FINAL REPORT

STANDARDIZED EXPANDED NUTRITION SURVEY (SENS) IN DOLLO ADO REFUGEE CAMPS

Bokolmanyo, Melkadida, Kobe, Hilaweyn and Buramino

Survey Conducted: 27th Feb - 30 March 2017

Report Finalized: September 2017

Surveys Coordinated and data collected jointly: UNHCR, ARRA, WFP, IMC and Humedica

Acknowledgement

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Particular thanks are expressed to refugee central committees and community health volunteers in the five camps for their support in community mobilization and awareness rising prior to the survey period.

We express our gratitude to refugee communities in Bokolmanyo, Melkadida, Kobe, Hilaweyn and Buramino camps for their participation and allowing their children and women to be measured and responding to various tools used by the survey.

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Lists of Acronyms

ARRA	Administration for Refugee & Returnee Affairs
BSFP	Blanket Supplementary Feeding Program
CI	Confidence Interval
CSB+	Corn-Soya-Blend plus
GAM	Global Acute Malnutrition
GFD	General Food Distribution
HFA	Height-for-Age
HAZ	Height-for-Age Z-score
HH	Household
IMC	International Medical Corps
IP	Implementing Partner
IYCF	Infant and young children feeding
Kcal	Kilocalorie
Kg	Kilogram
MSF-S	Medicines sans Frontiers Spain
MUAC	Mid-Upper Arm Circumference
NGO	Non-Governmental Organization
OTP	Outpatient program
SAM	Severe Acute Malnutrition
SC	Stabilization Centre
SFP	Supplementary Feeding Program
TFP	Therapeutic Feeding Program
TSFP	Targeted Supplementary Feeding Program
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
WASH	Water Sanitation and Health
WFA	Weight-for-Age

WHZ	Weight-for-Height / Length Z-score
WFH	Weight-for-Height
WFP	World Food Programme
WHO	World Health Organization

Executive summary

A joint UNHCR, WFP, ARRA and IMC Standardized Expanded Nutrition Survey (SENS) was carried out in the five Somali refugee's camps in Melkadida/Dollo Ado refugee camps from 27th Feb to 30th March 2017, with the main objective to assess the general health and nutrition status of refugees, and formulate workable recommendations for appropriate nutritional and public health interventions.

It was a cross-sectional study with simple random sampling technique used for sample selection among Somali refugee population in Dollo Ado refugee camps.

The UNHCR SENS guidelines V.2 of 2013 were used as a basis for the survey methodology focusing on the five out of six standard modules namely; anthropometry and health for children aged 6 – 59 months, Anaemia in children aged 6 – 59 months and non-pregnant women aged 15-49 year, Infant and Young Child Feeding (IYCF) practices among Infant and Young Children aged 0-23 months, Household food Security, Water, Sanitation and Hygiene. It should be noted that Mosquito Net, the sixth module of the UNHCR SENS was not included in the survey since malaria is not an issue in Dollo Ado camps. Additional questionnaire for mortality information was added in the survey to assess death rates among under five years as well as the entire population.

A five days training was conducted to the survey coordinators and supervisors in view of the above mentioned SENS modules. Emphasis was made on data collection techniques to ensure high quality information is collected from respondents. Orientation on anthropometric information and blood sample takers, standardization of data collection tool and pilot test was performed prior to data collection in the camps.

Electronic questionnaires uploaded in the pre-installed Open Data Kit apps in smartphones were administered to heads of households and data quality check was performed at the end of each data collection day. Paper questionnaires were used for mortality data collection. Data analysis was done in ENA for SMART version of 9th July 2015 and Epi-info version 3.5.4 of 30th July 2012.

The average weighted prevalence of global acute malnutrition was 14.1% compared to 22.6% reported in 2016. Despite the overall reduction, prevalence of global acute malnutrition in Buramino and Kobe refugee camps, remained above the WHO emergency threshold of ≥15% which is categorized as "critical" according to classifications of public health significance. It was further observed that prevalence of global acute malnutrition was above the UNHCR acceptable level of <10% in all the five camps. Prevalence of severe acute malnutrition in Melkadida, Hilaweyn and Buramino camps was above the UNHCR emergency threshold of 2%. Prevalence of severe acute malnutrition was 1.8% and 1.5% in Bokolmayo and Kobe respectively.

Prevalence of total stunting was 43% in Hilaweyn camp which is above the cut-off point of 40% (critical) according to WHO classification of public health significance. The prevalence in the remaining four camps remained between 25.1% - 36.8% considered "POOR" as per WHO classification of public health significance. It was further noted that the weighted average prevalence of stunting has significantly increased from 11% recorded in 2013 to 34% in 2017 for the five camps, indicating that the number of children suffering from chronic malnutrition has been gradually increasing overtime.

Prevalence of anaemia in children aged 6 – 59 months was 40% and above in Bokolmayo, Melkadida, Hilaweyn and Buramino camps, categorized as "high" by classification of public health significance, and 38.0% in Kobe (Medium) public health significance. Prevalence of total anaemia in non-pregnant women aged 15 – 49 year was 44.6% in Hilaweyn, the only camp with high prevalence of anaemia among the five. Likewise, prevalence was above 20% acceptable level by WHO and UNHCR standards. Below is the summary table presenting findings of the six SENS modules conducted in 2017 in Dollo Ado camps.

Table 1: Summary of key findings SENS Dollo Ado camps (Bokolmanyo, Melkadida, Kobe, Hilaweyn, Buramino)

	Number / total	% (95% CI)	Number/ total	% (95% CI)	Number/ total	% (95% CI)	Number / total	% (95% CI)	Number/ Total	% (95% CI)	Classification of public health significance
	Bokolmanyo		Melkadida		Kobe		Hilaweyn		Buramino		
CHILDREN (6-59 months)											
Acute Malnutrition (WHO 2006 Growth Standards)	Number /total	% (95% CI)	Number /total	% (95% CI)	Number /total	% (95% CI)	Number /total	% (95% CI)	Number /total	% (95% CI)	
Global Acute Malnutrition (GAM)	53/384	13.8% (10.7-17.6)	37/311	11.9% (8.8-16.0)	62/398	15.6% (12.3-19.5)	28/220	12.7% (9.0-17.2)	48/284	16.9% (13.0-21.3)	Critical if ≥ 15%
Moderate Acute Malnutrition (MAM)	46/384	12.0% (9.1-15.6)	26/311	8.4% (5.8-12.0)	56/398	14.1% (11.0-17.8)	22/220	10.0% (6.7-14.7)	36/284	12.7% (9.3-17.0)	
Severe Acute Malnutrition (SAM)	7/384	1.8% (0.9-3.7)	11/311	3.5% (2.0-6.2)	6/398	1.5% (0.7-3.2)	6/220	2.7% (1.3-5.8)	12/284	4.2% (2.4-7.2)	
Oedema	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
Stunting (WHO 2006 Growth Standards)											
Total Stunting	95/379	25.1% (21.0-29.7)	107/293	36.5% (31.2–42.2)	122/388	31.4% (27.0-36.2)	92/214	43.0% (36.5-49.7)	89/272	32.7% (27.4-38.5)	Critical if ≥ 40%
Severe Stunting	25/379	6.6% (4.5-9.6)	33/293	11.3% (8.1-15.4)	40/388	10.3% (7.7-13.7)	43/214	20.1% (15.3-26.0)	33/272	12.1% (8.8-16.5%)	
Mid Upper Arm Circumference (MUAC)											
MUAC<12.5 cm	13/394	3.3 % (1.9 - 5.6)	8/323	2.5 % (1.3 - 4.8)	23/407	5.7 % (3.8 - 8.3)	12/226	5.3% (3.1-9.1)	20/290	6.9% (4.5-10.4)	
MUAC 11.5-12.4 cm	13/394	3.3% (1.9-5.6)	7/323	2.2 % (1.1 - 4.4)	16/407	4.0 % (2.4 - 6.3)	8/226	3.5 % (1.8 - 6.8)	16/290	5.5 % (3.4 - 8.8)	
MUAC <11.5 cm	0/394	0.0 %	1/323	0.3% (0.1-1.7)	7/407	1.7% (0.8-3.5)	4/226	1.8% (0.7-4.5)	4/290	1.4% (0.5-3.5)	

	Number / total	% (95% CI)	Number/ total	% (95% CI)	Number/ total	% (95% CI)	Number / total	% (95% CI)	Number/ Total	% (95% CI)	Classification of public health significance
	Bokolmanyo		Melkadida		Kobe		Hilaweyn		Buramino		
Anaemia (6-59 months)											
Total Anaemia (Hb <11 g/dl)	161/393	41.0% (36.1-46.0)	128/320	40.0% (34.6-45.6)	154/408	38.0% (33.3-43.0)	124/218	56.9% (50.0-63.6)	130/275	47.3% (41.2-53.4)	High if ≥ 40%
Mild (Hb 10-10.9 g/dl)	91/393	23.2% (19.1-27.7)	73/320	22.8% (18.4-27.9)	90/408	22.2% (18.3-26.7)	65/218	29.8% (23.8-36.4)	68/275	24.7% (19.7-30.3)	
Moderate (Hb 7-9.9 g/dl)	69/393	17.6% (14.0-21.8)	54/320	16.9% (13.0-21.5)	64/408	15.8% (12.5-19.8)	57/218	26.1% (20.4-32.5)	62/275	22.5% (17.7-27.9)	
Severe (Hb<7.0 g/dl)	1/393	0.3% (0.0-1.6)	1/320	0.3% (0.0-2.0)	0	0.0%	2/218	0.9% (0.1-3.3)	0	0.0%	
Programme Coverage											
Therapeutic program (based on all admission criteria WHZ, Edema and MUAC)	5/14	35.7% (12.8-64.9)	4/18	22.2% (6.4-47.6%)	9/16	56.3% (29.9-80.2%	3/9	33.3% (7.5-70.1%)	3/15	20.0% (4.3-48.1%)	
SFP (based on all admission criteria WHZ, and MUAC)	5/51	9.8% (3.3-21.4)	3/29	10.3% (2.2-27.7)	11/67	16.4% (8.5-27.5)	9/30	30.0% (14.7-49.4)	5/48	10.4% (3.5-22.7)	
BFP, Admission based on age, 6-35 months	184/206	89.3% (84.3-93.2)	150/160	93.8% (88.8-97.0)	186/226	82.3% (76.7-87.0)	100/121	82.6% (74.7-88.9)	69/91	75.8% (65.7-84.2)	
Wet feeding program as a BFP, Admission based on age, 36-59 months	119/175	68.0% (60.5-74.8)	94/133	70.7% (62.2-78.2)	134/169	79.3% (72.4-85.1)	58/98	59.2% (48.8-69.0)	56/121	46.3% (37.2-55.6)	
Measles vaccination with card (9-59 months)	355/375	94.7% (91.7-96.6)	268/304	88.2% (84.0-91.6)	282/388	72.7% (67.9-77.0)	103/220	46.8% (40.1-53.6)	146/273	53.5% (47.4-59.5)	

	Number / total	% (95% CI)	Number/ total	% (95% CI)	Number/ total	% (95% CI)	Number / total	% (95% CI)	Number/ Total	% (95% CI)	Classification of public health significance
	Bokolmanyo		Melkadida		Kobe		Hilaweyn		Buramino		
Measles vaccination with card or recall (9-59 months)	372/375	99.2% (97.5-99.8)	299/304	98.4% (96.0-99.4)	363/389	93.3% (90.2-95.5)	199/223	89.2% (84.4-93.0)	249/273	91.2% (87.2-94.3)	Target of ≥ 95%
Vitamin A supplementation coverage with card, within past 6 months (6-59 months)	321/394	81.5% (77.3-85.2)	255/323	78.9% (74.1-83.3)	257/407	63.1% (58.2-67.8)	84/224	37.5% (31.1-44.2)	115/291	39.5% (33.9-45.4)	
Vitamin A supplementation coverage with card or recall, within past 6 months (6-59 months)	389/394	98.7% (96.9-99.5)	316/323	97.8% (95.4-99.0)	383/407	94.1% (91.3-96.1)	197/228	86.4% (81.3-90.6)	255/291	87.6% (83.3-91.2)	Target of ≥ 90%
Morbidity											
Diarrhoea in the past 2 weeks	2/394	0.5% (0.1-2.0%)	0/323	0.0%	6/406	1.5% (0.6-3.4)	1/223	0.4% (0.0-2.5)	9/290	3.1% (1.4-5.8)	
CHILDREN (0-23 months)											
Infant and Young children Feeding Practices											
Timely initiation of breastfeeding (0-23 months)	149/167	89.2% (83.5-93.5)	120/139	86.3% (79.5-91.6)	154/187	82.4% (76.1-87.5)	67/104	64.4% (54.4-73.6)	115/125	92.1% (85.8-96.1)	
Exclusive breastfeeding under 6 months (0-5 months)	44/50	88.0% (75.7-95.5)	31/34	91.2% (76.3-98.1)	42/43	97.7% (87.7-99.9)	21/36	58.3% (40.8-74.5)	27/40	67.5% (50.9-81.4)	
Continued breastfeeding at 1 year (12-15 months)	19/22	86.4% (64.1-97.1)	21/21	100.0%	39/46	84.8% (71.1-93.7)	13/17	76.5% (50.1-93.2)	19/23	82.6% (61.2-95.0)	
Continued breastfeeding at 2 years (20-23 months)	9/19	47.4% (24.4-71.1)	19/29	65.5% (45.7-82.1)	14/21	66.7% (43.0-85.4)	4/11	36.4% (10.9-69.2)	5/12	41.7% (15.2-72.3)	

	Number / total	% (95% CI)	Number/ total	% (95% CI)	Number/ total	% (95% CI)	Number / total	% (95% CI)	Number/ Total	% (95% CI)	Classification of public health significance
	Bokolmanyo		Melkadida		Kobe		Hilaweyn		Buramino		
Introduction of solid, semi-solid or soft foods (6-8 months)	13/19	68.4% (43.4-87.4)	14/19	73.7% (48.8-90.9)	15/19	78.9% (54.4-93.9)	3/5	60.0% (14.7-94.7)	7/18	38.9% (17.3-64.3)	
Consumption of iron-rich or iron-fortified foods (6-23 months)	99/110	90.0% (82.8-94.9)	100/101	99.0% (94.6-100.0)	133/137	97.1% (92.7-99.2)	62/66	93.9% (85.2-98.3)	93/95	97.9% (92.6-99.7)	
Bottle feeding (0-23 months)	3/115	2.6% (0.5-7.4)	5/139	3.6% (1.2-8.2%)	16/187	8.6% (5.0-13.5)	11/103	10.7% (5.5-18.3)	18/138	13.0% (7.9-19.8)	
WOMEN 15-49 years											
Anaemia (non-pregnant) (UNHCR SENS cut off)											
Total Anaemia (Hb <12.0 g/dl)	48/130	36.9% (28.6-45.8)	34/140	24.3% (17.4-32.2)	39/139	28.1% (20.8-36.3)	41/92	44.6% (34.2-55.3)	40/107	37.4% (28.2-47.3)	High if ≥ 40%
Mild (Hb 11.0-11.9)	19/130	14.6% (9.0-21.9)	24/140	17.1% (11.3-24.4)	16/139	11.5% (6.7-18.0)	20/92	21.7% (13.8-31.6)	19/107	17.8% 11.0-26.3)	
Moderate (Hb 8.0-10.9)	28/130	21.5% (14.8-29.6)	10/140	7.1% (3.5-12.7)	21/139	15.1% (9.6-22.2)	19/92	20.7% (12.9-30.4)	20/107	18.7% (11.8-27.4)	
Severe (Hb<8.0)	1/130	0.8% (0.0-4.2)	0/ 140	0.0%	2/139	1.4% (0.2-5.1)	2/92	2.2% (0.3-7.6)	1/107	0.9% (0.0-5.1)	
Programme coverage , pregnant and lactating											
Pregnant women currently enrolled in the ANC	31/32	96.9% (83.8-99.9)	18/18	100.0%	23/24	95.8% (78.9-99.9)	9/10	90.0% (55.5-99.7)	17/18	94.4% (72.7-99.9)	
Pregnant women currently receiving Iron-folic acid pills	21/32	65.6% (46.8-81.4)	18/18	100.0%	19/24	79.2% (57.8-92.9)	9/10	90.0% (55.5-99.7)	16/18	88.9% (65.3-98.6)	
WASH (WATER QUANTITY, SAFE EXCRETA DISPOSAL)											

	Number / total	% (95% CI)	Number/ total	% (95% CI)	Number/ total	% (95% CI)	Number / total	% (95% CI)	Number/ Total	% (95% CI)	Classification of public health significance
	Bokolmanyo		Melkadida		Kobe		Hilaweyn		Buramino		
Proportion of households using an improved drinking water source	341/341	100%	282/283	99.6% (98.0-100.0)	366/366	100.0%	331/331	100.0%	291/291	100.0%	
≥20lpppd	192/341	56.3% (50.9-61.6%)	113/283	39.9% (34.2-45.9)	152/366	41.5% (36.5-46.8)	157/332	93.1% (89.7-95.5)	112/291	38.5% (32.9-44.3)	
15- <20lpppd	65/341	19.1% (15.1-23.7%)	50/283	17.7% (13.4-22.6%)	88/366	24.0% (19.8-28.8%)	72/332	21.7% (17.5-26.6%)	70/291	24.1% (19.3-29.4%)	
<15lpppd	84/341	24.6% (20.2-29.6%)	120/283	42.4% (36.6-48.4%)	126/366	34.4% (29.6-39.6%)	103/332	31.0% (26.1-36.3%)	109/291	37.5% (31.9-43.3%)	
Average consumption (Liters per person per day)	20.7		18.5		20.3		22.8		20.34		UNHCR target is ≥20 lpppd
Proportion of households that say they are satisfied with the drinking water supply	299/341	87.7% (83.7-91.0)	232/283	82.0% (77.0-86.3)	305/364	83.8% (79.6-87.4)	310/333	93.1% (89.7-95.5)	228/290	78.6% (73.4-83.2)	
An improved excreta disposal facility (improved toilet facility, 1 household)	116/340	34.1% (29.1-39.5%)	12/282	4.3% (2.2-7.3)	7/358	2.0% (0.9-4.2)	42/331	12.7% (9.4-16.9)	10/288	3.5% (1.7-6.3)	
A shared family toilet (improved toilet facility, 2 households)	128/340	37.6% (32.5-43.1%)	72/282	25.5% (20.5-31.0)	33/358	9.2% (6.5-12.8)	157/331	47.4% (42.0-53.0)	30/288	10.4% (7.1-14.5)	
A communal toilet (improved toilet facility, 3 households or more)	59/340	17.4% (13.6-21.9%)	153/282	54.3% (48.2-60.2)	233/358	65.1% (59.9-70.0)	132/331	39.9% (34.6-45.4)	198/288	68.8% (63.1-74.1)	
An unimproved toilet (unimproved toilet facility or public toilet)	37/340	10.9% (7.9-14.8%)	45/282	16.0% (11.9-20.8)	85/358	23.7% (19.5-28.6)	0/331	0.0%	50/288	17.4% (13.2-22.2)	

	Number / total	% (95% CI)	Number/ total	% (95% CI)	Number/ total	% (95% CI)	Number / total	% (95% CI)	Number/ Total	% (95% CI)	Classification of public health significance
	Bokolmanyo		Melkadida		Kobe		Hilaweyn		Buramino		
Proportion of households with children under three years old that dispose of faeces safely	157/204	77.0% (70.6-82.6%)	130/163	79.8% (72.8-85.6)	189/244	77.5% (71.7-82.5)	136/138	98.6% (94.9-99.8)	138/164	84.1% (77.6-89.4)	
FOOD SECURITY											
Proportion of HH with a ration card	161/170	94.7% (90.2-97.6)	123/126	97.6% (93.2-99.5)	174/177	98.3% (95.1-99.6)	176/177	99.4% (96.9-100.0)	146/146	100.0%	
Average number of days GFD lasts out of 30 days	24.7		25.7		24.9		21.2		19		
Average duration (%) in relation to the theoretical duration of the ration (30days)	82.3%		85.7%		83.0%		70.7%		63.3%		
Household Dietary Diversity Score {Mean(SD)}	8.3 SD = 2.6		7.7 SD = 2.9		7.4 SD = 2.54		6.8 SD = 2.1		5.9 SD = 1.9		
Proportion of households reporting using the following coping strategies over the past month*:											
Borrowed cash, food or other items with or without interest	120/170	70.6% (63.1-77.3)	94/126	74.6% (66.1-81.9)	115/171	67.3% (59.7-74.2)	95/172	55.2% (47.5-62.8)	73/146	50.0% (41.6-58.4)	
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	43/170	25.3% (19.0-32.5)	32/126	25.4% (18.1-33.9)	2/171	13.5% (8.7-19.5)	21/172	12.2% (7.7-18.1)	31/144	21.5% (15.1-29.1)	
Requested increased remittances or gifts as compared to normal	35/170	20.6% (14.8-27.5)	21/126	16.7% (10.6-24.3)	30/171	17.6% (12.2-24.2)	42/172	24.4% (18.2-31.5)	26/143	18.2% (12.2-25.5)	
Reduced the quantity and/or frequency of meals and snacks	98/170	57.6% (49.8-65.2)	82/126	65.1% (56.1-73.4)	87/171	50.9% (43.1-58.6)	63/172	36.8% (29.6-44.5)	61/144	42.4% (34.2-50.9)	

	Number / total	% (95% CI)	Number/ total	% (95% CI)	Number/ total	% (95% CI)	Number / total	% (95% CI)	Number/ Total	% (95% CI)	Classification of public health significance
	Bokolmanyo		Melkadida		Kobe		Hilaweyn		Buramino		
Begged	33/170	19.4% (13.8-26.2)	32/126	25.4% (18.1-33.9)	65/171	38.0% (30.7-45.7)	13/172	7.6% (4.1-12.7)	27/143	18.9% (12.8-26.3)	
Engaged in potentially risky or harmful activities	11/170	6.5% (3.3-11.3)	4/125	3.2% (0.9-8.0)	3/171	1.8% (0.4-5.1)	4/172	2.3% (0.6-5.8)	2/144	1.4% (0.2-4.9)	
Retrospective mortality occurred within the camps (3 months recall)											
Crude mortality rate (CDR) Deaths/10,000/day	0.22 (0.09-0.52)		0.39 (0.17–0.91)		0.27 (0.11-0.64)		0.38 (0.16-0.92)		0.20 (0.06-0.65)		Very serious if ≥1
Under five mortality (U5M) Deaths/10,000/day	0.51 (0.12-2.10)		0.63 (0.14–2.78)		0.48 (0.11-2.07)		1.38 (0.30-6.09)		1.3 (0.30-3.48)		Very serious if ≥2

Classifications of indicators

The table below shows the public health significance malnutrition classification among children under 5 years old.

Table 2: Classification of Public Health Significance for Children Under 5 Years of Age

Prevalence %	Critical	Serious	Poor	Acceptable
Low weight-for-height	≥15	10-14	5-9	<5
Low height-for-age	≥40	30-39	20-29	<20

Source: WHO (1995) Physical Status: The Use and Interpretation of Anthropometry and WHO (2000). The Management of Nutrition in Major Emergencies

Table 3: Classification of Public Health Significance

Prevalence %	High	Medium	Low
Anaemia	≥40	20-39	5-19

Source: WHO (2000) The Management of Nutrition in Major Emergencies

Table 4: Simplified Classification of the Severity of Gam, Anaemia, and Stunting In Refugee Setting (UNHCR Operational Guidance)

PREVALENCE%	HIGH		MEDUIM	LOW
GAM	≥15 Critical	10-14 Serious	5-9	<5
ANAEMIA U5	≥40		20-39	5-19
STUNTING	≥30		20-29	<20

Source: UNHCR operational guidance

Interpretations of Results

The prevalence of global acute malnutrition (GAM) among children aged 6-59 months has reduced significantly compared to 2016. However, in Buramino and Kobe refugee camps, the prevalence of GAM has still remained above the WHO emergency threshold of ≥15% (Critical). Similarly, reduction in SAM prevalence have been noted among children aged 6-59 months, but still SAM prevalence remained above 2% of critical in Melkadida, Hilaweynm and Buramino. However the prevalence of GAM were still above the UNHCR acceptable standards of <10% in all the five camps.

Figure 1 : Trends of GAM prevalence among children 6-59 months in all camps (2015-2017)

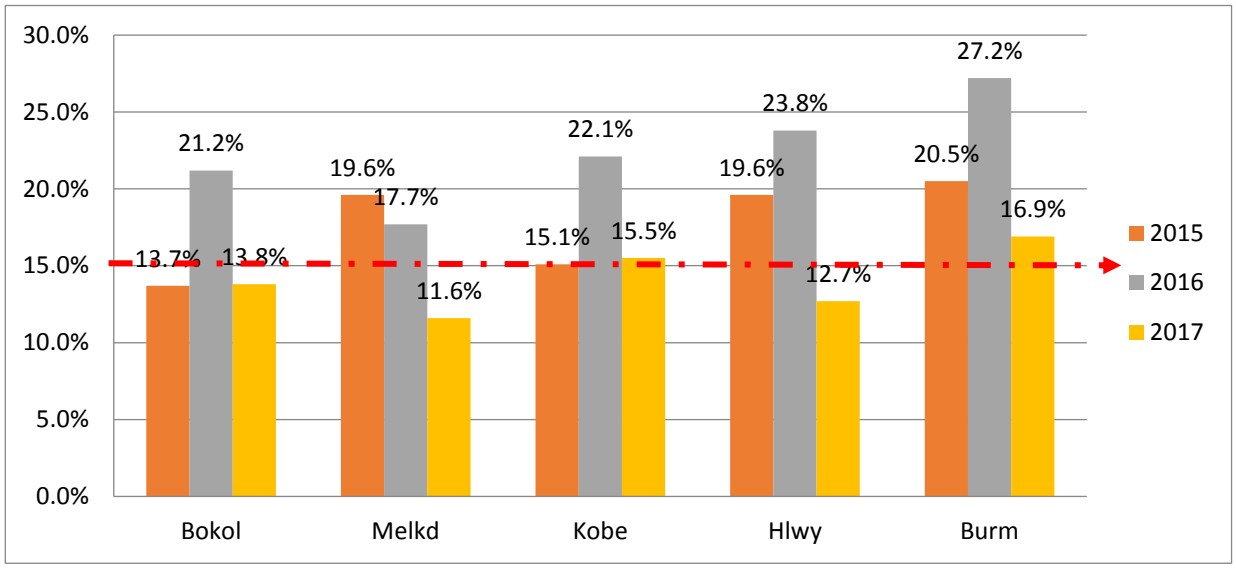
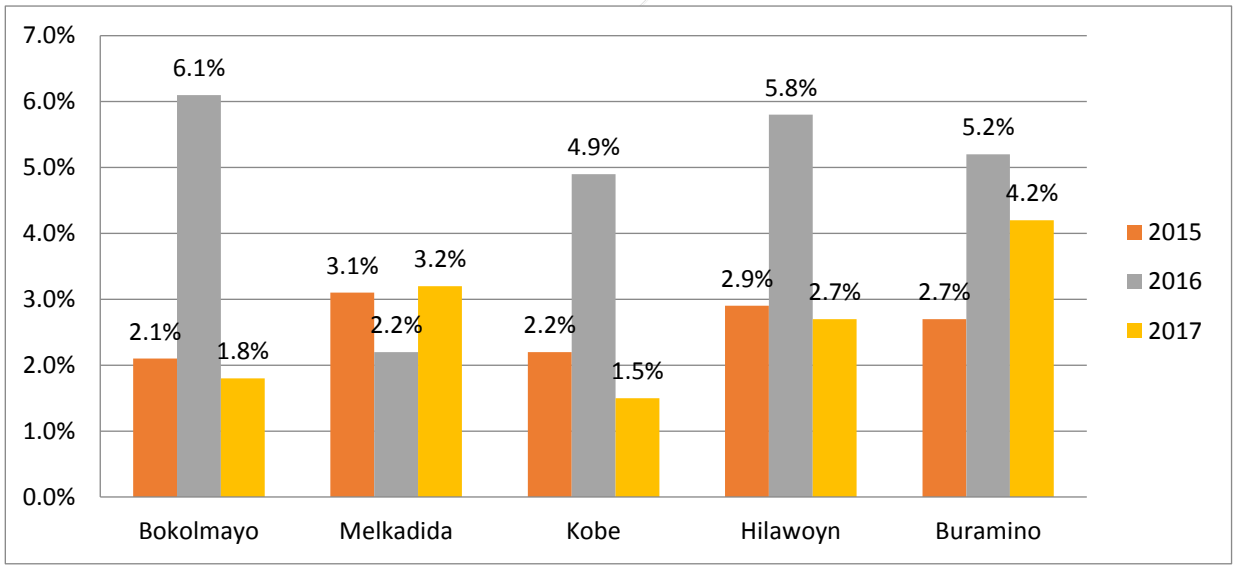
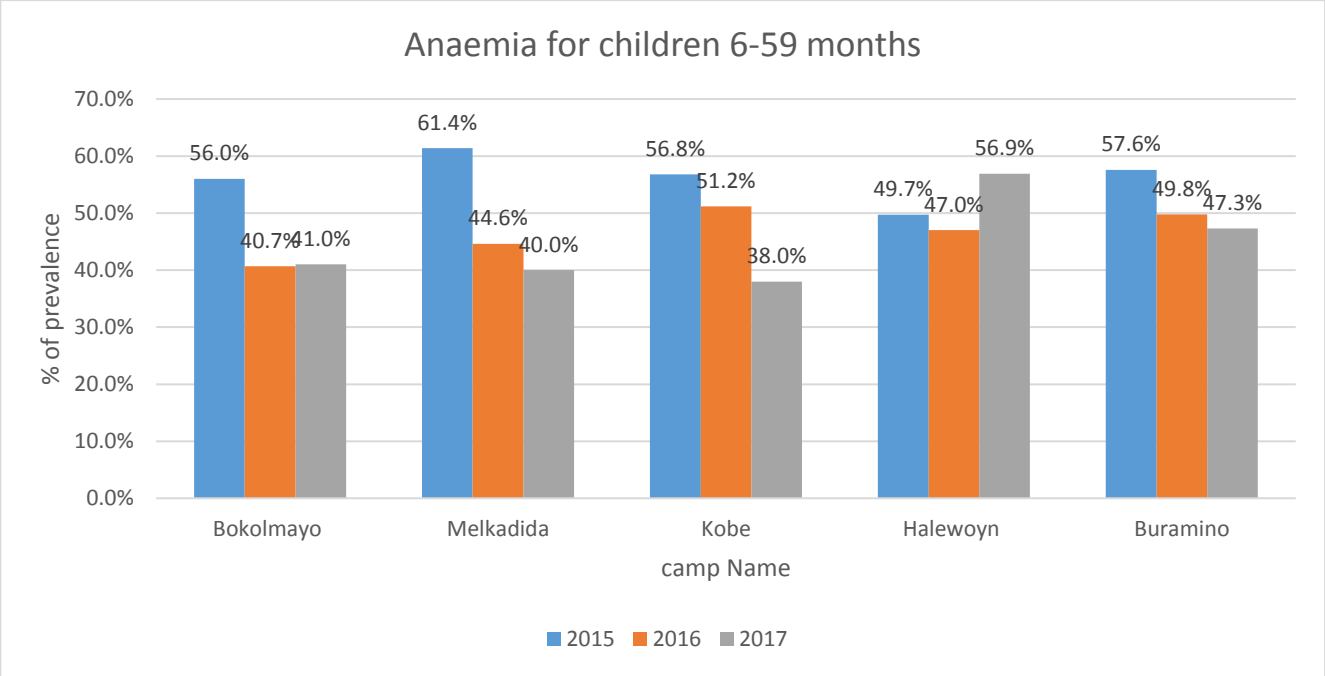


Figure 2: Trends of SAM prevalence among children 6-59 months in all camps (2015-2017)



The trends of Anaemia prevalence among children 6-59 months show a reduction in Melkadida and Kobe refugee camps, but an increase in Hilaweyn, while the rest of the camps remain the same in comparison to the previous years. The prevalence of Anaemia is above 40% of public significance in four camps out of five which is showing that there is a public health problem in all camps.

Figure 3: Trends of Anaemia prevalence among children 6-59 months in all camps (2015-2017)



Anaemia prevalence among children 6-59 months showed a reduction in Melkadida from 44.6% to 40.0%, in Kobe from 51.2% to 38.0% and in Buramino from 49.8 to 47.3% , but an increase in Hilaweyn from 47% to 56.9% and almost no change in Bokolmanyo when compared to 2016 findings. The prevalence of Anaemia in all camps remained above the acceptable cut-off point of 20% recommended by WHO but also above the 40% indicating a public health significance problem.

Anaemia prevalence among non-pregnant women of reproductive age (15-49 years) remained largely unchanged in three camps compared to 2016, which is in Bokolmanyo is from 33.5% to 36.9%, Melkadida is from 21.4% to 24.3%; Kobe from 35.0% to 28.1%, Buramino from 48.3% to 37.4% and Hilaweyn from 44.6% to 42.9% in 2017.

Coverage of Measles vaccination from both recall and with card for children age 9-59 months was 93.3% in Kobe, 89.2% in Hilaweyni and 91.2% in Buramino camps while coverage in Melkadida and Bokolmayo was above 95% recommended by UNHCR and sphere standards.

Coverage of vitamin A supplementation (in the last 6 months prior of the data collection) for children 6-59 months from both card and recall was within the recommended level of >90% except Buramino and in which coverage was 86.4% and 87.6% in Hilaweyn camps.

Nutrition program enrolment status for children found acutely malnourished in the categories of SAM in the therapeutic feeding programme reported between 20.0%-56.3% and MAM in the targeted SFP between 9.8%-30.0% in all five camps which is far below the expected >90%, while the enrolment of children aged 6-23 months in the preventive blanket supplementary feeding under nutrition programme running by IMC indicated being between 75.8%-93.8% and for children aged 36-59 months running under school feeding by SCI falls between 46.3%-79.3%. Nutritional screening and monitoring of this group was noted to a challenge since SCI has no capacity for such service and actually mandated to IMC. Mobility of IMC team to and from nutrition facilities was seemed to be challenging considering anthropometric tools and number of staffs they have. This led to a gap between SCI and IMC, and thus, hampering the efforts for nutritional monitoring of children in this age group.

Proportion of households with access to general food ration reliant on possession of ration card was almost 100% in all camps. The number of days which the general food ration lasted out of 30 days was found in the average of 23.1 days, ranging from19 days to 25.7 days.

The mean household dietary diversity score (HDDS) in three refugee camps (Bokolmayo 8.3, Melkadida 7.7 and Kobe 7.4) while in Hilaweyn and Buramino was 6.8 and 5.9 respectively, out of 12 food groups. There is improvement in the HDDS in all camps comparing to 2016 (except in Bur amino it has reduced from 7.3 to 5.9 in 2017).

