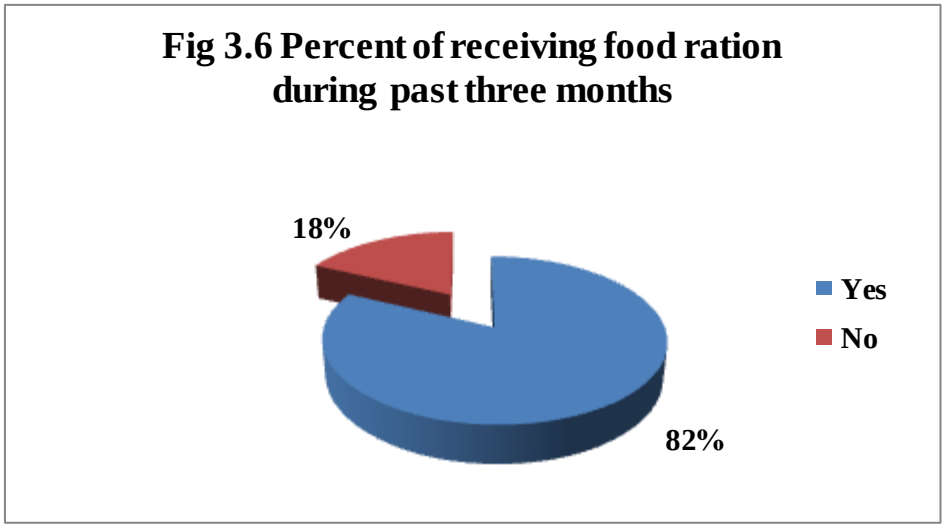
Table 3.3.3 shows that up to three fourths of families are using different coping strategies with significant difference between IDPs and host families.

Table 3.3.3: Coping strategies by resident group

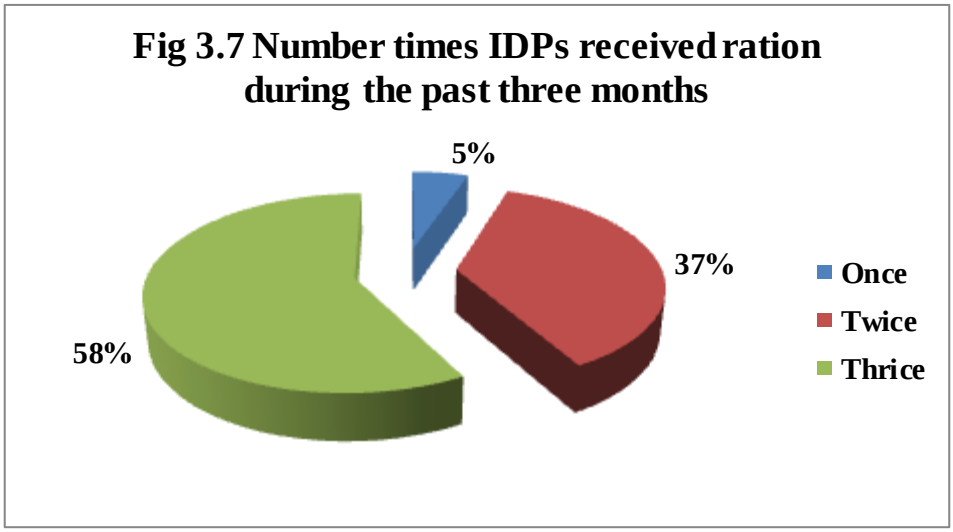
Indicator	All	IDPs	Host
Loaned food or helped by relatives	76.7 (945)	74.8 (508)	79.0 (437)
Bought food on credit	67.0 (824)	67.0 (455)	67.1 (369)
Selling assets to buy food	43.3 (533)	42.0 (285)	44.9 (248)
Decreased expenditure on education/Health	47.4 (584)	48.5 (329)	46.2 (255)
Borrow money from relative/neighbours	68.4 (841)	66.7 (453)	70.4 (388)
Stopped khat/smoking/ Shama	62.1 (764)	63.8 (433)	60.0 (331)

3.3.4. GENERAL FOOD DISTRBURION

Fig 3.6 shows that most IDPs families have received food ration during the last three months.



The majority of IDPs had received the food ration at least twice during last three months (Fig 3.7).



One fourth of IDPs receiving ration admit that they were selling it mainly to buy other food.

3.3.5. THERAPUTIC AND SUPPLEMENTARY FOOD DISTRBURION

3.3.5.1.Therapeutic and/or Supplementary feeding

Overall, only around one out of five cases of SAM is currently on therapeutic food (table 3.1.13) with higher percentage of IDPs SAM cases receiving therapeutic food compared to host: 31.7 vs. 8.7 respectively (x^2 : 8.4, P< 0.01, df 1)

Table 3.3.4: Therapeutic feeding among SAM cases by resident group

Programme type	All (n=119)	IDPs (73)	Host (46)
Therapeutic feeding programme coverage for SAM cases only	22.7% (27) (95% C.I.: 3.7-15.8)	31.5% (23) (95% C.I.: 21.5-42.1)	8.7% (4) (95% C.I.: 1.8-18.2)

* Significance difference (P< 0.01)

Table 3.1.14 gives the Supplementary feeding by resident status. Among non-SAM cases only 4.1% of children are receiving supplementary food (5.5% among IDP and 2.6% among host). The difference is statistically significant between IDP and host: (x^2 : 6.7, P< 0.05, df 1)

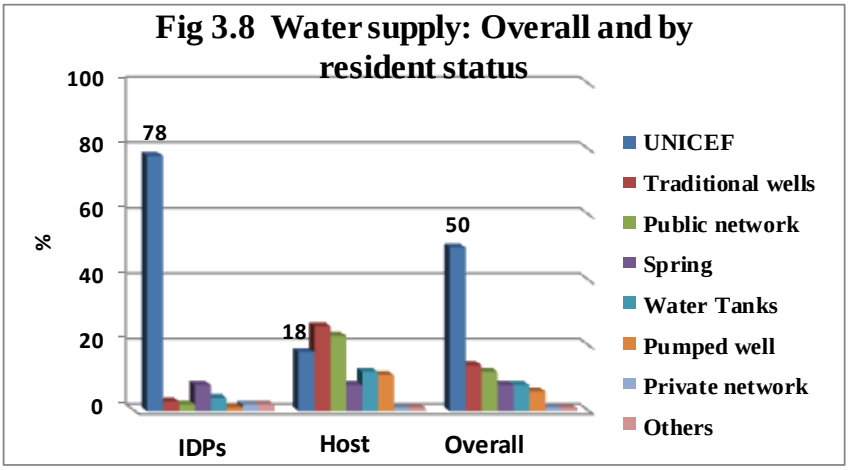
Table 3.3.5: Supplementary feeding among non-SAM cases by resident status

Programme type	All (n=1206)	IDPs* (618)	Host (588)
Supplementary feeding programme coverage among non-SAM cases	4.1 % (49) (95% C.I.: 3.0-5.2)	5.5 % (34) (95% C.I.: 3.8-7.4)	2.6% (15) (95% C.I.: 1.2-3.9)

* Significance difference (P< 0.05)

3.4. WATER, SANITATION, AND HYGIENE (WASH)

Fig 3.8 shows that overall half of the surveyed houses are supplied by water through UNICEF. This differs significantly between IDPs (78%) and host population (18%).



Less than half of the surveyed population have toilet inside house and around 12% have no inside or outside toilet (Fig 3.9). This is also signfcantly higher among the host population: 9% vs. 16% (X^2: 32.5, P<0.0001, df 1).

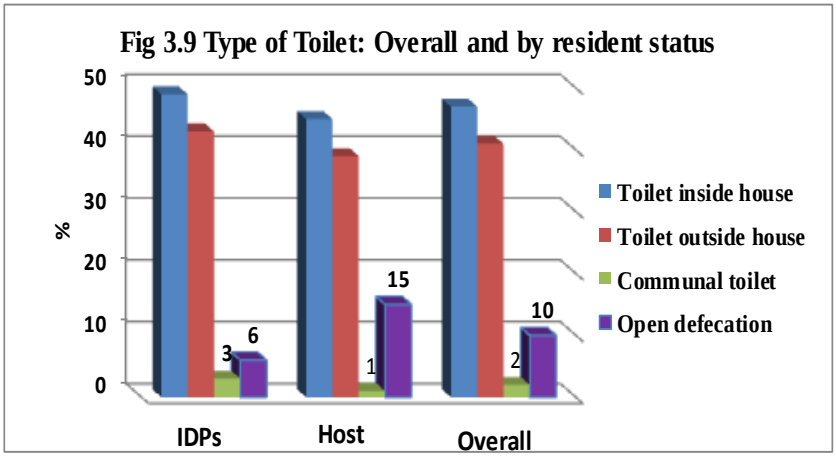
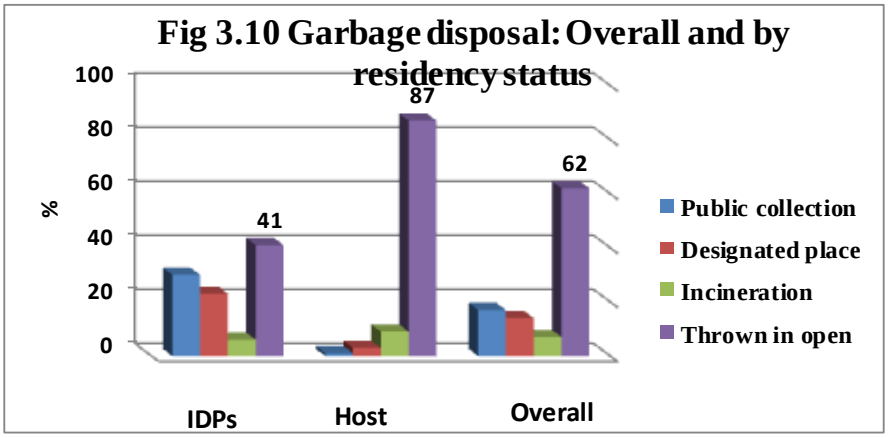


Fig 3.10 shows that nearly two thirds of the surveyed sample have no garbage disposal and throw it in open. Nevertheless, this is significant and differs between IDPs and host community. While 87% of host communities throw garbage in open only 41% of IDPs do (X^2: 349.9, P <0.0001, df:3.



4. DISCUSSION

The survey covers 1028 households, 1231 families, 1450 U5 children, and 1592 women in child bearing age distributed evenly among IDPs and host population. The total Boy: Girl ratio was 1.1, therefore we can note that there was no sex bias in the selection and each gender had an equal chance of being included in the sample. However and in spite of rigorous quality control measures and daily plausibility checks on digital preference, we have noticed some concentration on children between 12 and 47 months. Such observation is still consistent with the preliminary findings from the undergoing nutritional survey in Hodeida which demands special investigation.

Results from the qualitative method i.e. Focus Group Discussion (FGD), will be quoted whenever relevant in text boxes to complement results of the statistical analysis.

4.1. NUTRITIONAL STATUS OF U5 CHILDREN

4.1.1. Prevalence of malnutrition

Valid anthropometric and health data was obtained from a total of 1450 U5 children. The survey found an overall GAM prevalence of 31.4% [95% C.I 29.0 – 33.7] which is significantly higher than the critical emergency threshold of ≥ 15 %[6]. Furthermore, the overall prevalence of SAM of 9.1% [95% CI 7.6 – 10.5] is also nearly double the 5% WHO critical emergency threshold.

Fig 4.1 summaries the prevalence of different types and degrees of malnutrition found in this survey.

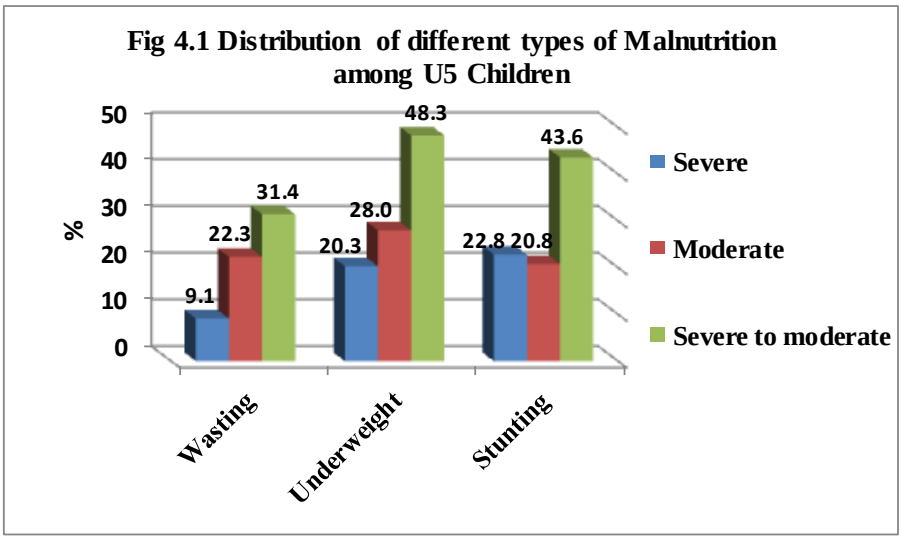


Table 4.1 gives the malnutrition figures found in this survey compared to figures from the previous national surveys[7, 8] and the State Of The World's Children (SOWC) [9] figures. The

[6] Physical status: the use and interpretation of anthropometry. Report of a WHO Expert Committee. WHO Technical Report Series No. 854. Geneva: World Health Organization, 1995.

[7] Central Statistical Organization (CSO). Yemen Demographic and Maternal and Child Health Survey-II, 1997..

[8] Ministry of Public Health and Population. Central Statistical Organization, and League of Arab Sector. Yemen Family Health Survey, Principal Report; 2005

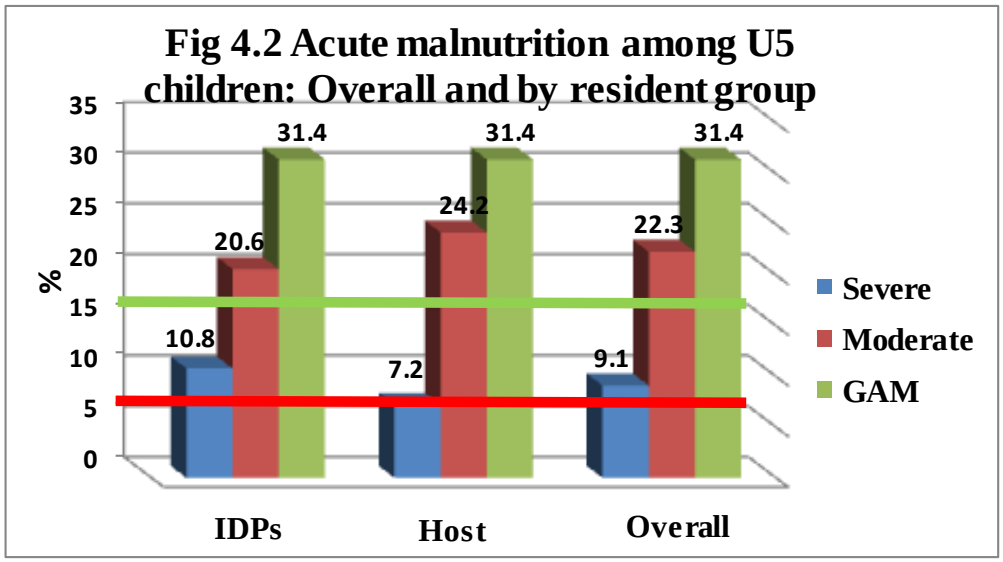
level of wasting found in this survey is two to three times the national figures, underweight slightly higher and stunting is lower.