Recommendations

Immediate-term

1. Infant and Young children Feeding Practices indicators showed low proportion of "timely initiation of complementary feeding" and "continued breast feeding up to two years". Given better access of RCH clinics by pregnant and lactating mothers, health providers should use this platform to delivery key messages for improvement of IYCF practice.
2. Food rations has been provided below the recommended daily energy of 2100 kcal per person per day. It is strongly recommended to review rations for the refugee food basket to reaching the minimum daily recommended allowance of both macro and micronutrients – minerals and vitamins. Present recommendations immediate, midterm and long there or as per sector with defining by priority.
3. Prevalence of anaemia among children aged 6-59 moths was "high" in the five camps and one camp among women. Considering the WHO acceptable level of prevalence < 20% which has not been attained, there is need to continue with blanket supplementation to children aged 6 – 35 months with supercereal plus and supercereal to children aged 36 – 59 month.
4. Enrolment coverage of SAM and MAM was very low in OTP and TSFP while attendance was high at BSFP both dry and wet feeding. The two-stage screening of MUAC and subsequent Weight for Height should be done twice a month at BFSP while solely Weight for Height is performed once a month to ensure capturing of all acute malnourished children and admit them in appropriate feeding program.

Medium-term

1. Strengthen outreach program to ensure effective identification and referral of children identified through nutritional screening in the community. Wet feeding as part of BSFP in children aged 36 – 59 months is done at schools by SCI. This imposes challenges related to screening and monitoring of nutritional status of the children since SCI has no such capacity. It is strongly recommended to provide this service within IMC facilities since they are mandated and have capacity of screening, identification and treatment of SAM and MAM cases.

2. Strengthen outreach program for active case finding in terms of capacity building and linkage with other programs like growth monitoring for children aged 0-59 months at community level to speedup referral of suspected cases of acute malnutrition to nutrition facilities.
3. Organize a regular joint monitoring and supportive supervision on the health, nutrition and WASH sectors from country office by both UNHCR and partners.

Long-term

1. Strengthen and scale up livelihood projects for improvement of the household food security to bring positive impact at household level.
2. UNHCR should plan to conduct an in-depth study to identify underlying causes of malnutrition in Dollo Ado camps as prevalence of GAM has persistently being high while prevalence of chronic malnutrition measured by stunting keeps increasing overtime.
3. Despite high vaccination coverage from the aggregate sum of card and parental information, coverage by card alone was very low. It is imperative to keep conveying messages to parents and caregivers on the importance of keeping safe the vaccination card. Also, lost or damaged cards should be replaced with new ones while keeping information which was available from the old card.

1. Introduction

Dollo Ado District/Woreda is located in the extreme south east of Ethiopia bordering Kenya and Somalia in the south, in the angle formed by the confluence of the Ganale Dorya and the Dawa Rivers. Dollo Ado has been hosting Somali refugees in five camps (Bokolmanyo, Melkadida, Kobe, Hilaweyn and Buramino) since 2009. The highest number of influx into Dollo Ado was recorded during 2011 due to recurrent drought resulted famine and insecurity in Somalia. The refugees arriving during 2011 and early 2012 were in very poor health with high levels of malnutrition. UNHCR, ARRA and WFP in collaboration with humanitarian agencies made efforts in saving the lives of thousands of refugees mainly the vulnerable group women and children through the provisions of essential live saving, protections and basic services including public health, food security, nutrition etc. At the end of March 2017 the Dollo Ado camps had a population of 212,683 individuals of which about 18.0 % were estimated to be under five years old children (source: UNHCR ProGres, as of March 2017).

Food security situation of persons of concerns is primarily dependent on the monthly cyclical food ration assistance provided by WFP and distributed for persons of concerns by the government refugee agency (Administrative for Refugees and Returnees Affairs: ARRA). During late 2016 and early 2017 the food basket encountered ration size reductions on cereals and missing commodities, mainly for CSB+ and Sugar.

Nutrition Situation

Nutrition services and activities in the camps at the time of the surveys included:

- Targeted Supplementary Feeding Programmes (TSFP) for Moderately Acute Malnourished (MAM) children 6-59 months, Pregnant and Lactating Women (PLW) and patients with chronic illnesses such as TB and HIV.
- Outpatient and inpatient therapeutic feeding programmes for Severely Acute Malnourished (SAM) cases.
- Blanket Supplementary Feeding Programme (BSFP) for all children 6-59 months and Pregnant and Lactating Women (PLW).
- Infant and Young Child Feeding (IYCF) support and promotion programme.
- Periodic mass MUAC screening of children 6-59 months using a two-step screening which includes weight for height measurements for children found at risk of acute malnutrition.

Food Security

Refugees in the Dollo Ado camps are mainly dependant on the general food ration which is provided by WFP with limited access to additional sources of food/income. At the time of the survey, the General Food Distribution (GFD) provided to all registered refugees comprised of 585g/person/day which could provide 2,118kcal/person/day. Practically, the intended rations for consumption by refugee beneficiaries was 1,822kal/p/d considering that 20% (90g) of the cereals distributed was meant to compensate milling costs and losses. It should be noted that the minimum recommended ration as per UNHCR and sphere standards should provide 2100kcal/p/d.

Table 5: Food basket contents of the general ration during the survey at Dollo Ado refugee camps

Ration Type	Amount per person per day in gram	ENERGY Kcal	Protein (g)	Fat (g)	Vit.C (mg)
Cereal (Consumption)	360	1,188	55.4	6.8	0
Cereal (Milling cost)	90	N/A	N/A	N/A	N/A
Pulses	50	168	10.0	0.6	0
Vegetable oil	30	266	0.0	30.0	0
Corn Soya Blend plus (CSB+)	50	200	9.0	3.0	25
Iodized salt	5	0	0.0	0.0	0
Ration total	**585**[1]	**1822**	**74.4**	**40.4**	**25**

Health situation

There are a comprehensive health services in all refugee camps with two major activities performed which is curative services (OPD, IPD, and Pediatric clinic) and preventive aspects which include EPI for children age 0-59 months and vitamin A supplementation, RPH, environmental sanitations and water provision.

2. Survey Objectives

2.1 Primary objectives of the survey:

a. To determine the prevalence of acute malnutrition among children 6-59 months.

b. To determine the prevalence of stunting among children 6-59 months.

c. To assess the two-week period prevalence of Diarrhoea among children 6-59 months.

d. To assess the prevalence of Anaemia among children 6-59 months and women of reproductive age (non-pregnant, 15-49 years).

e. To determine the coverage of measles vaccination among children 9-59 months

f. To determine the coverage of vitamin A supplementation in the last six months among children 6-59 months and postnatal women.

g. To investigate IYCF practices among children 0-23 months.

h. To assess the proportion of households those use an adequate quantity of water per person per day.

i. To assess the proportion of households who say they are satisfied with water supply.

To determine the coverage of ration cards and the duration the GFD ration lasts for recipient households.

j. To determine the extent to which negative coping strategies are used by households.

k. To assess household dietary diversity.

l. To determine the population's access to, and use of, improved water, sanitation and hygiene facilities

m. To establish recommendations on actions to be taken to address the situation

[1] 585g includes 90g of cereals meant for milling cost and losses

2.2. Secondary objectives:

a. To determine the enrolment coverage of selective feeding programs for children 6-59 months (OTP/SC, TSFP, and BSFP).
b. To determine enrolment into Antenatal Care clinic and coverage of iron-folic acid supplementation in pregnant women.
c. To assess crude and under-five mortality rates in the camps in the last three months.
To determine the coverage of deworming in the last six months among children 12-59 months.

3. Methodology

3.1 Sample size calculation

A cross-sectional survey was conducted in the five camps in line with UNHCR Standardized Expanded Nutrition Survey (SENS) guidelines for refugee population's (version 2, 2013) and the Standardized Monitoring Assessment of Relief and Transition (SMART) methodology.

Simple random sampling was applied to generate sample of households to be surveyed. Sampling was made on ENA for SMART software (version July 9th, 2015) considering the upper limits of prevalence of GAM from the last nutrition survey in 2016, average family size and under five populations from ProGress database and 10% for non-response and refusals. Prior to data collection verification and labelling of all the houses where refugees were living was done with provision of unique address for each shelter type. All houses were checked and given a unique number. Empty houses were excluded from the sampling frame. The sampled houses were generated by the ENA for SMART software. All households were selected randomly using a simple random sampling method by drawing a random number. This random number was translated to the list of existing household numbers by excel spread sheet. The list was further split into pieces and assigned to respective teams for data collection.

Table 6: Sample size from ENA for SMART output based on parameters indicated in the table

Parameters	Bokolmanyo	Melkadida	Kobe	Hilaweyn	Buramino
Estimated prevalence of GAM	25.2%	21.7%	26.3%	28.6%	31.8%
Desired precision	±4	±4	±4	±4	±4
Average household size	10.4	10.1	8.6	11.7	16.7
% U5 years	16.1	17.0	17.2	10.5	16.7
% none response households	10%	10%	10%	10%	10%
Households to be included for Anthropometry and Mortality	**334**	**325**	**391**	**303**	**323**
Number of children to be included in the assessment	**453**	**425**	**465**	**490**	**521**

Training on SENS components, techniques of data collection and teamwork in the camp was organized and conducted for survey supervisors and enumerators. Training was arranged in one venue for four days, followed by one additional day for the standardization and pilot test in the field.

A total of 72 enumerators were selected from partners (ARRA and IMC) and assigned into two survey groups; one group was assigned to Buramino and Hilaweyn refugee camps and the second group was assigned to Melkadida and Bokolmanyo. However, enumerators for Kobe camp were selected and assigned from the two groups. Each survey group comprised 36 persons and made 6 teams. Each survey team was comprised of six individuals; two for anthropometric measurements, one for the household questionnaire (WASH and Food security), one for the mortality data collection and also team leader, one for haemoglobin measurer and one assistant. The teams were mobilized into two locations as per their respective locations and data was collected simultaneously from two camps at a time.

During data collection, supervisors were assigned to each team. The overall coordination of the survey was led by the UNHCR country office nutritionist who initially supervised one camp along with colleagues from UNHCR Melkadida. Thereafter, the team split into two groups for supervision of the rest of the camps. At the end of data collection from respective camps, teams were meeting together in the evening for reviewing the data to ensure quality of information is maintained.

All eligible children aged 0-59 months from all selected households were included in the assessment of anthropometry, measles vaccination and vitamin A supplementation coverage, enrolment in the nutrition program, diarrhoea recall over a period of the previous two weeks, measurement of haemoglobin and infant and young child feeding (0-23 months) and WASH. Half of the selected households were assessed on food security, haemoglobin test in women of reproductive age (15-49 years, non-pregnant), Antenatal Care (ANC) coverage and Iron folate supplementations tools administered.

Different recall periods were used in different camps for collection of mortality data. 1st January 2017 was chosen as a recall date as this was remembered easily by all households. Consequently, the recall period was 74 days for Kobe camp, 81 days for Melkadida and Buramino camps, 88 days Bokolmayo and Hilaweyni camps.

Each survey team explained the purpose of the survey and issues of confidentiality and obtained verbal consent before proceeding with the survey in the selected households. The collected data were checked on daily basis and transferred to the server for plausibility check and drawn feedback for the team to correct errors and ensure data quality. Summary of results illustrated under Table 1.

3.2 Data Collection

The data was collected by using smartphone with pre-installed Open Data Kit facility (ODK) Version 1.4.2 apps; and recording on paper for key measurements were made for cross checking the data and retain backup to avoid if any risks associated with the mobile phone persists.

Each team was provided with a list of households to be surveyed on a daily basis, and advised to follow the bellow precaution measures:

- If an individual or an entire household was not present the team had to revisit once at the end of the day. If still was unsuccessful, the individual or the household was recorded as absent and they were not replaced with another household or individual.

- If the individual or an entire household refused to participate then it was considered as a refusal and the individual or the household were not replaced with another.

- If a selected child was disabled with a physical deformity preventing certain anthropometric me asurements, the child was still included in the assessment of the other indicators.

- If it was determined that a selected household did not have any eligible children, the relevant questionnaires were administered to the household.

- If a selected child was found to be admitted in the nutrition or health centre the team visited the centre to take the measurements and the child's information. If it was impossible to visit the centre, the child was given an ID number and considered as absent and not replaced. A note was made that the child was in a nutrition/health centre at the time of the survey.

This recommendation differs from the standard SMART recommendation which considers nutrition surveys that are usually conducted in large geographic areas and where it is often not possible to go to the nutrition or health centre for measurement of the admitted children.

3.3 Questionnaires

The questionnaires were prepared in English language and administered in Somali language via translators. The questionnaires were pre-tested before the survey.

Five standard SENS modules and one extra module questionnaires were designed to provide information on the relevant indicators of the different target groups as indicated in the survey objectives. The six module questionnaires covered the following areas and the following measurements:

Module 1*: Anthropometry and Health* - This included questions and measures on children aged 6-59 months. Information was collected on anthropometric status, oedema, enrolment in selective feeding programmes, immunization (measles), vitamin A supplementation in the last six months, morbidity from diarrhoea in past two weeks, and haemoglobin assessment.

Module 2*: Anaemia* - This included measurement of levels of haemoglobin in children aged 6 – 59 months and women of child bearing age (15 – 49 years) who are not pregnant. Further information collected from women was pregnancy status, enrolment in ANC, coverage of iron-folic acid pills and post-natal vitamin A supplement.

Module 3*: Infant and Young Children Feeding Practices (IYCF)* - This included questions on infant and feeding practices for children aged 0-23 months.

Module 4: *Food Security* - This included questions on access and use of the GFD ration, coping mechanisms when the GFD ran out ahead of time, household dietary diversity.

Module 5*: Water, Sanitation and Hygiene (WASH)* - This included questions on the quantity of water used per household and the satisfaction with the drinking water supply, hygiene and sanitation.

Extra Module*: Mortality* - This included questions related to mortality in the last three months among the whole population.

3.4 Measurement methods

a) Household-level indicators

Mortality: An individual-level mortality form similar to the 2016 nutrition survey was used.

Food security: The questionnaire used was adopted from the UNHCR's Standardized Expanded Nutrition Survey Guidelines for Refugee Populations

WASH: The questionnaire used was adopted from the UNHCR's Standardized Expanded Nutrition Survey Guidelines for Refugee Populations

b) Individual-level indicators

Sex of children: recorded as male or female.

Birth date or age in months for children 0-59 months: the exact date of birth (day, month, and year) was recorded from birth certificates and checked on family fact sheet, and an EPI card or child health card. If no reliable proof of age was available, age was estimated in months using a local event calendar. If the child's age could absolutely not be determined by using a local events calendar or by probing, the child's length/height was used for inclusion; the child had to measure between 65 cm and 110 cm.

Age of women 15-49 years: unlike small children, the exact date of birth of women was not recorded. Reported age was recorded in years.

Weight of children 6-59 months: measurements were taken to the closest 100 grams using an electronic scale (SECA scale) with a wooden board to stabilize it on the ground. All children were weighed without clothes.

Height/Length of children 6-59 months: children's height or length was taken to the closest millimeter using a wooden height board (*Shorr Productions*). Height was used to decide on whether a child should be measured lying down (length) or standing up (height). Children less than 87cm were measured lying down, while those greater than or equal to 87cm were measured standing up.

Oedema in children 6-59 months: bilateral oedema was assessed by applying gentle thumb pressure on to the tops of both feet of the child for a period of three seconds and thereafter observing for the presence or absence of an indent.

MUAC of children 6-59 months: MUAC was measured at the mid-point of the left upper arm between the elbow and the shoulder and taken to the closest millimetere using a standard tape. MUAC was recorded in centimeters.

Child enrolment in selective feeding programme for children 6-59 months: selective feeding programme enrolment status was assessed for the outpatient therapeutic programme and for the supplementary feeding programme. This was verified by card or showing the mother or care giver the images of the products given at the different programs

Measles vaccination in children 6-59 months: measles vaccination was assessed by checking for the measles vaccine on the EPI card if available or by asking the caregiver to recall if no EPI card was available. For ease of data collection, results were recorded on all children but were only analysed for children aged 9-59 months

Vitamin A supplementation in last 6 months in children 6-59 months: whether the child received a vitamin A capsule over the past six months was recorded from the EPI card or health card if available or by asking the caregiver to recall if no card is available. A vitamin A capsule was shown to the caregiver when asked to recall.

Haemoglobin concentration in children 6-59 months and women 15-49 years: Hb concentration was taken from a capillary blood sample from the fingertip and recorded to the closest gram per deciliter by using the portable HemoCue Hb 301 Analyser (HemoCue, Sweden). If severe anaemia was detected, the child or the woman was referred for treatment immediately.

Diarrhoea in last 2 weeks in children 6-59 months: an episode of diarrhoea was defined as three loose stools or more in 24 hours. Caregivers were asked if their child had suffered episodes of diarrhoea in the past two weeks.

ANC enrolment and iron and folic acid pills coverage: if the surveyed woman was pregnant, it was assessed by card or recall whether she was enrolled in the ANC programme and was receiving iron-folic acid pills.

Infant and young child feeding practices in children 0-23 months: infant and young child feeding practices were assessed based on the UNHCR's Standardized Expanded Nutrition Survey Guidelines for Refugee Populations (2013)

Referrals: Children aged 6-59 months were referred to health centre/post for treatment when MUAC was < 12.5 cm, when oedema was present, or when haemoglobin was < 7.0 g/dL. Women of reproductive age were referred to the hospital for treatment when haemoglobin was < 8.0 g/dL.

3.5 Case definitions and calculations

Mortality: The crude death rate (CMR) was expressed as the number of deaths per 10,000 persons per day. The formula below was applied:

Crude Death Rate (CMR) = 10,000/a*f/ (b+f/2-e/2+d/2-c/2)

Where:

a = Number of recall days

b = Number of current household residents

c = Number of people who joined household during recall period

d = Number of people who left household during recall period

e = Number of births during recall period

f = Number of deaths during recall period

Malnutrition in children 6-59 months: Acute malnutrition was defined using weight-for-height index values or the presence of edema and classified as show in the table below. Main results are reported after analysis using the WHO 2006 Growth Standards. Results using the NCHS 1977 Growth Reference are reported in **Appendix 2.**

Table 7: Definitions of acute malnutrition using weight-for-height and/or oedema in children 6–59 months

Categories of acute malnutrition	Z-scores (NCHS Growth Reference 1977 and WHO Growth Standards 2006)	Bilateral oedema
Global acute malnutrition	< -2 z-scores	Yes/No
Moderate acute malnutrition	< -2 z-scores and ≥ -3 z-scores	No
Severe acute malnutrition	> -3 z-scores	Yes
	< -3 z-scores	Yes/No

Stunting, also known as chronic malnutrition was defined using height-for-age index values and was classified as severe or moderate based on the cut-offs shown below. Main results are reported according to the WHO Growth Standards 2006. Results using the NCHS Growth Reference 1977 are reported in.

Table 8: Definitions of stunting using height-for-age in children 6–59 months

Categories of stunting	Z-scores (WHO Growth Standards 2006 and NCHS Growth Reference 1977)
Stunting	<-2 z-scores
Moderate stunting	<-2 z-score and >=-3 z-score
Severe stunting	<-3 z-scores

Underweight was defined using the weight-for-age index values and was classified as severe or moderate based on the following cut-offs. Main results are reported according to the WHO Growth Standards 2006. Results using the NCHS Growth Reference 1977 are reported in **Appendix 1.**

Table 9: Definitions of underweight using weight-for-age in children 6–59 months

Categories of underweight	**Z-scores (WHO Growth Standards 2006 and NCHS Growth Reference 1977)**
Underweight	<-2 z-scores
Moderate underweight	<-2 z-scores and >=-3 z-scores
Severe underweight	<-3 z-scores

Mid Upper Arm Circumference (MUAC) values were used to define malnutrition according to the following cut-offs in children 6-59 months:

Table 10: Low MUAC values cut-offs in children 6-59 months

Categories of low MUAC values	
<12.5 cm:	Global acute malnutrition
≥ 11.5 cm and <12.5 cm: Moderate acute malnutrition	
< 11.5 cm:	Severe acute malnutrition

Child enrolment in selective feeding programme for children 6-59 months: Feeding programme coverage is estimated during the nutrition survey using the direct method as follows (reference: Emergency Nutrition Assessment: Guidelines for field workers. Save the Children. 2004):

Coverage of SFP programme (%) =

$$\frac{100 \times \textit{No. of surveyed children with MAM according to SFP admission criteria who reported being registered in SFP}}{\textit{No. of surveyed children with MAM according to SFP admission criteria}}$$

Coverage of TFP programme (%) =

$$\frac{100 \times \textit{No. of surveyed children with SAM according to OTP admission criteria who reported being registered in OTP}}{\textit{No. of surveyed children with SAM according to OTP admission criteria}}$$

Infant and young child feeding practices in children 0-23 months

Infant and young child feeding practices were assessed as follows based on the UNHCR SENS IYCF module (Version 1.3 (March 2012).

Timely initiation of breastfeeding in children aged 0-23 months*:*

Proportion of children 0-23 months who were put to the breast within one hour of birth

Children 0-23 months who were put to the breast within one hour of birth

Children 0-23 months of age

Exclusive breastfeeding under 6 months*:*

Proportion of infants 0–5 months of age who are fed exclusively with breast milk: (including expressed breast milk or from a wet nurse, ORS, drops or syrups (vitamins, breastfeeding minerals, medicines)

Infants 0–5 months of age who received only breast milk during the previous day

Infants 0–5 months of age

Continued breastfeeding at 1 year:

Proportion of children 12–15 months of age who are fed breast milk

Children 12–15 months of age who received breast milk during the previous day

Children 12–15 months of age

Introduction of solid, semi-solid or soft foods*:*

Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods

Infants 6–8 months of age who received solid, semi-solid or soft foods during the previous day

Infants 6–8 months of age

Children ever breastfed*:*

Proportion of children born in the last 24 months who were ever breastfed Children born in the last 24 months who were ever breastfed

Children born in the last 24 months

Continued breastfeeding at 2 years:

Proportion of children 20–23 months of age who are fed breast milk

Children 20–23 months of age who received breast milk during the previous day

Children 20–23 months of age

Consumption of iron rich or iron fortified foods in children aged 6-23 months:

Proportion of children 6–23 months of age who receive an iron-rich or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home.

Children 6–23 months of age who received an iron-rich food or a food that was specially designed for infants and young children and was fortified with iron, or a food that was

Fortified in the home with a product that included iron during the previous day

Children 6–23 months of age

Bottle feeding:

Proportion of children 0-23 months of age who are fed with a bottle

Children 0–23 months of age who were fed with a bottle during the previous day

Children 0–23 months of age

Anaemia in children 6-59 months and women of reproductive age:

Anaemia was classified according to the following cut-offs in children 6-59 months and non-pregnant women of reproductive age. Pregnant women were not included in this surveys for the assessment of anaemia as recommended by UNHCR {pregnant women are not to be included in routine nutrition surveys for the assessment of anaemia due sample size issues, (usually a small number of pregnant women are found) as well as the difficulties in assessing gestational age in pregnant women)}.

Table 11: Definition of anaemia (WHO 2000)

Age/Sex groups	Categories of Anaemia (Hb g/dL)			
	Total	Mild	Moderate	Severe
Children 6 - 59 months	<11.0	10.9 - 10.0	9.9 - 7.0	< 7.0
Non-pregnant adult females 15-49 years	<12.0	11.9 - 11.0	10.9 - 8.0	< 8.0

Classification of public health problems and targets

Mortality: The following thresholds are used for mortality.

Table 12: Mortality benchmarks for defining crisis situations (NICS, 2010)

Emergency threshold
CDR > 1/10,000 / day: 'very serious'
CDR > 2 /10,000 /day: 'out of control'
CDR > 5 /10,000 /day: 'major catastrophe'
(double for U5MR thresholds)

Anthropometric data: The target for the prevalence of global acute malnutrition (GAM) for children 6-59 months of age by camp, country and region should be < 10% and the target for the prevalence of severe acute malnutrition (SAM) should be <2%. The table below shows the classification of public health significance of the anthropometric results for children under-5 years of age according to WHO:

Table 13: Classification of public Health significance for children under 5 years of age

Prevalence %	Critical	Serious	Poor	Acceptable
Low weight-for-height	≥20	15-19	10-14	<10
Low height-for-age	≥40	30-39	20-29	<20
Low weight-for-age	≥30	20-29	10-19	<10

Selective feeding programmes:

Table 14: Performance indicators for selective feeding programmes *

	Recovery	Case fatality	Defaulter rate	Coverage		
				Rural areas	Urban areas	Camps
SFP	>75%	<3%	<15%	>50%	>70%	>90%
TFP	>75%	<10%	<15%	>50%	>70%	>90%

* UNHCR and WFP selective feeding guideline 2011 and SPHERE standards for performance

Measles vaccination coverage: UNHCR recommends target coverage of 95% (same as Sphere Standards).

Vitamin A supplementation coverage: UNHCR performance indicator; target for vitamin A supplementation coverage for children aged 6-59 months by camp, country and region should be >90%.

Anaemia data*:* UNHCR Strategic Plan for Nutrition and Food Security (2008-2010) states that the targets for the prevalence of anaemia in children 6-59 months of age and in women 15-49 years of age should be low i.e. <20%. The severity of the public health situation should be classified according to WHO criteria as shown in Table 14 below.

Table 15: Classification of public health significance (WHO 2000)

Prevalence %	High	Medium	Low
Anaemia	≥40	20-39	5-19

WASH: Diarrhoea caused by poor water, sanitation and hygiene accounts for the annual deaths of over two million children under five years old. Diarrhoea also contributes to high infant and child morbidity and mortality by directly affecting children's nutritional status. Refugee populations are often more vulnerable to public health risks and reduced funding can mean that long term refugee camps often struggle to ensure the provision of essential services, such as water, sanitation and hygiene. Hygienic conditions and adequate access to safe water and sanitation services is a matter of ensuring human dignity and is recognised as a fundamental human right. The following standards (amongst others) apply to UNHCR WASH programmes:

Table 16: UNHCR WASH Programme Standards

UNHCR Standard	Indicator
Average quantity of water available per person/day	> or = 20 litres
Latrine provision	20 people/latrine
Soap provision	> 250 g per person per month

3.6 Training, coordination and supervision

The surveys were coordinated by experts from UNHCR, ARRA and WFP with supervision assistance from the health and nutrition managers from all the camps.

Supervisors training were conducted for a total of 12 participants for three days. A total of 72 enumerators were selected from partners and grouped into two survey teams; 36 participants were from Buramino and Hilaweyn camps and the second 36 participants were from Kobe, Melkadida and

Bokolmanyo. Training was arranged in two separate venues and training was conducted for four days, followed by an additional day for the pilot test in the field. 12 community incentive workers (six per team) joined the survey team in the camps. One survey team was comprising of a subset of six separate teams comprising of six individuals per team arranged two for anthropometric measurements, one for household questionnaire, one for mortality data collection, one for haemoglobin data and one assistance. The teams were mobilized into two locations as per their respective locations and data were collected simultaneously from two camps at a time. During data collections supervisors were assigned in each team. The overall coordination of survey was led by UNHCR, ARRA and WFP.

The training focused on: the purpose and objectives of the survey; roles and responsibilities of each team member, familiarization with the questionnaires by reviewing the purpose for each question; interviewing skills and recording of data; interpretation of calendar of events and age determination; how to take anthropometric measurements and haemoglobin measurements and common errors; data collection by using Smart phone (Tablet used) and a practical session on various tools. Two mobile phone per team allocated, one for child data and women HB recording and the second for household data collection: Food security and WASH. The practical session on anthropometric measurements involved volunteer children for practice as well as a standardisation test. The practical session on haemoglobin measurements involved the trainees and trainers themselves as well as a standardisation test. For the pre-test, three households were selected for each of the teams who administered the questionnaires and took the required measurements. The data collection tools were then reviewed based on the feedback from the field pre-test.

3.7 Data collection, entry and analysis

Data collection was conducted from 14th to 30th March 2017 with an average of three to four days in each camp. Each survey team explained the purpose of the survey and issues of confidentiality and obtained verbal consent before proceeding with the survey in the selected households. The informed consent form is shown in **Appendix 4**.

Data entry was done on daily basis receiving the phones from the field. Each record was checked before transferring to the server. Some data also checked against the paper Household Listing form and either confirmed or marked to be returned to the team for correction and/or confirmation the following day. By sending the Android phones back to the teams with corrections or confirmations required, the teams received practical feedback and further learned the importance of accuracy and thoroughness in recording the measurements and responses.

Records for each questionnaire in each household were checked for completeness, consistency with HH listing form, and range of data, before being confirmed and synchronized (uploaded) from the phones to the server each evening. Records were downloaded from the server each evening as csv files to save as a back-up and minimize risk of loss of the data in case the server fails to perform in the following day. Data for children 6-59 months was then transferred from the csv files into ENA for SMART software and plausibility check was done to generate report indicating quality of data collected in that particular day and subsequent feedback to team supervisors. At the end of the data collection, a complete set of data was ready for analysis. All data files were cleaned before analysis. Entries were double checked, one by one, with the original questionnaire to ensure there were no data entry errors. Duplicate entries were identified and removed. Analysis was performed using ENA for SMART and Epi Info software. The SMART plausibility report was generated for each complete set of survey data in order to check the quality of the anthropometric data and a summary of the key quality criteria is shown in **Appendix 1**.

The nutritional indices were cleaned using flexible cleaning criteria from the observed mean (also known as SMART flags in the ENA for SMART software), rather than the reference mean (also known as WHO flags in the ENA for SMART software). This flexible cleaning approach is recommended in the

UNHCR SENS Guidelines. For the weight-for-height index, a cleaning window of +/- 3 SD value in SMART for ENA software version of July 2015 was used.

4. PRESENTATION OF RESULTS

Table 17: Targeted number of children aged 6 – 59 months against the actual number of children surveyed

	Camp				
	Bokolmanyo	Melkadida	Kobe	Hilaweyn	Buramino
Targeted number of children to be surveyed	453	425	465	490	521
Actual number of children surveyed	394	323	407	226	291
Percentage coverage	87%	76%	88%	46%	56%

The recommended sample representation according to UNHCR SENS guidelines was only attained in Bokolmanyo and Kobe camps with coverage above 80% of targeted number of children to be surveyed. The coverage was extremely low in Hilaweyn where the number of children surveyed was below 50% for the targeted sample size.