Table 4.1: National prevalence of malnutrition from previous surveys and SOWC 2010

Survey	Year	Wasting			Underweight			Stunting		
		Severe	*Moderate*	*GAM*	*Severe*	*Moderate*	*Severe to moderate*	*Severe*	*Moderate*	*Severe to moderate*
1. Demographic Health Survey[7]	1997	2.6	10.3	12.9	14.5	31.6	46.1	26.7	25.0	51.7
2. Family Health survey[8]	2003	3.0	12.4	9.4	15.2	30.4	45.6	22.2	30.9	53.1
3. SOWC[9]	2010	3.9	11.1	15.0	19.0	24.0	43.0	37.1	20.9	58.0
This survey	**2011**	**9.1**	**22.3**	**31.4**	**20.3**	**28.0**	**48.3**	**22.8**	**20.8**	**43.6**

4.1.2. Malnutrition prevalence among IDPs and host population

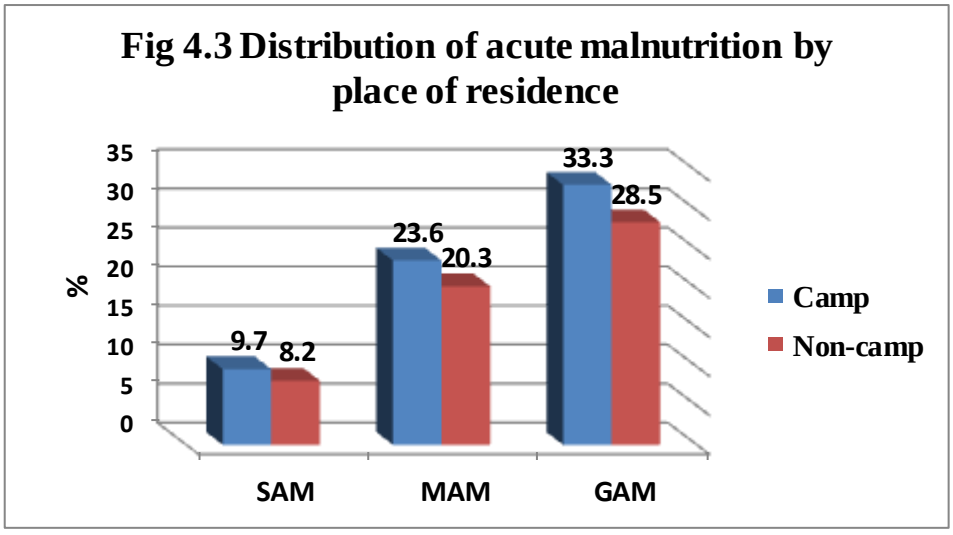
Fig 4.2 shows acute malnutrition among IDPs and host. Although GAM and SAM among IDPs and host are exceeding the emergency level, SAM only is significantly higher among the IDPs 10.8:7.2% respectively (X^2 7.1 $p < 0.05$, df 2).



[9] THE STATE OF THE WORLD'S CHILDREN. UNICEF. 2010. www.unicef.org/.../ SOWC_Spec._ Ed._CRC_Main_Report_EN_090409.pdf

Furthermore, acute malnutrition figures found in this survey are much higher than pervious figures found among the IDPs population at the same area which was 9.8% for GAM and 0.4% for SAM[10]. However, another assessment that was done in Harad district and cover camps and non-camp population found nearly similar figures of 28.9% and 7.7% for GAM and SAM respectively[11]. Similarly UNICEF nutrition assessment carried out in five districts of Sa'ada (where there is on-going conflict between the Government forces and the Houthis) in July 2010 revealed that the rate of severe acute malnutrition was 17 per cent and moderate acute malnutrition is 28 per cent[12]. Though, the above assessments' methodologies are not exactly the same as such assessments were using MUAC classification, a comparison offers some insight into trends on the current situation.

Moreover, figure 4.3 shows the distribution of acute malnutrition by place of residence: camps vs. non-camps. Although the prevalence is higher among camp population, it does not reach the significant level (P=0.06).



A comparison of malnutrition in the three camps shows a comparable high rate of GAM across the three camps with the Camp 2 showing almost double of SAM cases compared to other camps. It should be noted that the management of the Camp 2 changed hands three months prior to the survey. The camp has been recently declared as a permanent settlement and currently not under any organizational responsibility and its inhabitants are not receiving support from any organization.

4.1.3. Malnutrition and child age

Fig 4.4 shows that younger children who are less than two years of age have significantly higher prevalence of GAM compared to those above 2 years: 34.9%: 28.9% (x^2 :5.8, P< 0.05, df 1). This is also true for SAM which is significantly higher among those < 24 months: 11.9 vs. 7.1

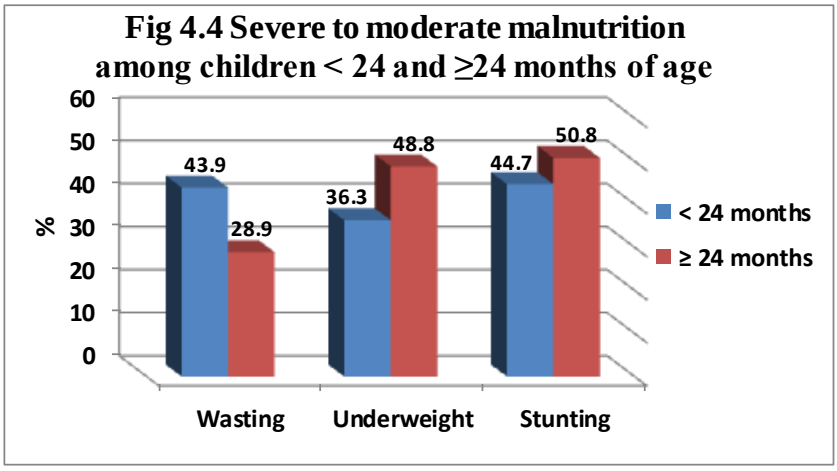
[10] MSF Nutrition Assessment Al Mazraq camps 1,2,3 and Al Gofel area, July 2010.

[11] MSF Harad district Rapid Assessment, 13-11-2009

[12] Nutrition assessment in five western districts of Sa'ada Governorate, July 2010, supported by UNICEF and the Ministry of Public Health and Population.

% ($x^{2:}$11.0, P< 0.01, df 2). This high prevalence among younger children may indicate inadequate IYCF practices (see IYCF section) and perhaps high prevalence of diarrhoea among this age group (see Childhood Morbidity). However, such association is reversed for stunting and underweight where children ≥ 24 months have significantly higher prevalence of severe (x^2 :23.5, P< 0.0001, df 2) as well as severe to moderate stunting (x^2 : 21.5, P< 0.0001, df 1) and significantly higher prevalence of severe to moderate underweight (x^2 :5.2, P< 0.05, df 1).

Such trend of acute malnutrition among under 2 years children if not properly tackled may end up in a chronic malnutrition in older age children. The underlying causes of long term growth failure as demonstrated by high level of stunting could be attributed to the high wasting level below 24 months of age with little catch-up of growth due to persisted diarrhoea.



4.1.4. Malnutrition by gender

Regarding gender, while the prevalence of wasting and underweight is significantly higher among boys (x^2 8.4, P < 0.01, df 1, x^2 4.7, P<0.05, df 1), stunting also higher but the difference is not statistically significant.

4.1.5. Malnutrition by mother's literacy

Education levels are generally very low, especially among women. We found that 86 percent of the women did not attain any educational level. The direct link between education and nutrition is obvious. Better-educated mothers have better access to information about food and nutrition and tend to be more aware and knowledgeable about nutrition problems and their solutions. In this survey mother's illiteracy was significantly associated with stunting which was found to be higher among illiterate mothers' children compared to literate: 45.4% vs. 37.3% (X^2 4.3, P < 0. 05, df 1). Previous studies in Yemen shows that child malnutrition is significantly lower in educated households[13]. Perhaps we need to concentrate on child caring practices and empowering young women through schools and mainstreaming nutrition in education curriculum.

4.2. CHILDREN'S HEALTH

4.2.1. Childhood Morbidity

[13] National Food Security Strategy Paper. (NFSSP), Final Draft, February 2010

The relationship between diseases and nutrition is well documented[14]. This survey found that almost half of the children in the assessment who were reported to have been sick in the previous two weeks, 47.4% of the children reported to have diarrhoea (compared to national figure of 29.6[15]), 54.6 had fever (compared to national figure of 40%[15]) and 43.1% had ARI (compared to national figure of 42%[15]).

Although all morbidities are common among the IDPs, diarrhoea had significantly higher morbidity prevalence among them: 52.6 vs. 41.8 (x^2 : 16.9, P< 0.0001, df 1).

Table 4.2 summarises the association between diarrhoea and malnutrition and shows that diarrhoea is found to be significantly associated with all types of malnutrition. We found significant association (X^2 12.0, P < 0.01, df 1) between diarrhoea and acute malnutrition with 55.8% of severely malnourished and 53.7% of moderately malnourished children have reported diarrhoea in the past two weeks compared to 44.4% among those who were not acutely malnourished. Repeated attacks of diarrhoea – that may be associated to poor environmental sanitation- found to be associated with tropical enteropathy with resultant poor nutrient absorption and considerable nutrient losses[16]. The resulting nutritional deficiency causes impaired immunity and increased vulnerability to more infection resulting in a vicious cycle of infection and malnutrition.

Both IDPs and host communities deal with diarrhoea as usual everyday occurrence among children as well as fever and cough. For diarrhoea they just give yoghurt, rice water, canned juice, and biscuit. Few stop giving milk and few gives the ordinary family food. During cough they also stop sweets and cold drinks. Some also realize the association of diarrhea to polluted water.

FGs participants mentioned that can access only two health facilities, Al Mazaraq health unit, which located in Al Mazraq IDPs camp which covers IDPs camps and local communities around the camps and the rural hospital in Harad town.. Since the health unit only provides very basic services, most of participants – especially host population- prefer to go to Harad hospital if they have to. However, due to the distance and the high transportation cost (up to 4000 Rial), no mother or baby is taken to Harad rural hospital unless they *are "sick to death"* as quoted by a mother.

Table 4.2: Diarrhoea in the two weeks prior to interview by nutritional status

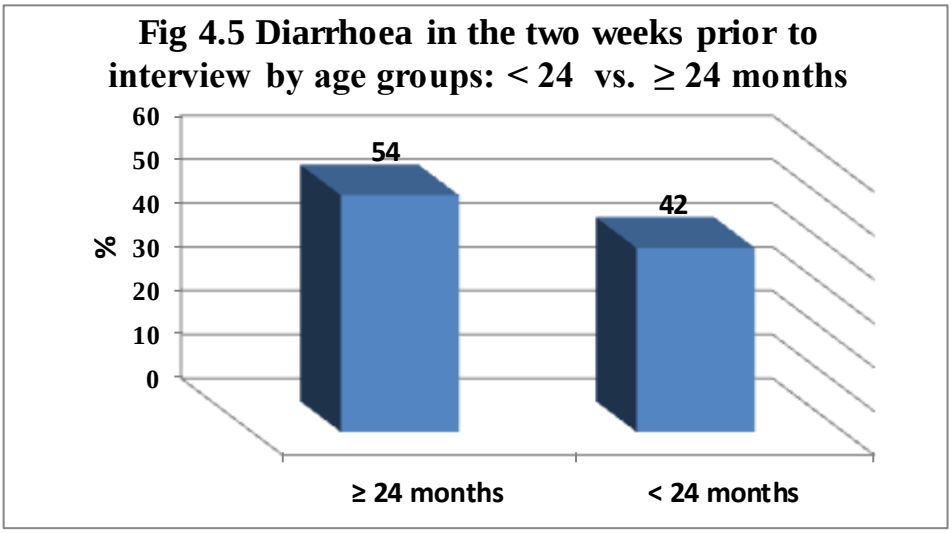
Indicator	Severe (<-3 z-score)	Moderate (>= -3 and <-2 z-score)	Normal (> = -2 z score)	Significant level
Acute malnutrition based on weight-for-height z-scores (and/or oedema)	55.8% (72)	53.7% (169)	44.4% (431)	X^2 12.1, P < 0.01, df 2
Underweight based on weight-for-age z-scores	58.6% (171)	50.4% (203)	41.0% (305)	X^2 28.0, P < 0.0001, df 2
Stunting based on height-for-age z-scores	56.4% (181)	48.3% (141)	43.0% (340)	X^2 16.5, P < 0.0001, df 2

[14] Early child growth: how do nutrition and infection interact?. A&T Technical Brief . Issue 3, June 2011: 1-10

[15] Ministry of Public Health and Population. Central Statistical Organization, and League of Arab Sector. Yemen Family Health Survey, Principal Report; 2005

[16] Jean H Humphrey. Child undernutrition, tropical enteropathy, toilets, and Handwashing. Lancet.com Vol 374 September 19, 2009:1032-35

Fig 4.5 Diarrhoea found to be significantly higher among children below <24 months: 54% vs. 42% (x^2 : 23.1, P< 0.0001, df 1). Considering that this group also has significantly higher prevalence of wasting may indicate that a high burden of diarrhoea in the first two years of life is associated with a much higher risk of acute malnutrition.



Furthermore, this survey found that diarrhoea to be more in boys (which may be related to their more exposure to the outdoor environment/poor sanitary practices) with a prevalence of 49.4% compared to 45.3% among girls. Although such difference is slightly below the required significance level (P =0.07) this may goes with the fact that boys have higher malnutrition prevalence which need to be further investigated.

This survey found highly significant association between diarrhoea and stunting which is consistent with finding of many studies that shows that high burden of diarrhoea in the first two years of life found to be highly associated with a much higher risk of stunting[17].

Mother illiteracy was significantly associated with stunting, where the prevalence of stunting was higher among children of illiterate mothers compared to literate mothers: 45.4% vs. 37.3% (X^2 4.3, P < 0. 05, df 1). The fact that diarrhoea incidence was higher among children of illiterate mothers (47.7% vs. 42.1) may also give an indication to a possible relation between diarrhoea, mothers' illiteracy and stunting that needs to be studied.

Malnutrition and infection are intimately related – a malnourished child is more susceptible to disease, and a sick child is more likely to become malnourished. This survey found that GAM is highly associated with fever (which is a proxy for infection) where the prevalence of fever among wasted children is 63.3% and only 50.5 among non- wasted children (X^2 20.2, P < 0.0001, df 1). Whether this is result or a cause is difficult to answer through such cross-sectional design and need to be investigated through analytical or experimental design. No such association was found with ARI which goes with less clear impact of respiratory infections on growth in many literature may be due to the fact that most types of respiratory infections - mild, upper respiratory infections - are unlikely to have persistent effects in most children[18].

4.2.2. Measles vaccination

[17] Early child growth: how do nutrition and infection interact?. A&T Technical Brief . Issue 3, June 2011: 1-10

[18] Early child growth: how do nutrition and infection interact?. A&T Technical Brief . Issue 3, June 2011: 1-10

Measles is an endemic disease in Yemen and many outbreaks occur every year[19]. Overcrowdings, poor nutritional status, and low vaccination coverage are among the important risk factors common to the survey population.

The overall measles vaccination coverage is 79.4% with significantly higher vaccination coverage among IDPs than host communities (x^2: 10.5, P< 0.01, df 2). Although such coverage is higher than the national coverage of ٧٣%[20], it is still below the minimum target of 90% coverage which is necessary to prevent outbreaks.

Measles is still occurring both among host and IDPs populations and women are more aware than men about its occurrence. Only in one FGD at camp 1 participants said that they stopped seeing anymore measles as they are vaccinating children. They give the child ordinary food unless the child refuses when they give canned juice and biscuit. Some wash the child with sour milk.

Moreover, only around one third of coverage with measles vaccine could be confirmed through presence of vaccination card, which need to be addressed through ensuring continuous availability of vaccination cards at both health facilities and during campaigns/outreaches and more health education to parents.

4.2.3. Vitamin A supplementation

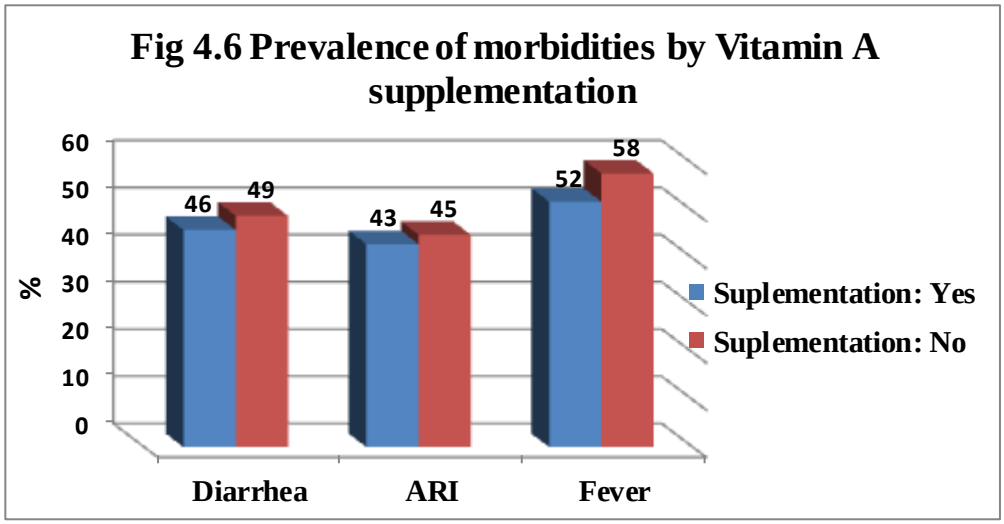
WHO and UNICEF have recommended that children under 5 years of age should be supplemented twice a year with vitamin A. In addition to the well-known effects of Vitamin A deficiency (e.g. loss of vision, night blindness etc.), vitamin A deficiency can also lead to reduced body immunity and hence more susceptibility to infection and illnesses. However, vitamin A supplementation coverage was found to be low and only 65.5% of U5 children had received vitamin A supplementation with significantly higher figures found among IDPs: 69.1% vs. 61.6% (x^2: 9.1, P< 0.01, df 1). Such figures – though higher than the previous national figures: 35.6[21] – are less than the recommended national cut-off figure of 80%.

Importantly, morbidities due to diarrhoea and ARI was less among those who received Vitamin A supplementation (Fig 4.6) but was only significant with fever (x^2: 4.3, P< 0.05, df 1). The lack of association of Vitamin A supplementation with diarrhoea may be related to the high loss of Vitamin A thorough rebated bouts of diarrhoea and malabsorption.

[19] MoPHP (2009). Comprehensive Multi-Year Plan, 2006-2010. Expanded Program of Immunization.

[20] MoPHP (2010). National Health Strategy: 2010-2025

[21] Ministry of Public Health and Population. Central Statistical Organization, and League of Arab Sector. Yemen Family Health Survey, Principal Report; 2005



4.3. INFANT AND YOUNG CHILD FEEDING (IYCF) PRACTICES

Infant and young child feeding practices directly affect the health and nutritional status of the children under 2 years of age[22]. Therefore protecting, promoting and supporting lactating women to breastfeed their children from 0 to 24 months of age is highly recommended.

4.3.1. Ever breastfed

90% of children in the assessment had ever been breastfed. There is no significant difference in the prevalence of wasting among those who were ever breast fed compared to those who were breast fed.

Women believe that breast feeding is good for babies and it is less costly than artificial milk which is provided by mother only if there is no breast milk, or baby refuses to breastfeed, or if baby is crying and hungry as breast milk is not sufficient.

Women did not complain about breast problem that could prevent breast feeding except the normal congestions which could happen from time to time.

4.3.2. Early initiation of breast feeding

Early initiation of breast feeding is encouraged as colostrum, that contains antibodies and has high nutrient density. It also ensures that the infant receives mother's warmth (kangaroo method is preferred and advocated). Breastfeeding facilitates bonding between mother and newly born infant. Immediate breastfeeding after delivery facilitates placental expulsion, uterine contraction and reduces the risk of post-partum haemorrhage.

According to UNICEF/ WHO recommendations, breastfeeding should be initiated within the first hour after birth. Only 15 percent of women initiated breastfeeding within an hour after delivery compared to national figure of 30%[23]. Initiation of the breast feeding within the first hours is less among IDPs than

Women of IDPs and Host communities are mostly aware of the benefits of the colostrum (Liba/Saba'h) to the new-borns. Few women especially among host community did not know if it is beneficial or harmful. However, at one FGD among IDPs living outside camps , men mentioned that colostrum is a semi clotted blood remnants and it is harmful as some babies died after breastfeeding.

[22] USAID's Investment in IYCF: LINKAGES Achievements and Results. http://www.linkagesproject.org/ media/publications/ FINAL_USAID_LINKAGES.pdf

[23] UNICEF. Multiple Indicator Cluster Surveys (MICS), 2006

host population: 9.8% vs. 20.0% respectively (X^2: 12.6 P< 0.01, df 2).

4.3.3. Pre-lacteal feeding

Pre-lacteal feeding (e.g. infant formula sweetened water, ghee/butter) was found in 26% of cases especially among host population where around one third receive something before breast feed compared to one fifth among IDPs (X^2: 7.8 P< 0.01, df 1).

FGDs women participants, mentioned that sometimes that breast milk did not come out immediately after delivery. As the child is crying, they have to offer him either sweetened water or powdered milk however, as it becomes very expensive and sometimes cause diarrhoea, powder milk is not the first choice. Nevertheless, some women mentioned that as they are living in hot area the born child is thirsty they have to offer him water from the beginning.

4.3.4. Exclusive breast feeding

A good practice in IYCF that breastfeeding should continue on demand for the first six months of life, without giving any other food or fluid (even water). However, this survey found that only among children below six months, one in five children found to be on exclusive breastfeeding. Though this figure is higher than the national figure of 11.5%[24], it is still very low.

Exclusive breastfeeding found to be higher among literate than illiterate mothers (20.0% vs. 12.5%) however, the difference is not statistically significant may be due to the small sample size among the 6 months age group. Also, no significant difference between diarrhoea among the exclusive breastfeeding and non-exclusive breast feeding found may due to the same reason.

Although wasting found to be higher among non-exclusive breast fed children (33.3% vs. 26.7%) due to small sample size difference was statistically insignificant.

4.3.5. Bottle feeding

While overall 12% of children were offering complementary feeding through bottle -which is not a good practice- this is significantly higher among host communities than IDPs (15.6% vs. 8.7%). The prevalence of diarrhoea found to be higher among bottle feed children (53.7%:45.9%), however the difference is just approaching the significance level (P= 0.06).

4.3.6. Food diversification

Community efforts to diversify the food basket found to be very limited. Children are not fed frequently and dietary diversity and nutritional quality is not assured. Children do not get essential nutrients for healthy growth and development; this may include foods such as milk, meat, fruit, vegetables etc. This survey found that less than one in four of the 6-23 months children are on proper diversified food i.e. receiving four or more food groups in the previous day. Such food diversification found to be better among host community compared to IDPs (26.0% vs. 22.3%

Though the inhabitant population had better food diversity in their children and families food, they have mentioned keeping such diversity become costly especially when it comes to what they use to. They have mentioned as the past that their favoured foods are honey, mutton meet, eggs, rice etc.) As such food became costly and unaffordable as their incomes dropped they forced to adapt to cheaper food such as bread, rice etc.

[24] UNICEF. Multiple Indicator Cluster Surveys (MICS), 2006

respectively), but the difference is also statistically insignificant. Furthermore, food diversification is better among literate mothers compared to illiterate mothers (32.0% vs. 23.1% respectively) however, the difference did not approach the significance.

Table 4.3 shows that poor food diversification found to be significantly associated with underweight malnutrition (X^2 8.7, P < 0. 01, df) but not to other malnutrition.

Table 4.3: Prevalence of underweight among 6-23 months age based on weight-for-age z-scores by food diversification group

Indicator	Poor food diversification* (n=348)	Good Food secure (n=111)
Prevalence of underweight (<-2 z-score)	46.6% (162)	35.1 % (39)

* Significance difference (P< 0.01)

4.4. WOMEN OF CHILD BEARING AGE

4.4.1. Malnutrition among pregnant and non-pregnant women

There is strong epidemiological evidence of an association between maternal nutritional status, both during and prior to pregnancy, and birth weight and intrauterine growth retardation[25]. Therefore, the sixth report on the world nutrition situation calls for a renewed effort to invest in maternal nutrition in a sustainable and holistic manner[26].

FGs participants women mentioned that women have no advantage during pregnancy or lactation as they continue to eat the same family food but in some places, they prefer to stop feeding the pregnant mother honey and sours as lemons and oranges as they believe these usually affect badly the baby. Some inhabitant communities prevent the pregnant to eat green vegetables such Malokhia "jew's mallow" or spices and Holba "fenugreek".

Among host population after delivery those who can offer feed they feed mother for a week special food e.g. meat, honey, ghee

Out of 1,592 women in child bearing age assessed, 23% were pregnant. Pregnant mothers with MUAC < 20.7cm (severe risk) and < 23.0cm (moderate risk) who carry a risk of growth retardation of the foetus found to be 16.4% and 30.3% respectively. Host communities signifcantly have higher risk than IDPs: 55.0% vs. 41.2% (X^2 5.1, P <0.05, df:1).

For non pregnant women with MUAC < 18.0 cm (severe risk) and < 16.0 to <18.5 cm (moderate risk) figures are 3.9% and 1.7% respectively. Also host communities signifcantly have higher risk than IDPs: 7.2% vs. 4.2% (X^2 5.1, P =0.05, df:1).

Although the prevlance of preganat women malnutrtion was higher among illiterate pregnat women: 48.5% vs. 39.7% however, such diffrence was statistically not significnat (P>0.05).

[25] Rebecca Norton, Maternal Nutrition During Pregnancy as it Affects Infant Growth, Development and Health

[26] United Nations System, Standing Committee on Nutrition6th report on the world nutrition situation. 2010

Simailarly, the prevlance of non-pregant women malnutrtion was higher among illiterate pregnat women: 5.3% vs. 4.7% but the diffrence was statistically not significnat (P>0.05).

4.4.2. Anaemia a mong pregnant and non-pregnant women

Anaemia among pregnant women risks associated with child births, low birth weight babies and maternal deaths. Very severe anaemia in pregnant women is a medical emergency due to the risk of congestive heart failure and maternal death rates are greatly increased.

Prevalence of severe to moderate anaemia among pregnant women was 37.8 percent and among non-pregnant was 38.3. Only among non-pregnant the host population has significantly higher prevalence than IDPs: 41.3 vs. 35.8 (X^2: 8.1, P <0.05, df 3).

Using the WHO classification on the severity of anaemia among the pregnant women the prevalence of anaemia falls in the "moderate category" i.e. 20.0 – 39.9% both for host and IDPs. For non-pregnant women at reproductive age, prevalence of anaemia falls in the "severe category" i.e. ≥ 40% for host and falls in the "moderate category" for IDPs i.e. 20.0 – 39.9%.

Although the prevlance of preganat women malnutrtion was higher among illiterate pregnat women: 38.7% vs. 26.5% however, such diffrence was statistically not significnat (P=0.07). Simailarly, the prevlance of non-pregant women malnutrtion was higher among illiterate pregnat women: 37.0% vs. 34.7% but the diffrence was statistically not significnat (P>0.05).

4.5. HOUSEHOLD FOOD INSECURITY, ACCESSIBILITY AND COPING STRATEGIES

4.5.1. Food insecurity

Household food consumption and food sources provide important measures of food security. In this survey household heads were asked to recall the kinds and frequency of food that were consumed during the previous seven days and Food Consumption Group as defined by the Food Consumption score.

Both IDPs as well as host communities reported that different types of foods are available in the nearby Harad and Al Mazraq markets, but low purchasing power is affecting their access to food. It was also mentioned that the high food prices during the last 6 months have not affected food availability in markets but has mostly deteriorated their access to food.

The findings show that more than half of the families are food insecure (i.e. in the poor and borderline groups) and more than one fifth are severely food insecure. Food insecurity (i.e. the poor and borderline groups in Food Consumption Groups) was found to be significantly higher among IDPs than host population (X^2: 43.1, P <0.0001, df 1).

Though the prevalence of all types of child malnutrition was found to be higher among food insecure (i.e. the poor and borderline groups), this was only significant with stunting: X^2 4.9, P < 0. 05, df 1 (Table 4. 4).

Table 4.4: Prevalence stunting based on height-for-age z-scores by food insecurity group

Indicator	Food insecure* (n=445)	Food secure (n=383)
Prevalence of stunting (<-2 z-score)	47.6% (212)	39.9 % (153)

*Significance difference (P<0 .05)

Furthermore, malnutrition prevalence among pregnant women was found to be higher in the food insecure group (49.6%: 43.3%) but such a difference was not statistically significant (P > 0. 05). Also, no significant association was found between food security and anaemia among pregnant or non-pregnant women.

The main livelihood resources for the inhabitant population are agriculture, with people mainly growing all kinds of sorghum but this production in terms of quantities or prices is not sufficient to provide enough food for families especially with the draught that has hit Harad and surrounding areas in recent years.