4.1. RESULTS FROM BOKOLMANYO

Table 18 Demographic characteristics of the study population in Bokolmanyo

Total HHs surveyed	317
Total population surveyed	2071
Total U5 surveyed	446
Average HH size	6.5
% of U5	21.5%

Table 19: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
AGE (mo)	**no.**	**%**	**no.**	**%**	**no.**	**%**	**Boy:girl**
6-17	36	44.4	45	55.6	81	20.6	0.8
18-29	53	50.0	53	50.0	106	26.9	1.0
30-41	43	50.6	42	49.4	85	21.6	1.0
42-53	46	50.5	45	49.5	91	23.1	1.0

54-59	18	58.1	13	41.9	31	7.9	1.4
Total	196	49.7	198	50.3	394	100.0	1.0

Anthropometric results (based on WHO standards 2006) in Bokolmanyo:

Table 20: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

Indicators	95% C.I.		
	All n = 384	**Boys** n = 190	**Girls** n = 194
Prevalence of global malnutrition (<-2 z-score and/or edema)	(53) 13.8 % (10.7 - 17.6)	(34) 17.9 % (13.1 - 24.0)	(19) 9.8 % (6.4 - 14.8)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no edema)	(46) 12.0 % (9.1 - 15.6)	(29) 15.3 % (10.8 - 21.1)	(17) 8.8 % (5.5 - 13.6)
Prevalence of severe malnutrition (<-3 z-score and/or edema)	(7) 1.8 % (0.9 - 3.7)	(5) 2.6 % (1.1 - 6.0)	(2) 1.0 % (0.3 - 3.7%)

The prevalence of oedema is 0.0 %

Figure 4 Distribution of weight-for-height z-scores (based on WHO Growth Standards) in Bokolmnyo

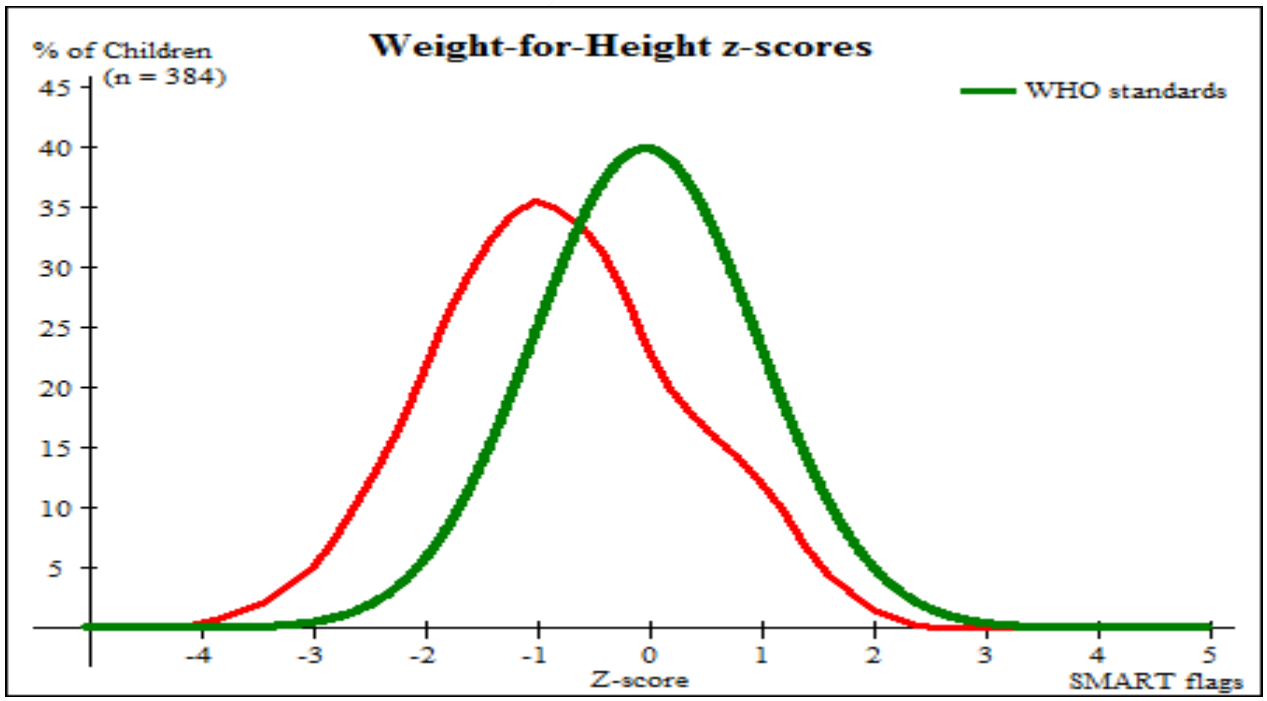


Figure 5 Trends in the prevalence of global and severe acute malnutrition based on WHO Growth Standards in children 6-59 months from 2013-2017 in Bokolmanyo

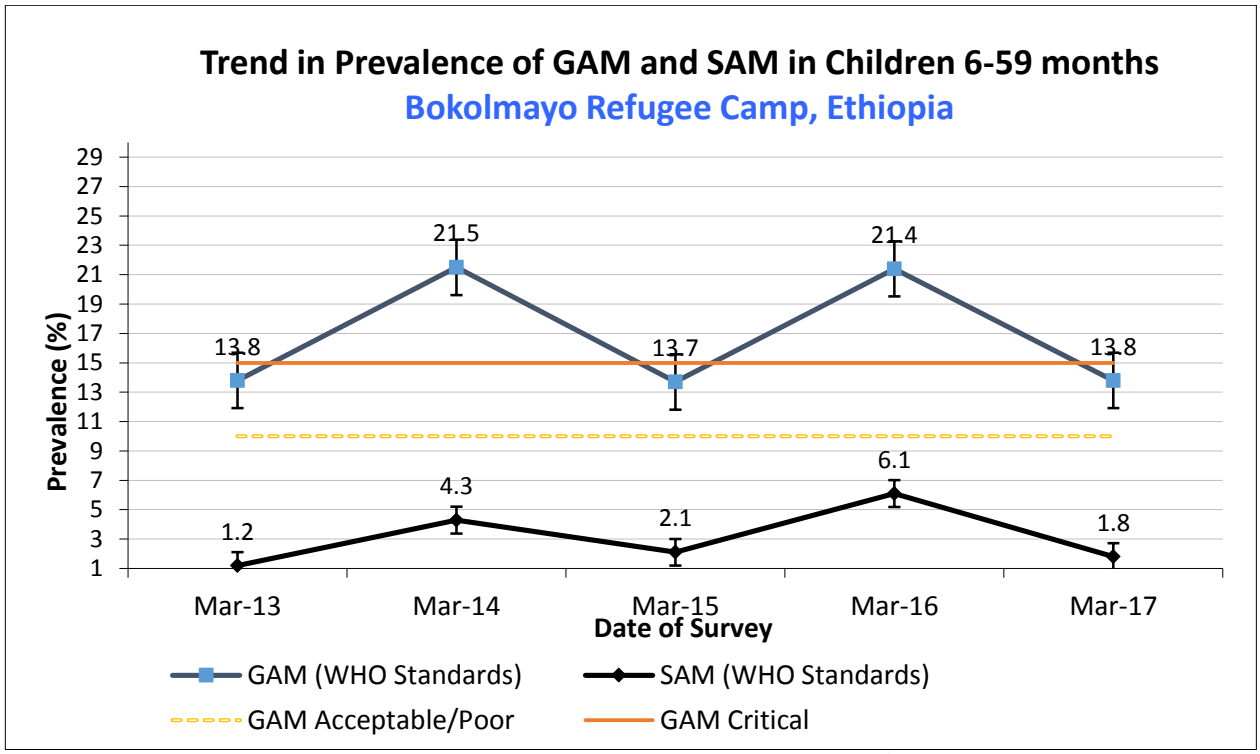


Table 21: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	79	3	3.8	10	12.7	66	83.5	0	0.0
18-29	103	2	1.9	7	6.8	94	91.3	0	0.0
30-41	83	1	1.2	9	10.8	73	88.0	0	0.0
42-53	89	1	1.1	16	18.0	72	80.9	0	0.0
54-59	30	0	0.0	4	13.3	26	86.7	0	0.0
Total	384	7	1.8	46	12.0	331	86.2	0	0.0

Table 22: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 14 (3.6 %)	Not severely malnourished No. 380 (96.4 %)

Table 23: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	95% C.I.		
	All n = 394	**Boys** n = 196	**Girls** n = 198
Prevalence of global malnutrition (< 125 mm and/or edema)	(13) 3.3 % (1.9 - 5.6%)	(5) 2.6 % (1.1 - 5.8%)	(8) 4.0 % (2.1 - 7.8%)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no edema)	(13) 3.3 % (1.9 - 5.6%)	(5) 2.6 % (1.1 - 5.8%)	(8) 4.0 % (2.1 - 7.8%)
Prevalence of severe malnutrition (< 115 mm and/or edema)	(0) 0.0 % (0.0 - 1.0%)	(0) 0.0 % (0.0 - 1.9%)	(0) 0.0 % (0.0 - 1.9%)

Table 24: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	**Total no.**	**Severe wasting (< 115 mm)**		**Moderate wasting (>= 115 and < 125 mm)**		**Normal (> = 125 mm)**		**Edema**	
		No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	81	0	0.0	7	8.6	74	91.4	0	0.0
18-29	106	0	0.0	3	2.8	103	97.2	0	0.0
30-41	85	0	0.0	2	2.4	83	97.6	0	0.0
42-53	91	0	0.0	1	1.1	90	98.9	0	0.0
54-59	31	0	0.0	0	0.0	31	100.0	0	0.0
Total	394	0	0.0	13	3.3	381	96.7	0	0.0

Table 25: Prevalence of underweight based on weight-for-age z-scores by sex

	95% C.I.		
	All n = 379	**Boys** n = 186	**Girls** n = 193
Prevalence of underweight (<-2 z-score)	(95) 25.1 % (21.0 - 29.7%)	(49) 26.3 % (20.5 - 33.1%)	(46) 23.8 % (18.4 - 30.3%)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(70) 18.5 % (14.9 - 22.7%)	(37) 19.9 % (14.8 - 26.2%)	(33) 17.1 % (12.4 - 23.0%)
Prevalence of severe underweight (<-3 z-score)	(25) 6.6 % (4.5 - 9.6%)	(12) 6.5 % (3.7 - 10.9%)	(13) 6.7 % (4.0 - 11.2%)

Table 26: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	75	1	1.3	11	14.7	63	84.0	75	1
18-29	102	8	7.8	23	22.5	71	69.6	102	8
30-41	85	8	9.4	21	24.7	56	65.9	85	8
42-53	86	5	5.8	11	12.8	70	81.4	86	5
54-59	31	3	9.7	4	12.9	24	77.4	31	3
Total	379	25	6.6	70	18.5	284	74.9	379	25

Table 27: Prevalence of stunting based on height-for-age z-scores and by sex

	95% C.I.		
	All n = 379	**Boys** n = 186	**Girls** n = 193
Prevalence of stunting (<-2 z-score)	(95) 25.1 % (21.0 - 29.7%)	(49) 26.3 % (20.5 - 33.1%)	(46) 23.8 % (18.4 - 30.3%)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(70) 18.5 % (14.9 - 22.7%)	(37) 19.9 % (14.8 - 26.2%)	(33) 17.1 % (12.4 - 23.0%)
Prevalence of severe stunting (<-3 z-score)	(25) 6.6 % (4.5 - 9.6%)	(12) 6.5 % (3.7 - 10.9%)	(13) 6.7 % (4.0 - 11.2%)

Figure 6: Distribution of height –for Age z-scores (based on WHO Growth Standards)

Figure 7: Trends in the prevalence of stunting in children 6-59 months in Bokolmnyo

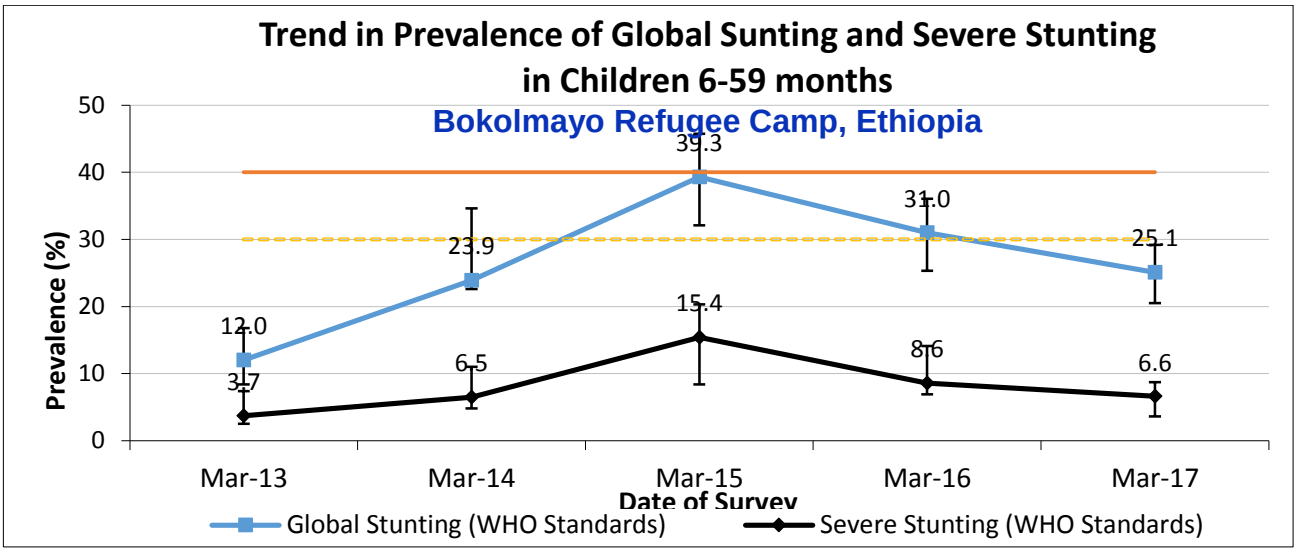


Table 28: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	75	1	1.3	11	14.7	63	84.0
18-29	102	8	7.8	23	22.5	71	69.6
30-41	85	8	9.4	21	24.7	56	65.9
42-53	86	5	5.8	11	12.8	70	81.4
54-59	31	3	9.7	4	12.9	24	77.4
Total	379	25	6.6	70	18.5	284	74.9

Table 29: 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	384	-0.81±1.09	1.00	0	10
Weight-for-Age	387	-1.23±1.04	1.00	0	7
Height-for-Age	379	-1.21±1.17	1.00	0	15

* contains for WHZ and WAZ the children with oedema.

Mortality results (retrospective over 88 days prior to interview)

Table 30: Mortality rates

CMR (total deaths/10,000 people / day): 0.22 (0.09-0.52) (95% CI)
U5MR (deaths in children under five/10,000 children under five / day): 0.51 (0.12-2.10) (95% CI)

Feeding programme coverage results in Bokolmanyo

Table 31: Programme coverage for acutely malnourished children in Bokolmnyo

	Number/total	% (95% CI)
Supplementary feeding programme coverage	5/51	9.8% (3.3-21.4%)
Therapeutic feeding programme coverage	5/14	35.7% (12.8-64.9%)
Blanket supplementary feeding program (BSFP) 6-35 months	184/206	89.3% (84.3-93.2)
Wet Feeding for children 36 -59 months	119/175	68.0% (60.5-74.8)

Measles vaccination coverage results in Bokolmanyo

Table 32: Measles vaccination coverage for children aged 9-59 months (or other context-specific target group) (n= 375)

	Measles (with card) n=355	Measles (with card or confirmation from mother) n=372
YES	94.7% (91.7-96.6%)	99.2% (97.5-99.8%)

Vitamin A supplementation coverage results in Bokolmanyo

Table 33: Vitamin A supplementation for children aged 6-59 months within past 6 months (or other context-specific target group) (n=394)

	Vitamin A capsule (with card) n=321	Vitamin A capsule (with card or confirmation from mother) n=389
YES	81.5% (77.3-85.2%)	98.7% (96.9-99.5%)

Figure 8: Trends in the coverage of measles vaccination and vitamin A supplementation IN LAST 6 MONTHS in children 6-59 months 2013-2017

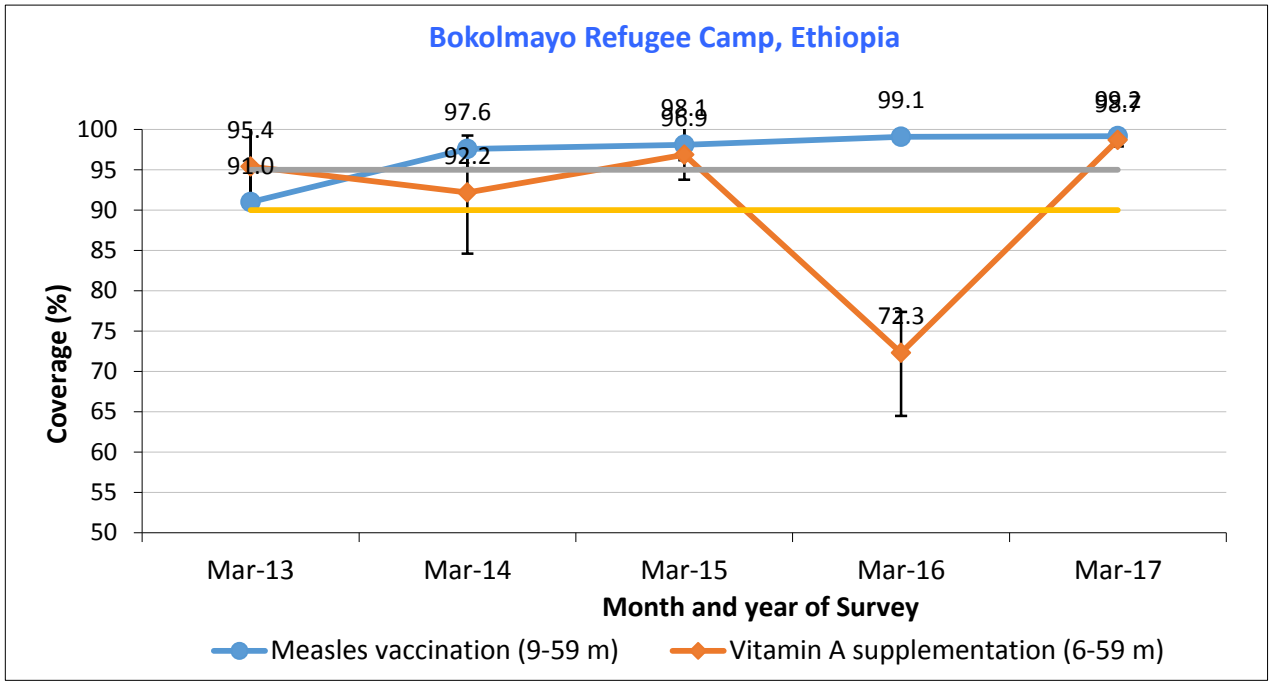


Table 34: The 88 days retrospective mortality rate

Mortality rate	% (95% CI)
CMR (total deaths/10,000 people / day):	0.22 (0.09-0.52)
U5MR (deaths in children under five/10,000 children under five / day):	0.51 (0.12-2.10)

Diarrhoea results in Bokolmanyo

Table 35: Period prevalence of diarrhoea

	Number/total	% (95% CI)
Diarrhoea in the last two weeks	2/394	0.5% (0.1-2.0%)

Anaemia results in Bokolmanyo

Table 36: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age

	Number/ total	Prevalence (%) and 95% CI
Total Anaemia (Hb<11.0 g/dL)	161/393	41.0% (36.1-46.0%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	91/393	23.2% (19.1-27.7%)
Moderate Anaemia (7.0-9.9 g/dL)	69/393	17.6% 14.0-21.8%)
Severe Anaemia (<7.0 g/dL)	1/393	0.3 (0.0-1.6%)
Mean Hb (g/dL) **(SD / 95% CI)** **[range]**		11.12 S.D = 1.3 (Min 5.7, Max 14.7)

Figure 9: Trends in anaemia categories in children 6-59 months from 2013-2017

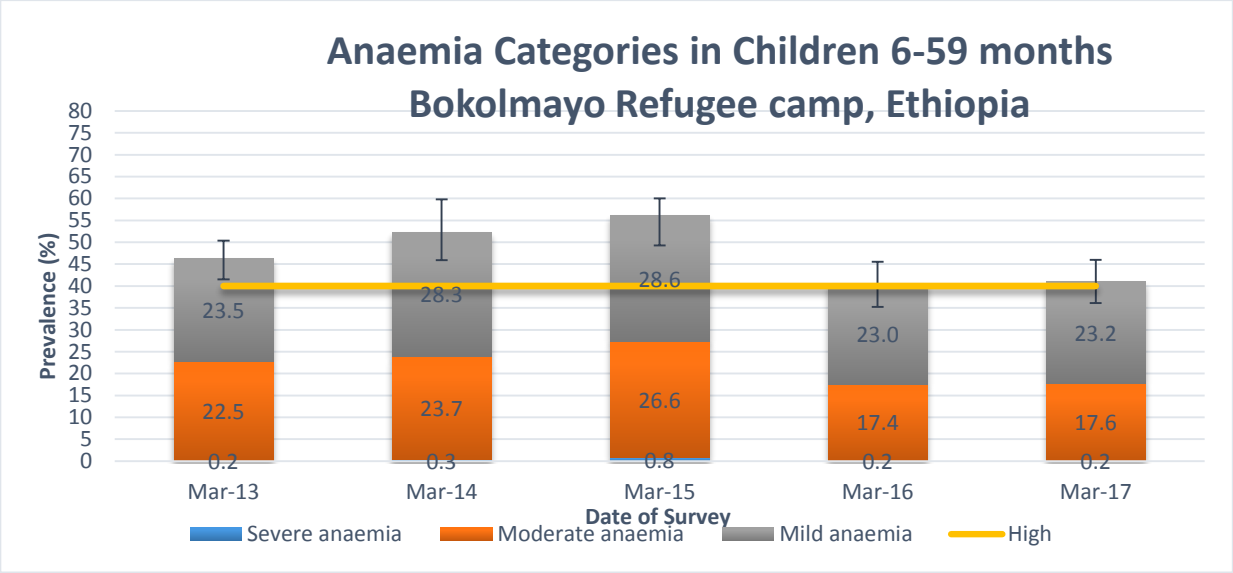


Table 37: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

	6-23 months n=114	24-35months n=103	36-59 months n=176
Total Anaemia (Hb<11.0 g/dL)	(64) 56.1% (46.5-65.4%)	(47) 45.6% (35.8-55.7%)	(50) 28.4% (21.9-35.7%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	(30) 26.3% (18.5-35.4%)	(25) 24.3% (16.4-33.7%)	(36) 20.5% (14.8-27.2%)
Moderate Anaemia (7.0-9.9 g/dL)	(33) 28.9% (20.8-36.2%)	(22) 21.4% (13.9-30.5%)	(14) 8.0% (4.4-13.0%)
Severe Anaemia (<7.0 g/dL)	(1) 0.9% (0.0-4.8%	0.0%	0.0%

Infant and Young Children Feeding (IYCF) Children 0-23 months in Bokolmanyo

Table 38: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/total	Prevalence (%) and 95% CI
Timely initiation of breastfeeding	(0-23 months)	149/167	89.2% (83.5-93.5%)
Exclusive breastfeeding under 6 months	(0-5 months)	44/50	88.0% (75.7-95.5%)

Continued breastfeeding at 1 year	(12-15 months)	19/22	86.4% (64.1-97.1%
Continued breastfeeding at 2 years	(20-23 months	9/19	47.4% (24.4-71.1%)
Introduction of solid, semi-solid or soft foods	(6-8 months)	13/19	68.4% (43.4-87.4%)
Consumption of iron-rich or iron-fortified foods	(6-23 months)	99/110	90.0% (82.8-94.9%)
Bottle feeding	(0-23 months)	3/115	2.6% (0.5-7.4%)

Table 39: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)
Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	21/167	12.6% (8.0-18.6%)

Table 40: CSB+ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF	54/115	47.0% (37.6-56.5%)

Table 41: CSB++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF++	90/115	78.3% (69.6-85.4%)

Women 15-49 years in Bokolmanyo

Table 42: Women physiological status and age

Physiological status	Number/total	% of sample
Non-pregnant	130/162	80.2% (73.3-86.1%)
Pregnant	32 /162	19.8% (13.9-26.7%
Mean age and (SD) [range]	28.41 years and SD = 9.13 [min 15 & max 48.0]	

Table 43: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia in non-pregnant women of reproductive age (15-49 years)	Number/total	% (95% CI)
Total Anaemia (<12.0 g/dL)	48/130	36.9% (28.6-45.8%)
Mild Anaemia (11.0-11.9 g/dL)	19/130	14.6% (9.0-21.9%)
Moderate Anaemia (8.0-10.9 g/dL)	28/130	21.5% (14.8-29.6%)
Severe Anaemia (<8.0 g/dL)	1/130	0.8% (0.0-4.2%)
Mean Hb (g/dL) (SD) and [range]	12.3g/dl SD =1.46	[Min 6.3, Max 15.2]

Figure 10: Trends in anaemia categories in women 15-49 years from 2013-2017

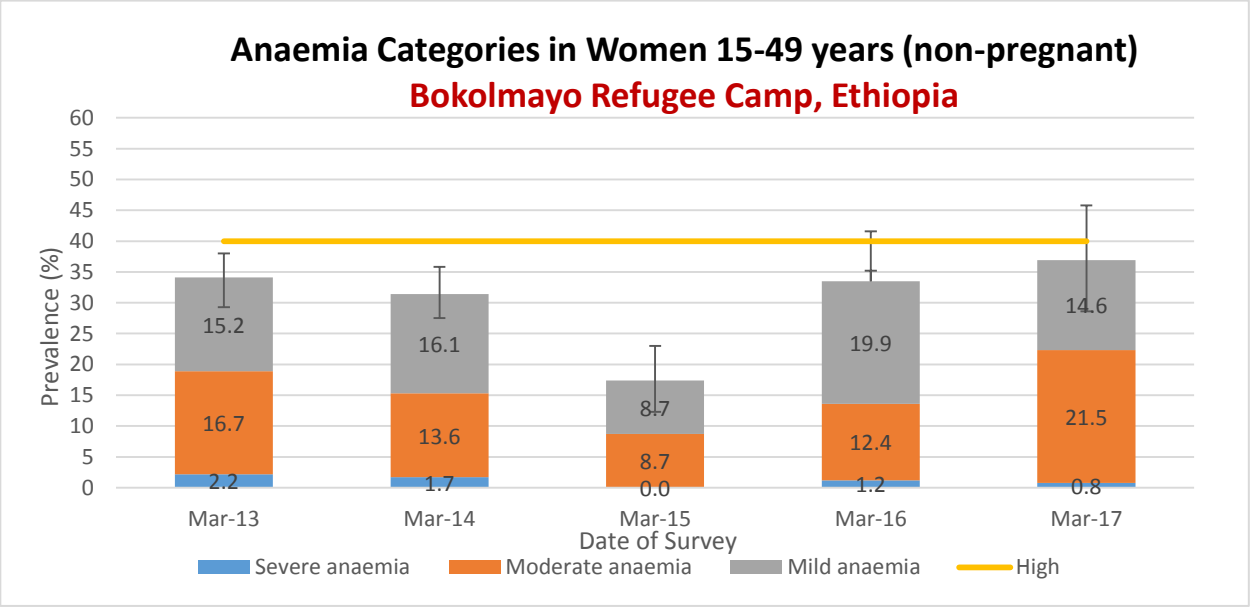


Table 44: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	31/32	96.9% (83.8-99.9%)
Currently receiving iron-folic acid pills	21/32	65.6% (46.8-81.4%)

Food security in Bokolmanyo

Table 45: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	161/170	94.7% (90.2-97.6%)

Table 46: Reported duration of general food ration

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration*
24.7143	82.3 SD = 6.4744

Table 47: Reported duration of general food ration 2

	Number/ total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	159/161	98.8% (95.6-99.8%)
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle 30 days	2/161	1.2% (0.2-4.4%)
>75% of the cycle 30 days	159/161	98.8% (95.6-99.8%)

Negative coping strategies results

Table 48: Coping strategies used by the surveyed population over the past month

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items *with or without interest*	120/170	70.6% (63.1-77.3%)
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	43/170	25.3% (19.0-32.5%)
Requested increased remittances or gifts as compared to normal	35/170	20.6% (14.8-27.5%)
Reduced the quantity and/or frequency of meals	98/170	57.6% (49.8-65.2%)
Begged	33/170	19.4% (13.8-26.2%)
Engaged in potentially risky or harmful activities	11/170	6.5% (3.3-11.3%)
Proportion of households reporting using none of the coping strategies over the past month	35/170	20.6% (14.8-27.5%)

***** The total will be over 100% as households may use several negative coping strategies.

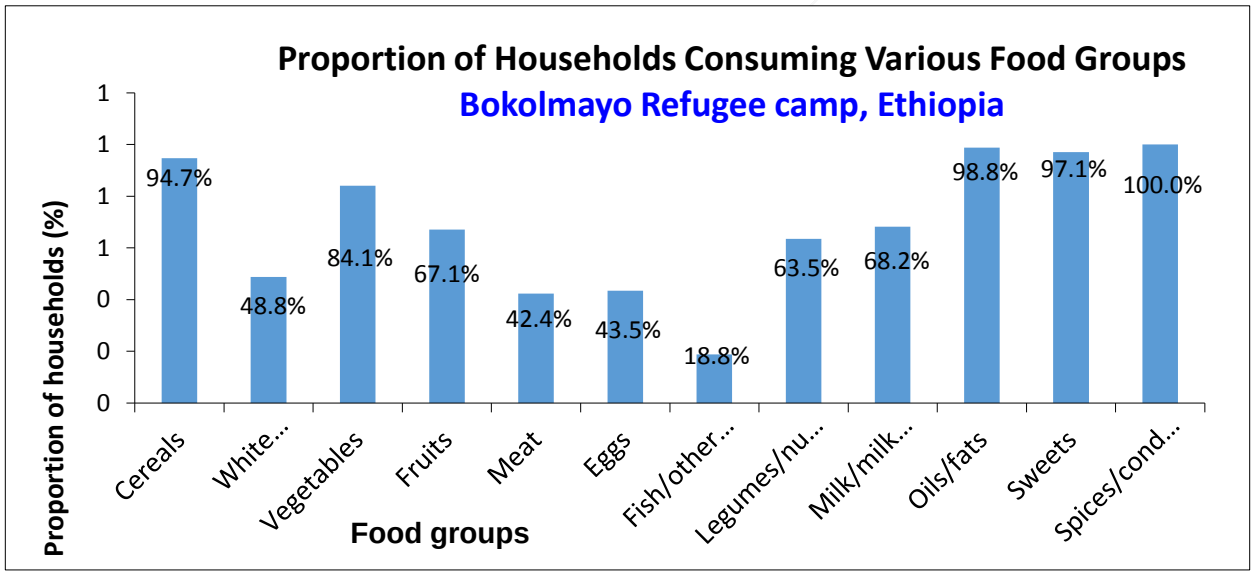
Table 49: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	8.2 SD 2.6

Table 50: Consumption of micronutrient rich foods by households

	Number/Total	% and 95% CI
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	26/170	15.3% (10.2-21.6%)
Proportion of households consuming either a plant or animal source of vitamin A	144/170	84.7% (78.4-89.8%)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	77/170	45.3% (37.7-53.1%)

Figure 11: Proportion of Households Consuming Various Food Groups



WASH in Bokolmanyo

Table 51: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	341/341	100.0%
Proportion of households that use a covered or narrow necked container for storing their drinking water	214/341	62.8% (57.4-67.9%)

Table 52: Water Quantity: Amount of litres of water used per person per day

Proportion of households that use:	Number/total	% (95% CI)
≥ 20 lpppd	192/341	56.3% (50.9-61.6%)
15 – <20 lpppd	65/341	19.1% (15.1-23.7%)
<15 lpppd	84/341	24.6% (20.2-29.6%)
Average consumption (Liters per person per day)	20.7LPPPD	

Table 53: Satisfaction with water supply

	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	299/341	87.7% (83.7-91.0%)

Figure 12: Proportion of households that say they are satisfied with the water supply

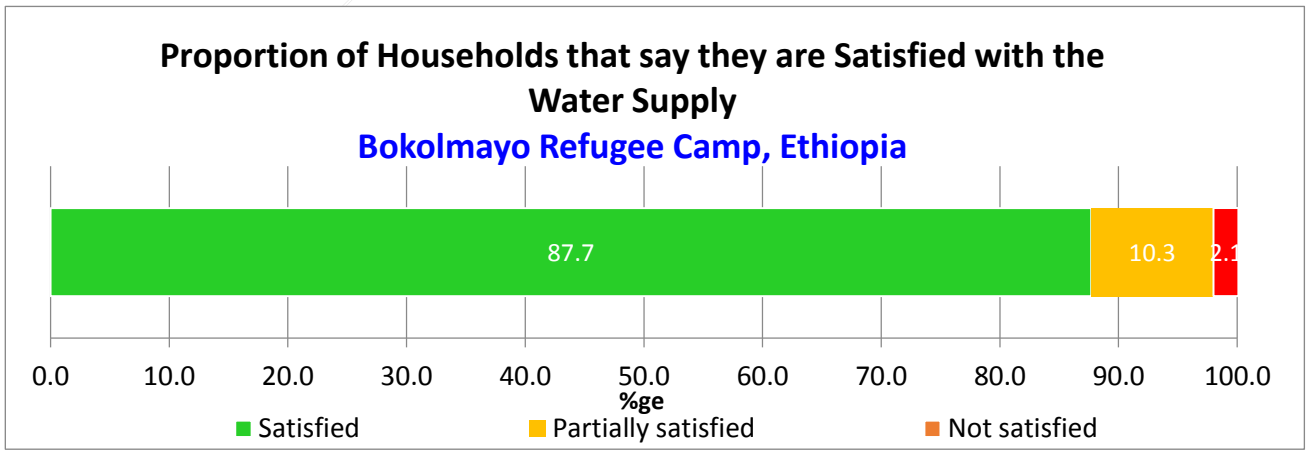


Figure 13: Reasons provided for Dissatisfaction of Water Supply

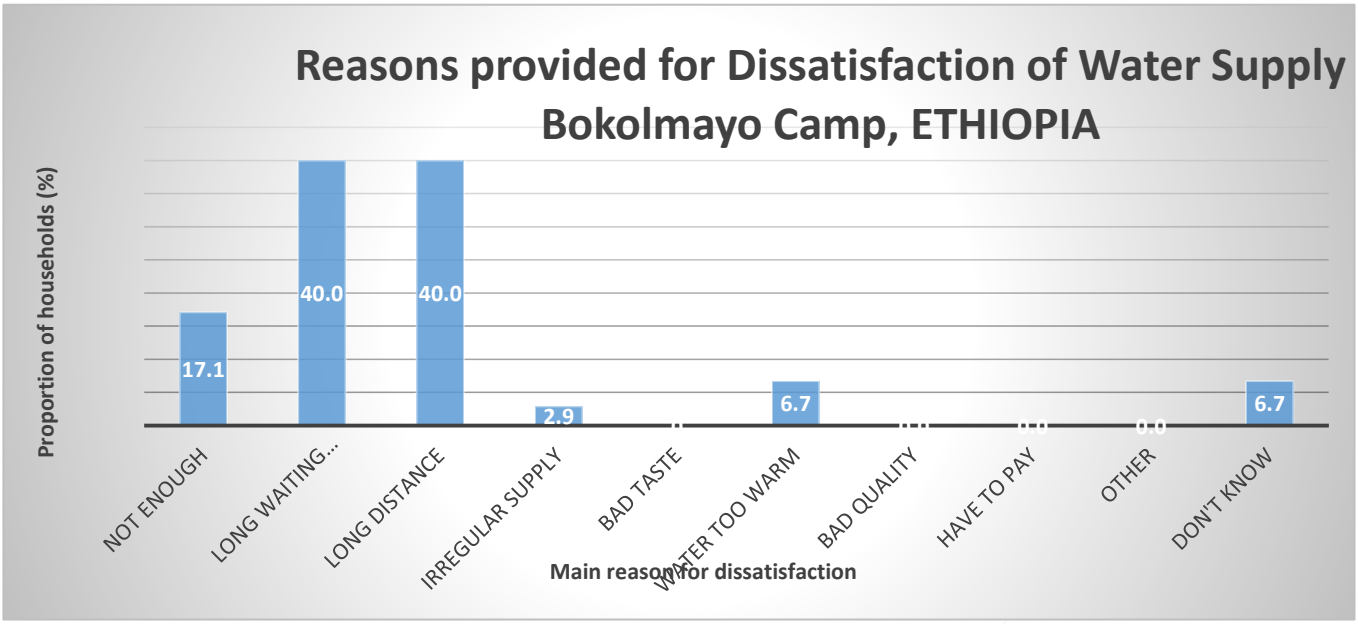
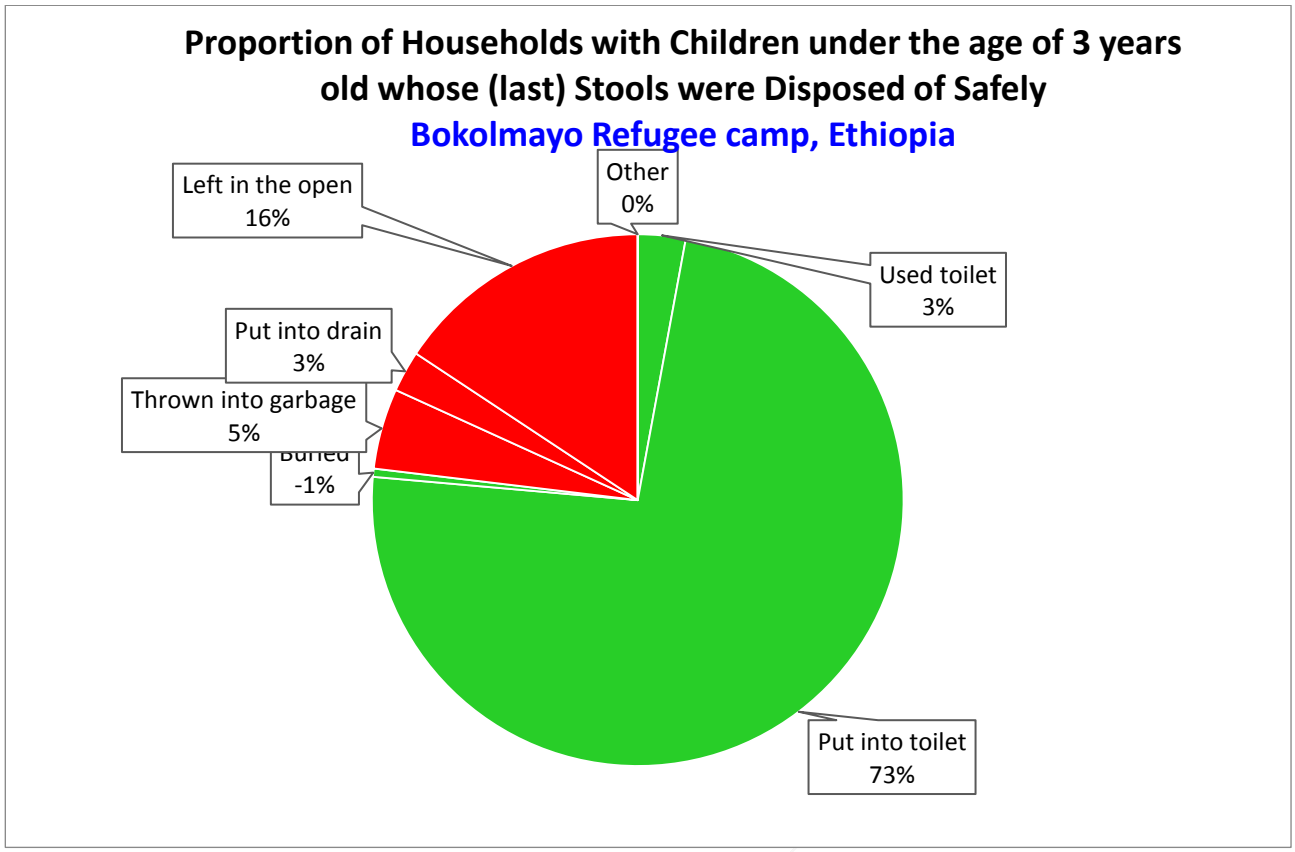