Others who were dependent on income sources such as herding, daily labor and khat trade were doing well when there was reasonable access to Saudi Arabia (SA) through smuggling. Such important income sources had collapsed recently as SA has built a fence at the Saudi-Yemen border, making cross-border work not only difficult and also dangerous.

4.5.2. Food accessibility

Such high food insecurity is also supported by the findings of inadequate access to food. Around half of families were forced to reduce meal size/number, more than one third went to bed hungry, and 14.6% spent the whole day unfed. The IDPs had statistically significant higher food inaccessibility as they have higher percentages of family members who have forced to reduce the size of meals and who have forced to stay the whole day unfed.

Higher prevalence of different types of childhood malnutrition was found among those who have poor food inaccessibility, with none reaching significant levels.

Among pregnant women, higher prevalence of malnutrition was found among those who have poor food accessibility. However, this only reached significant level when food vanished totally from the household: 54.7% vs. 42.5% (X^2 3.8, P = 0. 05, df 1).

All FG participants expressed great worries about their families' and children's future and their accessibility to food as food prices have increased dramatically since January 2011 due to fuel shortages, while income has decreased due to the current political situation in Yemen which could lead to a serious food insecurity situation. Furthermore, closing SA borders has further limited income sources.

IDP participants mention that due to insufficient food in households, they have learned to eat one or two meals a day. Although they do their best to feed their children three times a day, they have to offer them less quantities and or unfavourable kinds of food.

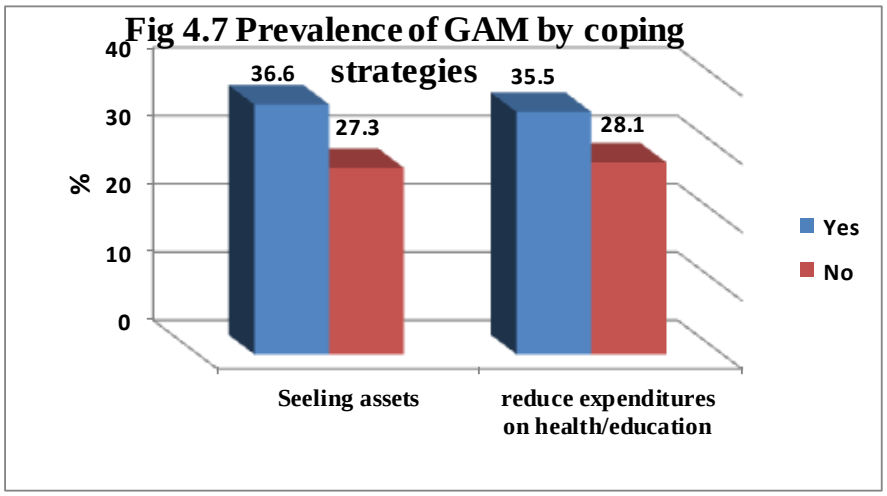
Nevertheless, almost all food accessibility indicators (i.e. decreasing size/number of meals, food totally vanished, sleeping hungry, not eating at all during the day) were found to be significantly higher among the food insecure groups (i.e. in poor and borderline groups).

4.5.3. Coping strategies

It was noted that households adopt a wide range of coping strategies in efforts to cover their food gaps when faced with acute food decline where up to three fourths of the surveyed families are using different coping strategies e.g. buying food on credit, selling assets, decreased expenditure on education/Health etc. Coping strategies found to be common both among IDPs and host communities where up to three fourths of the surveyed families are using such strategies e.g. buying food on credit, selling assets, decreased expenditure on education/Health etc.

FGs participants mentioned that as their income they gain from livelihood sources or other sources is not adequate to maintain or to meet their families minimum food requirements, they have to adopt some coping mechanisms such as barrowing money/goods from relative/neighbours, buying food/goods on credit, and selling assets or food ration.

Of the different coping strategies, selling assets to buy food and reducing expenditures on health/education (Fig 4.7) were highly associated with GAM (X^2 14.0, P < 0. 0001, df 1, X^2 9.3, P < 0. 01, df 1 respectively).



Among pregnant women (table 4.5), higher prevalence of malnutrition was found among those who were forced to use different coping strategies. However, this was significant only with buying food on credit (X^2 7.9, P < 0. 01, df 1).

Table 4.5: Prevalence of acute malnutrition among pregnant by coping strategy

Indicator	All (n=274)	family bought* food on credit (n=182)	family did not bought food on credit (n=92)
Severe to moderate risk of IUGR (MUAC: <23.0 cm)	46.7% (128)	52.7% (96)	34.8% (32)

* Significance difference (P< 0.01)

Although some coping strategies (e.g. decreasing expenditure on health, selling assets to buy food) are higher among food insecure groups, none of these differences reach significant level.

4.5.4. General food distribution

General food distribution from WFP targeted mainly IDPs where 82% were targeted and the majority received food twice during last three months.

Food insecurity was found to be much higher among those who are receiving rations (X^2: 8.2, P <0.01, df 1), indicating proper targeting of the poor b y the program (Table 4.6).

According to some IDPs at the FGs, in addition to the food assistance they are receiving from WFP, they are also receiving some assistance from charities/NGOs. According to FG participants from host communities, the cash assistance that some host households receive through the Social Welfare Fund (SWF) is minimal and covers less than a tenth of the household's necessities.

The main issues highlighted by IDP FGDs that are relevant to food distribution are:

- The quantities of assistance food are not enough for IDP households as it is consumed in two weeks
- Those that are registered have to share their food aid with other IDPs (relatives, friends or neighbours) who are not registered and not receiving any food assistance.
- Some foods were not favoured, such as red beans which is hard to cook, and/or needs a lot of expensive fuel.
- Some IDPs have to sell some of their food to buy fresh food/green vegetables such as tomatoes and *molikhia*. Some are selling the red beans very cheaply on the market.

Table 4.6: Prevalence of food insecurity among those on rations

Indicator	All (n=853)	Receive ration (n=394)	Do not receive ration (n=459)
Severely to moderately food insecure	53.6% (457)	59.9% (232)	49.1% (225)

* Significance difference (P< 0.01)

However, IDPs who are not receiving rations are at much higher risk of food insecurity as shown in table 4.7 (X^2 5.6, P < 0. 05, df 1). That may indicate the importance of supplementary feeding for IDPs and its important role in preventing food insecurity.

Table 4.7: Prevalence of food insecurity among IDPs on ration

Indicator	All (n=470)	Receive ration (n=388)	Do not receive ration (n=82)
Severely to moderately food insecure	61.7% (290)	59.3% (230)	73.2% (60)

* Significance difference (P< 0.01)

Although no association was found between the food distribution and nutritional status of U5 children, the key role of food distribution in improving women's nutritional status is shown in table 4. 8, where pregnant women who received rations in the last three months have significantly lower prevalence of all degrees of malnutrition (X^2 9.0, P <0.05, df:1).

Table 4.8: Prevalence of malnutrition among pregnant women receiving food rations based on MUAC

Indicator	All (n = 273)	Receive ration * (n=133)	Do not receive ration (n=140)
Severe to moderate risk of IUGR (MUAC: <23.0 cm)	46.5% (127)	37.6% (50)	55.0% (77)
Moderate risk of IUGR (MUAC: 20.7 to <23.0 cm)	30.0% (82)	22.6% (30)	37.1% (52)
Severe risk of IUGR (MUAC: <20.7 cm)	16.5% (45)	15.0% (20)	17.9% (25)

* Significance difference (P< 0.05)

Furthermore, non-pregnant women (Table 4.9), who received food rations exhibited lower prevalence of malnutrition than those who did not (X^2 4.0, P <0.05, df: 1).

Table 4.9: Prevalence of malnutrition among non-pregnant women receiving food rations based on MUAC

Indicator	All (n = 886)	Received* ration (n=394)	Did not receive ration (n=492)
Severe to moderate risk of IUGR (MUAC: <23.0 cm)	5.6% (49)	3.8% (15)	6.9% (34)

* Significance difference (P< 0.05)

The prevalence of anaemia in pregnant women was found to be lower among those receiving food rations during the last three months (33.8%: 37.9% respectively). However, this difference was not statistically significant (P> 0.05). Nevertheless, the prevalence of anaemia among the non-pregnant (table 4.10) is significantly lower among those who are receiving food rations during the last three months: 32.5% vs. 39.8%(X^2: 10.6, P <0.05, df 3).

Table 4.10: Prevalence of anaemia among non-pregnant women receiving food rations based on MUAC

Indicator	All	Received* ration	Did not receive ration
Severe to moderate anaemia (Hb: < *9.9 g/dl*)	36.5% (322)	32.5% (127)	39.8% (195)
Moderate anaemia (Hb: *7.0-9.9 g/dl*)	36.1% (301)	32.0% (122)	39.6% (179)
Severe anaemia (Hb: <*7.0 g/dl*)	2.5% (21)	1.3% (5)	3.5% (16)

* Significance difference (P< 0.05)

The above findings that show positive impact of food distribution on women's nutritional status - regardless of the pathway through which food distribution takes place, either directly or indirectly by improving health service utilization including antenatal care etc., should provide a strong argument for scaling up food distribution and supporting the WFP in continuing and scaling up its operations.

4.5.5. Therapeutic and supplementary food distribution

Nutritional screening system, extremely important in producing reliable, timely, representative, and useful information for reaching target groups and defining interventions[27], was found to be malfunctioning. Despite high prevalence of child malnutrition, only 5.9% of all U5 are receiving supplementary and/or therapeutic feeding.

Furthermore, even among SAM cases only 22.7% are receiving supplementary and/or therapeutic feeding. Although such figures are significantly higher among IDPs (31.5% vs.8.7) still it shows unsatisfactory screening and targeting. Therefore, there is a need for joint action from all partners working in the survey area to establish such a system.

Such low coverage may be related to the very low total number of operational OTPs/ health facilities in the three districts. At the time of the survey, there was literally only one OTP inside the camp operated by MSFE providing CMAM services to IDPs inside the camps as well as to the host community in Harad, in addition to two mobile outreach OPD/ OTP sites in Harad.

[27] WHO. Health and Nutrition Sentinel Site Surveillance System. (working draft)

4.6. WATER, SANITATION, AND HYGIENE (WASH)

WASH is one of the lifesaving programs that aim at reducing mortality and morbidity. Distribution of adequate, safe and clean water reduces prevalence of waterborne diseases such as dirhaea, and hence can reduce malnutrition. Children living in poor sanitary conditions ingest high concentrations of faecal bacteria, which colonise the small intestine and induce tropical enteropathy through a T-cell-mediated process. The hyperpermeable gut facilitates translocation of microbes, triggering metabolic changes of the immune response. Growth falters when these changes coincide with reduced nutrient absorption by atrophied villi, marginal dietary intake, and the high growth demands of the first 2 years of life[28].

FGs participants from host communities mentioned that all inhabitants and IDPs in and around Harad buy their drinking water while the rest of the inhabitants in the sub-districts of Harad depended on ground water. During the fuel crisis, 20 liters of water cost 100-150 Rial. Some participants also related diarrhoea to improper water supply, and are asking to be given access to IDP water sources, which is safer than the springs or wells they are currently using.

Based on survey responses, about half of the respondents mentioned fetching water from protected water points. There are significant differences between IDPs and host communities in this regard. While only a fifth of the surveyed IDPs do not have safe water supply, more than four quarters of surveyed host population do not (X^2: 32.1, P<0.0001, df 1).

Because the quality of water from the different sources was not studied, a conclusive statement cannot be made about the safety of drinking water in this survey. WASH cluster partners who perform daily checks of water quality confirmed that it is within Sphere standards.

Regarding IDPs, international NGOs are providing water to the camps. The surrounded communities around the camp have got a benefit of using this water for free. The communities around the IDPs camps and IDPs themselves used to fetch the water from water distribution point by or girls or through using donkeys. Some participants complained of water shortages as the fuel prices have been increased and the tankers stopped providing water at some places.

While most households have access to latrines (inside or outside the house), still around 12% do not have toilets and practice open defecation. This is also more common among hosts compared to IDPs: 15% vs. 6% (X^2: 32.5, P<0.0001, df 1). Similarly, there is significant difference between IDPs and hosts in garbage disposal, with 88% of host communities throwing garbage in the open, and only 41% of IDPs (X^2: 349.9, P <0.0001, df:3).

Given that diarrhoea is the primary factor in this survey found to be associated with acute malnutrition (GAM), the findings further showed a higher percent of children with diarrhoea amongst IDP households that sourced their water from water tanks, as compared to those that sourced their water from other sources e.g. wells, springs etc.: 50.4% vs. 44.5% respectively (X^2: 5.2, P<0.05, df 1).

In IDP camp, NGOs had provided family latrines, but some were not functioning and dirty. Therefore families prefered to defecate in open air.

Among host population, only few have toilets at home and mostly resort to open defecation.

Furthermore, diarrhoea was also found to be significantly associated with human excreta and garbage disposal but in a reciprocal way, in other words lower diarrhoea prevalence among those who defecate in open air compared to those who have latrines: 38.3% vs. 48.8% respectively (X^2: 5.6, P<0.05, df 1), and among those

[28] Jean H Humphrey. Child undernutrition, tropical enteropathy, toilets, and Handwashing. Lancet.com Vol 374 September 19, 2009:1032-35

who are dispose of garbage in open air compared to those who resort to other types of disposal : 45.3% vs. 51.1% respectively (X^2: 4.5, P<0.05, df 1). Although the WASH cluster is ensuring the quality of water pumped to the communities, a combination of inadequate methods of human excreta and garbage disposal, poor latrine standards, improper storage, collection and handling of drinking water at household level may explain the high prevalence of diarrhoea. Further investigation may help in further understanding the underlying causes of diarrhoea.