Table 54: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household)	37/340	10.9% (7.9-14.8%)
A shared family toilet (improved toilet facility, 2 households)	116/340	34.1% (29.1-39.5%)
A communal toilet (improved toilet facility, 3 households or more)	128/340	37.6% (32.5-43.1%)
An unimproved toilet (unimproved toilet facility or public toilet)	59/340	17.4% (13.6-21.9%)
Proportion of households with children under three years old that dispose of faeces safely	157/204	77.0% (70.6-82.6%)

Figure 14: Proportion of Households with Children under the age of 3 years old whose (last) Stools were Disposed of Safely


Proportion of Households with Children under the age of 3 years old whose (last) Stools were Disposed of Safely
Bokolmayo Refugee camp, Ethiopia
Left in the open 16%
Other 0%
Used toilet 3%
Put into drain 3%
Thrown into garbage 5%
-1%
Put into toilet 73%

4.2 RESULTS FROM MELKADIDA CAMP

Table 55: Demographic characteristics of the study population in Melkadida

Total HHs surveyed	314
Total population surveyed	2022
Total U5 surveyed	368
Average HH size	6.4
% of U5	18.2%

Table 56: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
AGE (mo)	**no.**	**%**	**no.**	**%**	**no.**	**%**	**Boy:girl**
6-17	33	52.4	30	47.6	63	19.5	1.1
18-29	49	50.0	49	50.0	98	30.3	1.0
30-41	47	67.1	23	32.9	70	21.7	2.0
42-53	42	64.6	23	35.4	65	20.1	1.8
54-59	14	51.9	13	48.1	27	8.4	1.1
Total	185	57.3	138	42.7	323	100.0	1.3

The prevalence of oedema is 0.0 %

Anthropometric results (based on WHO standards 2006) in Melkadida:

Table 57: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	95% C.I.		
	All n = 311	**Boys** n = 177	**Girls** n = 134
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(37) 11.9 % (8.8 - 16.0)	(25) 14.1 % (9.8 - 20.0)	(12) 9.0 % (5.2 - 15.0)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(26) 8.4 % (5.8 - 12.0)	(17) 9.6 % (6.1 - 14.8)	(9) 6.7 % (3.6 - 12.3)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(11) 3.5 % (2.0 - 6.2)	(8) 4.5 % (2.3 - 8.7)	(3) 2.2 % (0.8 - 6.4)

The prevalence of oedema is 0.0 %

Figure 15 : Distribution of weight-for-height z-scores (based on WHO Growth Standards) in Melkadida

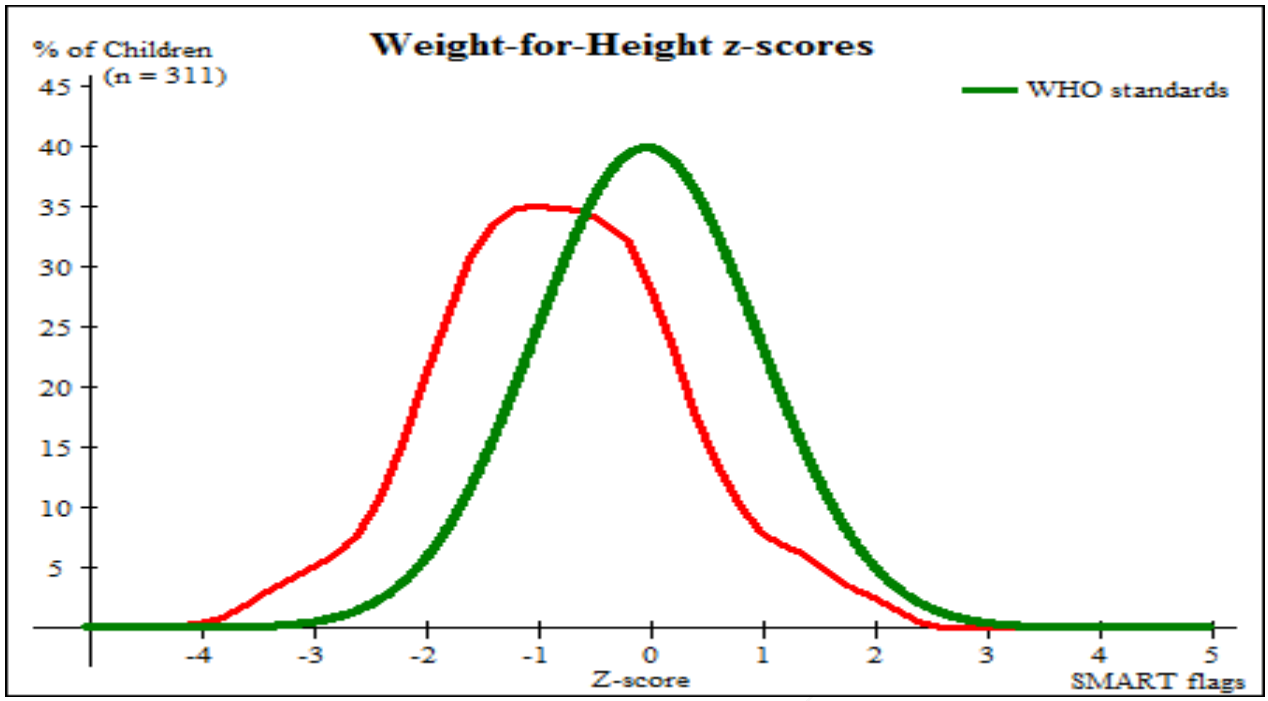


Figure 16: Trends in the prevalence of global and severe acute malnutrition based on WHO Growth Standards in children 6-59 months from 2013-2017 in Melkadida

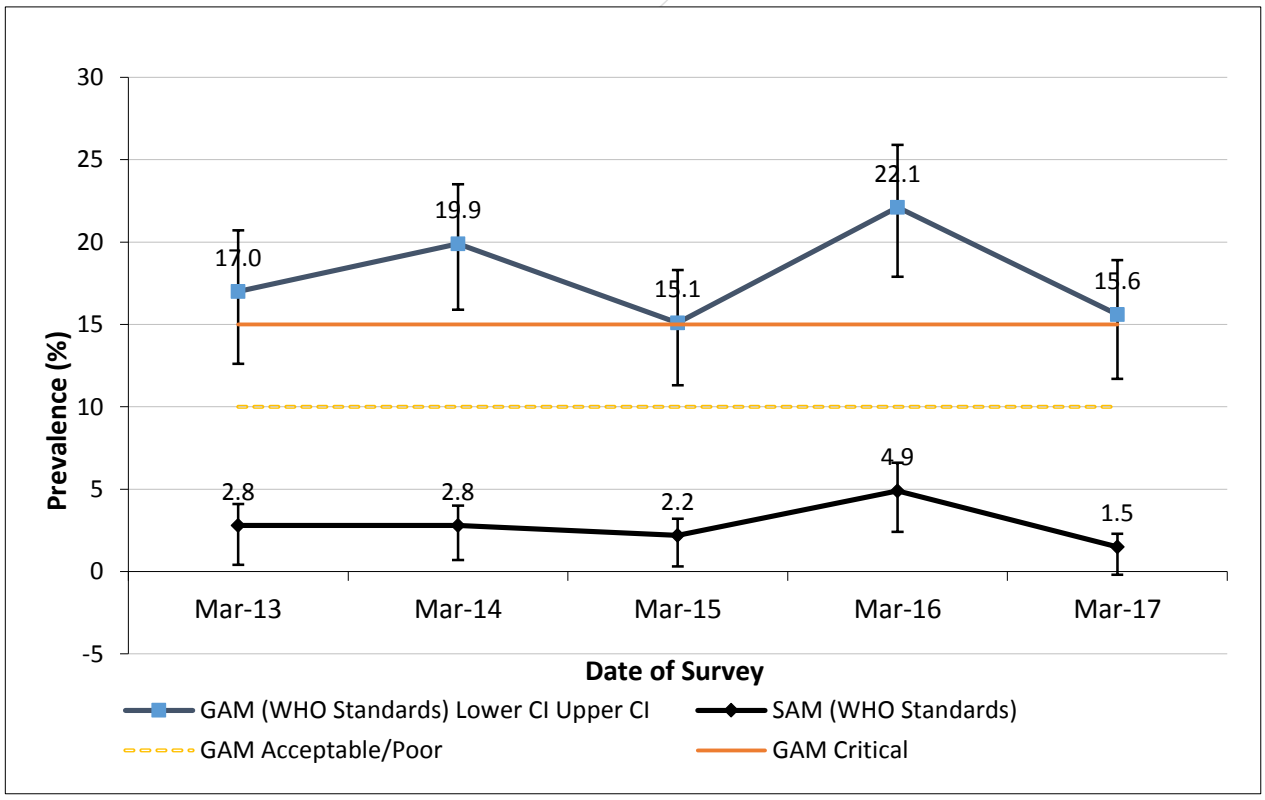


Table 58: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	59	1	1.7	5	8.5	53	89.8	0	0.0
18-29	94	6	6.4	9	9.6	79	84.0	0	0.0
30-41	67	0	0.0	4	6.0	63	94.0	0	0.0
42-53	64	3	4.7	6	9.4	55	85.9	0	0.0
54-59	27	0	0.0	2	7.4	25	92.6	0	0.0
Total	311	10	3.2	26	8.4	275	88.4	0	0.0

Figure 17: PREVALENCE OF ACUTE MALNUTRITION BY AGE, BASED ON WEIGHT-FOR-HEIGHT Z-SCORES AND/OR OEDEMA IN MELKADIDA

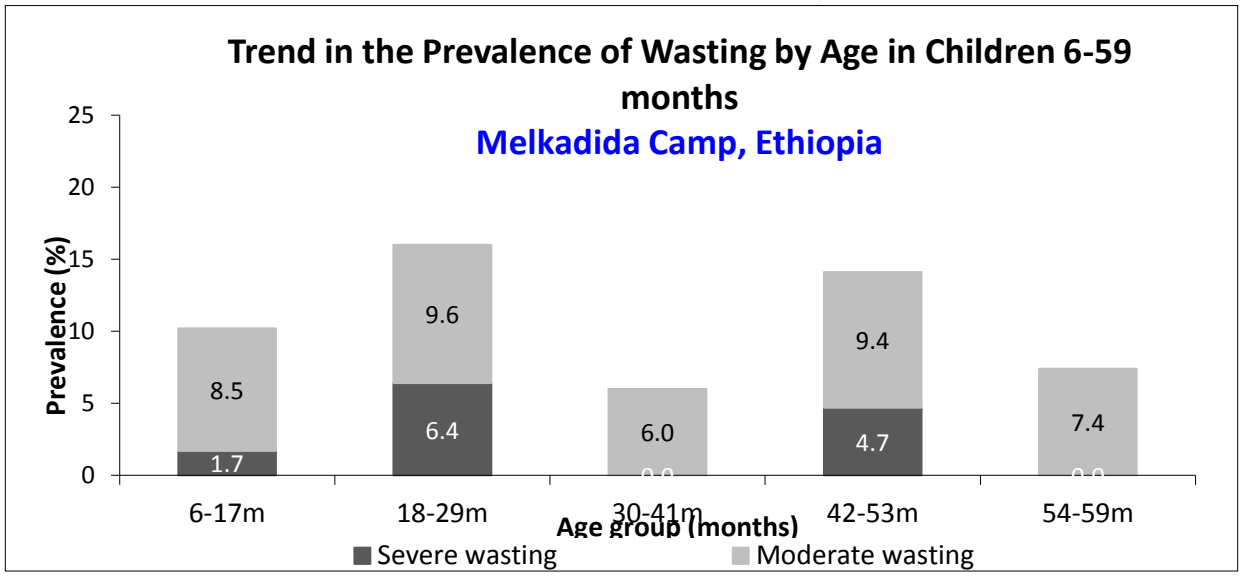


Table 59: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 16 (5.0 %)	Not severely malnourished No. 306 (95.0 %)

Table 60: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	95% C.I.		
	All n = 323	**Boys** n = 185	**Girls** n = 138
Prevalence of global malnutrition (< 125 mm and/or Oedema)	(8) 2.5 % (1.3 - 4.8%)	(5) 2.7 % (1.2 - 6.2%)	(3) 2.2 % (0.7 - 6.2%)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no Oedema)	(7) 2.2 % (1.1 - 4.4%)	(4) 2.2 % (0.8 - 5.4%)	(3) 2.2 % (0.7 - 6.2%)
Prevalence of severe malnutrition (< 115 mm and/or Oedema)	(1) 0.3 % (0.1 - 1.7%)	(1) 0.5 % (0.1 - 3.0%)	(0) 0.0 % (0.0 - 2.7%)

Table 61: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 mm and < 125 mm)		Normal (> = 125 mm)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	63	1	1.6	4	6.3	58	92.1	0	0.0
18-29	98	0	0.0	3	3.1	95	96.9	0	0.0
30-41	70	0	0.0	0	0.0	70	100.0	0	0.0
42-53	65	0	0.0	0	0.0	65	100.0	0	0.0
54-59	27	0	0.0	0	0.0	27	100.0	0	0.0
Total	323	1	0.3	7	2.2	315	97.5	0	0.0

Table 62: Prevalence of underweight based on weight-for-age z-scores by sex

	95% C.I.		
	All n = 318	**Boys** n = 182	**Girls** n = 136
Prevalence of underweight (<-2 z-score)	(90) 28.3 % (23.6 - 33.5)	(58) 31.9 % (25.5 - 39.0)	(32) 23.5 % (17.2 - 31.3)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(70) 22.0 % (17.8 - 26.9)	(40) 22.0 % (16.6 - 28.5)	(30) 22.1 % (15.9 - 29.7)
Prevalence of severe underweight (<-3 z-score)	(20) 6.3 % (4.1 - 9.5)	(18) 9.9 % (6.3 - 15.1)	(2) 1.5 % (0.4 - 5.2)

Table 63: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	62	3	4.8	11	17.7	48	77.4	0	0.0
18-29	95	9	9.5	18	18.9	68	71.6	0	0.0
30-41	69	2	2.9	20	29.0	47	68.1	0	0.0
42-53	65	6	9.2	13	20.0	46	70.8	0	0.0
54-59	27	0	0.0	8	29.6	19	70.4	0	0.0
Total	318	20	6.3	70	22.0	228	71.7	0	0.0

Table 64: Prevalence of stunting based on height-for-age z-scores and by sex

	95% C.I.		
	All n = 293	**Boys** n = 165	**Girls** n = 128
Prevalence of stunting (<-2 z-score)	(107) 36.5 % (31.2 - 42.2%)	(62) 37.6 % (30.5 - 45.2%)	(45) 35.2 % (27.4 - 43.8%)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(74) 25.3 % (20.6 - 30.5%)	(40) 24.2 % (18.3 - 31.3%)	(34) 26.6 % (19.7 - 34.8%)
Prevalence of severe stunting (<-3 z-score)	(33) 11.3 % (8.1 - 15.4%)	(22) 13.3 % (9.0 - 19.4%)	(11) 8.6 % (4.9 - 14.7%)

Figure 18: Distribution of height –for Age z-scores (based on WHO Growth Standards)

Figure 19: Trends in the prevalence of stunting in children 6-59 months in Melkadida

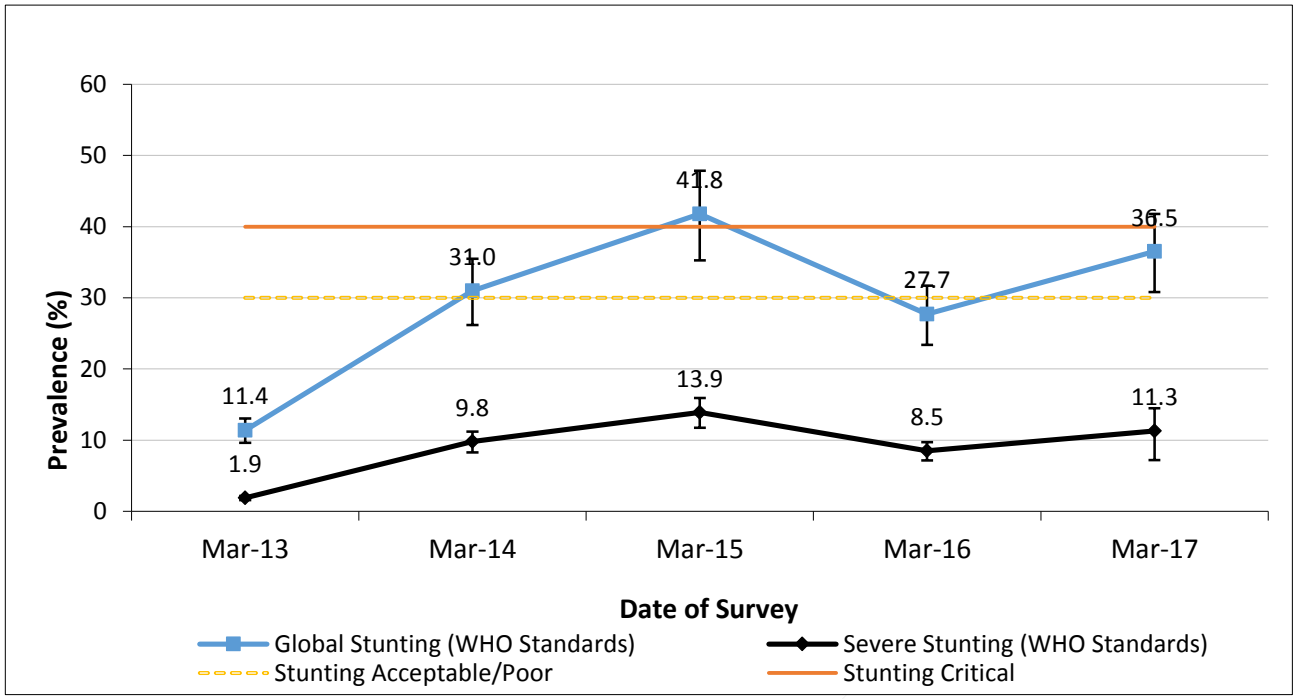


Table 65: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	55	1	1.8	13	23.6	41	74.5
18-29	86	17	19.8	19	22.1	50	58.1
30-41	62	7	11.3	20	32.3	35	56.5
42-53	63	8	12.7	10	15.9	45	71.4
54-59	27	0	0.0	12	44.4	15	55.6
Total	293	33	11.3	74	25.3	186	63.5

Table 66: 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	311	-0.80±1.07	1.00	1	11
Weight-for-Age	318	-1.32±1.18	1.00	0	5
Height-for-Age	293	-1.53±1.22	1.00	0	30

* contains for WHZ and WAZ the children with edema.

Table 67: The 81 days retrospective mortality rate

CMR (total deaths/10,000 people / day): 0.39 (0.17-0.91) (95% CI)
U5MR (deaths in children under five/10,000 children under five / day): 0.63 (0.14-2.78) (95% CI)

Feeding programme coverage results in Melkadida

Table 68: Programme coverage for acutely malnourished children

	Number/total	**% (95% CI)**
Supplementary feeding Programme coverage (SFP)	3/29	10.3% (2.2-27.7%)
Therapeutic feeding Programme coverage (TFP)	4/18	22.2% (6.4-47.6%)
Blanket feeding Programme coverage (6-35 months) (BFP)	150/160	93.8% (88.8-97.0%)
Wet feeding (36-59 months)	94/133	70.7% (62.2-78.2%)

Measles vaccination coverage results in Melkadida

Table 69: Measles vaccination coverage for children aged 9-59 months (or other context-specific target group) (n= 304)

	Measles (with card) n=268	**Measles (with card or confirmation from mother) n=299**
YES	88.2% (84.0-91.6%)	98.4% (96.0-99.4%)

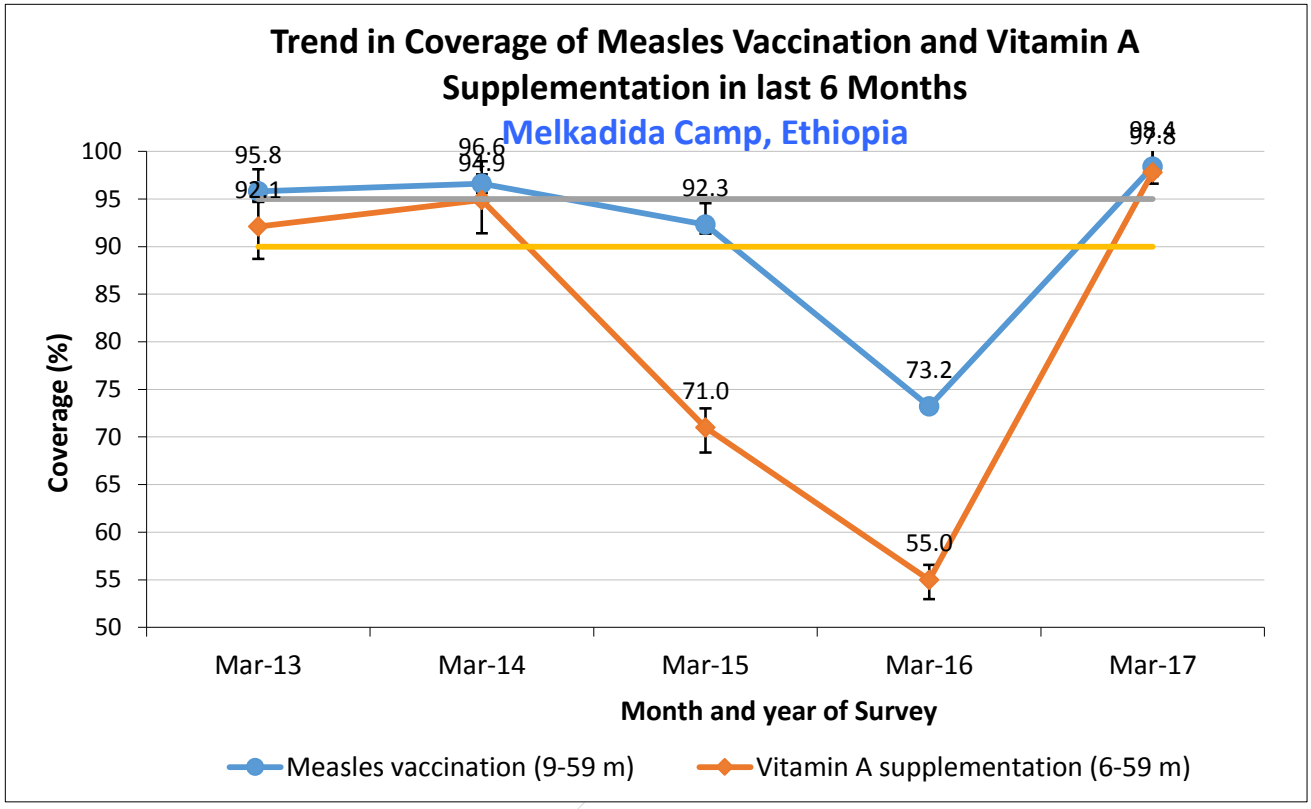
Vitamin A supplementation coverage results in Melkadida

Table 70: Vitamin A supplementation for children aged 6-59 months within past 6 months (or other context-specific target group) (n=323)

	Vitamin A capsule (with card) n=255	**Vitamin A capsule (with card or confirmation from mother) n=316**

YES	78.9% (74.1-83.3%)	97.8% (95.4-99.0%)

Figure 20: Trends in the coverage of measles vaccination and vitamin A supplementation IN LAST 6 MONTHS in children 6-59 months from 2013-2017



Diarrhoea results in Melkadida

Table 71: Period prevalence of diarrhoea

	Number/total	**% (95% CI)**
Diarrhoea in the last two weeks	0/323	0.0%

Anaemia results in Melkadida

Table 72: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age in Melkadida

	Number/ total	Prevalence (%) and 95% CI
Total Anaemia (Hb<11.0 g/dL)	128/320	40.0% (34.6-45.6%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	73/320	22.8% (18.4-16.9%)

Moderate Anaemia (7.0-9.9 g/dL)	54/320	16.9% (13.0-21.5%)
Severe Anaemia (<7.0 g/dL)	1/320	0.3% (0.0-2.0%)
Mean Hb (g/dL) [range]	11.06g/dl [3.0-13.9]	

Figure 21: Trends in anaemia categories in children 6-59 months from 2013-2017

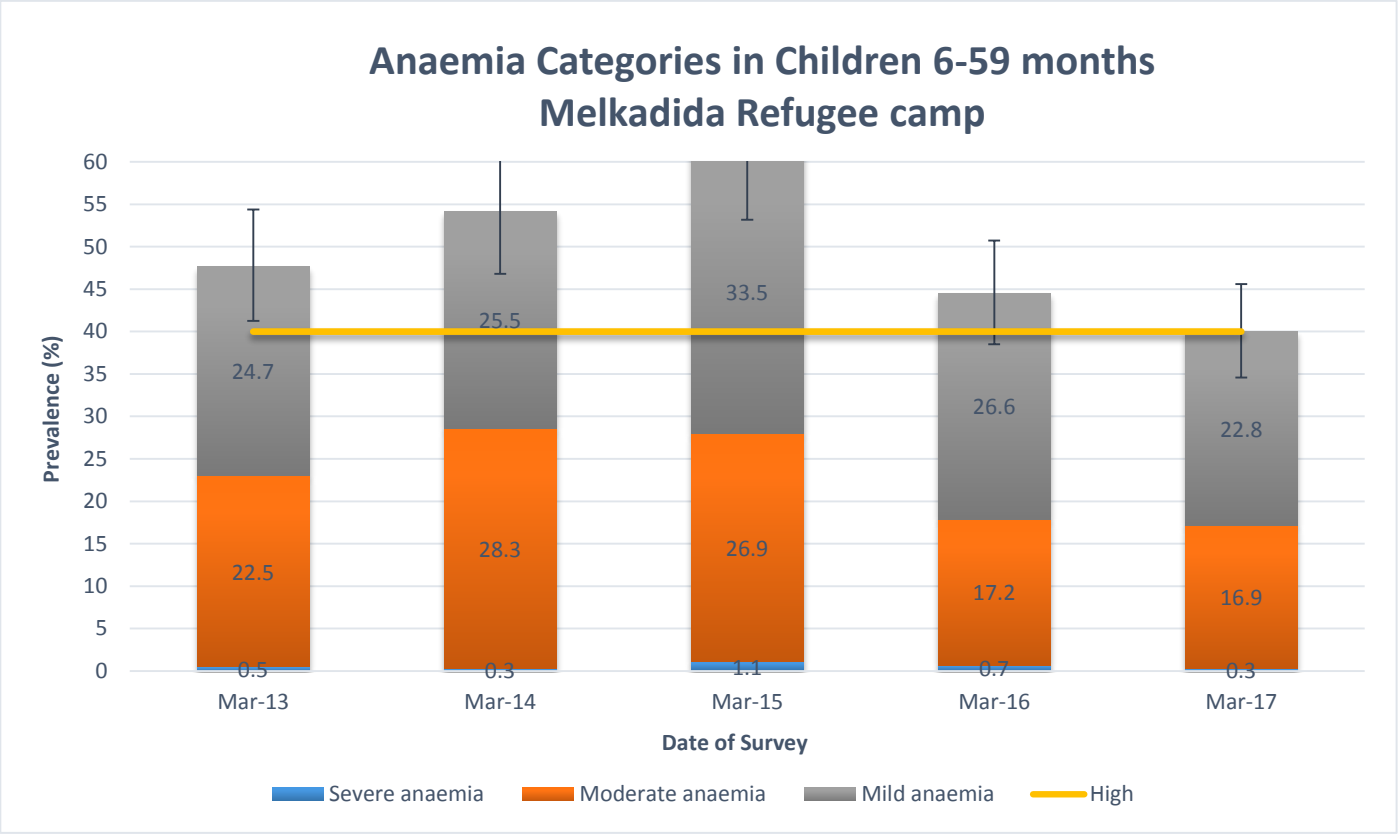


Table 73: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

	6-23 months (n=102)	24-35 months (n=85)	36-59 months (n=133)
Total Anaemia (Hb<11.0 g/dL)	(56) 54.9% (44.7-64.8%)	(38)44.7% (33.9-55.9%)	(34) 25.6% (18.4-33.8%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	(29) 28.4% (19.9-38.2%)	(21) 24.7% (16.0-35.3%)	(23) 17.3% (11.3-24.8%)
Moderate Anaemia (7.0-9.9 g/dL)	(27) 26.5% (18.2-36.1%)	(16) 18.8% (11.2-28.8%)	(11) 8.3% (4.2-14.3%)
Severe Anaemia (<7.0 g/dL)	0.0%	(1)1.2% (0.0-6.4%)	0.0%

Infant and Young Children Feeding (IYCF) Children 0-23 months

Table 74: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/total	Prevalence (%) & 95% CI
Timely initiation of breastfeeding	0-23 months	120/139	86.3% (79.5-91.6%)
Exclusive breastfeeding under 6 months	0-5 months	31/34	91.2% (76.3-98.1%)
Continued breastfeeding at 1 year	12-15 months	21/21	100.0%
Continued breastfeeding at 2 years	20-23 months	19/29	65.5% (45.7-82.1%)
Introduction of solid, semi-solid or soft foods	6-8 months	14/19	73.7% (48.8-90.9%)
Consumption of iron-rich or iron-fortified foods	6-23 months	100/101	99.0% (94.6-100.0%)
Bottle feeding	0-23 months	5/139	3.6% (1.2-8.2%)

Table 75: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)
Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	25/139	18.0% (12.0-25.4%)

Table 76: CSB+ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF	58/103	56.3% (46.2-66.1%)

Table 77: CSB++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF++	83/103	80.6% (71.6-87.7%)

Women 15-49 years in Melkadida

Table 78: Women physiological status and age

Physiological status	Number/total	% of sample
Non-pregnant	138/156	88.5% (82.4-93.0%)
Pregnant	18/156	11.5% (7.0-17.6%)
Mean age [range]	30.4 year [min 15, 47 max	

Table 79: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia in non-pregnant women of reproductive age (15-49 years)	Number/ Total	%	(95% CI)
Total Anaemia (<12.0 g/dL)	34/140	24.3%	17.4-32.2%
Mild Anaemia (11.0-11.9 g/dL)	24/140	17.1%	11.3-24.4%
Moderate Anaemia (8.0-10.9 g/dL)	10/140	7.1%	3.5-12.7%
Severe Anaemia (<8.0 g/dL)	0/140	0.0%	0.0
Mean Hb (g/dL) (SD / 95% CI) and [range]	12.6g/dl SD =1.17 & [min 8.9; 15.1 max]		

Figure 22: Trends in anaemia categories in women 15-49 years from 2013-2017

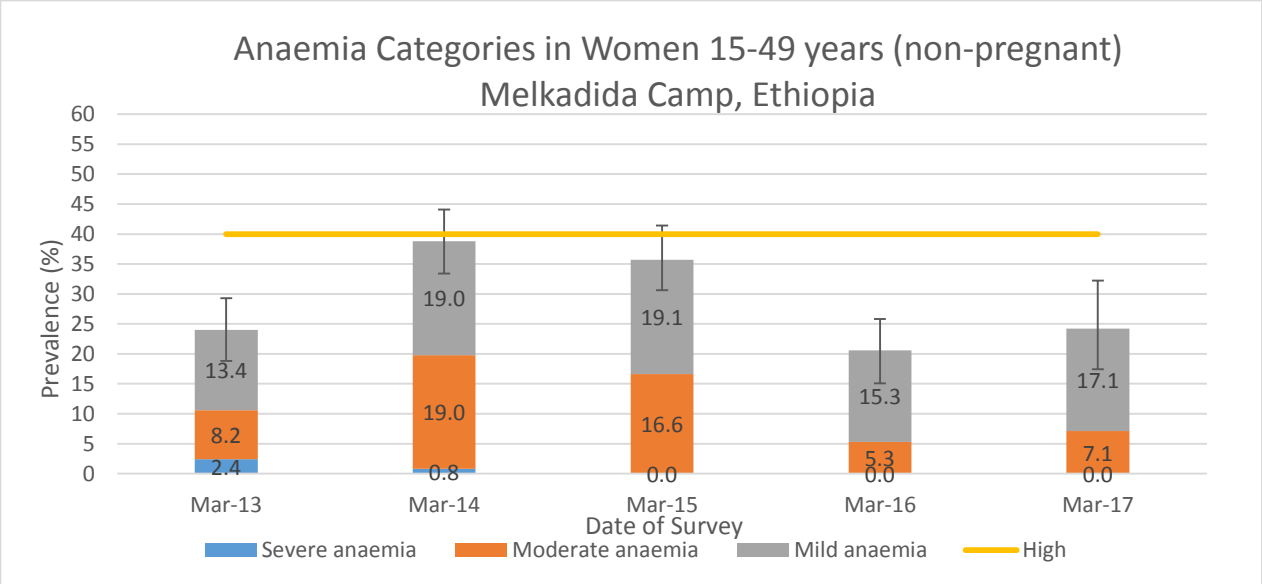


Table 80: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	18/18	100.0%
Currently receiving iron-folic acid pills	18/18	100.0%

Food security in Melkadida

Table 81: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	123/126	97.6% (93.2-99.5%)

Table 82: Reported duration of general food ration 1

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration
25.7 days out of 30 days SD = 6.75	85.8%

Table 83: Reported duration of general food ration 2

	Number/total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	120/123	97.6% (93.0-99.5%)
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle [30 DAYS]	3/123	2.4% (0.5-7.0%)
>75% of the cycle [30 DAYS]	120/123	97.6% (93.0-99.5%)

NEGATIVE HOUSEHOLD COPING STRATEGIES

Table 84: Coping strategies used by the surveyed population over the past month

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items with or without interest	94/126	74.6% (66.1-81.9%)
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	32/126	25.4% (18.1-33.9%)
Requested increased remittances or gifts as compared to normal	21 /126	16.7% (10.6-24.3%)
Reduced the quantity and/or frequency of meals and snacks	82/126	65.1% (56.1-73.4%)
Begged	32/126	25.4% (18.1-33.9%)
Engaged in potentially risky or harmful activities	4/125	3.2% (0.9-8.0%)
Proportion of households reporting using none of the coping strategies over the past month	21/125	16.8% (10.7-24.5%)

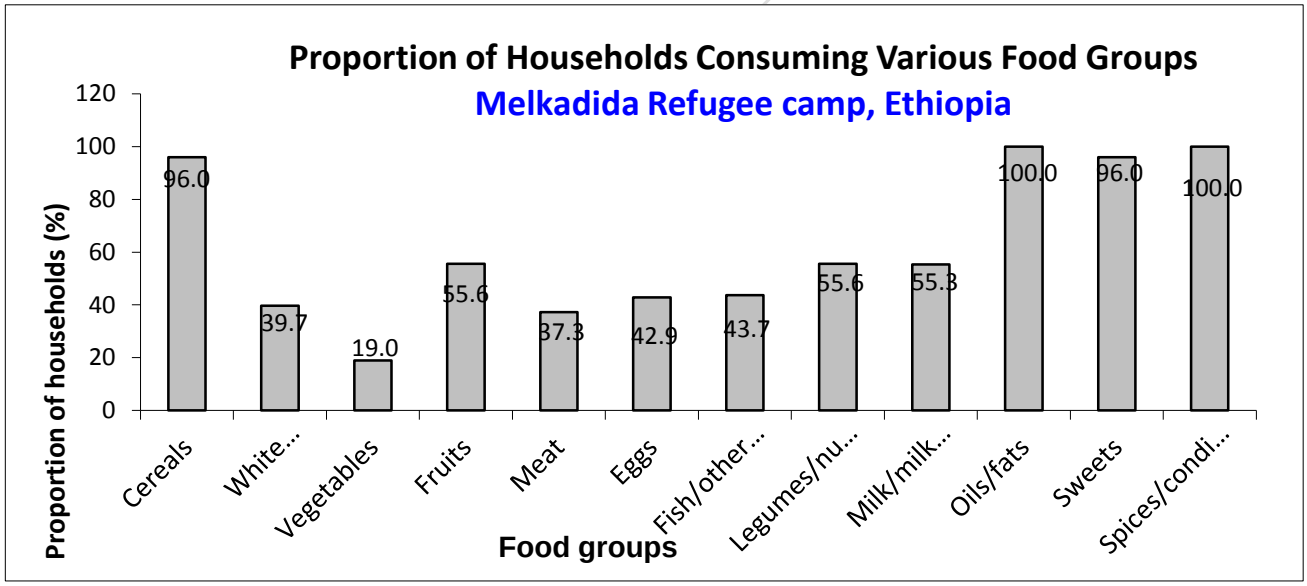
Table 85: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	7.7 SD = 2.9

Table 86: Consumption of micronutrient rich foods by households

	Number/total	% (95% CI)
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	33/126	26.2% (18.8-34.8%)
Proportion of households consuming either a plant or animal source of vitamin A	91/126	72.2% (63.5-79.8%)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	50/126	39.7% (31.1-48.8%)

Figure 23: Proportion of Households consuming Various Food Groups



WASH in Melkadida

Table 87: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	282/283	99.6% (98.0-100.0%)
Proportion of households that use a covered or narrow necked container for storing their drinking water	191/283	67.5% (61.7072.9%)

Table 88: Water Quantity: Amount of litres of water used per person per day

Proportion of households that use:	**Number/total**	**% (95% CI)**
≥ 20 lpppd	113/283	39.9% (34.2-45.9%)
15 – <20 lpppd	50/283	17.7% (13.4-22.6%)
<15 lpppd	120/283	42.4% (36.6-48.4%)
Add the average water usage in lpppd		18.5 Lpppd

Table 89: Satisfaction with water supply

	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	232/283	82.0% (77.0-86.3%)

Figure 24 : Proportion of households that say they are satisfied with the water supply

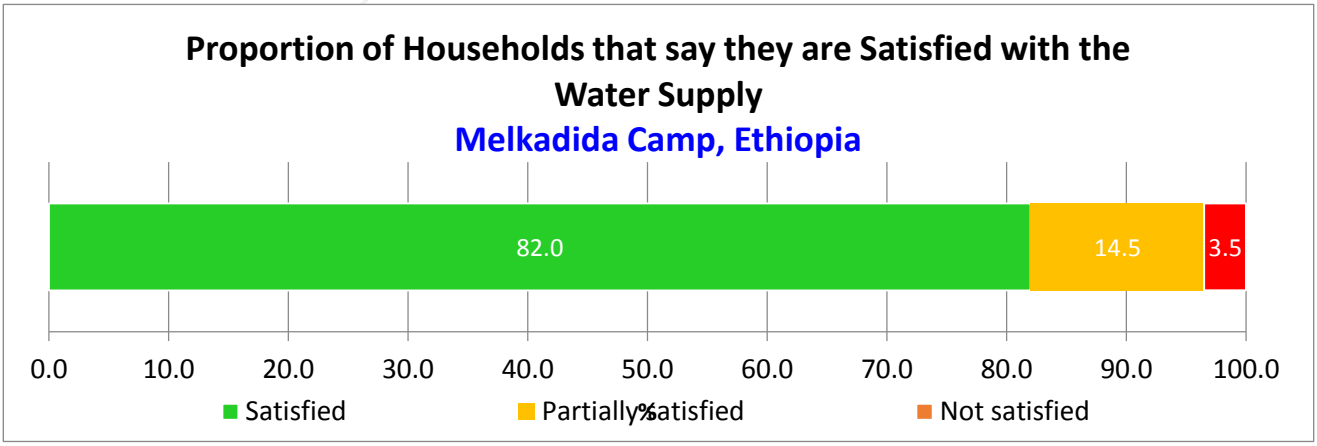


Figure 25: Reasons provided for dissatisfaction of water Supply

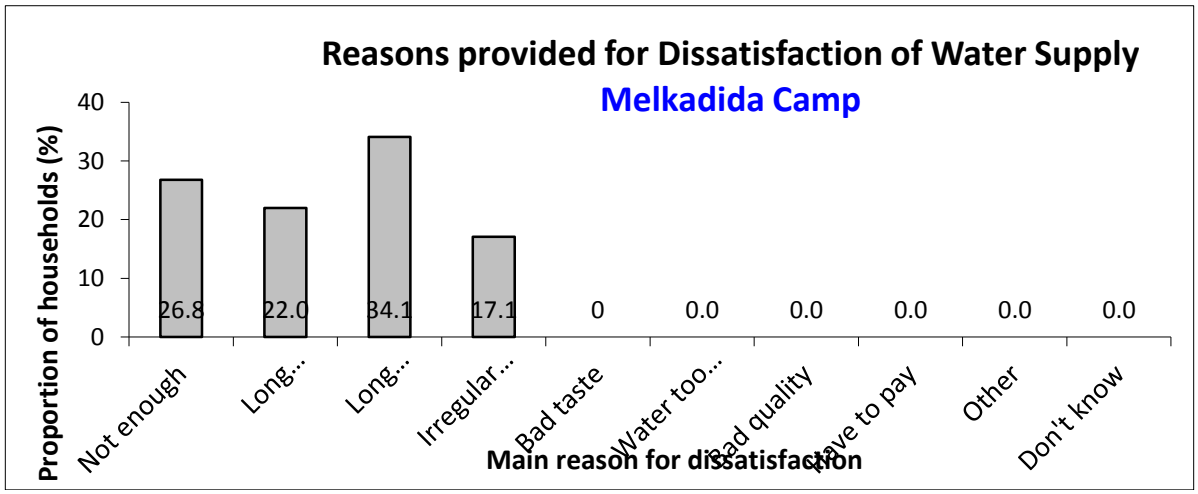
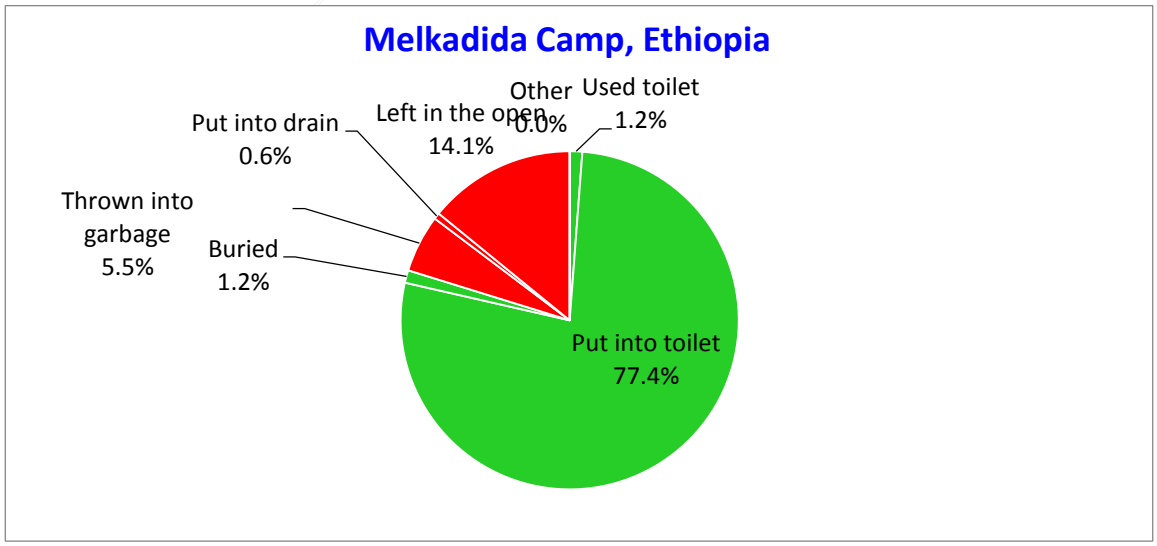


Table 90: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household)	12/282	4.3% (2.2-7.3%)
A shared family toilet (improved toilet facility, 2, households)	72/282	25.5% (20.5-31.0%)
A communal toilet (improved toilet facility, households or more)	153/282	54.3% (48.2-60.2%)
An unimproved toilet (unimproved toilet facility or public toilet)	45/282	16.0% (11.9-20.8%)
Proportion of households with children under three years old that dispose of faeces safely	130/163	79.8% (72.8-85.6%)

Figure 26:Proportion of household with children under the age 3 years old



4.3 RESULTS FROM KOBE CAMP

Table 91: Demographic characteristics of the study population in Kobe

Total HHs surveyed	360
Total population surveyed	2092
Total U5 surveyed	468
Average HH size	5.8
% of U5	22.4%

Table 92: Distribution of age and sex of sample

AGE (mo)	Boys		Girls		Total		Ratio
	no.	%	no.	%	no.	%	Boy:girl
6-17	52	46.4	60	53.6	112	26.9	0.9
18-29	48	50.0	48	50.0	96	23.1	1.0
30-41	51	53.7	44	46.3	95	22.8	1.2
42-53	42	49.4	43	50.6	85	20.4	1.0
54-59	14	50.0	14	50.0	28	6.7	1.0
Total	207	49.8	209	50.2	416	100.0	1.0

Anthropometric results (based on WHO standards 2006) in Kobe:

Table 93: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	95% C.I.		
	All n = 398	Boys n = 197	Girls n = 201
Prevalence of global malnutrition (<-2 z-score and/or Oedema)	(62) 15.6 % (12.3 - 19.5)	(34) 17.3 % (12.6 - 23.1)	(28) 13.9 % (9.8 - 19.4)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no Oedema)	(56) 14.1 % (11.0 - 17.8)	(32) 16.2 % (11.7 - 22.0)	(24) 11.9 % (8.2 - 17.2)
Prevalence of severe malnutrition (<-3 z-score and/or Oedema)	(6) 1.5 % (0.7 - 3.2)	(2) 1.0 % (0.3 - 3.6)	(4) 2.0 % (0.8 - 5.0)

The prevalence of oedema is 0.0 %

Figure 27 Distribution of weight-for-height z-scores (based on WHO Growth Standards) in Kobe camp

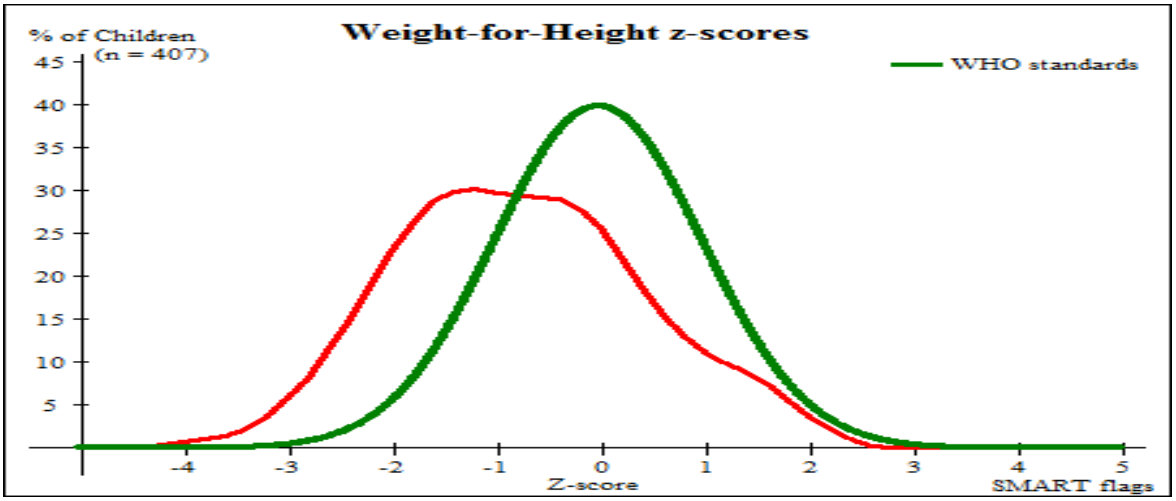


Figure 28 : Trends in the prevalence of global and severe acute malnutrition based on WHO Growth Standards in children 6-59 months from 2013-2017 in kobe

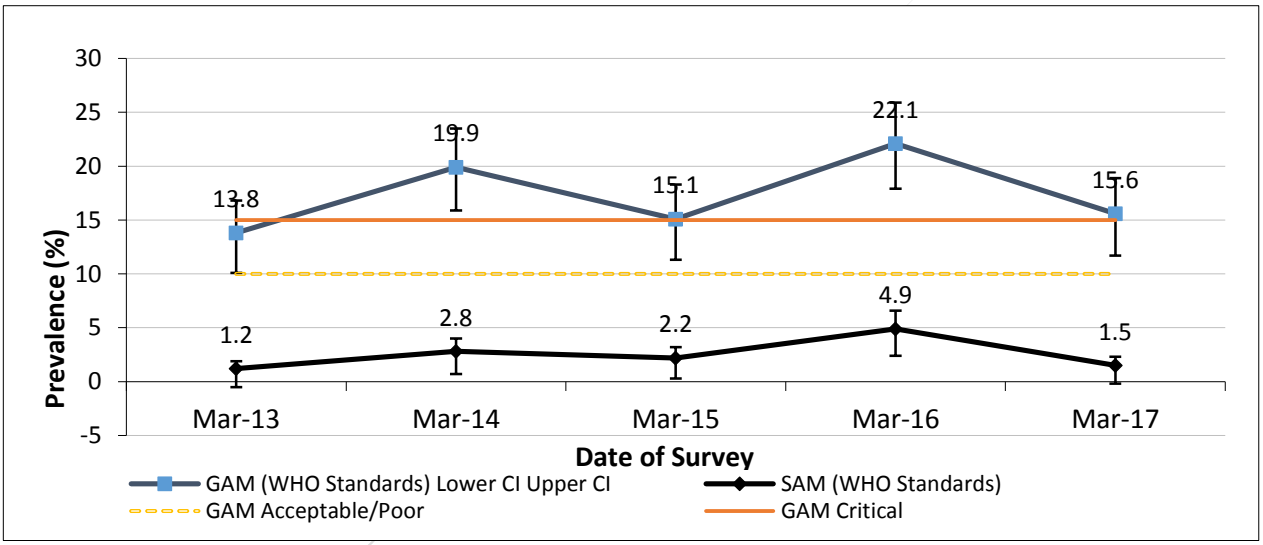


Table 94: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	109	1	0.9	14	12.8	94	86.2	0	0.0
18-29	94	2	2.1	13	13.8	79	84.0	0	0.0
30-41	92	2	2.2	14	15.2	76	82.6	0	0.0
42-53	84	1	1.2	9	10.7	74	88.1	0	0.0
54-59	28	0	0.0	7	25.0	21	75.0	0	0.0
Total	407	6	1.5	57	14.0	344	84.5	0	0.0

Table 95: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 9 (2.2 %)	Not severely malnourished No. 407 (97.8 %)

Table 96: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	95% C.I.		
	All n = 407	**Boys** n = 200	**Girls** n = 207
Prevalence of global malnutrition (< 125 mm and/or Oedema)	(23) 5.7 % (3.8 - 8.3)	(7) 3.5 % (1.7 - 7.0)	(16) 7.7 % (4.8 - 12.2)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no Oedema)	(16) 3.9 % (2.4 - 6.3)	(7) 3.5 % (1.7 - 7.0)	(9) 4.3 % (2.3 - 8.1)
Prevalence of severe malnutrition (< 115 mm and/or Oedema)	(7) 1.7 % (0.8 - 3.5)	(0) 0.0 % (0.0 - 1.9)	(7) 3.4 % (1.6 - 6.8)

Table 97: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	**Total no.**	**Severe wasting (< 115 mm)**		**Moderate wasting (>= 115 mm and < 125 mm)**		**Normal (> = 125 mm)**		**Oedema**	
		No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	112	3	2.7	11	9.8	98	87.5	0	0.0
18-29	96	3	3.1	3	3.1	90	93.8	0	0.0
30-41	95	0	0.0	1	1.1	94	98.9	0	0.0
42-53	85	1	1.2	1	1.2	83	97.6	0	0.0
54-59	28	0	0.0	0	0.0	28	100.0	0	0.0
Total	416	7	1.7	16	3.8	393	94.5	0	0.0

Table 98: Prevalence of underweight based on weight-for-age z-scores by sex

	95% C.I.		
	All n = 410	**Boys** n = 204	**Girls** n = 206
Prevalence of underweight (<-2 z-score)	(108) 26.3 % (22.3 - 30.8)	(55) 27.0 % (21.3 - 33.4)	(53) 25.7 % (20.2 - 32.1)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(80) 19.5 % (16.0 - 23.6)	(42) 20.6 % (15.6 - 26.7)	(38) 18.4 % (13.7 - 24.3)
Prevalence of severe underweight (<-3 z-score)	(28) 6.8 % (4.8 - 9.7)	(13) 6.4 % (3.8 - 10.6)	(15) 7.3 % (4.5 - 11.7)

Table 99: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	**Total no.**	**Severe underweight (<-3 z-score)**		**Moderate underweight (>= -3 and <-2 z-score)**		**Normal (> = -2 z score)**		**Oedema**	
		No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	110	8	7.3	19	17.3	83	75.5	0	0.0
18-29	93	8	8.6	18	19.4	67	72.0	0	0.0
30-41	94	5	5.3	20	21.3	69	73.4	0	0.0
42-53	85	5	5.9	19	22.4	61	71.8	0	0.0
54-59	28	2	7.1	4	14.3	22	78.6	0	0.0
Total	410	28	6.8	80	19.5	302	73.7	0	0.0

Table 100: Prevalence of stunting based on height-for-age z-scores and by sex

	95% C.I.		
	All n = 388	**Boys** n = 189	**Girls** n = 199
Prevalence of stunting (<-2 z-score)	(122) 31.4 % (27.0 - 36.2)	(57) 30.2 % (24.1 - 37.0)	(65) 32.7 % (26.5 - 39.5)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(82) 21.1 % (17.4 - 25.5)	(41) 21.7 % (16.4 - 28.1)	(41) 20.6 % (15.6 - 26.8)
Prevalence of severe stunting (<-3 z-score)	(40) 10.3 % (7.7 - 13.7)	(16) 8.5 % (5.3 - 13.3)	(24) 12.1 % (8.2 - 17.3)

Figure 29 : Distribution of height-for-age z-scores (based on WHO Growth Standards) in Kobe camp

Figure 30 : Trends in the prevalence of stunting in children 6-59 months in Kobe camp

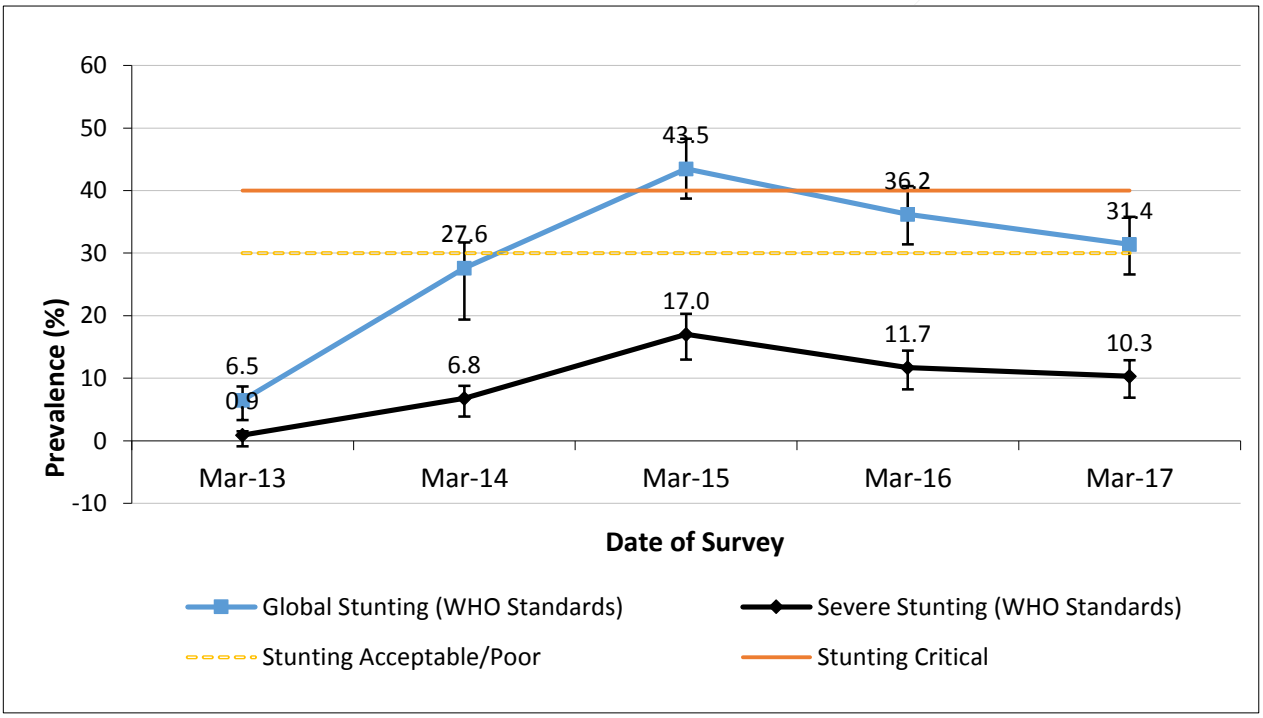


Table 101: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	108	6	5.6	23	21.3	79	73.1
18-29	90	15	16.7	24	26.7	51	56.7
30-41	87	11	12.6	20	23.0	56	64.4
42-53	83	7	8.4	15	18.1	61	73.5
54-59	28	1	3.6	5	17.9	22	78.6
Total	396	40	10.1	87	22.0	269	67.9

Table 102: 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	407	-0.77±1.19	1.00	0	9
Weight-for-Age	410	-1.31±1.08	1.00	0	6
Height-for-Age	396	-1.49±1.18	1.00	0	20

* contains for WHZ and WAZ the children with oedema.

Table 103: The 74 days retrospective mortality rate

CMR (total deaths/10,000 people / day): 0.27 (0.11-0.64) (95% CI)
U5MR (deaths in children <5 /10,000 children under five / day): 0.48 (0.11-2.07) (95% CI)

Feeding programme coverage results in Kobe

Table 104: Programme coverage for acutely malnourished children

	Number/total	% (95% CI)
Supplementary feeding programme coverage	12/74	16.2% (8.7-26.6)
Therapeutic feeding programme coverage	7/23	30.4% (13.2-52.9)
Blanket supplementary feeding program (BSFP) 6-35 months	186/226	82.3% (76.7-87.0)
Wet Feeding for children 36 -59 months of age	134/169	79.3% (72.4-85.1)

Measles vaccination coverage results in Kobe

Table 105: Measles vaccination coverage for children aged 9-59 months (or other context-specific target group) (n= 389)

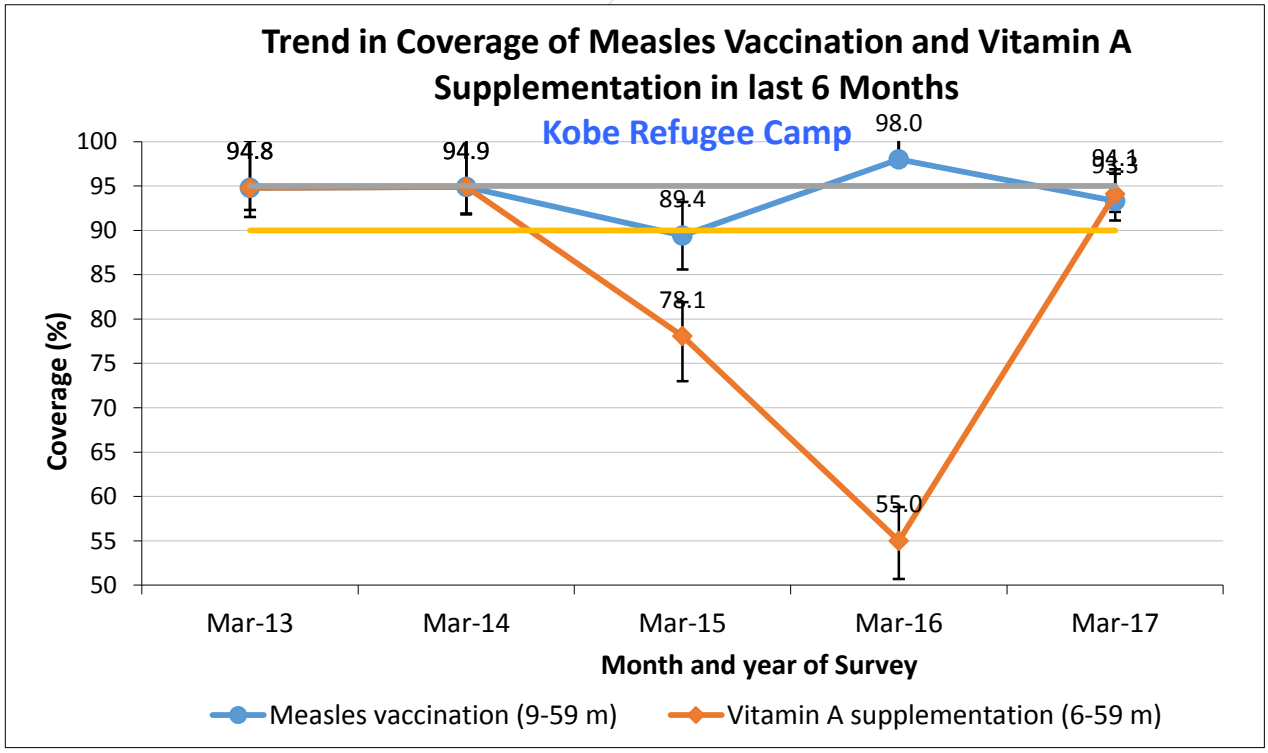
	Measles (with card) n=282	Measles (with card or confirmation from mother) n=363
YES	72.7% (67.9-77.0%)	93.3% (90.2-95.5%)

Vitamin A supplementation coverage results in Kobe

Table 106: Vitamin A supplementation for children aged 6-59 months within past 6 months (or other context-specific target group) (n=408)

	Vitamin A capsule (with card) n=257	Vitamin A capsule (with card or confirmation from mother) n=384
YES	63.1% (58.2-67.8%)	94.1% (91.3-96.1%)

FIGURE 31: TRENDS IN THE COVERAGE OF MEASLES VACCINATION AND VITAMIN A SUPPLEMENTATION IN LAST 6 MONTHS IN CHILDREN 6-59 MONTHS FROM 2013-2017



Diarrhoea results in Kobe

Table 107: Period prevalence of diarrhoea

	Number/total	% (95% CI)
Diarrhoea in the last two weeks	6/406	1.5% (0.6-3.4%)

Anaemia results in Kobe

Table 108: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age in Kobe

	All (95% CI) n =405
Total Anaemia (Hb<11.0 g/dL)	(n=154) 38.0% (33.3-43.0%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	(n=90) 22.2% (18.3-26.7%)
Moderate Anaemia (7.0-9.9 g/dL)	(n=64) 15.8% (12.5-19.8%)
Severe Anaemia (<7.0 g/dL)	0.0%
Mean Hb (g/dL) **(SD / 95% CI) / [range]**	11.15gm/dl SD =1.26 and [min 7.3-Max 15.0]

Figure 32 : Trends in anaemia categories in children 6-59 months from 2013-2017

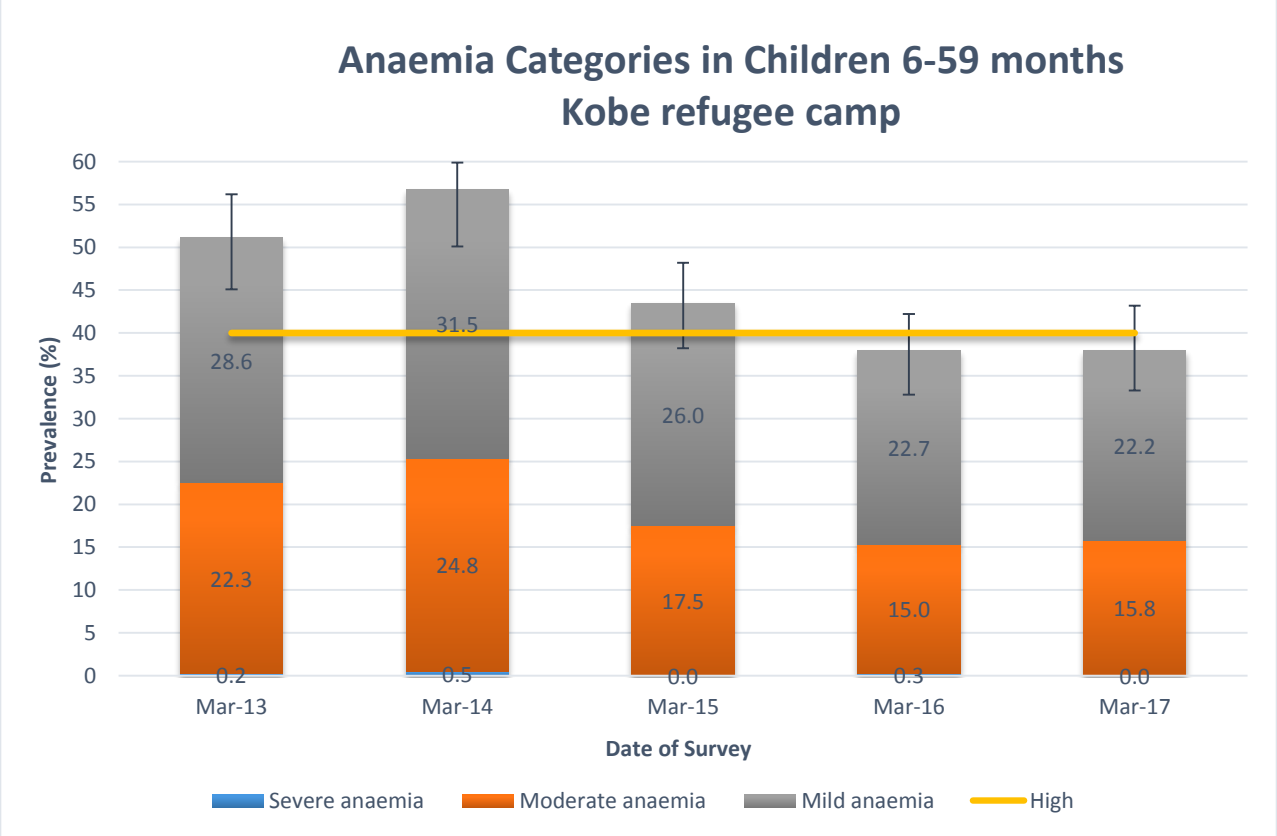


Table 109: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

	6-23 months (n=142)	24-35 months (n=92)	36-59 months (n=171)
Total Anaemia (Hb<11.0 g/dL)	(79) 55.6% (47.1-64.0%)	(39) 42.4% (32.1-53.1%)	(36) 21.1% (15.2-27.9%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	(41) 28.9% (21.6-37.1%)	(21) 22.8% (14.7-32.8%)	(28) 16.4% (11.2-22.8%)
Moderate Anaemia (7.0-9.9 g/dL)	(38) 26.8% (19.7-34.8%)	(18) 19.6% (12.0-29.1%)	(8) 4.7% (2.0-9.0%)
Severe Anaemia (<7.0 g/dL)	0.0%	0.0%	0.0%

Infant and Young Children Feeding (IYCF) Children 0-23 months in Kobe

Table 110: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/ total	Prevalence (%) and 95% CI
Timely initiation of breastfeeding	0-23 months	154/187	82.4% (76.1-87.5%)
Exclusive breastfeeding under 6 months	0-5 months	42/43	97.7% (87.7-99.9%)
Continued breastfeeding at 1 year	12-15 months	39/46	84.8% (71.1-93.7%)
Continued breastfeeding at 2 years	20-23 months	14/21	66.7% (43.0-85.4%)
Introduction of solid, semi-solid or soft foods	6-8 months	15/19	78.9% (54.4-93.9%)
Consumption of iron-rich or iron-fortified foods	6-23 months	133/137	97.1% (92.7-99.2%)
Bottle feeding	0-23 months	16/187	8.6% (5.0-13.5%)

Table 111: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)
Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	154/183	84.2% (78.0-89.1%)

Fortified blended foods

Table 112: CSB intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive CSB	66/143	46.2% (37.8-54.7%)

Table 113: CSB ++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive CSB++	112/143	78.3% (70.7-84.8%)

Women 15-49 years in Kobe

Table 114: Women physiological status and age

Physiological status	Number/total	% of sample
Non-pregnant	139/163	85.3% (78.9-90.3%)
Pregnant	24/163	14.7% (9.7-21.1%)
Mean age (range)	29.3 Yrs [min 15, and max 46 yrs]	

Table 115: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia in non-pregnant women of reproductive age (15-49 years)	Number/total	% (95% CI)
Total Anaemia (<12.0 g/dL)	39/139	28.1% (20.8-36.3%)
Mild Anaemia (11.0-11.9 g/dL)	16/139	11.5% (6.7-18.0%)
Moderate Anaemia (8.0-10.9 g/dL)	21/139	15.1% (9.6-22.2%)
Severe Anaemia (<8.0 g/dL)	2/139	1.4% (0.2-5.1%)
Mean Hb (g/dL) and (SD) [range]	12.36 g/dl and SD = 1.45 [7.1 Min and 15.7 Max]	

Figure 33 : Trends in anaemia categories in women 15-49 years from 2011-2016 in kobe

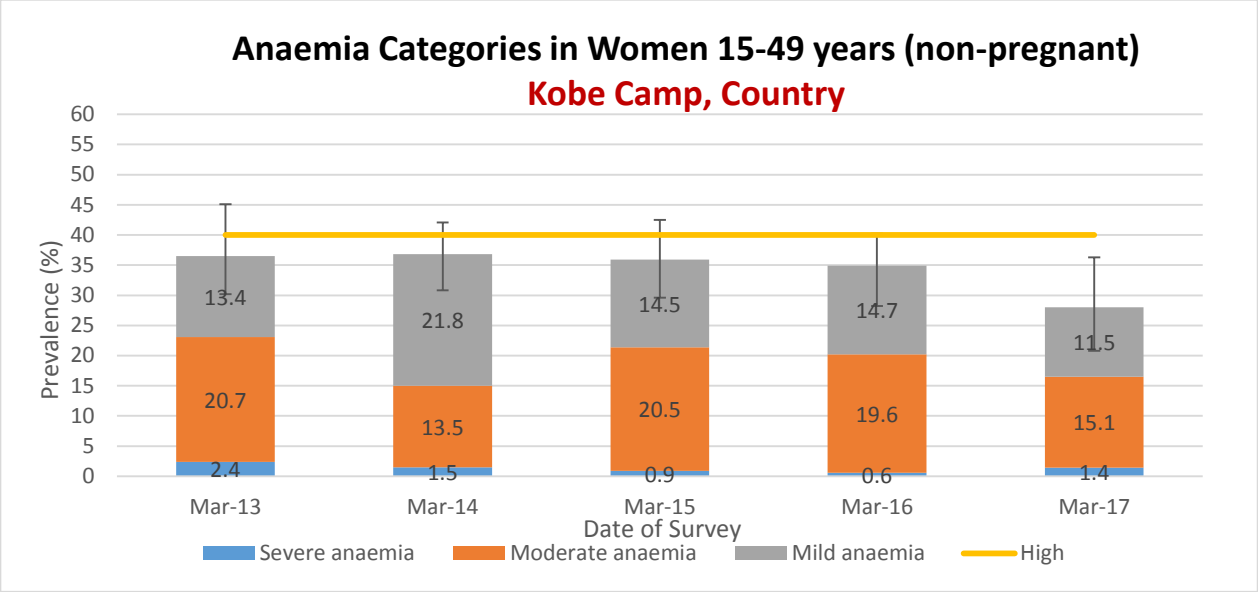


Table 116: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	12/12	100.0%
Currently receiving iron-folic acid pills	12/12	100.0%

Food security in Kobe

Table 117: Food security SAMPLING information

Household data	Planned	Actual	% of target
Total households surveyed for Food Security	196	177	90.3%

Access to food assistance results

Table 118: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	174/177	98.3% (95.1-99.6%)

Table 119: Reported duration of general food ration

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration*
24.9	83.0 SD = 5.5115

Table 120: Reported duration of general food ration

	Number/total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	171/174	98.3% (95.0-99.6%)
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle [30 DAYS]	3/174	1.7% (0.4-5.0%)
>75% of the cycle [30 DAYS]	171/174	98.3% (95.0-99.6%)

Negative coping strategies results

Table 121: Coping strategies used by the surveyed population over the past month

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items *with or without interest*	115/171	67.3% (59.7-74.2%)
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, etc.)	2/1713	13.5% (8.7-19.5%)
Requested increased remittances or gifts as compared to normal	30/170	17.6% (12.2-24.2%)
Reduced the quantity and/or frequency of meals	87/171	50.9% (43.1-58.6%)
Begged	65/171	38.0% (30.7-45.7%)
Engaged in potentially risky or harmful activities	3/170	1.8% (0.4-5.1%)
Proportion of households reporting using none of the coping strategies over the past month	37/174	21.3% (15.4-28.1%)

* The total will be over 100% as households may use several negative coping strategies.