5. SUMMARY OF FINDINGS

- The rates of GAM rates found in this survey of 31.4% [95% C.I 29.0 – 33.7], based on the WHO growth standards are much higher than national figures and surpass the 15% emergency threshold, indicating the need for urgent intervention. Furthermore, SAM rate of 9.1% is also much higher than the national figure of 3.9% and signifies a nutrition emergency.
- Although GAM and SAM among IDPs and host communities exceed emergency level, SAM alone is significantly higher among IDPs compared to the host community, 10.8 vs.7.2%
- While the underweight rate at 48.3% also exceeds the national figure of 43.0%, the stunting rate of 43.6% is lower than national figures of 58%, though both remain a serious public health concern.
- GAM prevalence was found to be significantly higher among children under two years of age (43.9% vs. 28.9%), which may be related to poor IYCF practices. However, underweight and stunting are significantly higher among U2 children, indicating the importance of early treatment of acute malnutrition.
- Malnutrition was found to be highly related to diarrhea, while fever was found to be significantly associated with GAM.
- Diarrhea was found to be significantly higher among children below 24 months, which may be related to the higher prevalence of GAM in this group.
- All types of morbidities were higher among IDPs than the host population but this was significant only with diarrhea (52.6% vs. 41.8%).
- Measles vaccination coverage at 79.4% and vitamin A supplementation at 65.5%, though slightly higher than the national coverage of 73% (2010), is still below the target coverage of at least 90%. As all morbidities were found to be lower among those who received Vitamin A supplementation (although this is only statistically significant with fever), this should be fostered.
- As stunting was found to be significantly higher among illiterate mothers' children as was diarrhea prevalence (although it did not reach the significant level) this may signal a possible relationship between diarrhea, maternal illiteracy and stunting, which need to be explored further.
- In spite of high rates of ever breastfeeding, only one in five children was found to be exclusively breastfed with higher prevalence of wasting among non-exclusive breastfed children. Moreover, only 15% of women initiated breastfeeding within an hour after delivery, 26% used pre-lacteal feeding, and less than one in four of the 6-23 months old children are on proper diversified food with significantly higher risk of underweight; diarrhea was found higher among bottle fed children.
- The moderate to severe risk of IUGR was found to be at 46.7% and 5.6% among pregnant and non-pregnant respectively, and significantly higher among host communities.
- Anaemia prevalence was also high among pregnant and non-pregnant women: 37.8 percent and 38.3 percent respectively, and significantly higher among host populations for the non-pregnant (41.3% vs. 35.8%).
- Both mothers' malnutrition and anaemia prevalence was higher among illiterate women, though this did not reach a significant level.

- More than half of the families are food insecure and more than one fifth are severely food insecure with significantly higher food insecurity among IDPs.
- Though the prevalence of all types of malnutrition among children was found to be higher among the food insecure (i.e. the poor and borderline groups in Food Consumption Groups), this was only significant with stunting. Malnutrition among women was also found to be higher among pregnant and food insecure groups (49.6%: 43.3%) though this difference was not statistically significant.
- The findings show inadequate access to food, with about half of families being forced to decrease meal size/number, more than one third went to bed hungry, and 14.6% remained unfed the whole day. IDPs have statistically significant higher food inaccessibility.
- Common coping strategies among IDPs and host communities for up to three fourths of the surveyed families include buying food on credit, selling assets to buy food, decreased expenditure on education/health etc. Of the different coping strategies, selling assets and reducing expenditures on health/education to buy food were highly significant and associated with GAM. Among pregnant women, higher prevalence of malnutrition was found among those who used different coping strategies, though, this was only significant for buying food on credit.
- General food distribution by WFP is targeting mainly IDPs and reaching 82% coverage; it was found that the majority received food rations twice during the last three months. Food insecurity was found to be much higher among those who receive food rations, indicating proper targeting. Furthermore, IDPs who do not receive rations are at much higher risk of food insecurity.
- Pregnant women on rations within the last three months exhibit significantly lower prevalence of malnutrition: 37.6% vs. 55.0%. Furthermore, non-pregnant women who received food rations have lower prevalence of malnutrition than those who do not: 3.8% vs. 6.9%.
- The prevalence of anaemia in pregnant women was found to be lower among those who are receiving food rations during the last three months (33.8%: 37.9% respectively). However, this difference was not statistically significant (P> 0.05). Nevertheless, the prevalence of anaemia among the non-pregnant is significantly lower among those who are receiving food rations during the last three months (32.5% vs. 39.8%).
- Only 22.7% of SAM affected children are receiving supplementary and/or therapeutic feeding (31.5% vs.8.7% among IDPs compared to host children respectively).
- Regarding WASH, a higher percentage of children with diarrhea were found to live in households that reported fetching drinking water from protected sources compared to those who are drinking from other sources, e.g. wells, springs etc.: 50.4% vs. 44.5%. Furthermore, lower diarrhea prevalence was found among those who have no latrines and who throw garbage in the open.

6. RECOMMENDATIONS

The fact that the prevalence of acute malnutrition found in this survey is way above the critical emergency threshold (≥15) indicates a need for urgent intervention. The following recommendations should be considered by different parties i.e. government (e.g. MoPHP and its governorate and district health offices, district local authorities/local councils, Executive Unit), UN agencies (e.g. UNICEF, WFP, WHO) and I/NGOs etc., as follows:

- **Response**

  - The findings of severe acute malnutrition in this survey that is nearly double the 5% WHO critical threshold suggest that acute malnutrition is a major problem among IDPs as well as host communities, indicating a serious level of concern. Furthermore, the fact that only one out of 5 SAM cases are currently on therapeutic and/or supplementary feeding, demands strengthening and capacity expansion to screen for malnutrition activities into health and community structures. Health facilities' staff as well as community volunteers should be sensitized on identification of moderate and severe acute malnutrition. Health workers should also be informed and trained on appropriate management of acute malnutrition including standardization of protocols on referrals, treatment and the use of therapeutic foods.
  - Scaling up CMAM services through the establishment of OTPs in all operational health facilities along with setting up outreach/ mobile services.
  - With the high magnitude of moderate acute malnutrition particularly in the under 24 months age bracket, emergency nutrition programmes should focus primarily on this age group through promotion of appropriate IYCF, CMAM, health, as well as the promotion of appropriate WASH practices at household level to address the main underlying causes of malnutrition and the needs of this specific age group.
  - In view of the high magnitude of moderate acute malnutrition, particularly in the 0-24 month age bracket, preventing the deterioration of their nutritional status to SAM, as well as towards chronic malnutrition, should be addressed by provision of appropriate supplementary foods.
  - As malnutrition was found to be closely related to illness, especially diarrhea and fever, there is a need to pay special attention to the underlying health causes of malnutrition. Sustainable responses should be considered to address, health and WASH issues with special focus on household water handling, as well as periodical disinfection of jerry cans and water containers.
  - Given the coverage of measles vaccination and vitamin A supplementation was found to be far below the target, and in view of reported measles cases and the positive impact of Vitamin A supplementation on morbidity, local health systems such as fixed health facilities, outreach/ mobile services, campaigns etc. should be supported to expand routine immunizations and supplementation of vitamin A coverage to children in both IDP and host communities.
  - Due to the limited food diversity found in this survey and poor infant feeding practices, multiple micronutrient powder (MNP) and deworming for all children aged 6-59 months should be included in response interventions
  - As more than half of the surveyed families are food insecure, which is significantly higher among IDPs and is linked to malnutrition, it is very critical to provide/maintain food assistance to all IDPs through general food distribution. It is also recommended that rations

should include essential food items, the amount should be increased, and local preferences – whenever possible- should be taken into consideration e.g. red beans currently distributed were found not to be favorable by the local population.

- In view of high prevalence of malnutrition and anaemia among women especially in the host communities, as well as the key role found of food distribution in improving malnutrition and anaemia among them, expanding the supplementary feeding programme to cater to the needs of women in childbearing age both among IDPs and host communities is highly recommended. Furthermore, multiple micronutrients and iron/folate supplements for pregnant and lactating women should be included.
- Taking into account the poor, and the potentially fragile food accessibility and wide range of coping strategies used among host communities, it is recommended to target the most vulnerable groups within host communities with food assistance. Alternatively, the classical food aid approach, could be replaced –even on pilot basis- with a new food assistance approach, e.g. cash/vouchers for work/training, conditional cash transfer etc.

- **Coordination**

- Strengthening inter-cluster coordination among nutrition, food security, WASH, and health clusters is highly recommended in order to design a common response to prevent further deterioration in nutrition status and food security for IDPs and host communities, as improving nutritional status in children demands multi-sectoral programming to treat and prevent malnutrition. For example, current food distribution programs could be combined with raising awareness of appropriate health, WASH and care practices.
- The Nutrition Cluster (NC) should continue to advocate through government structures (Executive Committee, district health authorities etc.) as they are the main structures responsible to coordinate and implement the emergency response. Establishing a NC working group within the health cluster in Harad should be encouraged.
- WASH cluster partners should consider the following; a) Improving water surveillance and water safety at all levels (water-trucking chain, point of delivery, transportation, storage containers and safe container with narrow neck). b) Undertaking vector control campaigns to neutralize sanitary risks. c) Upgrading latrine/ toilet standards. d) Scaling up hygiene promotion campaigns through innovative participatory approach.

- **Follow-up**

- The nutrition, health and food security situation of IDPs as well as host communities should be monitored on regular basis (e.g. bi-yearly) until rates of GAM decrease to below the WHO $\geq$ 15% critical emergency threshold.
- The nutritional status of children should be monitored more frequently by undertaking national and sub-national nutrition surveys (e.g. DHS). Updates on nutritional status of U5 children in the survey area as well as in different parts of the country should be encouraged in order to quickly identify and respond to evolving emergencies.
- Further investigation is recommended into underlying factors related to chronic malnutrition, the age/sex specific causes of acute malnutrition, IYCF practices etc.
- In the few, important WASH related findings of this survey, further investigations are needed to determine underlying causes of this inverse relationship by undertaking a comprehensive analysis of the WASH sector in the surveyed areas.

- It is crucial to investigate feasible cost effective means to provide assistance towards reestablishing livelihoods and long-term food security interventions among IDPs and host communities. This should entail relevant inputs that reflect livelihood options (e.g. crop production, labor, fishing etc.) along with monitoring food access, prices, and market availability of essential commodities (rice, oil, vegetables and sugar).

7. ANNEXES

ANNEX 1: Nutrition Survey Team

I. Surveyors

1- Huda Abdullah Ali Al-Bahri
2- Mariam Ahmed Ali Al-Husam
3- Kawkab Ata Husain Ya'eesh
4- Zainab Ahmed Yousef Al-Rajehi
5- Dhekra Sa'ad Ahmed Ja'dal
6- Saeedah Ahmed Yehia Al-Hajjaji
7- Nora Ali Ayedh Abu Nokhra
8- Fatima Ahmed Yousef Al-Rajehi
9- Hind Mohammed Mohammed Al-Sayaghi
10- Elham Husain Naser Al-Qadadi
11- Huda Kuddaf Omar Omar
12- Muna Shoei Abdullah Al-Faqeeh
13- Afrah Naser Qaid Otaifa
14- Khadeeja Mohammed Shaie Ebraheem
15- Shoeiah Shoei Ali Sufyan
16- Ebtisam Ahmed Mohammed Al-Burmi
17- Eshraq Saleh Muhsen Al-Weshali
18- Hana Mohammed Shoei Salah

II. HemoCue Hb measurers

1- Fathia Ali Shoei Dhablan
2- Hawala Garboosh Husain Ghaleb
3- Asma Al-Ezzi Mohammed Husain Khateeb
4- Hameeda Ebraheem Ahmed Jondus
5- Khadeeja Abdulrazzaq Hasan

III. Focus group teams

1- Hana Naser Qaid Otaifa
2- Haifa Ali Naser Al-Husaini
3- Abdulrahman Ali Abdullah Khamees
4- Ebraheem Mohammed Ali Ajlan

IV. Data entry and management

1- Hadhrami Hadi Al-Hadhrami
2- Anees Abdu Ali Al-Qubati
3- Jawhara Ahmed Mohammed Maqbool
4- Mahdi Khalil

V. Logistics

Dr. Ayman Ahmed madhkoor

VI. Team heads

1- Mansour Abdu Mohammed Ghalib
2- Dr. Fuad Mohammed Mohammed Shamsan
3- Dr. Waleed Mohammed Hamood Shamsan
4- Waleed Abdulmalek Sallam Al-madhaji
5- Aref Mohamed Naji Awfan

VII. Field supervisors

1- Dr. Ali Mohammed Jahhaf
2- Dr. Abdulbaset Mahyoob Al-Dobai
3- Faisal Ali Farei Qamhan
4- Dr. Rajia Sharhan

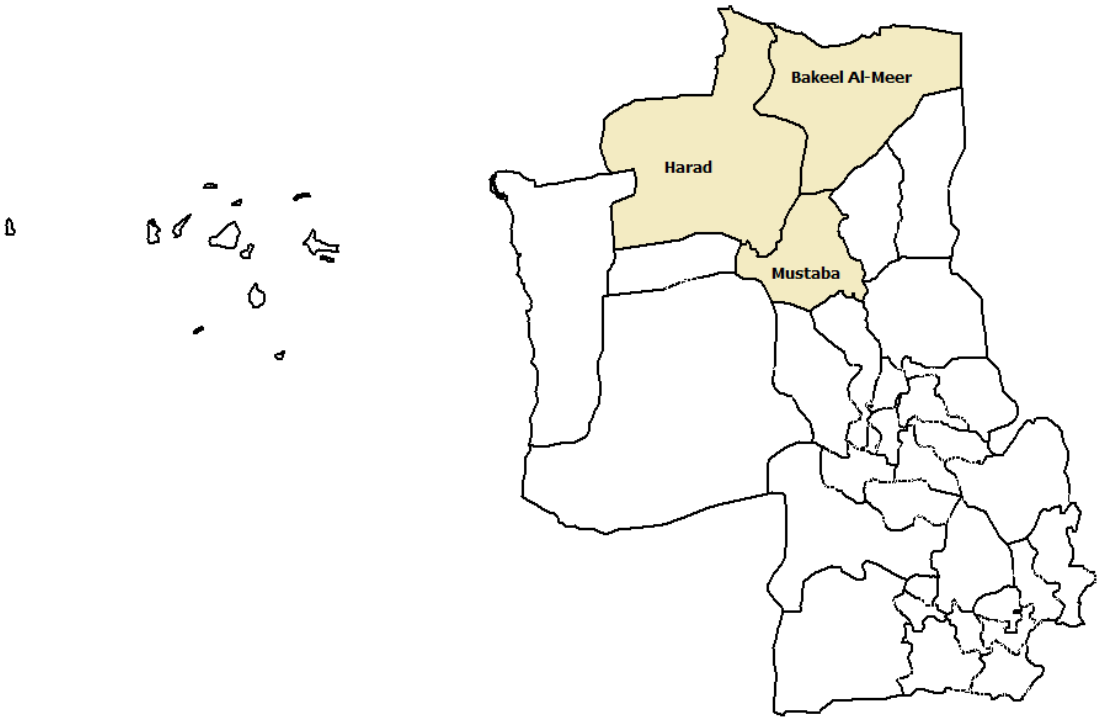
VIII. Trainers

1- Ahmed Ismail
2- Abdulkareem Al-Hubaisi

IV. Technical survey coordinator

Nagib Abdulbaqi Abdulwahab Ali

ANNEX 2: Map of the survey area



ANNEX 3: Assignment of clusters

Survey layer 1: IDPs

Cluster no.	*Cluster name*	*Sub district*	*District*	*Sample size*
١	Tasher	Tasher	Bakeel Al-Meer	48
٢	Harat Al-Bataria (Midi road)	Harad	Harad	33
٣	Al-Hamli Complex + Jamana	Al Atanah	Harad	24
4-5	Al-Madab	Al Faj	Harad	24
٦	Al-Qufl	Al Faj	Harad	36
٧	Om Al-Turab, Al-Makhada Al-Sufla	Al Faj	Harad	27
8-12				
13-14	Al-Annaba +Al-Yarmook School neighbourhood	Al Faj	Harad	46
15-24	Camp 1	Al Faj	Harad	241
٢٥	Sheb Al-Laban	Al Faj	Harad	26
26-28	Camp 2	Al Faj	Harad	83
٢٩	Wadi bin Abdullah	Bani Al Hadad	Harad	٢٨
٣٠	Al-Wazaar	East Mustaba	Mustaba	١٣