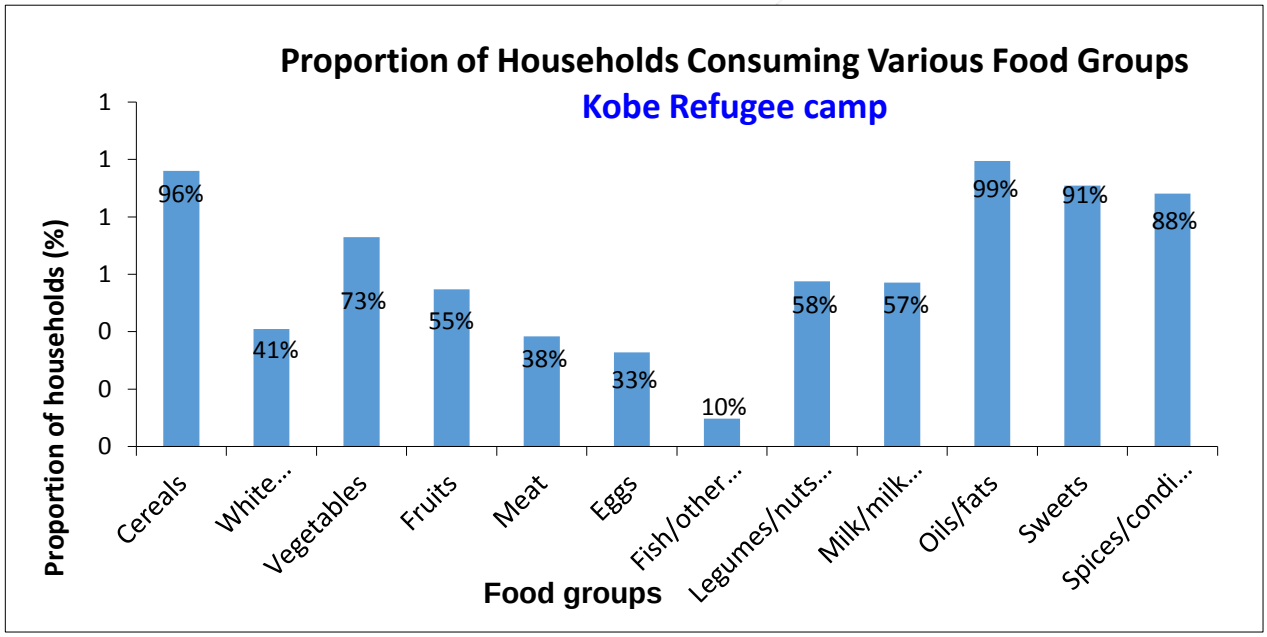
Table 122: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	7.36 SD = 2.54

Table 123: Consumption of micronutrient rich foods by households

	Number/total	% (95% CI)
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	31/176	17.6% (12.3-24.1%)
Proportion of households consuming either a plant or animal source of vitamin A	135/176	76.7% (69.8-82.7%)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	70/176	39.8% (32.5-47.4%)

Figure 34 : Proportion of Households Consuming Various Food Groups



WASH in Kobe

Table 124: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	366/366	100.0%
Proportion of households that use a covered or narrow necked container for storing their drinking water	232/365	63.6% (58.4-68.5%)

Table 125: Water Quantity: Amount of litres of water used per person per day

Proportion of households that use:	Number/total	% (95% CI)
≥ 20 lpppd	152/366	41.5% (36.5-46.8%)
15 – <20 lpppd	88/366	24.0% (19.8-28.8%)
<15 lpppd	126/366	34.4% (29.6-39.6%)
average water usage in lppd		**20.3 liter/peron/day**

Table 126: Satisfaction with water supply

	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	305/364	83.8% (79.6-87.4%)

Figure 35 : Proportion of households that say they are satisfied with the water supply

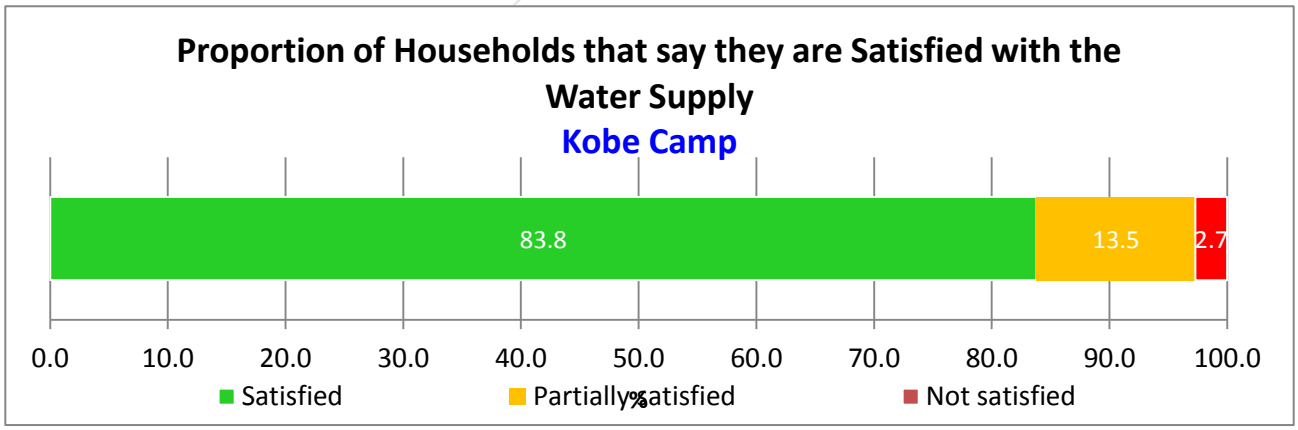
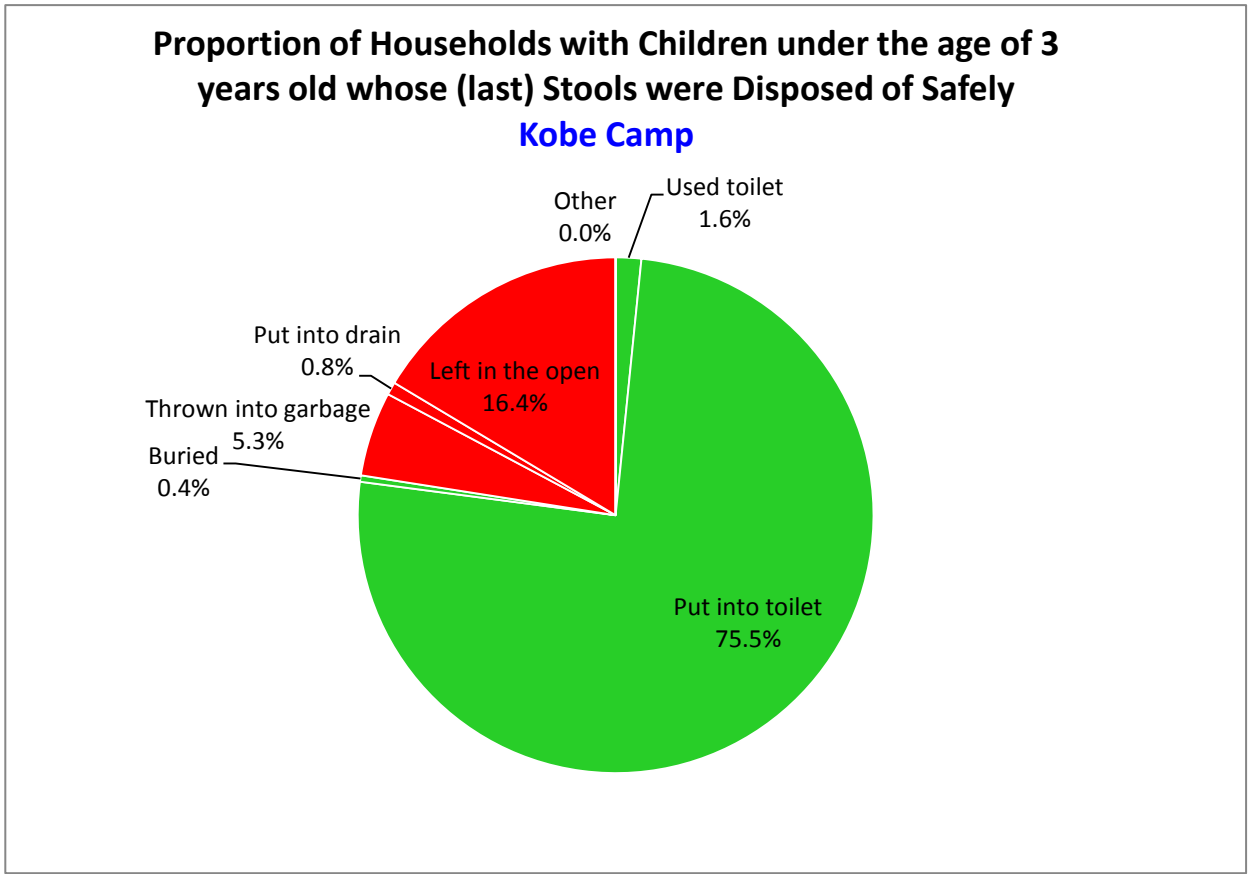


Table 127: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household),	7/358	2.0% (0.9-4.2%)
A shared family toilet (improved toilet facility, 2 households)	33/358	9.2% (6.5-12.8%)
A communal toilet (improved toilet facility, 3 households or more)	233/358	65.1% (59.9-70.0%)
An unimproved toilet (unimproved toilet facility or public toilet)	85/358	23.7% (19.5-28.6%)
Proportion of households with children under three years old that dispose of faeces safely	189/244	77.5% (71.7-82.5%)

Figure 36: Proportion of Household with children under the age 3 years old whose last Stool were Disposed safely



4.4 RESULTS FROM HILAWEYN CAMP

Table 128: Demographic characteristics of the study population in Hilaweyn

Total HHs surveyed	333
Total population surveyed	1730
Total U5 surveyed	252
Average HH size	6.8
% of U5	20.3%

Table 129: Distribution of age and sex of sample

AGE (mo)	Boys		Girls		Total		Ratio
	no.	%	no.	%	no.	%	Boy:girl
6-17	27	52.9	24	47.1	51	22.6	1.1
18-29	28	49.1	29	50.9	57	25.2	1.0
30-41	28	49.1	29	50.9	57	25.2	1.0
42-53	27	52.9	24	47.1	51	22.6	1.1
54-59	4	40.0	6	60.0	10	4.4	0.7
Total	114	50.4	112	49.6	226	100.0	1.0

Anthropometric results (based on WHO standards 2006) in Hilaweyn:

Table 130: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All n = 220	**Boys** n = 111	**Girls** n = 109
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(28) 12.7 % (9.0 - 17.8)	(14) 12.6 % (7.7 - 20.1)	(14) 12.8 % (7.8 - 20.4)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(22) 10.0 % (6.7 - 14.7)	(12) 10.8 % (6.3 - 18.0)	(10) 9.2 % (5.1 - 16.1)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(6) 2.7 % (1.3 - 5.8)	(2) 1.8 % (0.5 - 6.3)	(4) 3.7 % (1.4 - 9.1)

The prevalence of oedema is 0.0 %

Figure 37: Distribution of weight-for-height z-scores (based on WHO Growth Standards)

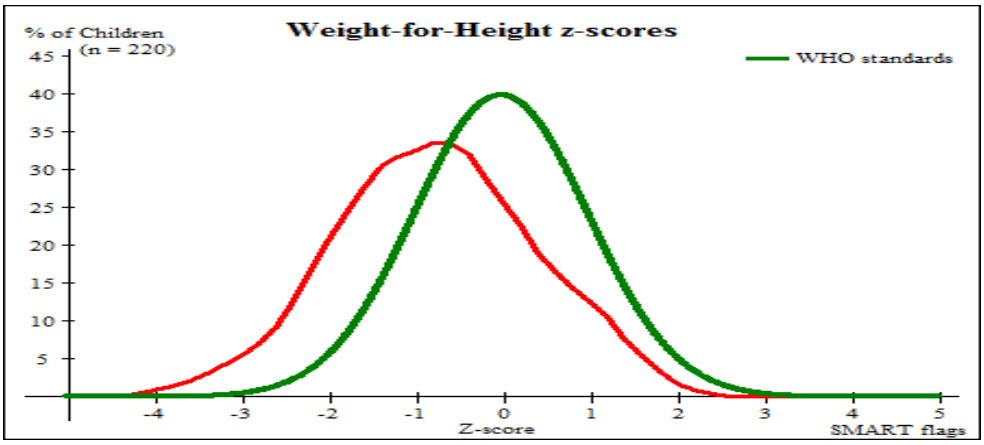


Figure 38 : Trends in the prevalence of global and severe acute malnutrition based on WHO Growth Standards in children 6-59 months from 2013-2017 in Hilaweyn

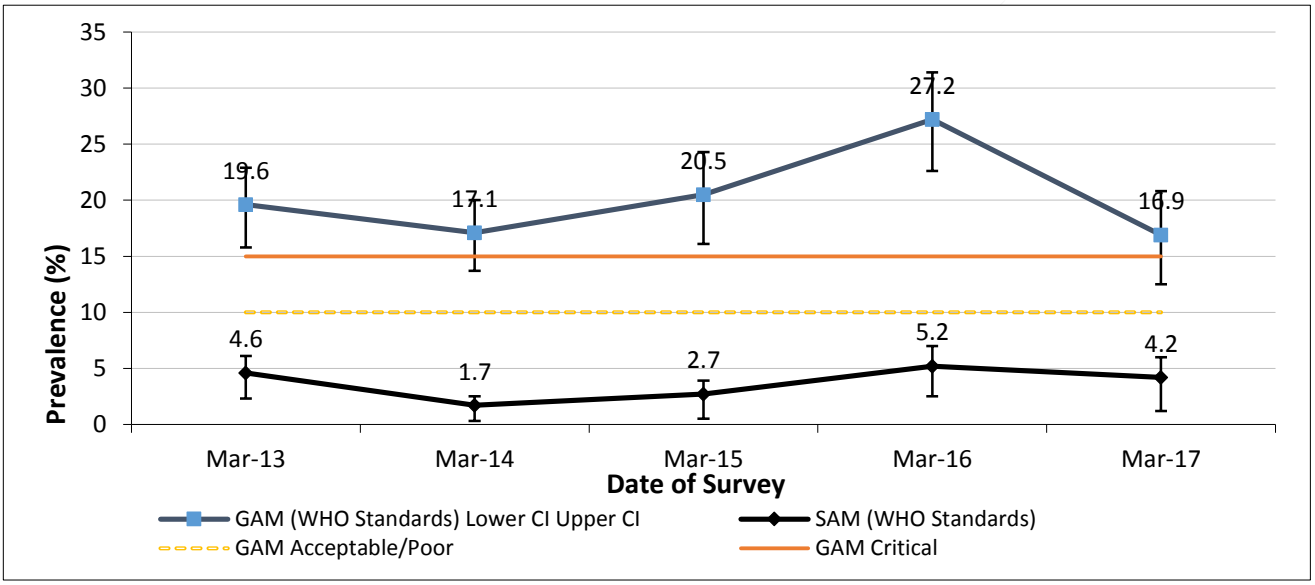


Table 131: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	49	4	8.2	6	12.2	39	79.6	0	0.0
18-29	57	1	1.8	5	8.8	51	89.5	0	0.0
30-41	56	1	1.8	6	10.7	49	87.5	0	0.0
42-53	51	2	3.9	4	7.8	45	88.2	0	0.0
54-59	10	0	0.0	1	10.0	9	90.0	0	0.0
Total	223	8	3.6	22	9.9	193	86.5	0	0.0

Table 132: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 8 (3.6 %)	Not severely malnourished No. 217 (96.4 %)

Table 133: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	95% C.I.		
	All n = 226	**Boys** n = 114	**Girls** n = 112
Prevalence of global malnutrition (< 125 mm and/or oedema)	(12) 5.3 % (3.1 - 9.1)	(1) 0.9 % (0.2 - 4.8)	(11) 9.8 % (5.6 - 16.7)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(8) 3.5 % (1.8 - 6.8)	(0) 0.0 % (0.0 - 3.3)	(8) 7.1 % (3.7 - 13.5)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(4) 1.8 % (0.7 - 4.5)	(1) 0.9 % (0.2 - 4.8)	(3) 2.7 % (0.9 - 7.6)

Table 134: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 & < 125 mm)		Normal (> = 125 mm)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	51	3	5.9	4	7.8	44	86.3	0	0.0
18-29	57	0	0.0	3	5.3	54	94.7	0	0.0
30-41	57	1	1.8	0	0.0	56	98.2	0	0.0
42-53	51	0	0.0	1	2.0	50	98.0	0	0.0
54-59	10	0	0.0	0	0.0	10	100.0	0	0.0
Total	226	4	1.8	8	3.5	214	94.7	0	0.0

Table 135: Prevalence of underweight based on weight-for-age z-scores by sex

	95% C.I.		
	All n = 225	**Boys** n = 113	**Girls** n = 112
Prevalence of underweight (<-2 z-score)	(64) 28.4 % (22.9 - 34.7)	(35) 31.0 % (23.2 - 40.0)	(29) 25.9 % (18.7 - 34.7)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(48) 21.3 % (16.5 - 27.1)	(28) 24.8 % (17.7 - 33.5%)	(20) 17.9 % (11.9 - 26.0)
Prevalence of severe underweight (<-3 z-score)	(16) 7.1 % (4.4 - 11.2)	(7) 6.2 % (3.0 - 12.2)	(9) 8.0 % (4.3 - 14.6)

Table 136: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	**Total no.**	**Severe underweight (<-3 z-score)**		**Moderate underweight (>= -3 and <-2 z-score)**		**Normal (> = -2 z score)**		**Oedema**	
		No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	51	3	5.9	10	19.6	38	74.5	0	0.0
18-29	57	5	8.8	13	22.8	39	68.4	0	0.0
30-41	56	4	7.1	12	21.4	40	71.4	0	0.0
42-53	51	3	5.9	11	21.6	37	72.5	0	0.0
54-59	10	1	10.0	2	20.0	7	70.0	0	0.0
Total	225	16	7.1	48	21.3	161	71.6	0	0.0

Table 137: Prevalence of stunting based on height-for-age z-scores and by sex

	95% C.I.		
	All n = 225	**Boys** n = 113	**Girls** n = 112
Prevalence of stunting (<-2 z-score)	(92) 43.0 % (36.5 - 49.7)	(56) 52.8 % (43.4 - 62.1)	(36) 33.3 % (25.2 - 42.7)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(49) 22.9 % (17.8 - 29.0)	(31) 29.2 % (21.4 - 38.5)	(18) 16.7 % (10.8 - 24.8)
Prevalence of severe stunting (<-3 z-score)	(43) 20.1 % (15.3 - 26.0)	(25) 23.6 % (16.5 - 32.5)	(18) 16.7 % (10.8 - 24.8)

Figure 39 : Distribution of weight-for-height z-scores (based on WHO Growth Standards)

Figure 40 : Trends of prevalence of stunting in children 6-59 months in Hilaweyn camp

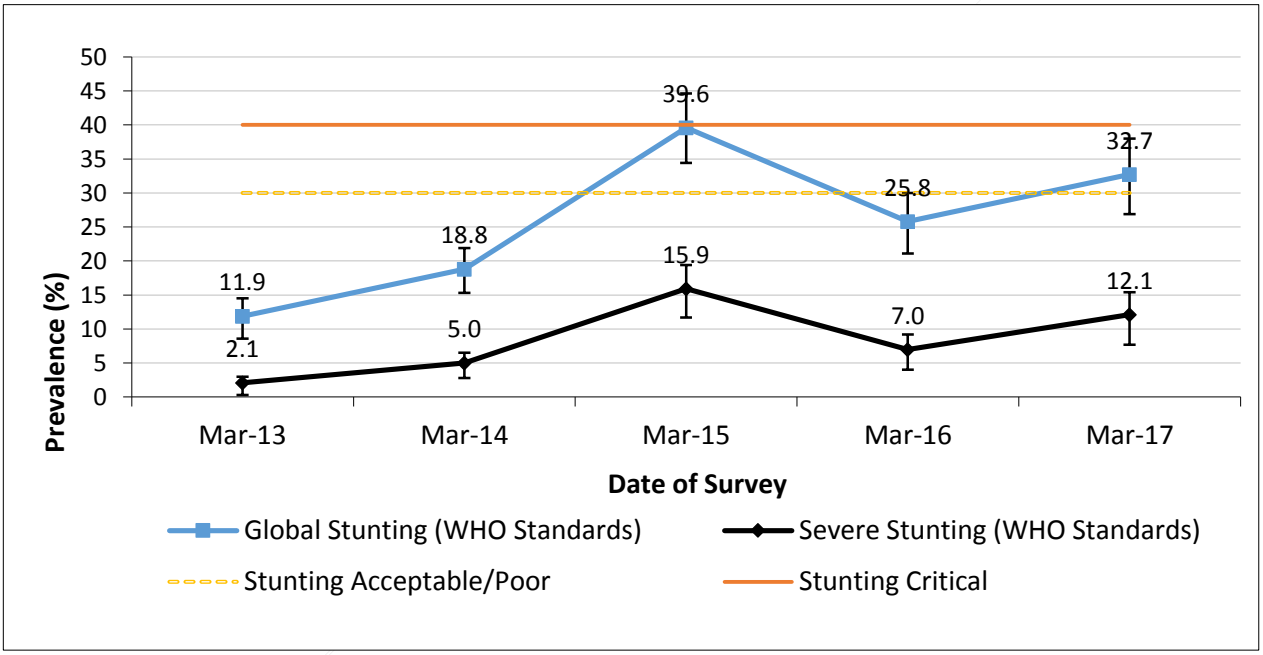


Table 138: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	51	8	15.7	10	19.6	33	64.7
18-29	57	20	35.1	10	17.5	27	47.4
30-41	56	9	16.1	12	21.4	35	62.5
42-53	51	8	15.7	14	27.5	29	56.9
54-59	10	0	0.0	3	30.0	7	70.0
Total	225	45	20.0	49	21.8	131	58.2

Table 139: 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	223	-0.79±1.17	1.00	1	2
Weight-for-Age	225	-1.45±1.13	1.00	1	0
Height-for-Age	225	-1.71±1.51	1.00	1	0

* contains for WHZ and WAZ the children with edema.

Table 140: The 88 days retrospective mortality rate

CMR (total deaths/10,000 people / day): 0.38 (0.16-0.92) (95% CI)
U5MR (deaths in children U5/10,000 children U5/day): 1.38 (0.30-6.09) (95% CI)

Feeding programme coverage results in Hilaweyn

Table 141: Programme coverage for acutely malnourished children

	Number/total	**% (95% CI)**
Supplementary feeding programme coverage	3/9	33.3% (7.5-70.1%)
Therapeutic feeding programme coverage	9/30	30.0% (14.7-49.4%)
Blanket feeding programme coverage (6-35 month)	100/121	82.6% (74.7-88.9%)
Wet feeding programme coverage (36-59 months)	58/98	59.2% (48.8-69.0%)

Measles vaccination coverage results

Table 142: Measles vaccination coverage for children aged 9-59 months (n=220)

	Measles (with card) n=103	**Measles (with card or confirmation from mother) n=199**
YES	46.8% (40.1-53.6%)	89.2% (84.4-93.0%)

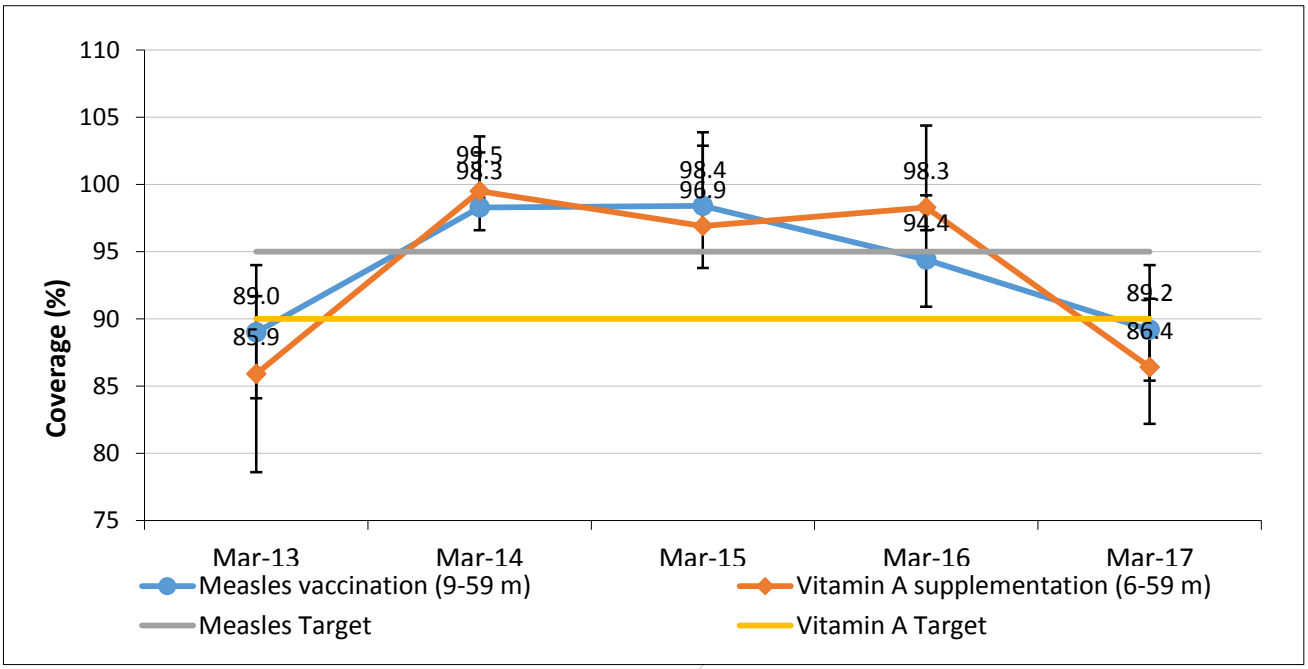
Vitamin A supplementation coverage results in Hilaweyn

Table 143: Vitamin A supplementation for children aged 6-59 months within past 6 months (n=228)

	Vitamin A capsule (with card) n=84	**Vitamin A capsule**

		(with card or confirmation from mother) n=197
YES	37.5% (31.1-44.2%)	86.4% (81.3-90.6%)

Figure 41 : Trends in the coverage of measles vaccination and vitamin A supplementation IN LAST 6 MONTHS in children 6-59 months from 2013-2017



Diarrhoea results in Hilaweyn

Table 144: Period prevalence of diarrhoea

	Number/total	% (95% CI)
Diarrhoea in the last two weeks	1/223	0.4% (0.0-2.5%)

Anaemia results

Table 145: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age

	Number/ total	Prevalence (%) & 95% CI
Total Anaemia (Hb<11.0 g/dL)	124/218	56.9% (50.0-63.6%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	65/218	29.8% (23.8-36.4%)
Moderate Anaemia (7.0-9.9 g/dL)	57/218	26.1% (20.4-32.5%)
Severe Anaemia (<7.0 g/dL)	2/218	0.9% (0.1-3.3%)
Mean Hb (g/dL) [range]	10.72g/dl & SD =1.38 [6.6 – 14.5]	

Figure 42 : Trends in anaemia categories in children 6-59 months from 2013-2017

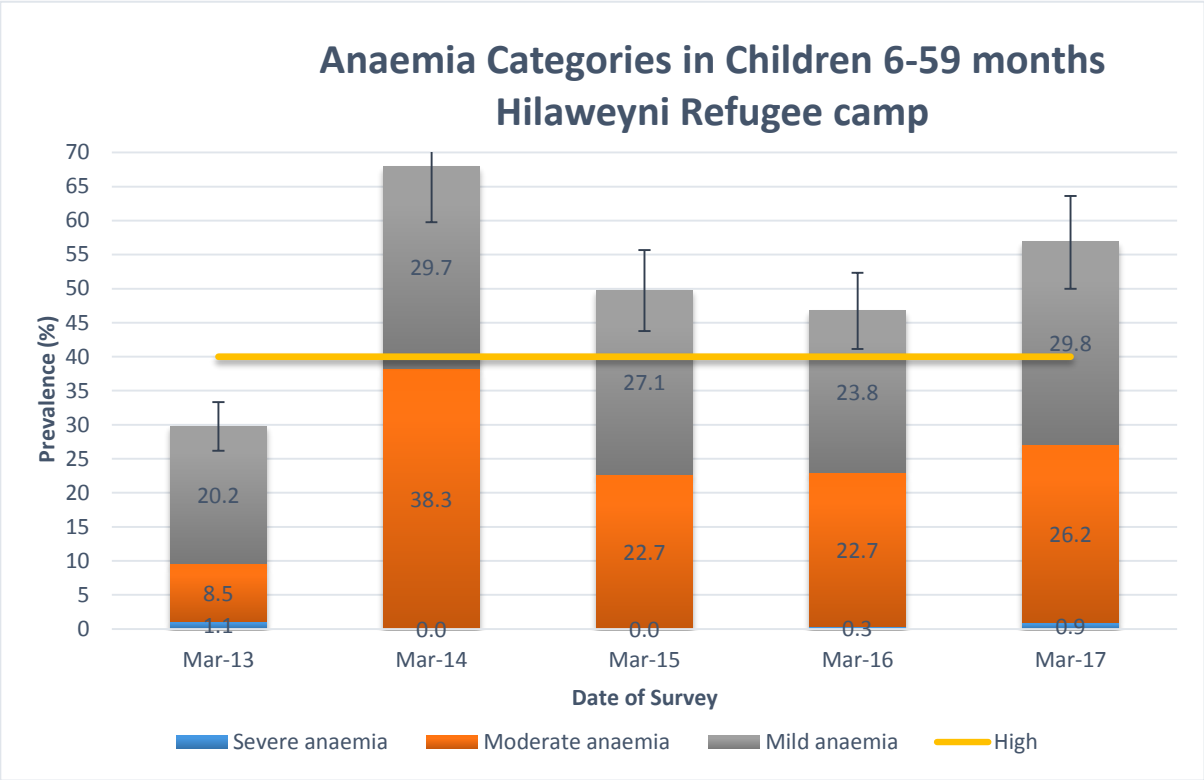


Table 146: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

	6-23 months (n=65)	24-35 months (n=57)	36-59 months (n=96)
Total Anaemia (Hb<11.0 g/dL)	(47) 72.3% (59.8 – 82.7%)	(33) 57.9% (44.1-70.9%)	(44) 45.8% (35.6-56.3%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	(22) 33.8% (22.6 - 46.6%)	(19) 33.3% (21.4 - 47%)	(24) 25.0% (16.7 - 34.9%)
Moderate Anaemia (7.0-9.9 g/dL)	(24) 36.9% (25.3 - 49.8%)	(14) 24.6% (14.1 - 37.8%)	(19) 19.8% (12.4 - 29.2%)
Severe Anaemia (<7.0 g/dL)	(1) 1.5% (0.0 - 8.3%)	0.0%	(1) 1.0% (0.0-5.7%)

Infant and Young Children Feeding (IYCF) Children 0-23 months, in Hilaweyn

Table 147: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/total	Prevalence (%) and 95% CI
Timely initiation of breastfeeding	0-23 months	67/104	64.4% (54.4-73.6%)
Exclusive breastfeeding under 6 months	0-5 months	21/36	58.3% (40.8-74.5%)
Continued breastfeeding at 1 year	12-15 months	13/17	76.5% (50.1-93.2%)
Continued breastfeeding at 2 years	20-23 months	4/11	36.4% (10.9-69.2%)
Introduction of solid, semi-solid or soft foods	6-8 months	3/5	60.0% (14.7-94.7%)
Consumption of iron-rich or iron-fortified foods	6-23 months	62/66	93.9% (85.2-98.3%)
Bottle feeding	0-23 months	11/103	10.7% (5.5-18.3%)