Survey layer 2: Host

Cluster no.	*Cluster name*	*Sub district*	*District*	*Sample size*
1-2	Tasher	Tasher	Bakeel Al-Meer	64
3-4	Harat Al-Bataria (Midi road)	Harad	Harad	70
5-6	Al Sawalema	Al Atanah	Harad	58
7-9	Al-Madab	Al Faj	Harad	89
10-12	Al-Qufl	Al Faj	Harad	87
١٣	Om Al-Turab, Al-Makhada	Al Faj	Harad	27
14-17	Al-Annaba, Al-Jarad, Al Sawdi, Al-Yarmook School neighbourhood	Al Faj	Harad	106
١٨	Al Hedrabah	Al Faj	Harad	١٧
١٩	Sheb Al-Laban	Al Faj	Harad	٢٢
٢٠	Al Kharsha	Al Faj	Harad	٢٥
21-22	Wadi bin Abdullah	Bani Al Hadad	Harad	50
23-24	Al-Wazaar	East Mustaba	Mustaba	82

ANNEX 4: Questionnaires

I. Household questionnaire

استبيان المسكن

الجمهورية اليمنية
وزارة الصحة العامة و السكان
قطاع الرعاية الصحية الأولية
الإدارة العامة لصحة الأسرة
إدارة التغذية

مسح الحالة التغذوية للأطفال تحت سن الخامسة والنساء في سن الإنجاب في محافظة حجة – يوليو ٢٠١١

استبيان المسكن (نموذج ١)

أولاً. يتم الشرح للساكنين في المسكن (البالغين منهم) عن المسح والتعريف بالجهة القائمة عليه والأشخاص العاملين فيه (أعضاء الفريق) بما في ذلك قياس هيموجلوبين الدم للنساء بعمر ١٥ – ٤٩ سنة، ثم بعد ذلك الحصول على الموافقة الشفهية منهم.

الموافقة	١. نعم		
	٢. لا		انتقل إلى النهاية

تاريخ المقابلة	ي ي	ش ش	س س س س
		7 Ø	1 1 Ø 2

المديرية		العزلة		القرية أو الحي أو المخيم	
الاسم	الرمز	الاسم	الرمز	الاسم	الرمز

اسم كبير الأسرة:	

ملئ الاستبيان من قبل الباحثة	الاسم	التوقيع

راجع الاستبيان	الاسم	التوقيع
المشرف الحقلي		

هل كان هناك:		
١.	غياب لأسرة حتى بعد الزيارة الثانية. (يجب العودة مرة أخرى لملئ الاستبيان)	
٢.	غياب لإمرأة حتى بعد الزيارة الثانية. (يجب العودة مرة أخرى لملئ الاستبيان)	
٣.	غياب لطفل حتى بعد الزيارة الثانية. (يجب العودة مرة أخرى لملئ الاستبيان)	

يملئ من قبل المشرف الحقلي (تستخدم لإدخال البيانات)

الموافقة	

رقم الفريق		

رقم استبيان المسكن				

تاريخ المقابلة	ي ي		ش ش		س س س س			
			7	Ø	1	1	Ø	2

رمز القرية أو الحي أو المخيم			رمز العزلة		
رمز المديرية					

العمل المكتبي

	الاسم	اليوم		الشهر		السنة				التوقيع
إدخال البيانات										
المراجعة										
تحديث وتنظيف قاعدة البيانات										

الملاحظات

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

س ٠٠١ – س ٠٠٢: بيانات عن الساكنين

س ٠٠١ـ أ	عدد الأسر في المسكن	العدد
س ٠٠١ـ ب	عدد الأفراد الذكور في المسكن	العدد
س ٠٠١ـ ج	عدد الأفراد الإناث في المسكن	العدد
س ٠٠١ـ د	عدد الأطفال الذكور بعمر ٦ أشهر إلى أقل من ٥ سنوات في المسكن	العدد
س ٠٠١ـ هـ	عدد الأطفال الإناث بعمر ٦ أشهر إلى أقل من ٥ سنوات في المسكن	العدد
س ٠٠١ـ و	عدد الأطفال الذكور بعمر أقل من ٦ أشهر في المسكن	العدد
س ٠٠١ـ ز	عدد الأطفال الإناث بعمر أقل من ٦ أشهر في المسكن	العدد
س ٠٠١ـ ح	عدد النساء بعمر ١٥ – ٤٩ سنة المسكن	العدد

س ٠٠٢ـ أ	هل أنتم كل أو بعض الأسر في المسكن هي أسر نازحة؟			إنتقل إلى
	١.	نعم		
	٢.	لا		س ٠٠٣
س ٠٠٢ـ ب	عدد الأسر النازحة في المسكن		العدد	
س ٠٠٢ـ ج	عدد الأفراد الذكور من النازحين في المسكن		العدد	
س ٠٠٢ـ د	عدد الأفراد الإناث من النازحين في المسكن		العدد	
س ٠٠٢ـ هـ	عدد الأطفال الذكور من النازحين بعمر ٦ أشهر إلى أقل من ٥ سنوات في المسكن		العدد	
س ٠٠٢ـ و	عدد الأطفال الإناث من النازحين بعمر ٦ أشهر إلى أقل من ٥ سنوات في المسكن		العدد	

س ٠٠٢ـ ز	عدد الأطفال الذكور من النازحين بعمر أقل من ٦ أشهر في المسكن	العدد	
س ٠٠٢ـ ح	عدد الأطفال الإناث من النازحين بعمر أقل من ٦ أشهر في المسكن	العدد	
س ٠٠٢ـ ط	عدد النساء النازحات بعمر ١٥ – ٤٩ سنة المسكن	العدد	

س ٠٠٣ – س ٠١٠: المسكن والوقود والماء والإصحاح البيئي

س ٠٠٣	مانوع المسكن؟		
	١.	منزل	
	٢.	شقة	
	٣.	عشة	
	٤.	صفيح (زنك)	
	٥.	خيمة	
	٦.	أخرى:	
س ٠٠٤	مانوع حيازة المسكن؟		
	١.	ملك	
	٢.	إيجار	
	٣.	شراكة	
	٤.	أخرى:	
س ٠٠٥	كم عدد الغرف في المسكن؟		
س ٠٠٦	ماهي المصادر الرئيسية الثلاثة لوقود الطبخ في المسكن (رتب المصادر من ١ إلى ٣ بحسب الأولوية). سجل (Ø) في بقية الخانات		
	أ.	غاز	
	ب.	كيروسين	
	ج.	فحم	
	د.	حطب	
	هـ.	مخلفات البقر	
	و.	بقايا المحاصيل الزراعية	
	ز.	أخرى:	

				إنتقل إلى
س ٠٠٧	ماهو المصدر الرئيسي لمياه الشرب في المسكن (خيار واحد فقط)			
		١.	شبكة عمومية.	
		٢.	وايتات.	
		٣.	شبكة خاصة.	
		٤.	بئر بمضخة.	
		٥.	بئر تقليدية.	
		٦.	غيل/ نبع.	
		٧.	خزان مغطى.	
		٨.	خزان مكشوف.	
		٩.	سد.	
		١٠.	برك/ جمع مياه الأمطار	
		١١.	خزانات اليونيسف	س ٠٠٩
		١٢.	أخرى:	

				إنتقل إلى
س ٠٠٨-أ	هل تقومون بمعالجة الماء قبل الشرب؟			
		١.	نعم	
		٢.	لا	س ٠٠٩
		٣.	لا أعرف	س ٠٠٩

س ٠٠٨-ب	ماهي طريقة المعالجة الرئيسية المستخدمة (خيار واحد فقط)			
		١.	الغلي والتبريد قبل الشرب	
		٢.	استخدام الكلور أو الكلوركس	
		٣.	الترشيح بقماش	
		٤.	استخدام مرشح سيراميك أو رمل أو ماشابه	
		٥.	ترقيد الماء قبل الشرب	
		٦.	استخدام الشب (شي الفؤاد)	
		٧.	أخرى:	

س ٠٠٩	مانوع الإصحاح المستخدم حاليا في المسكن			
		١.	حمام داخل المسكن	
		٢.	حمام خارج المسكن	
		٣.	حمام مجتمع (مشترك مع مساكن اخرى)	
		٤.	العراء	
		٥.	أخرى:	

س ٠١٠	ماكيفية التخلص من النفايات			
	١.	خدمة عمومية لجمع النفايات		
	٢.	وضعها في مكان مخصص		
	٣.	رميها في مكان مكشوف		
	٤.	الحرق		
	٥.	أخرى:		

س ٠١١: الموجودات في المسكن

س ٠١١	هل يحتوي المسكن على أيا من التالي				
	أ.	راديو.	١. نعم ٢. لا		
	ب.	تلفزيون.	١. نعم ٢. لا		
	ج.	تلفون سيار.	١. نعم ٢. لا		
	د.	تلفون أرضي.	١. نعم ٢. لا		
	هـ.	ثلاجة/ براد.	١. نعم ٢. لا		
	و.	سخان ماء.	١. نعم ٢. لا		
	ز.	فرن غاز أو كهربائي.	١. نعم ٢. لا		
	ح.	ماكينة خياطة.	١. نعم ٢. لا		
	ط.	مكنسة كهربائية.	١. نعم ٢. لا		
	ي.	ساتالايت.	١. نعم ٢. لا		
	ك.	مولد كهربائي.	١. نعم ٢. لا		
	ل.	مروحة.	١. نعم ٢. لا		
	م.	مكيف هواء.	١. نعم ٢. لا		
	ن.	أخرى:	١. نعم ٢. لا		

.....

يملئ من قبل مدخل البيانات	هل الاستبيان مكتمل			
	١.	نعم		
	٢.	لا		

II. Family questionnaire

استبيان أسرة رقم _____

الجمهورية اليمنية
وزارة الصحة العامة و السكان
قطاع الرعاية الصحية الأولية
الإدارة العامة لصحة الأسرة
إدارة التغذية

مسح الحالة التغذوية للأطفال تحت سن الخامسة والنساء في سن الإنجاب في محافظة حجة – يوليو ٢٠١١

استبيان الأسرة (نموذج ٢)

اسم رب الأسرة:	

رقم استبيان المسكن (يرجى العودة لاستبيان المسكن وتسجيل الرقم في راس الصفحة الأولى)				

بين فيما إذا كانت الأسرة: (تحديد طبقة المسح)		
١.	نازحة.	
٢.	مقيمة.	

ملئ الاستبيان من قبل	**الاسم**	**التوقيع**

راجع الاستبيان	**الاسم**	**التوقيع**
المشرف الحقلي		

بين فيما إذا كان هناك:		
١.	رفض من الأسرة أو الأم للاستجابة.	
٢.	غياب المرأة حتى بعد الزيارة الثانية.	

استبيان أسرة رقم _____

يملئ من قبل المشرف الحقلي (تستخدم لإدخال البيانات)

رقم الفريق		

رقم استبيان المسكن				
رقم استبيان الأسرة				

تاريخ المقابلة	ي ي		ش ش		س س س س				
			Ø	7	1	1	Ø	2	

رقم **طبقة** المسح		

رقم العنقود		

العمل المكتبي

	الاسم	اليوم		الشهر		السنة				التوقيع
إدخال البيانات										
المراجعة										
تحديث وتنظيف قاعدة البيانات										
الملاحظات										

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

استبيان أسرة رقم _____

س ٠٠١ – س ٠٠٣: بيانات عن الأسرة

س ٠٠١ـ أ	عدد الأفراد الذكور في الأسرة	العدد	
س ٠٠١ـ ب	عدد الأفراد الإناث في الأسرة	العدد	
س ٠٠١ـ ج	عدد الأطفال الذكور بعمر ٦ أشهر إلى أقل من ٥ سنوات	العدد	
س ٠٠١ـ د	عدد الأطفال الإناث بعمر ٦ أشهر إلى أقل من ٥ سنوات	العدد	
س ٠٠١ـ هـ	عدد الأطفال الذكور بعمر أقل من ٦ أشهر	العدد	
س ٠٠١ـ و	عدد الأطفال الإناث بعمر أقل من ٦ أشهر	العدد	
س ٠٠١ـ ز	عدد النساء بعمر ١٥ – ٤٩ سنة	العدد	
فلتر ١	إذا كانت الأسرة مقيمة		إنتقل إلى س ٠٠٣
س ٠٠٢ـ أ	هل نزحت الأسرة من		
	١. مناطق متأثرة بالنزاع		
	٢. مناطق غير متأثرة بالنزاع		
س ٠٠٢ـ ب	منذ متى تركت الأسرة موطنها الأصلي	يوم: 15 / شهر: ___ / سنة: ____	

س ٠٠٣	ماهي مصادر الدخل الثلاثة الرئيسية للأسرة خلال الستة أشهر الأخيرة (رتب المصادر من ١ إلى ٣ بحسب الأولية). سجل (Ø) في بقية الخانات		الترتيب	
	أ.	بيع منتجات زراعية		
	ب.	بيع حيوانات		
	ج.	بيع اسماك		
	د.	عمل مؤقت في الريف		
	هـ.	عمل مؤقت في الحضر		
	و.	راتب شهري		
	ز.	حوالات		
	ح.	تجارة أو عمل خاص		
	ط.	زراعة/ بيع/ نقل القات		
	ي.	مساعدات ضمان إجتماعية		
	ك.	مساعدة من الأقارب والأصدقاء		
	ل.	أخرى: تذكر		

انعدام الأمن الغذائي

س ٠٠٤ – س ٠٠٨: الوصول إلى الغذاء (الإجابة على هذه الإسئلة يجب أن تكون وفقا للحالة خلال الـ ٣٠ يوم الماضية)

س ٠٠٤	هل حدث أن لجأ (الاسم) أو أحد أفراد الأسرة إلى تصغير حجم الوجبات في اليوم بسبب شحة الموارد؟			
	١.	نعم		
	٢.	لا		

س ٠٠٥	هل حدث أن لجأ (الاسم) أو أحد أفراد الأسرة إلى تقليل عدد الوجبات في اليوم بسبب شحة الموارد؟			
	١.	نعم		
	٢.	لا		

س ٠٠٦	هل حدث وإن انعدم الغذاء تماما لديكم بسبب شحة المواد التي تمكنكم من الحصول عليه في المنطقة؟			
	١.	نعم		
	٢.	لا		

س ٠٠٧	هل حدث أن ذهب (الاسم) أو أحد أفراد الأسرة إلى النوم في الليل وهو جائع بسبب عدم كفاية الغذاء؟			
	١.	نعم		
	٢.	لا		