Table 148: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)
Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	1/102	1.0% (0.0-5.3%)

Fortified blended foods

Table 149: CSB+ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF	27/66	40.9% (29.0-53.7%)

Table 150: CSB++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF++	52/67	77.6% (65.8-86.9%)

Women 15-49 years in Hilaweyn

Table 151: Women physiological status and age

Physiological status	Number/total	% of sample
Non-pregnant	92/102	90.2% (82.7-95.2%)
Pregnant	10/102	9.8% (4.8-17.3%)
Mean age and SD [range]	29.25 years SD =7.46 [15 to 46]	

Table 152: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia - Women of reproductive age 15-49 years	Number/total	(%) and 95% CI
Total Anaemia (<12.0 g/dL)	41/92	44.6% (34.2-55.3%)
Mild Anaemia (11.0-11.9 g/dL)	20/92	21.7% 913.8-31.6%)
Moderate Anaemia (8.0-10.9 g/dL)	19/92	20.7% (12.9-30.4%)
Severe Anaemia (<8.0 g/dL)	2/92	2.2% (0.3-7.6%)
Mean Hb, g/dL (SD) [range]	11.93g/dl and SD = 1.4254 [7.3 - 14.6]	

Figure 43 : Trends in anaemia categories in women 15-49 years from 2013-2017 in hilaweyn

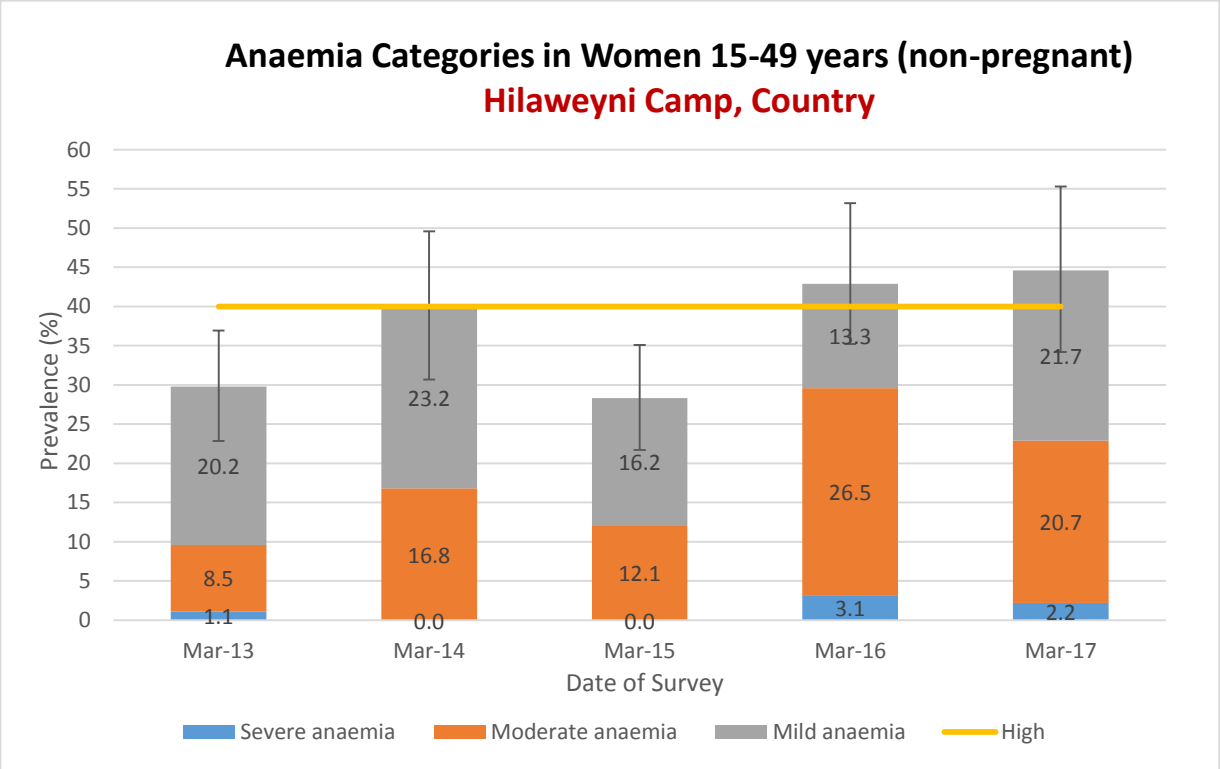


Table 153: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	9/10	90.0% (55.5-99.7%)
Currently receiving iron-folic acid pills	9/10	90.0% (55.5-99.7%)

Food security

Table 154: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	176/177	99.4% (96.9-100.0%)

Table 155: Reported duration of general food ration 1

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration*
21.145 day out of 30 days (SD = 5.39)	705%

Table 156: Reported duration of general food ration 2

	Number/total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	165/172	95.9% (91.8-98.3%)
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle [30 DAYS]	6/172	3.5% (1.3-7.4%)
>75% of the cycle [30 DAYS]	166/172	96.5% (92.6-98.7%)

Negative coping strategies results

Table 157: Coping strategies used by the surveyed population over the past months

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items *with or without interest*	95/172	55.2% (47.5-62.8%)
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	21/172	12.2% (7.7-18.1%)
Requested increased remittances or gifts as compared to normal	42/172	24.4% (18.2-31.5%)
Reduced the quantity and/or frequency of meals	63/172	36.8% (29.6-44.5%)
Begged	13/172	7.6% (4.1-12.7%)
Engaged in potentially risky or harmful activities	4/172	2.3% (0.6-5.8%)
Proportion of households reporting using none of the coping strategies over the past month	62/174	35.6% (28.5-43.2%)

***** The total will be over 100% as households may use several negative coping strategies.

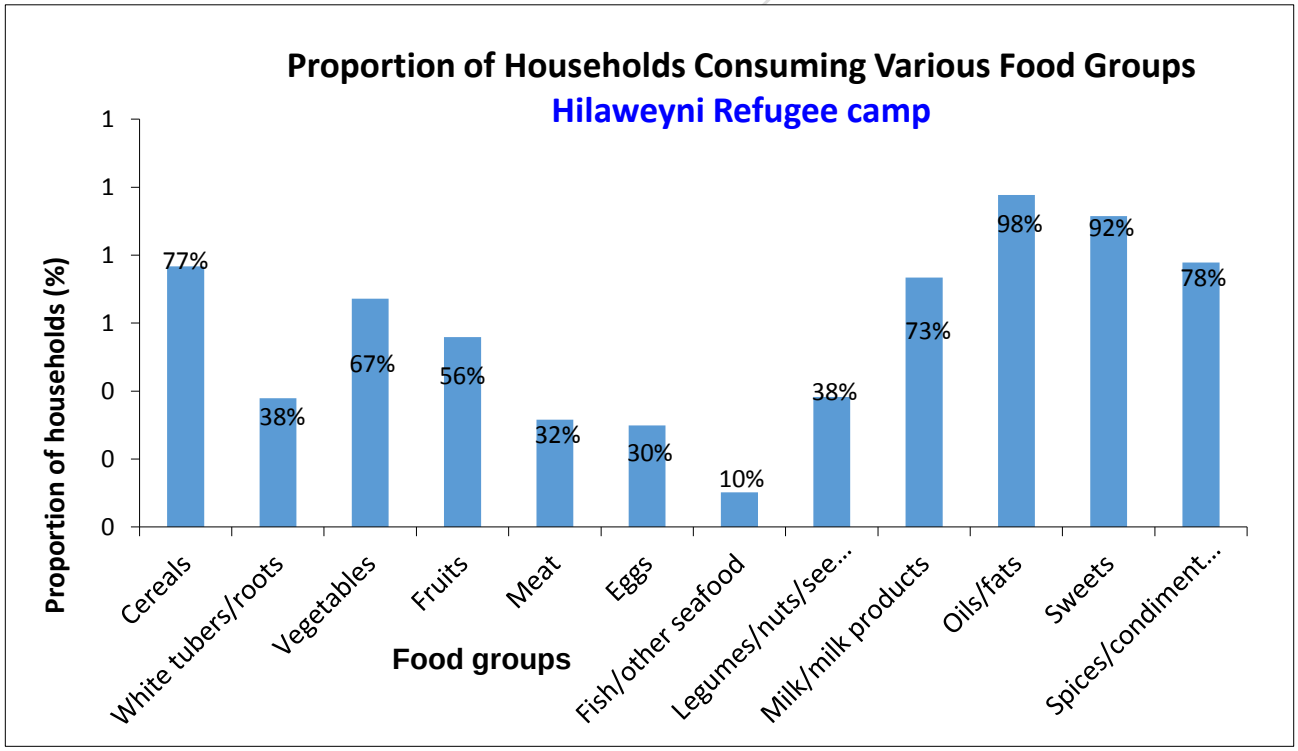
Table 158: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	6.8128 SD = 2.11

Table 159: Consumption of micronutrient Rich foods by households

	Number/total	% (95% CI)
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	9/177	5.1% (90.6-97.6%)
Proportion of households consuming either a plant or animal source of vitamin A	150/177	84.7% (78.6-89.7%)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	62/177	35.0% (28.0-42.5%)

Figure 44 : Proportion of Households Consuming Various Food Groups



WASH

Table 160: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	331/331	100.0%
Proportion of households that use a covered or narrow necked container for storing their drinking water	148/332	44.6% (39.2-50.1%)

Table 161: Water Quantity: Amount of litres of water used per person per day

Proportion of households that use:	Number/total	% (95% CI)
≥ 20 lpppd	157/332	47.3% (41.8-52.8%)
15 – <20 lpppd	72/332	21.7% (17.5-26.6%)
<15 lpppd	103/332	31.0% (26.1-36.3%)
Average water usage in lppd	22.1 Lpppd	

Table 162: Satisfaction with water supply

	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	310/333	93.1% (89.7-95.5%)

Figure 45 : Proportion of households that say they are satisfied with the water supply

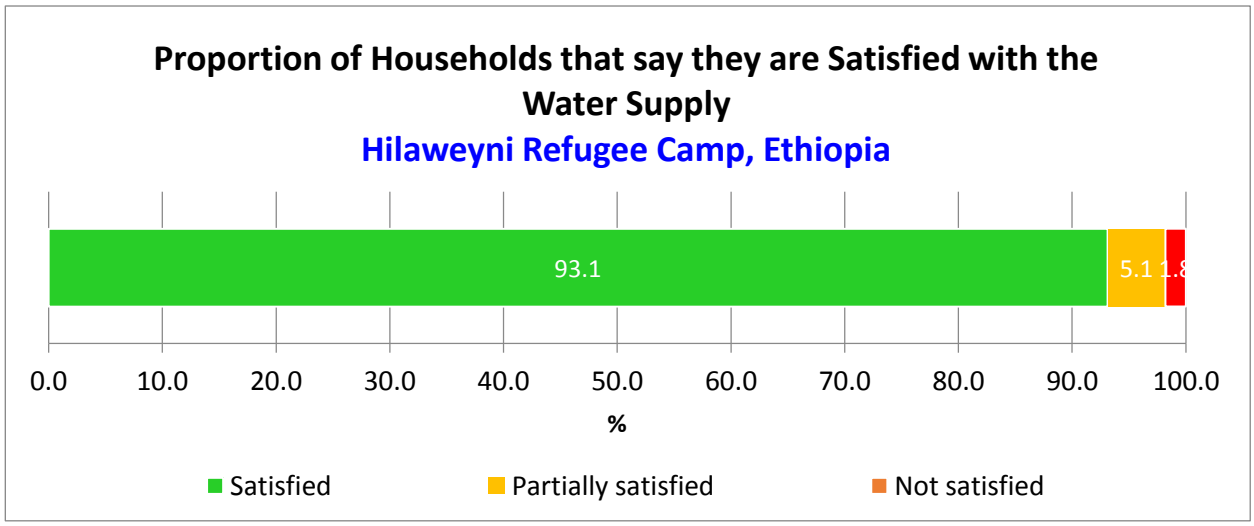


Figure 46 : Reasons provided for Dissatisfaction of Water Supply

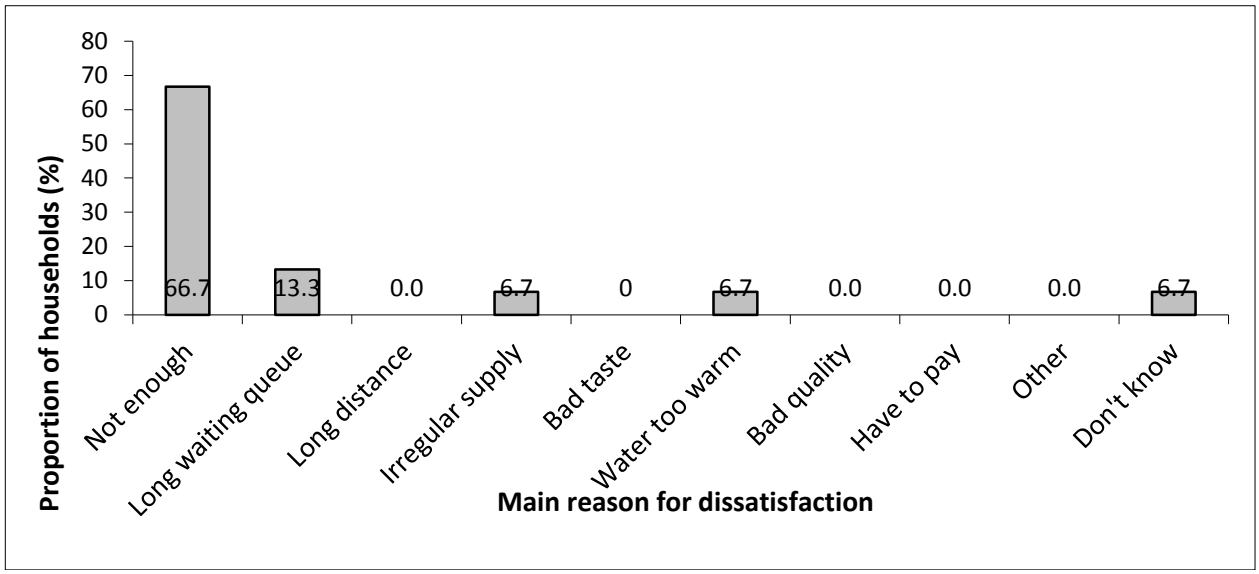
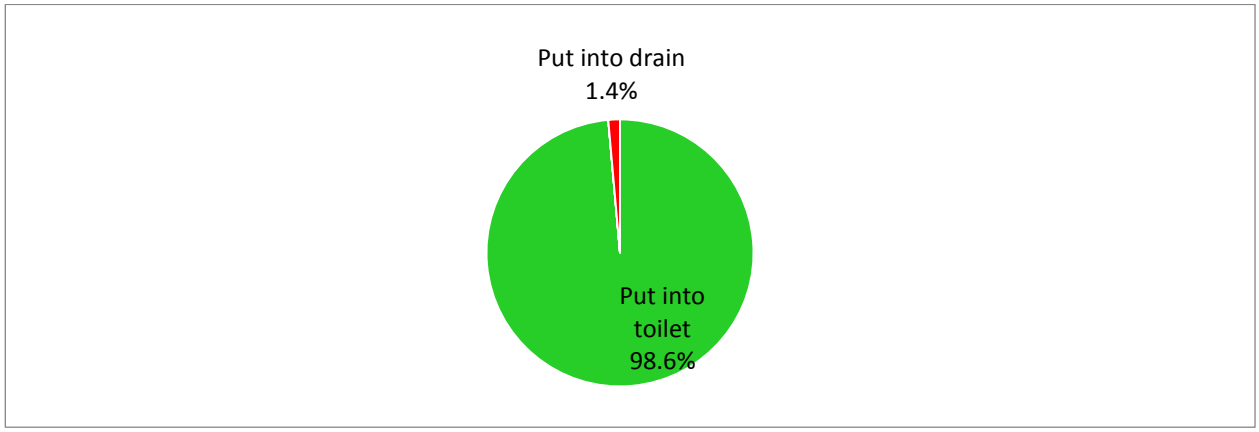


Table 163: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household),	42/331	12.7% (9.4-16.9%)
A shared family toilet (improved toilet facility, 2 households)	157/331	47.4% (42.0-53.0%)
A communal toilet (improved toilet facility, 3 households or more)	132/331	39.9% (34.6-45.4%)
An unimproved toilet (unimproved toilet facility or public toilet)	0	0.0%
Proportion of households with children under three years old that dispose of faeces safely	136/138	98.6% (94.9-99.8%)

Figure 47 : Proportion of Household with children under the age 3 years old whose last Stool were Disposed safely



4.5. RESULTS FROM BURAMINO CAMP

Table 164: Demographic characteristics of the study population in Buramino

Total HHs surveyed	298
Total population surveyed	1713
Total U5 surveyed	333
Average HH size	5.7
% of U5	19.4%

Table 165: Distribution of age and sex of sample

AGE (mo)	Boys		Girls		Total		Ratio
	no.	%	no.	%	no.	%	Boy: girl
6-17	32	47.1	36	52.9	68	23.4	0.9
18-29	37	53.6	32	46.4	69	23.7	1.2
30-41	38	52.8	34	47.2	72	24.7	1.1
42-53	39	58.2	28	41.8	67	23.0	1.4
54-59	8	53.3	7	46.7	15	5.2	1.1
Total	154	52.9	137	47.1	291	100.0	1.1

Anthropometric results (based on WHO standards 2006)

Table 166: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	95% C.I.		
	All n = 284	**Boys** n = 151	**Girls** n = 133
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(48) 16.9 % (13.0 - 21.7)	(27) 17.9 % (12.6 - 24.8%)	(21) 15.8 % (10.6 - 22.9%)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(36) 12.7 % (9.3 - 17.0%)	(19) 12.6 % (8.2 - 18.8%)	(17) 12.8 % (8.1 - 19.5%)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(12) 4.2 % (2.4 - 7.2%)	(8) 5.3 % (2.7 - 10.1%)	(4) 3.0 % (1.2 - 7.5%)

The prevalence of oedema is 0.0 %

Figure 48 : Distribution of weight-for-height z-scores (based on WHO Growth Standards) in Buramino

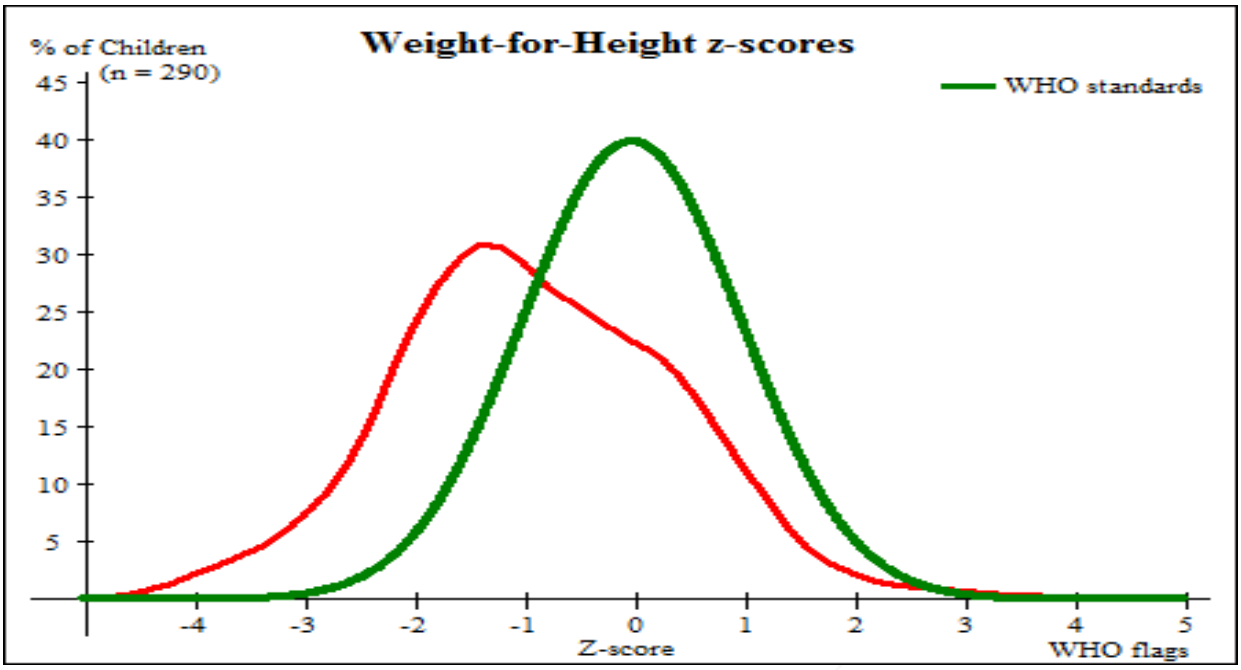


Figure 49 : Trends in the prevalence of global and severe acute malnutrition based on WHO Growth Standards in children 6-59 months from 2013-2017 in Buramino

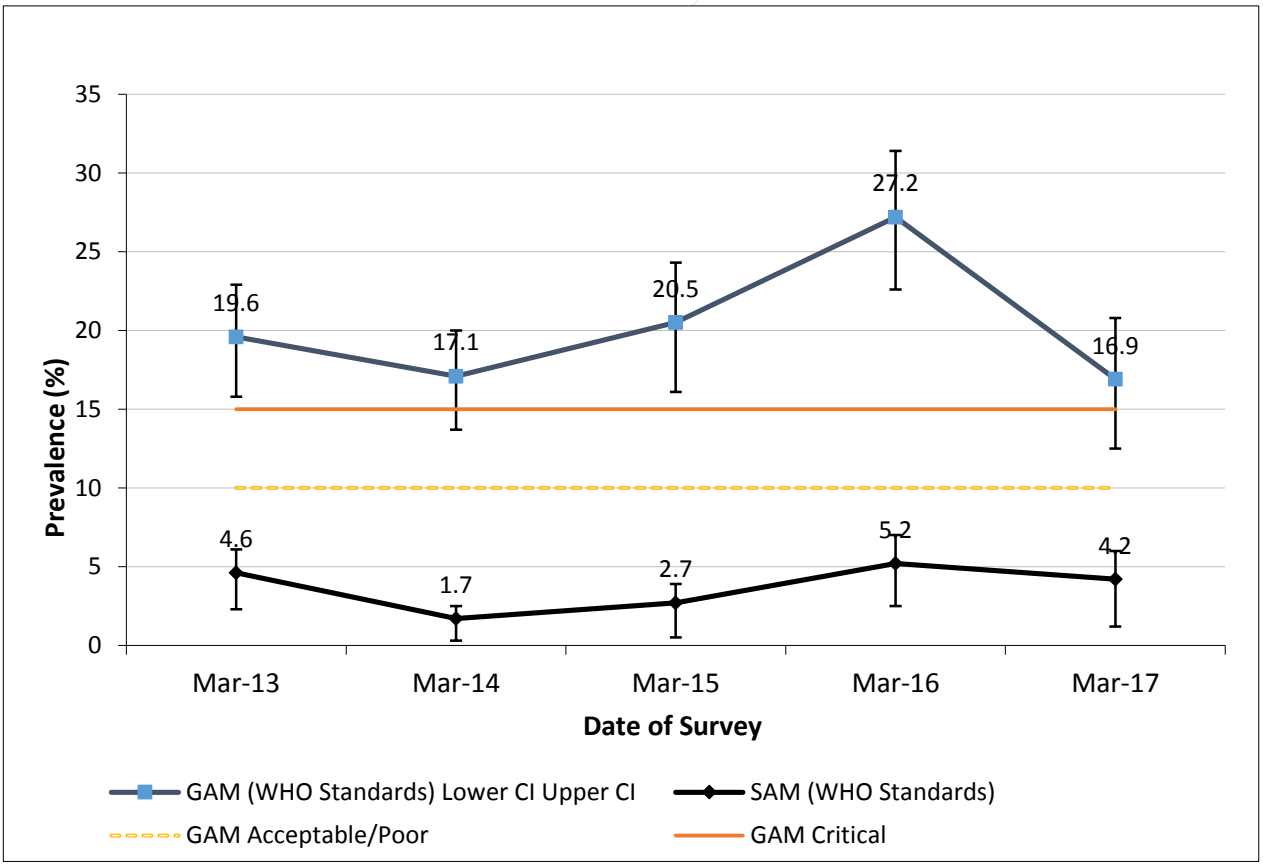


Table 167: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	66	3	4.5	9	13.6	54	81.8	0	0.0
18-29	68	4	5.9	6	8.8	58	85.3	0	0.0
30-41	70	0	0.0	12	17.1	58	82.9	0	0.0
42-53	67	3	4.5	8	11.9	56	83.6	0	0.0
54-59	13	2	15.4	1	7.7	10	76.9	0	0.0
Total	284	12	4.2	36	12.7	236	83.1	0	0.0

Figure 50 : Trend in the Prevalence of Wasting by Age in Children 6-59 months

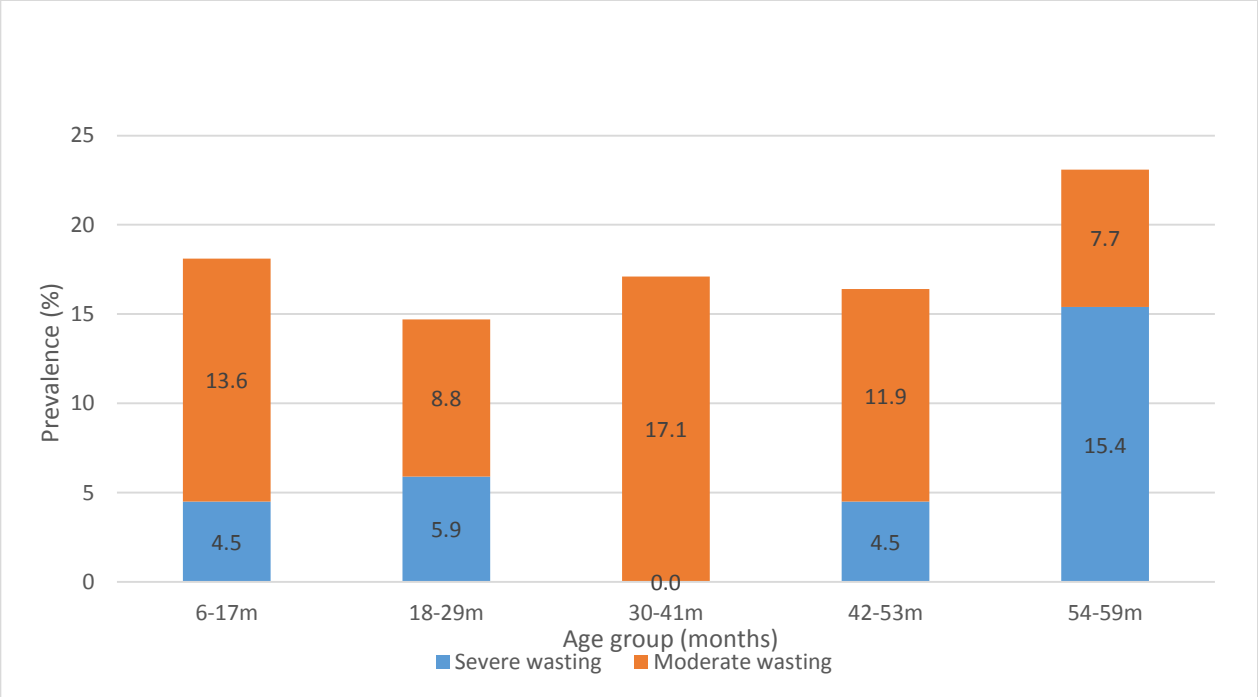


Table 168: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0(0.0 %)
Oedema absent	Marasmic No. 13 (4.5 %)	Not severely malnourished No. 278 (95.5 %)

Table 169: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	95% C.I.		
	All n = 290	**Boys** n = 154	**Girls** n = 136
Prevalence of global malnutrition (< 125 mm and/or oedema)	(20) 6.9 % (4.5 - 10.4%)	(9) 5.8 % (3.1 - 10.7%)	(11) 8.1 % (4.6 - 13.9%)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(16) 5.5 % (3.4 - 8.8%)	(7) 4.5 % (2.2 - 9.1%)	(9) 6.6 % (3.5 - 12.1%)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(4) 1.4 % (0.5 - 3.5%)	(2) 1.3 % (0.4 - 4.6%)	(2) 1.5 % (0.4 - 5.2%)

Table 170: Prevalence of underweight based on weight-for-age z-scores by sex

	95% C.I.		
	All n = 287	**Boys** n = 152	**Girls** n = 135
Prevalence of underweight (<-2 z-score)	(82) 28.6 % (23.7 - 34.1%)	(45) 29.6 % (22.9 - 37.3%)	(37) 27.4 % (20.6 - 35.5%)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(55) 19.2 % (15.0 - 24.1%)	(30) 19.7 % (14.2 - 26.8%)	(25) 18.5 % (12.9 - 25.9%)
Prevalence of severe underweight (<-3 z-score)	(27) 9.4 % (6.5 - 13.3%)	(15) 9.9 % (6.1 - 15.6%)	(12) 8.9 % (5.2 - 14.9%)

Table 171: Prevalence of underweight by age, based on weight-for-age z-score

Age (mo)	**Total no.**	**Severe underweight (<-3 z-score)**		**Moderate underweight (>= -3 & <-2 z-score)**		**Normal (> = -2 z score)**		**Oedema**	
		No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	66	7	10.6	14	21.2	45	68.2	0	0.0
18-29	68	8	11.8	12	17.6	48	70.6	0	0.0
30-41	72	5	6.9	14	19.4	53	73.6	0	0.0
42-53	67	5	7.5	10	14.9	52	77.6	0	0.0
54-59	14	2	14.3	5	35.7	7	50.0	0	0.0
Total	287	27	9.4	55	19.2	205	71.4	0	0.0

Table 172: Prevalence of stunting based on height-for-age z-scores and by sex

	95% C.I.		
	All n = 272	**Boys** n = 143	**Girls** n = 129
Prevalence of stunting (<-2 z-score)	(89) 32.7 % (27.4 - 38.5%)	(48) 33.6 % (26.3 - 41.6%)	(41) 31.8 % (24.4 - 40.2%)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(56) 20.6 % (16.2 - 25.8%)	(27) 18.9 % (13.3 - 26.1%)	(29) 22.5 % (16.1 - 30.4%)
Prevalence of severe stunting (<-3 z-score)	(33) 12.1 % (8.8 - 16.5%)	(21) 14.7 % (9.8 - 21.4%)	(12) 9.3 % (5.4 - 15.6%)

Figure 51 : Distribution of Height -for-Age z-scores (based on WHO Growth Standards) in Buramino

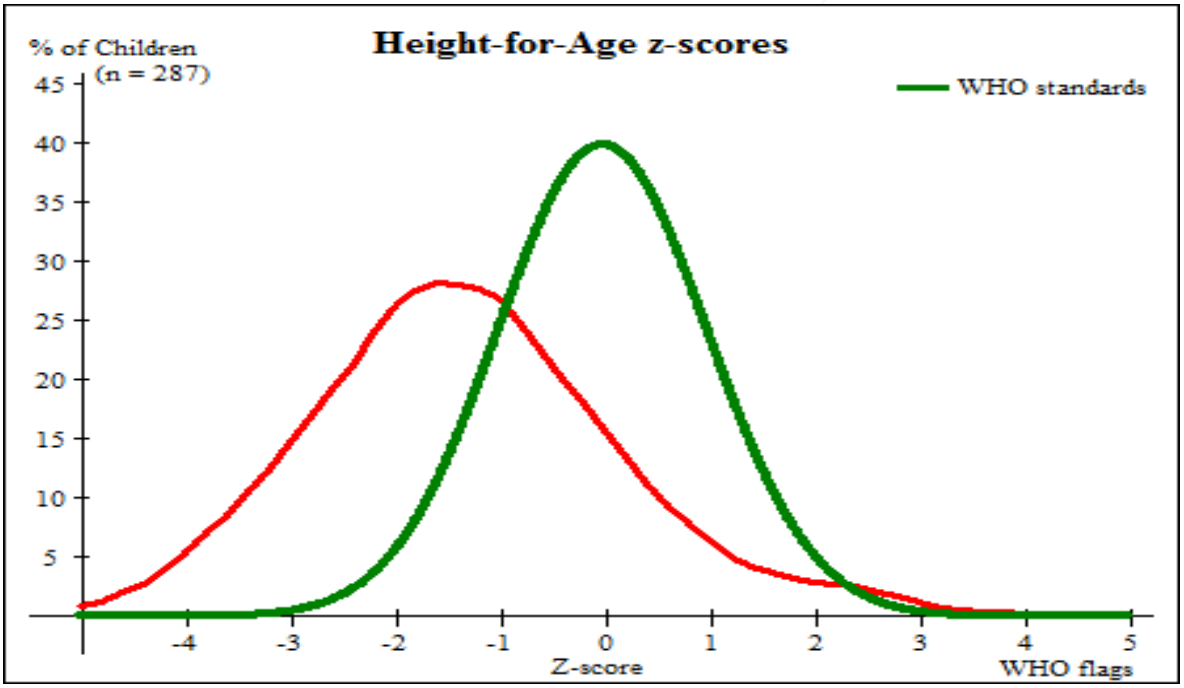


Figure 52 : Trends in the prevalence of stunting in children 6-59 months in Buramino camp