س ٠٠٨	هل حدث أن بقى (الاسم) أو أحد أفراد الأسرة يوما كاملا بدون أكل بسبب عدم كفاية الغذاء؟		
	١. نعم		
	٢. لا		

س ٠٠٩ – س ٠١٥: استراتيجية التكيف للأسرة (الإجابة على هذه الإسئلة يجب أن تكون وفقا للحالة خلال الـ ٣٠ يوم الماضية)

س ٠٠٩	هل حدث وأن قامت الأسرة باستلاف الغذاء أو ساعدها الأقارب في ذلك؟		
	١. نعم		
	٢. لا		
س ٠١٠	هل حدث وأن قامت الأسرة بشراء الغذاء بالآجل (الدين) أو الرهن؟		
	١. نعم		
	٢. لا		
س ٠١١	هل حدث وأن استخدمت الأسرة مدخراتها أو موجوداتها أو ممتلكاتها لشراء مواد غذائية؟		
	١. نعم		
	٢. لا		
س ٠١٢	هل حدث أن قللت الأسرة الإنفاق على التعليم والصحة لشراء مواد غذائية؟		
	١. نعم		
	٢. لا		
س ٠١٣	هل حدث أن اقترضت الأسرة نقودا من الأقارب أو الجيران لشراء مواد غذائية؟		
	١. نعم		
	٢. لا		
س ٠١٤	هل توقف أحد أفراد الأسرة عن تناول القات أو التدخين أو تناول الشمة من أجل توفير مبالغ لشراء مواد غذائية؟		
	١. نعم		
	٢. لا		
س ٠١٥	هل قامت الإسرة بأية إجراءات أخرى من أجل الحصول على الغذاء أو توفيره؟ سجلها هنا		

س ٠١٦ – س ٠٢٠: المساعدات الغذائية

س ٠١٦	هل لدى الأسرة بطاقة تموينية تستلم من خلالها حصص المساعدات الغذائية؟			
	١. نعم			
	٢. لا			

س ٠١٧-أ	هل تسلمت الأسرة أي حصة خلال الثلاثة أشهر الأخيرة؟			إنتقل إلى
	١. نعم			
	٢. لا			س ٠٢١

س ٠١٧-ب	كم عدد المرات التي تلقت فيها حصص خلال الثلاثة أشهر الأخيرة؟	العدد	

س ٠١٨	مانوع الأغذية التي تحصلت عليها الأسرة كمساعدة الغذائية؟					
	أ.	قمح أو دقيق	١.	نعم		
			٢.	لا		
	ب.	زيت أوسمن	١.	نعم		
			٢.	لا		
	ج.	سكر	١.	نعم		
			٢.	لا		
	د.	بقوليات	١.	نعم		
			٢.	لا		
	هـ.	خليط قمح وصويا	١.	نعم		
			٢.	لا		
	و.	حليب بودرة	١.	نعم		
			٢.	لا		
	ز.	تمر	١.	نعم		
			٢.	لا		
	ح.	ملح	١.	نعم		
			٢.	لا		
	ط.	أخرى:	١.	نعم		
			٢.	لا		

س ٠١٩	هل باعت الأسرة جزء من المساعدة الغذائية التي تحصل عليها خلال الثلاثة أشهر الأخيرة؟			إنتقل إلى
	١. نعم			
	٢. لا			س ٠٢١

س ٠٢٠	لماذا باعت الأسرة جزء من المساعدة الغذائية؟					
	أ.	من أجل مصاريف المدرسة.	١.	نعم		
			٢.	لا		
	ب.	من أجل خدمة صحية.	١.	نعم		
			٢.	لا		
	ج.	من أجل شراء ملابس.	١.	نعم		
			٢.	لا		
	د.	من أجل مصاريف مواصلات.	١.	نعم		
			٢.	لا		
	هـ.	من أجل شراء القات.	١.	نعم		
			٢.	لا		
	و.	من أجل شراء السجائر/ التبغ/ الشمة.	١.	نعم		
			٢.	لا		
	ز.	من أجل شراء مواد غير غذائية أخرى.	١.	نعم		
			٢.	لا		
	ح.	من أجل شراء أغذية أطفال.	١.	نعم		
			٢.	لا		
	ط.	من أجل شراء أغذية أخرى.	١.	نعم		
			٢.	لا		
	ي.	من أجل خدمات أخرى.	١.	نعم		
			٢.	لا		

س ٠٢١ – س ٠٢٢: التنويع الغذائي للأسرة

س ٠٢١	كم يوما في الأسبوع الماضي تناولت الأسرة الأغذية التالية: إذا كانت الأسرة لم تتناول هذه الأغذية فسجلي الإجابة (Ø).	عدد المرات ↓	س ٠٢٢	ماكان المصدر لهذه الأغذية في الأسبوع الماضي: ١- انتاج الأسرة ٢- صيد/جمع ٣- شراء نقدا ٤- شراء آجل ٥- قرض/ إهداء (أقارب أصدقاء) ٦- تسول ٧- اعطيت بالمقابل ٨- مساعدات غذائية (حكومة –منظمات) ٩- أخرى	رقم المصدر ↓
أ	بر، خبز، عصيد، فتة		أ		
ب	حبوب أخرى (ذرة، ذرة رفيعة، دخن، شعير)		ب		
ج	بطاط		ج		
د	أرز		د		
هـ	خضراوات (الخس، الطماطم، الفلفل، جزر، دبا..... الخ)		هـ		
و	فواكه (مانجو، عنب، ..... الخ)		و		
ز	فاصوليا، عدس، بازيليا، فول،		ز		
ح	بيض		ح		
ط	مشتقات الحليب (لبن، جبن، زبادي، حقين، .....)		ط		
ي	لحم (بقري، غنمي)		ي		

استبيان أسرة رقم _____

س ٠٢١	كم يوما في الأسبوع الماضي تناولت الأسرة الأغذية التالية: إذا كانت الأسرة لم تتناول هذه الأغذية فسجلي الإجابة (Ø).	عدد المرات ↓	س ٠٢٢	ماكان المصدر لهذه الأغذية في الأسبوع الماضي: ١- انتاج الأسرة ٢- صيد/جمع ٣- شراء نقدا ٤- شراء آجل ٥- قرض/ إهداء (أقارب أصدقاء) ٦- تسول ٧- اعطيت بالمقابل ٨- مساعدات غذائية (حكومة –منظمات) ٩- أخرى	رقم المصدر ↓
ك	دواجن		ك		
ل	أسماك (طازجة ومجففة ومعلبة)		ل		
م	زيوت/ دهون (سمن، زبدة، زيت نباتي، ....)		م		
ن	سكر، شاي، عسل، فواكه مجففة (تمر، زبيب)		ن		
س	بهارات		س		

.....

يملئ من قبل مدخل البيانات	هل الاستبيان مكتمل			
	١.	نعم		
	٢.	لا		

III. Woman Questionnaire

استبيان مرأة رقم _____

الجمهورية اليمنية
وزارة الصحة العامة و السكان
قطاع الرعاية الصحية الأولية
الإدارة العامة لصحة الأسرة
إدارة التغذية

مسح الحالة التغذوية للأطفال تحت سن الخامسة والنساء في سن الإنجاب في محافظة حجة – يوليو ٢٠١١

استبيان المرأة (نموذج ٣)

اسم المرأة:	

رقم استبيان المسكن (يرجى العودة لاستبيان المسكن وتسجيل الرقم في راس الصفحة الأولى)				
رقم استبيان الأسرة (يرجى العودة لاستبيان الأسرة وتسجيل الرقم في راس الصفحة الأولى)				

ملئ الاستبيان من قبل	الاسم	التوقيع
انثروبومتري		
الهيموجلوبين		
بقية الإستبيان		

راجع الاستبيان	الاسم	التوقيع
المشرف الحقلي		

بين فيما إذا كان هناك:		
١.	هناك استجابة من الأسرة والمرأة.	
٢.	رفض من الأسرة أو الأم للاستجابة.	
٣.	غياب المرأة حتى بعد الزيارة الثانية.	
٤.	المرأة ترقد في مستشفى (يجب الوصول إلى المرأة واستكمال كل بيانات الاستبيان).	

استبيان مرأة رقم _____

يملئ من قبل المشرف الحقلي (تستخدم لإدخال البيانات)

رقم الفريق		

رقم استبيان المسكن				
رقم استبيان الأسرة				
رقم استبيان المرأة				

تاريخ المقابلة	ي	ي			ش	ش	س	س	س	س
							1	1	Ø	2

العمل المكتبي

	الاسم	اليوم		الشهر		السنة				التوقيع
إدخال البيانات										
المراجعة										
تحديث وتنظيف قاعدة البيانات										

الملاحظات

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

س ٠٠١ – س ٠٠٣: القياسات الانثروبومترية (الجسمانية) والهيموجلوبين

س ٠٠١	عمر (الاسم) بالسنوات.	**السنوات** ☐☐
س ٠٠٢	محيط ذراع (الاسم) بالسنتيمتر (ØØ.Ø)	**سنتيمتر** ☐☐.☐
س ٠٠٣	قراءة الهيموجلوبين (تسجل كما هي من جهاز الهيموكيو)	**g/dl** ☐☐.☐

س ٠٠٤ – س ٠٠٦: التعليم

س ٠٠٤	هل سبق وأن دخلت (الاسم) مدرسة أو مؤسسة تعليمية؟		**إنتقل إلى**
	١.	نعم	
	٢.	لا	س ٠٠٦

س ٠٠٥	كم عدد السنوات الدراسية التي أكملتها (الاسم) في الدراسة؟	**السنوات** ☐☐	**إنتقل إلى**

فلتر ١	عدد السنوات الدراسية التي أكملتها (الاسم) في الدراسة هي ستة سنوات فأكثر	**إنتقل إلى** س ٠٠٧

س ٠٠٦	هل تستطيع (الاسم) القراء والكتابة؟		
	١.	نعم، تقرأ وتكتب.	
	٢.	تستطيع القراءة لكنها لاتكتب.	
	٣.	لاتستطيع القراءة والكتابة	

س ٠٠٧ – س ٠١٠: التدخين وواستخدام الشمة ووتناول القات

س ٠٠٧	إذا كانت (الأسم) تدخن السجائر، فكم متوسط عدد السجائر التي تدخنها في اليوم؟ إذا كانت (الاسم) لاتدخن السجائر فسجلي الإجابة (ØØ).	☐☐
س ٠٠٨	إذا كانت (الأسم) تدخن الشيشة أو المداعة، فكم متوسط عدد المرات في الاسبوع؟ إذا كانت (الاسم) لاتدخن المداعة فسجلي الإجابة (ØØ).	☐☐
س ٠٠٩	إذا كانت (الأسم) تستخدم الشمة، فكم متوسط عدد المرات تدخنها في اليوم؟ إذا كانت (الاسم) لاتستخدم الشمة فسجلي الإجابة (ØØ).	☐☐
س ٠١٠	إذا كانت (الأسم) تتناول القات، فكم عدد الأيام في الاسبوع التي تتناول فيها القات؟ إذا كانت (الاسم) لاتتناول القات فسجلي الإجابة (Ø).	☐

س ٠١١ – س ٠١٨: وضع المرأة، وتاريخ الولادات والحالة الفسيولوجية

				إنتقل إلى
س ٠١١	بين فيما إذا كانت (الاسم)			
	١.	عازب		النهاية
	٢.	متزوجة		
	٣.	حانق		
	٤.	مطلقة		
	٥.	أرملة		

				إنتقل إلى
س ٠١٢ـ أ	هل سبق وأن كان (للاسم) أحمال سابقة؟			
	١.	نعم		
	٢.	لا		س ٠١٨

س ٠١٢ـ ب	كم عدد كل أحمال (الاسم)؟		
س ٠١٣	كم عدد مرات الولادات الحية من هذه الأحمال؟		
س ٠١٤	كم عدد من بقى على قيد الحياة إلى الآن؟		
س ٠١٥	ماهي السنة التي كانت فيها الولادة الأولى (ولادة حية أو ميتة)	السنـــــة	
س ٠١٦	ماهي السنة التي كانت فيها الولادة الإخيرة (ولادة حية أو ميتة)	السنـــــة	

س ٠١٧	هل (الاسم) مرضع حالياً؟			
	١.	نعم		
	٢.	لا		

س ٠١٨	هل (الاسم) حامل حالياً؟			
	١.	نعم		
	٢.	لا		

س ٠١٩ – س ٠٢٠: المساعدة الغذائية للحامل والمرضع

فلتر ٢	(الاسم) ليست مرضع أو حامل حالياً	**إنتقل إلى** فلتر ٣

س ٠١٩-أ	هل تحصل (الاسم) على مساعدة غذائية؟			**إنتقل إلى**
	١.	نعم		
	٢.	لا		فلتر ٣

س ٠١٩-ب	هل تسلمت (الاسم) أي حصة خلال الثلاثة أشهر الأخيرة؟			**إنتقل إلى**
	١.	نعم		
	٢.	لا		فلتر ٣

س ٠١٩-ج	كم عدد المرات التي تلقت فيها (الاسم) حصص خلال الثلاثة أشهر الأخيرة؟	**العدد**	

س ٠٢٠	ماهي الأغذية التي تحصل عليها (الاسم)؟					
	أ.	قمح أو دقيق	١.	نعم		
			٢.	لا		
	ب.	زيت أوسمن	١.	نعم		
			٢.	لا		
	ج.	سكر	١.	نعم		
			٢.	لا		
	د.	بقوليات	١.	نعم		
			٢.	لا		
	هـ.	خليط قمح وصويا	١.	نعم		
			٢.	لا		
	و.	حليب بودرة	١.	نعم		
			٢.	لا		
	ز.	تمر	١.	نعم		
			٢.	لا		
	ح.	ملح	١.	نعم		
			٢.	لا		
	ط.	أخرى	١.	نعم		
			٢.	لا		

س ٠٢١ – س ٠٢٥: البدء بالرضاعة الطبيعية بعد الولادة مباشرة

فلتر ٣	إذا كانت (الاسم) عازب	**إنتقل إلى** النهاية

س ٠٢١ـ أ	هل كان لدى (الاسم) ولادات حية خلال عامين سابقين من الآن؟			**إنتقل إلى**
	١.	نعم		
	٢.	لا		النهاية

س ٠٢١ـ ب	كم عدد الولادات الحية التي لدى (الاسم) خلال عامين سابقين من الآن؟	**العدد**	

خاص بالولادة الأولى (الطفل الأول (ط١)) التي تمت خلال عامين سابقين

س ٠٢٢ (ط١)	هل بدأ الطفل الرضاعة خلال ٢٤ ساعة بعد الولادة؟ أحيانا لاتكون هناك رضاعة مباشرة لكن لبن الأم يستخرج من الثدي ويعطى للطفل بطريقة أخرى.			**إنتقل إلى**
	١.	نعم		
	٢.	لا		س ٠٢٤
	٣.	الأم لاتعرف		س ٠٢٥

س ٠٢٣ (ط١)	كم المدة بالساعات التى خلالها بدأت الرضاعة الطبيعية أو إعطي الطفل لبن أمه بطريقة أخرى (الكوب أو الملعقة)	**ساعات**		**إنتقل إلى** س ٠٢٥

س ٠٢٤ (ط١)	كم المدة بالأيام التى خلالها بدأت الرضاعة الطبيعية أو إعطي الطفل لبن أمه بطريقة أخرى (الكوب أو الملعقة)	**أيام**	

س ٠٢٥ـ أ (ط١)	هل أعطى (اسم الطفل) أي مادة أخرى قبل لبن الأم بعد الولادة.			**إنتقل إلى**
	١.	نعم		
	٢.	لا		النهاية أو ط٢
	٣.	الأم لاتعرف		النهاية أو ط٢

س ٠٢٥ـ ب (ط١)	ماذا أعطي للطفل قبل اللبأ أو لبن الأم بعد الولادة هل هو		
	١.	حليب بودرة	
	٢.	حليب أخر (بما فيه حليب الماشية)	
	٣.	ماء محلى بسكر او جلوكوز	
	٤.	عسل	
	٥.	سمن أو زبدة	
	٦.	أخرى	

خاص بالولادة الثانية (الطفل الثاني (ط٢)) التي تمت خلال عامين سابقين	

س ٠٢٢ (ط٢)	هل بدأ الطفل الرضاعة خلال ٢٤ ساعة بعد الولادة؟ أحيانا لاتكون هناك رضاعة مباشرة لكن لبن الأم يستخرج من الثدي ويعطى للطفل بطريقة أخرى.			إنتقل إلى
	١.	نعم		
	٢.	لا		س ٠٢٤
	٣.	الأم لاتعرف		س ٠٢٥

س ٠٢٣ (ط٢)	كم المدة بالساعات التى خلالها بدأت الرضاعة الطبيعية أو إعطي الطفل لبن أمه بطريقة أخرى (الكوب أو الملعقة)		ساعات	إنتقل إلى
				س ٠٢٥

س ٠٢٤ (ط٢)	كم المدة بالأيام التى خلالها بدأت الرضاعة الطبيعية أو إعطي الطفل لبن أمه بطريقة أخرى (الكوب أو الملعقة)		أيام	

س ٠٢٥ـ أ (ط٢)	هل أعطى (اسم الطفل) أي غذاء أخر قبل لبن الأم بعد الولادة.			إنتقل إلى
	١.	نعم		
	٢.	لا		النهاية
	٣.	الأم لاتعرف		النهاية

س ٠٢٥ـ ب (ط٢)	الغذاء الذي أعطي للطفل قبل لبن الأم بعد الولادة هل هو		
	١.	حليب بودرة	
	٢.	حليب أخر (بما فيه حليب الماشية)	
	٣.	ماء محلى بسكر او جلوكوز	
	٤.	عسل	
	٥.	سمن أو زبدة	
	٦.	أخرى	

.....

يملئ من قبل مدخل البيانات	هل الاستبيان مكتمل		
	١.	نعم	
	٢.	لا	

IV. Child Questionnaire

استبيان طفل رقم _____

الجمهورية اليمنية
وزارة الصحة العامة و السكان
قطاع الرعاية الصحية الأولية
الإدارة العامة لصحة الأسرة
إدارة التغذية

مسح الحالة التغذوية للأطفال تحت سن الخامسة والنساء في سن الإنجاب في محافظة حجة – يوليو ٢٠١١

استبيان الطفل (نموذج ٤)

اسم الطفل:	
اسم المرأة:	

رقم استبيان المسكن (يرجى العودة لاستبيان المسكن وتسجيل الرقم في راس الصفحة الأولى)				
رقم استبيان الأسرة (يرجى العودة لاستبيان الأسرة وتسجيل الرقم في راس الصفحة الأولى)				
رقم استبيان المرأة (أم الطفل) (يرجى العودة لاستبيان المرأة وتسجيل الرقم في راس الصفحة الأولى)				

ملئ الاستبيان من قبل	الاسم	التوقيع
انثروبومتري		
بقية الاستبيان		

راجع الاستبيان	الاسم	التوقيع
المشرف الحقلي		

بين فيما إذا كان هناك:		
١.	هناك استجابة من الأسرة	
٢.	رفض من الأسرة أو الأم للاستجابة	
٣.	غياب الطفل حتى بعد الزيارة الثانية	
٤.	الطفل يرقد في مستشفى (يجب الوصول إلى الطفل واستكمال كل بيانات الاستبيان)	

استبيان طفل رقم _____

يملئ من قبل المشرف الحقلي (تستخدم لإدخال البيانات)

رقم الفريق		

رقم استبيان المسكن				
رقم استبيان الأسرة				
رقم استبيان المرأة (أم الطفل)				
رقم استبيان الطفل				

تاريخ المقابلة	ي	ي	ش	ش	س	س	س	س	س
					1	1	Ø	2	

العمل المكتبي

	الاسم	اليوم		الشهر		السنة				التوقيع
إدخال البيانات										
المراجعة										
تحديث وتنظيف قاعدة البيانات										

الملاحظات

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

استبيان طفل رقم _____

س ٠٠١ – س ٠٠٧: القياسات الانثروبومترية (الجسمانية)

س ٠٠١ـ أ	تاريخ ولادة الطفل بالميلادي	ي ي	ش ش	س س س س	**إنتقل إلى**
				2 Ø	س ٠٠٢

س ٠٠١ـ ب	تاريخ ولادة الطفل بالهجري	ي ي	ش ش	س س س س	**إنتقل إلى**
				1 4	س ٠٠٢

س ٠٠١ـ ج	عمر الطفل بالأشهر (الرجاء عدم استخدام هذا السؤال إلا عند الضرورة القصوى وفي حالة استخدامه فإنه يرجى التحرى لأقرب نصف شهر)	**الأشهر** .	

س ٠٠٢	جنس الطفل		
	١. ذكر		
	٢. أنثى		

س ٠٠٣ـ أ	طول / ارتفاع الطفل بالسنتيمتر (ØØØ. Ø)	**سنتيمتر** .	

س ٠٠٣ـ ب	وضعية قياس ارتفاع الطفل		
	١. واقف		
	٢. مستلقي		

س ٠٠٤ـ أ	وزن الطفل بالكيلو جرام (ØØ. ØØ)	**كيلوجرام** .	

س ٠٠٤ـ ب	رقم الميزان المستخدم	**الرقم**	

س ٠٠٥	محيط ذراع الطفل بالسنتيمتر (ØØ. Ø)	**سنتيمتر** .	

س ٠٠٦	هل يعاني الطفل من أي إعاقة بدنية/ حركية		
	١. نعم		
	٢. لا		

س ٠٠٧	وجود التوذم؟ اضغطي لـ ٣ ثواني على كلتا القدمين و انظري إن كان هناك توذم في كلتيهما؟		
	١. نعم		
	٢. لا		

استبيان طفل رقم _____

س ٠٠٨ – س ٠١١: صحة الطفل

س ٠٠٨	هل عانى (اسم الطفل) من الإسهال خلال الإسبوعين السابقين؟			
	١.	نعم		
	٢.	لا		
	٣.	لا تعرف		

س ٠٠٩	هل عانى (اسم الطفل) من سعال أو رشح (زكام) أو إلتهاب في اللوزتين أو الحلق، أو ألم في الأذن أو خروج قيح منها خلال الإسبوعين السابقين؟			
	١.	نعم		
	٢.	لا		
	٣.	لا تعرف		

س ٠١٠	هل عانى (اسم الطفل) من الحمى خلال الإسبوعين السابقين؟			
	١.	نعم		
	٢.	لا		
	٣.	لا تعرف		

س ٠١١	هل عانى (اسم الطفل) من الحصبة خلال الثلاثة الأشهر السابقة؟ (حمى + طفح جلدي عام)			
	١.	نعم		
	٢.	لا		
	٣.	لا تعرف		

س ٠١٢ – س ٠١٤: حالة الرضاعة

				إنتقل إلى
س ٠١٢	هل سبق وأن رضع (اسم الطفل) من ثدي أمه؟			
	١.	نعم		
	٢.	لا		فلتر ١
	٣.	لا تعرف		فلتر ١

				إنتقل إلى
س ٠١٣	هل مازال يرضع من ثدي أمه حاليا؟			
	١.	نعم		فلتر ١
	٢.	لا		
	٣.	لا تعرف		فلتر ١

س ٠١٤	عمر الطفل بالأشهر عندما توقف عن رضاع الثدي؟ (يرجى التحرى لأقرب نصف شهر) – سجلي القيمة (9 .99) في حالة عدم المعرفة.	**الأشهر**	
		☐☐.☐	

فلتر ١	الطفل عمره ٦ أشهر فأكثر	**إنتقل إلى** س ٠١٧

س ٠١٥ – س ٠١٦: نوع الرضاعة للأطفال تحت ٦ أشهر

س ٠١٥-أ	هل رضع (اسم الطفل) من ثدي أمه خلال الـ ٢٤ ساعة الماضية؟ أحيانا لاتكون هناك رضاعة مباشرة لكن لبن الأم يستخرج من الثدي ويعطى للطفل بطريقة أخرى.			**إنتقل إلى**
	١.	نعم		
	٢.	لا		النهاية
	٣.	لا تعرف		النهاية

س ٠١٥-ب	كم عدد المرات التي رضع فيها (اسم الطفل) خلال الـ ٢٤ ساعة الماضية؟ أو عدد المرات التي أعطى فيها (اسم الطفل) لبن الأم بطريقة أخرى؟ سجلي (99) في حالة عدم المعرفة	☐☐	

س ٠١٦	هل أعطى (اسم الطفل) خلال الـ ٢٤ ساعة الماضية أي من المواد أدناه، أكتب عدد المرات أمام المواد التي تناولها وفي حالة عدم التناول، سجل الإجابة (ØØ)؟			
	أ.	ماء	☐☐	
	ب.	حليب رضع	☐☐	
	ج.	حليب ماشية، أو حليب معلب أو بودرة	☐☐	
	د.	عصائر	☐☐	
	هـ.	مرق	☐☐	
	و.	عصيدة سائلة	☐☐	
	ز.	شاي أو قهوة	☐☐	
	ح.	أية مشروبات أخرى	☐☐	

فلتر ٢	الطفل عمره أقل من ٦ أشهر.	**إنتقل إلى** النهاية

س ٠١٧: إطعام الطفل

س ٠١٧		هل تناول (اسم الطفل) أمس أيا من المجموعات الغذائية أدناه. إبدئي بسؤال اليوم من الوقت الذي استيقظ فيه الطفل صباح أمس وحتى نومه في المساء. إتركي الأم تتذكرو عندما تنتهي قم بذكر المواد من الجدول				
	أ.	عصيدة أو خبز أو أرز أو مكرونة أو اي غذاء مصنوع من الحبوب.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	ب.	يقطين أو جزر أو دبا أو بطاطا حلوة جوفها أصفر أو برتقالي.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	ج.	بطاطا بيضاء أو أية أغذية درنية أخرى.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	د.	أي خضراوات ورقية داكنة الخضرة.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	هـ.	مانجو أو باباي ناضجة.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	و.	أي فواكه أو خضراوات أخرى.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	ز.	كبد أو كلى أو قلب أو أحشاء أخرى.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	ح.	أي لحوم بقر أو غنم أو ماعز أو دواجن.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	ط.	بيض.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	ي.	اسماك طازجة أو مجففة أو معلبة.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		

	ك.	أي أغذية مصنوعة من الفول أو الفاصوليا أو البازيليا أو العدس أو الفول السوداني أو أي بقوليات أخرى.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	ل.	الجبن أو الزبادي أو الحقين أو الأيسكريم أو الثرابة.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	م.	أي زيوت أو دهون (مثل السمن أو الزبد أو القشطة)	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	ن.	أي أغذية سكرية مثل الشيكولاتة أو الحلوى أو العسل أو السكاكر أو الكيك أو البسكويت.	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		
	س.	أخرى، تذكر	١.	نعم		
			٢.	لا		
			٣.	لاتعرف		

س ٠١٨	كم عدد المرات التي تناول فيها الطفل الأغذية الموضحة في السؤال (٠١٧) أمس؟		

س ٠١٩	هل أعطى (اسم الطفل) أيا من الأغذية في السؤال (٠١٧) بالزجاجة أمس؟			
	١.	نعم		
	٢.	لا		
	٣.	الأم لاتعرف		

س ٠٢٠ – س ٠٢٢: المساعدات والمعالجة الغذائية

				إنتقل إلى
س ٠٢٠	هل يحصل الطفل على أغذية تزويدية من المرفق الصحي أو أنه مسجل ضمن برنامج علاجي للتغذية (عيادة خارجية) (استخدام عينة من الغذاء العلاجي الجاهز للإيضاح؟			
	١.	نعم		
	٢.	لا		س ٠٢٣

س ٠٢١	ماهي الأغذية التي يحصل عليها الطفل؟					
	أ.	خليط قمح وصويا	١.	نعم		
			٢.	لا		
	ب.	زيت أوسمن	١.	نعم		
			٢.	لا		
	ج.	سكر	١.	نعم		
			٢.	لا		
	د.	أغذية تزويدية جاهزة	١.	نعم		
			٢.	لا		
	هـ.	أغذية معالجة	١.	نعم		
			٢.	لا		
	و.	حليب بودرة	١.	نعم		
			٢.	لا		
	ز.	أخرى:	١.	نعم		
			٢.	لا		

س ٠٢٢ـ أ	هل تسلم الطفل أي حصة خلال الثلاثة أشهر الأخيرة؟			إنتقل إلى
	١.	نعم		
	٢.	لا		س ٠٢٣

س ٠٢٢ـ ب	كم عدد المرات التي تلقى فيها الطفل حصص غذائية خلال الثلاثة أشهر الأخيرة؟	العدد	

س ٠٢٣ : التزويد بفيتامين (أ)

س ٠٢٣	كم عدد المرات أعطي فيها (اسم الطفل) جرعة من فيتامين (أ) مثل هذه؟ أظهري للأم عينات الكبسولات؟	العدد	

فلتر ٣	الطفل عمره أقل من ٩ أشهر.	إنتقل إلى
		النهاية

س ٠٢٤: لقاح الحصبة

س ٠٢٤	أطلبي من الأم أن تريك بطاقة تحصين الطفل إن كانت محتفظة بها هل تم تطعيم الطفل ضد الحصبة (حقنة في عضلة اليد اليسرى تعطى للطفل عند سن ٩ أشهر و ١٨ شهر، أو خلال الحملة الأخيرة التي تمت في ٢٠٠٩)؟			إنتقل إلى
	١.	نعم من خلال البطاقة		
	٢.	نعم بالتذكر		
	٣.	لا		
	٤.	الأم لاتعرف		

.....

يملئ من قبل مدخل البيانات	هل الاستبيان مكتمل			
	١.	نعم		
	٢.	لا		