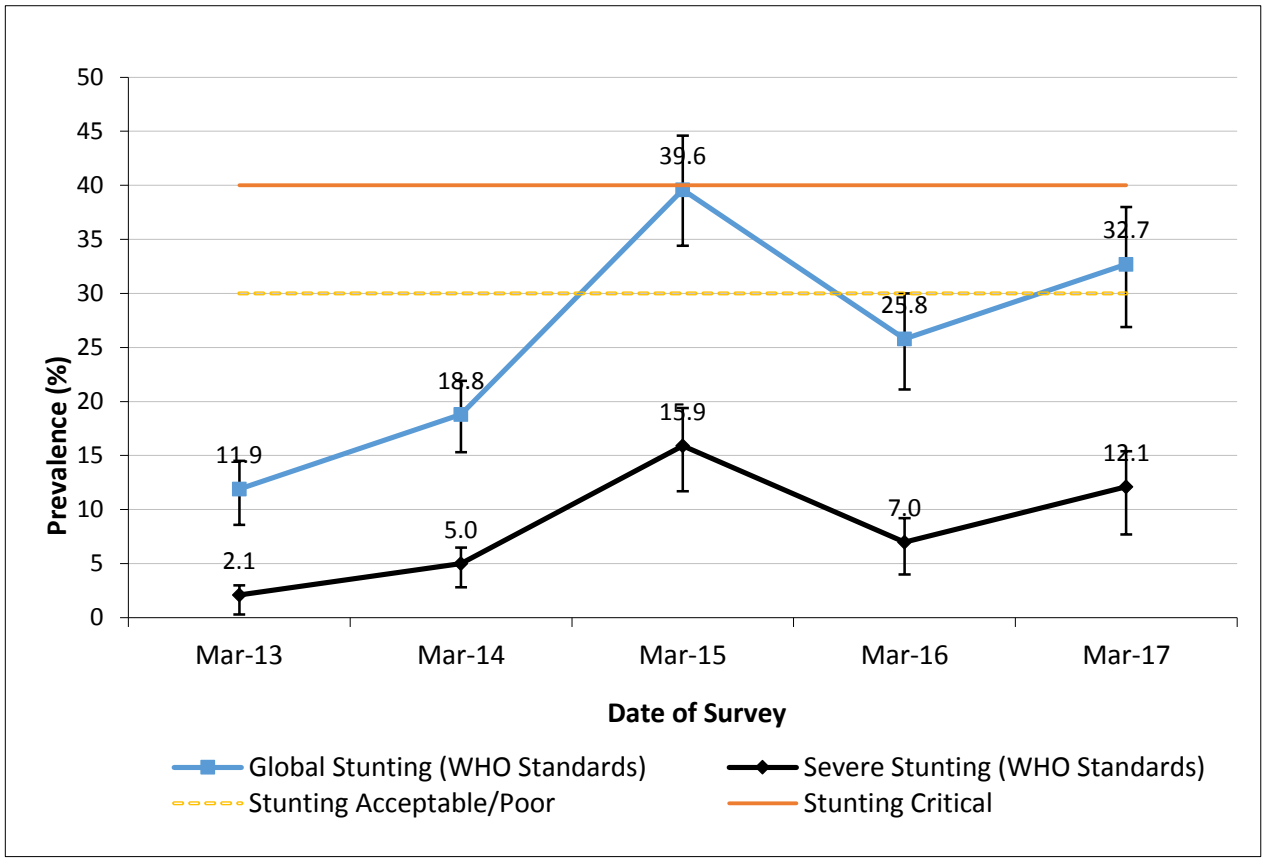


Table 173: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	66	5	7.6	12	18.2	49	74.2
18-29	59	13	22.0	17	28.8	29	49.2
30-41	67	9	13.4	14	20.9	44	65.7
42-53	66	5	7.6	9	13.6	52	78.8
54-59	14	1	7.1	4	28.6	9	64.3
Total	272	33	12.1	56	20.6	183	67.3

Figure 53 : Trend in the Prevalence of Stunting by Age in Children 6-59 months

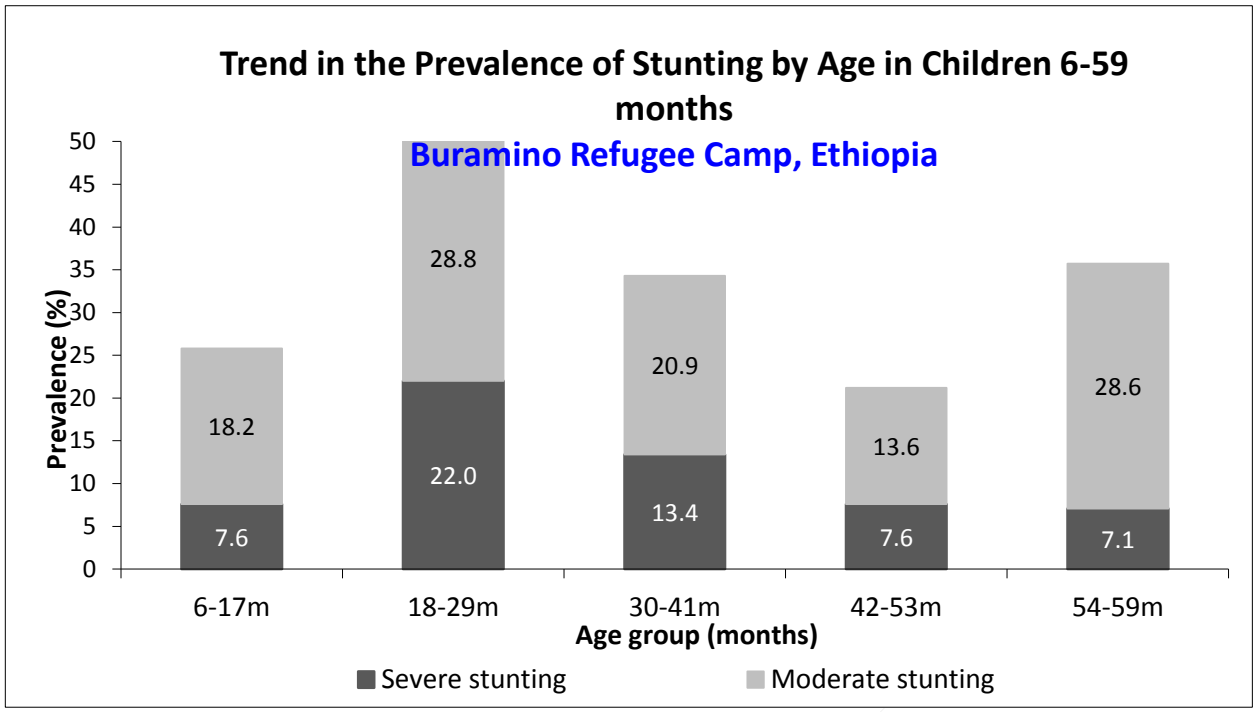


Table 174: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	284	-0.93±1.19	1.00	0	7
Weight-for-Age	287	-1.39±1.09	1.00	0	4
Height-for-Age	272	-1.42±1.24	1.00	0	19

* contains for WHZ and WAZ the children with edema.

Feeding programme coverage results in Boramino

Table 175: Programme coverage for acutely malnourished children

	Number/total	**% (95% CI)**
Supplementary feeding programme coverage	5/48	10.4% (3.5-22.7%)
Therapeutic feeding programme coverage	3/15	20.0% (4.3-48.1%)
Blanket supplementary feeding program (BSFP) 6-35 months	69/91	75.8% (65.7-84.2)
Wet Feeding for children 36 -59 months	56/121	46.3% (37.2-55.6)

Table 176: The 81 days retrospective mortality rate

CMR (total deaths/10,000 people / day): 0.24 (0.07-0.79) (95% CI)
U5MR (deaths in children under five/10,000 children under five / day): 1.25 (0.36-4.23) (95% CI)

Measles vaccination coverage results in Buramino

Table 177: Measles vaccination coverage for children aged 9-59 months (or other context-specific target group) (n= 273)

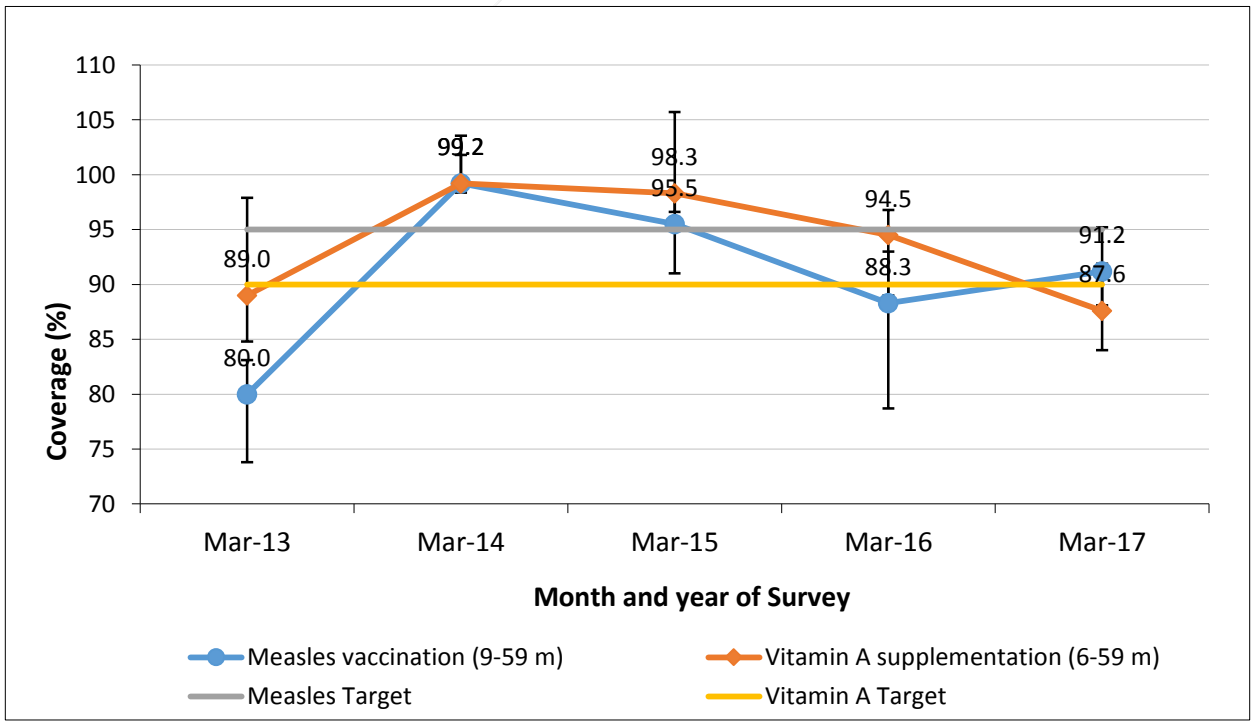
	Measles (with card) n=146	Measles (with card or confirmation from mother) n=249
YES	53.5% (47.4-59.5%)	91.2% (87.2-94.3%)

Vitamin A supplementation coverage results in Buramino

Table 178: Vitamin A supplementation for children aged 6-59 months within past 6 months (or other context-specific target group) (n=291)

	Vitamin A capsule (with card) n= 115	Vitamin A capsule (with card or confirmation from mother) n=255
YES	39.5% (33.9-45.4%)	87.6% (83.3-91.2%)

FIGURE 54: TRENDS IN THE COVERAGE OF MEASLES VACCINATION AND VITAMIN A SUPPLEMENTATION IN LAST 6 MONTHS IN CHILDREN 6-59 MONTHS FROM 2013-2017



Diarrhoea results in Buramino

Table 179: PERIOD prevalence of diarrhoea

	Number/total	% (95% CI)
Diarrhoea in the last two weeks	9/290	3.1% (1.4-5.8%)

Anaemia results in Buramino

Table 180: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age

	All n = 275
Total Anaemia (Hb<11.0 g/dL)	(130) 47.3% (41.2-53.4%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	(68) 24.7% (19.7-30.3%)
Moderate Anaemia (7.0-9.9 g/dL)	(62) 22.5% (17.7-27.9%)
Severe Anaemia (<7.0 g/dL)	(0) 0.0%
Mean Hb (g/dL) and (SD) [range]	10.9g/dl and SD = 1.35 [7.0-14.8]

Figure 55 : Trends in anaemia categories in children 6-59 months from 2013-2017

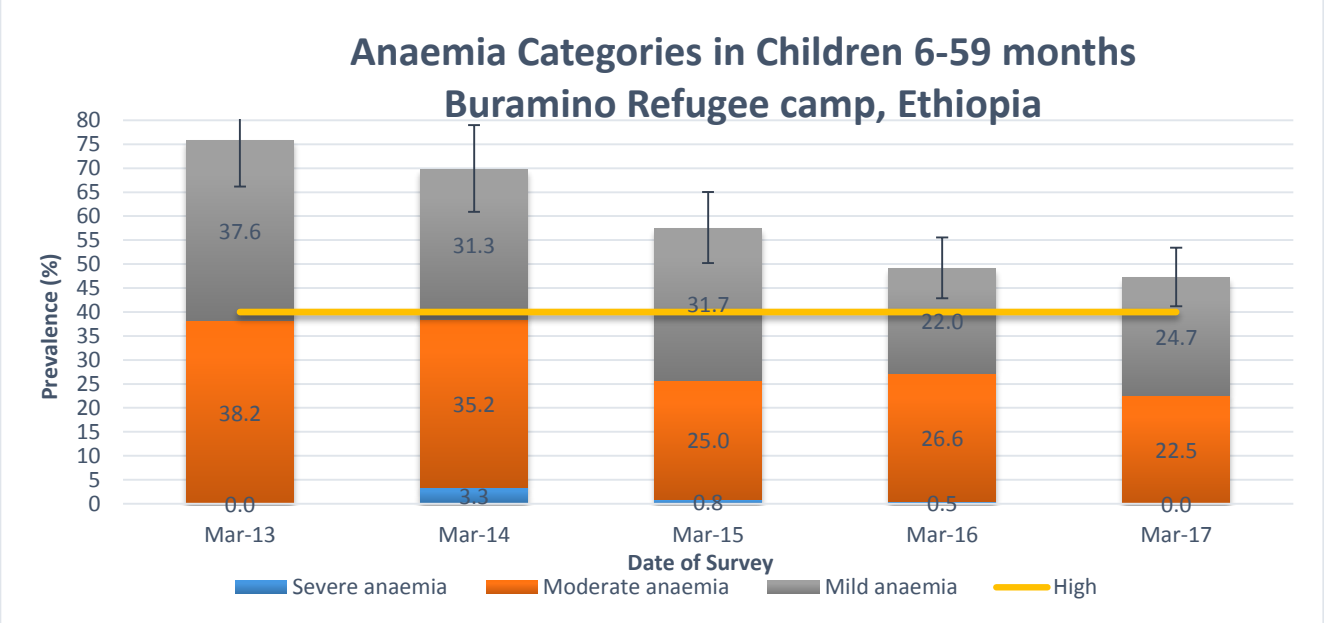


Table 181: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

	6-23 months (n=85)	24-35 months (n=68)	36-59 months (n=122)
Total Anaemia (Hb<11.0 g/dL)	(60) 70.6% (59.7-80.0%)	(33) 48.5% (36.2-61.0%)	(37) 30.3% (22.3-39.3%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	(30) 35.3% (25.2 - 46.4%)	(16) 23.5% (14.1-35.4%)	(22) 18.0% (11.7-26.0%)
Moderate Anaemia (7.0-9.9 g/dL)	(30) 35.3% (25.2 - 46.4%)	(17) 25.0% (15.3-37.0%)	(15) 12.3% (7.0-19.5%)
Severe Anaemia (<7.0 g/dL)	0.0%	0.0%	0.0%

Infant and Young Children Feeding (IYCF) Children 0-23 months

Table 182: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/total	Prevalence (%)	95 % CI
Timely initiation of breastfeeding	0-23 months	115/125	92.05	85.8-96.1%
Exclusive breastfeeding under 6 months	0-5 months	27/40	67.5%	50.9-81.4%
Continued breastfeeding at 1 year	12-15 months	19/23	82.6%	61.2-95.0%
Continued breastfeeding at 2 years	20-23 months	5/12	41.7%	15.2-72.3%
Introduction of solid, semi-solid or soft foods	6-8 months	7/18	38.9%	17.3-64.3%)
Consumption of iron-rich or iron-fortified foods	6-23 months	93/95	97.9%	92.6-99.7%
Bottle feeding	0-23 months	18/138	13.0%	7.9-19.8%

Table 183: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)
Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	11/138	8.0% (4.0-13.8%)

Fortified blended foods

Table 184: FBF intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive CSB+	49/97	50.5% (40.2-60.8%)

Table 185: FBF++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive CSB++	79/96	82.3% (73.2-89.3%)

Women 15-49 years

Table 186: Women physiological status and age

Physiological status	Number/total	% of sample
Non-pregnant	110/128	85.9% (78.7-91.4%)
Pregnant	18/128	14.1% (8.6-21.3%)
Mean age [range]	30.3 year [15-49]	

Table 187: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia in non-pregnant women of reproductive age (15-49 years)	All n = 107
Total Anaemia (<12.0 g/dL)	(40) 37.4% (28.2-47.3%)
Mild Anaemia (11.0-11.9 g/dL)	(19) 17.8% (11.0-26.3%)
Moderate Anaemia (8.0-10.9 g/dL)	(20) 18.7% (11.8-27.4%)
Severe Anaemia (<8.0 g/dL)	(1) 0.9% (0.0-5.1%)
Mean Hb (g/dL) and (SD) [range]	12.0g/dl SD =1.54 [4.5-15.6]

Figure 56 : Trends in anaemia categories in women 15-49 years from 2013-2017

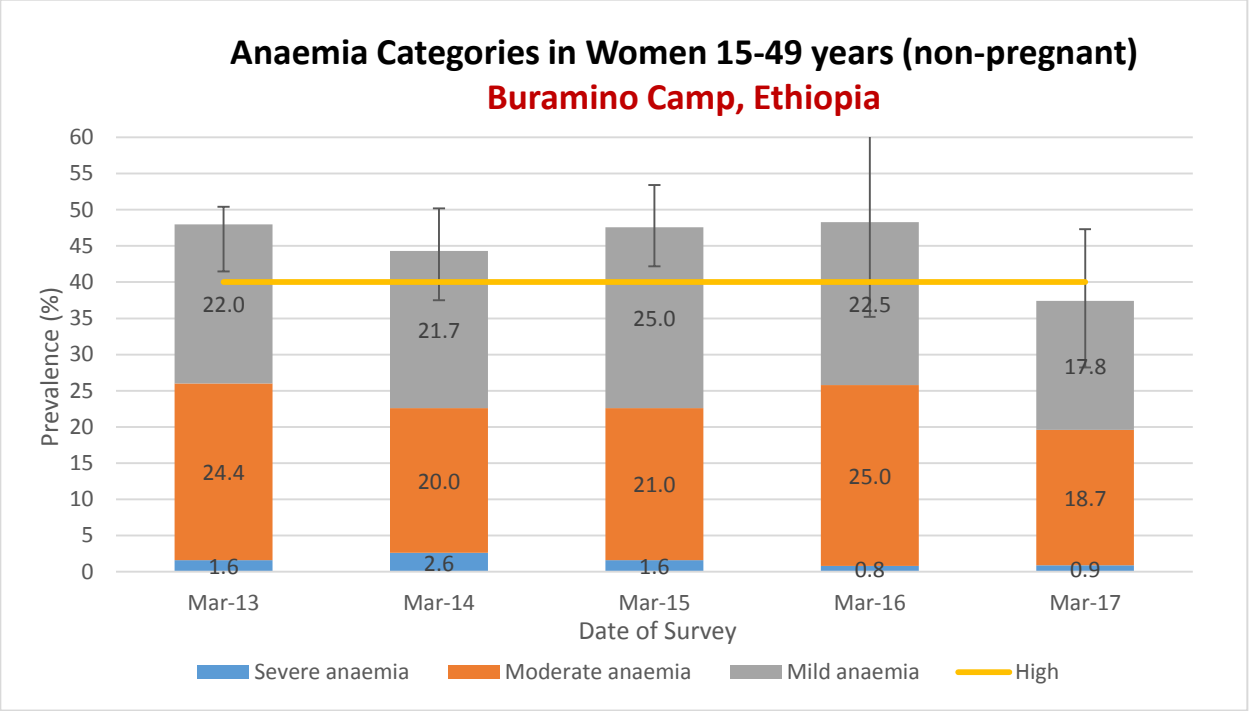


Table 188: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	17/18	94.4% (72.7-99.9%)
Currently receiving iron-folic acid pills	16/18	88.9% (65.3-98.6%)

Food security

Table 189: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	146/146	100.0%

Table 190: Reported duration of general food ration 1

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration*
19 days out of 30	63.3 days SD = 5.7

Table 191: Reported duration of general food ration 2

	Number/total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	139/145	95.9% (91.2-98.5%)
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle [30 DAYS]	15/145	10.3% (5.9-16.5%)
>75% of the cycle [30 DAYS]	130/145	89.7% (83.5-94.1%)

Negative coping strategies results

Table 192: Coping strategies used by the surveyed population over the past month

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items *with or without interest*	73/146	50.0% (41.6-58.4%)
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, etc.)	31/144	21.5% (15.1-29.1%)
Requested increased remittances or gifts as compared to normal	26/143	18.2% (12.2-25.5%)
Reduced the quantity and/or frequency of meals	61/144	42.4% (34.2-50.9%)
Begged	27/143	18.9% (12.8-26.3%)
Engaged in potentially risky or harmful activities	2/144	1.4% (0.2-4.9%)
Proportion of households reporting using none of the coping strategies over the past month	44/139	31.7% (24.0-40.1%)

***** The total will be over 100% as households may use several negative coping strategies.

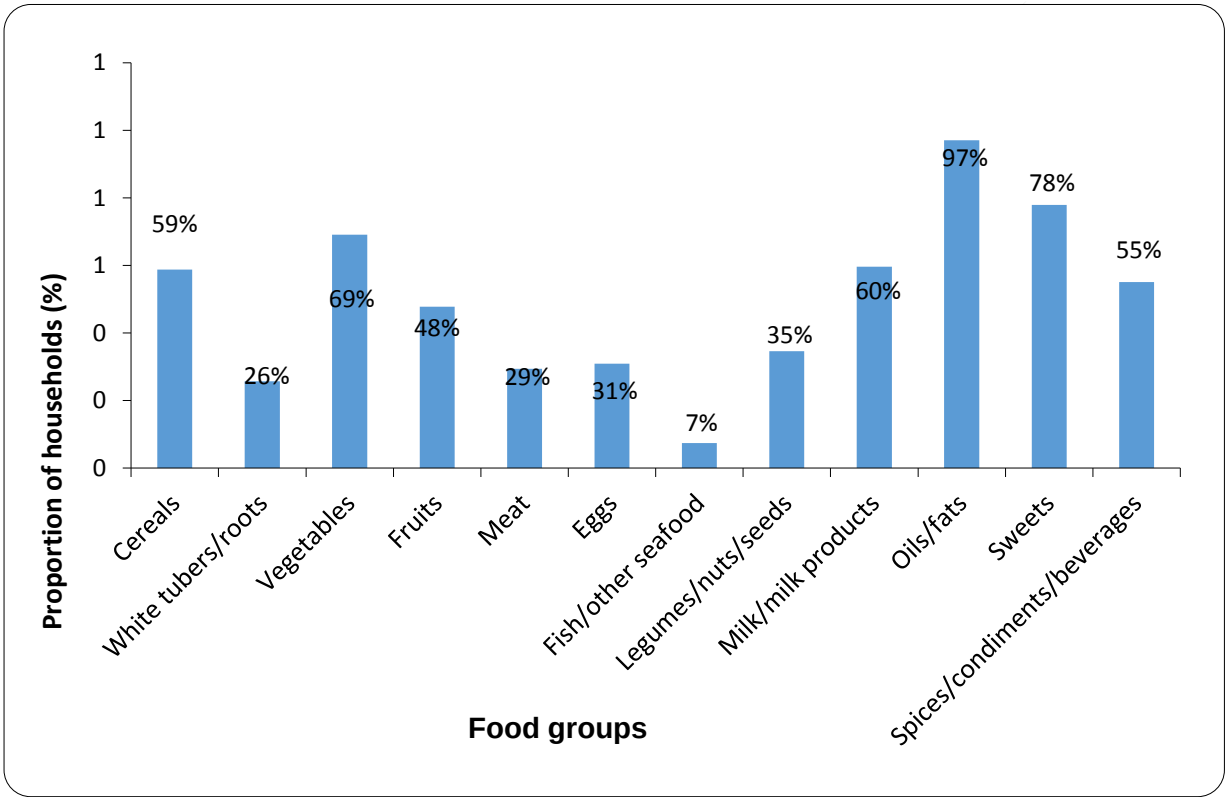
Table 193: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	5.9338 SD 1.8864

Table 194: Consumption of micronutrient rich foods by households

	Number/total	% (95% CI)
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	8/136	5.9% (2.6-11.3%)
Proportion of households consuming either a plant or animal source of vitamin A	101/136	74.3% (66.1-81.4%)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	43/136	31.6% (23.9-40.1%)

Figure 57 : Proportion of Households Consuming Various Food Groups



WASH

Table 195: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	291/291	100.0%
Proportion of households that use a covered or narrow necked container for storing their drinking water	116/288	40.3% (34.6-46.2%)

Table 196: Water Quantity: Amount of litres of water used per person per day

Proportion of households that use:	Number/total	% (95% CI)
≥ 20 lpppd	112/291	38.5% (32.9-44.3%)
15 – <20 lpppd	70/291	24.1% (19.3-29.4%)
<15 lpppd	109/291	37.5% (31.9-43.3%)
Average Water in LPPPD	20.34 LPPPD	

Table 197: Satisfaction with water supply

	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	228/290	78.6% (73.4-83.2%)

Figure 58 : Households that say they are satisfied with the water supply

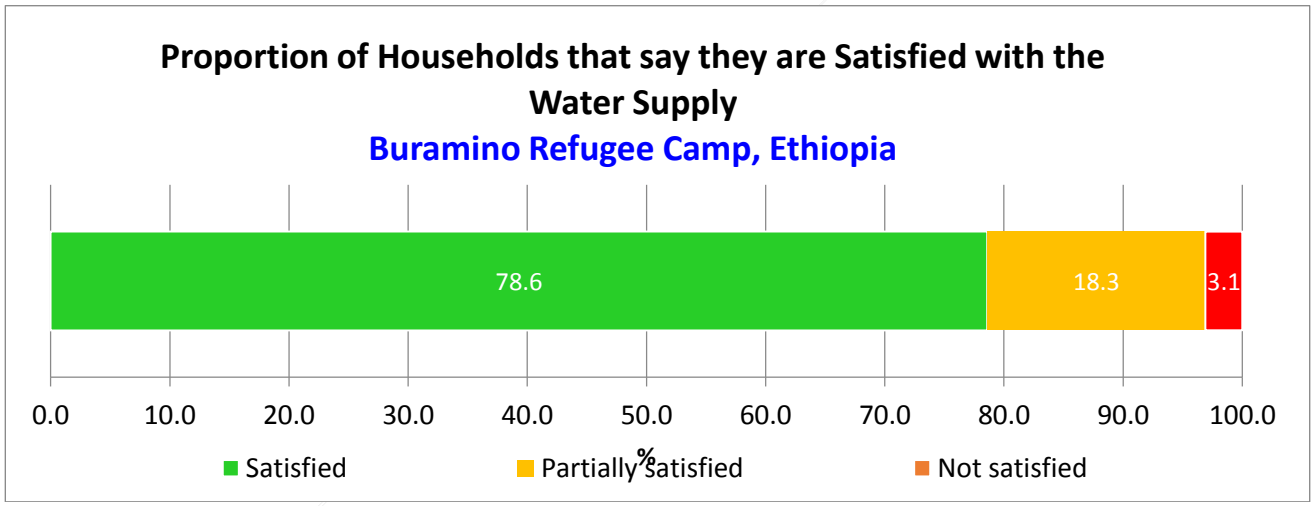


Figure 59 : Reasons provided for Dissatisfaction of Water Supply in Buramino camp

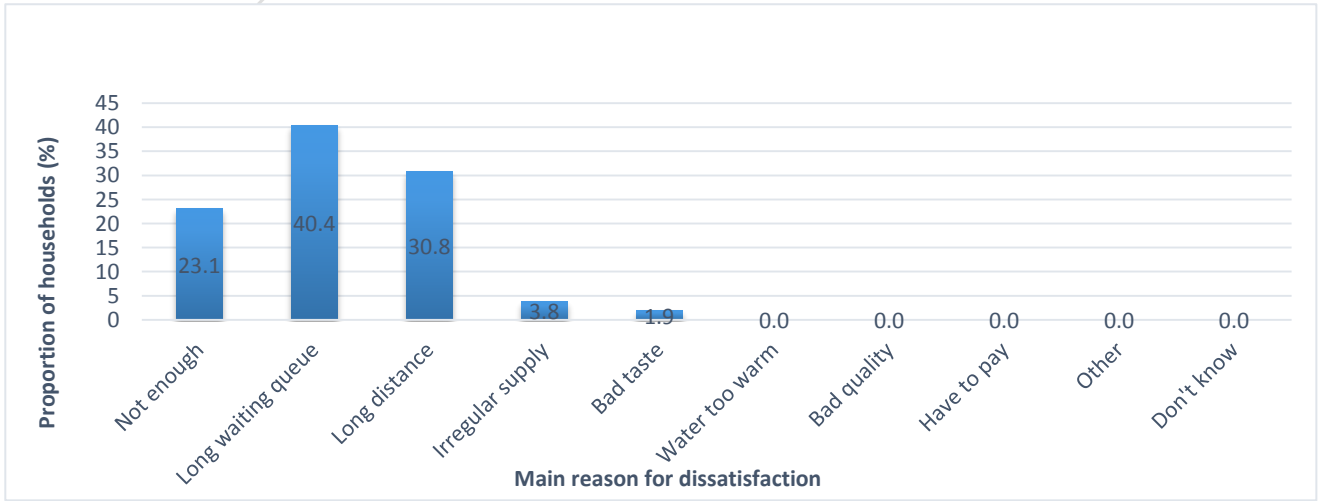
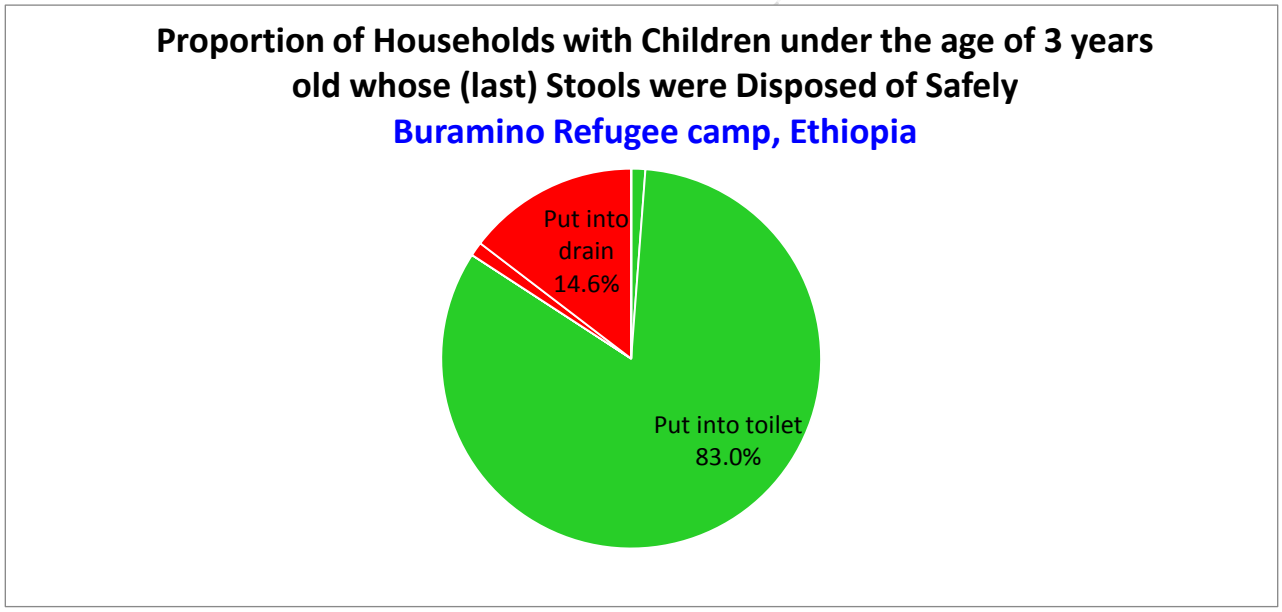


Table 198: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household),	10/288	3.5% (1.7-6.3%)
A shared family toilet (improved toilet facility, 2 households)	30/288	10.4% (7.1-14.5%)
A communal toilet (improved toilet facility, 3 households or more)	198/288	68.8% (63.1-74.1%)
An unimproved toilet (unimproved toilet facility or public toilet)	50/288	17.4% (13.2-22.2%)
Proportion of households with children under three years old that dispose of faeces safely	138/164	84.1% (77.6-89.4%)

Figure 60 : Proportion of Household with children under the age 3 years old whose last Stool were Disposed safely



4.6 Additional information analysed from the SENS data

Additional information was analysed to compare nutritional status of refugees children aged 6 – 59 months who crossed the border after 1st Jan 2017 (called new arrival) and those who were in camps before the date (called old caseload). Results showed high prevalence of GAM among new arrivals ranging from 11.1% in Melkadida to 24.1% in Kobe camp. The highest prevalence of GAM among old caseload was in Buramino at 15.2%.

Table 199: Comparison of GAM prevalence between the old caseload and new arrivals as of 1st Jan 2017

Camp	GAM for Old case (n/N) %(95% CI)	GAM for New arrivals (n/N) %(95% CI)
Bokolmanyo	(51/375) 13.6% (10.5-17.2%)	(2/10) 20.0 % (5.7-51.0%)
Buramino	(37/244) 15.2% (11.2-20.2%)	(9/39) 23.1% 12.6-38.2%)
Hilaweyni	(27/208) 13.0% (9.1-18.2%)	(3/17) 17.6% (6.2-41.0%)
Kobe	(54/368) 14.7% (11.4-18.7%)	(7/29) 24.1% (12.2- 42.1%)
Mekadida	(35/302) 11.6% (8.5 -15.7%)	(1/9) 11.1% (2.0 43.5%)

Information was also analysed to find out an impact of health extension package to IYCF - women who were trained verses those who were not trained on IYCF in the five camps.

Table 200: Comparison between women with HEP (Yes) against those without HEP (No)

Indicator	Bokolmanyo		Melkadida		Kobe		Buramino		Hilaweyn	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Timely initiation of breastfeeding (0-23 months)	90.1% (82.5-95.1)	87.9% (77.5-94.6)	97.2% (90.3 - 99.7)	74.6% (62.5-84.5)	90.7% (83.6-95.8)	72.1% (61.8-81.5)	83.8% (75.8-89.9)	80.0% (58.1-94.6)	83.3% (70.7-92.1%)	44.0% (30.0-58.7)
Exclusive breastfeeding under 6 months	73.0% (63.2-81.4%)	100.0%	90.9% (70.8 - 98.9)	91.7% (61.5-99.8%)	95.0% (75.1-99.9%)	100.0%	69.4% (51.9-83.7%)	50.0% (6.8-93.2%)	70.0% (45.7-88.1)	43.8% (19.8-70.1)
Introduction of solid, semi-solid	50.0%	88.9%	62.5%	81.8%)	72.7%	87.5 %	27.3%	100.0%	100.0%	75.0%

or soft foods(6-8 months)	(18.7-81.3%)	(75.5-98.2)	(24.5-91.5)	48.2-97.7)	(39.0 – 94.0)	47.3-99.7)	(6.0-61.0)			(19.4-99.4)
Bottle Feeding (0-23 months)	3.0% (0.6-8.3%)	(0/0) 0.0%	1.4% (0.0-7.5%)	6.0% (1.7-14.6%)	7.1% (2.9-14.0%)	10.2% (4.8-18.5%)	Note analysed			

5. Discussion

5.1 Anthropometry and health

The prevalence of GAM has reduced significantly compared to 2016. However, in Buramino and Kobe refugee camps, the GAM prevalence has remained over and above the UNHCR and WHO emergency threshold (≥15%), and thus, categorized as "critical" by classification of Public Health Significance. Similarly, improvements in SAM prevalence was noted among children aged 6-59 months, though at "critical" level (>2%) in three camps. The prevalence of SAM was 3.5% in Melkadida, 2.7% in Kobe and 4.2% in Buramino camps. The weighted average prevalence of GAM reduced from 22.6% in 2016 to 14.1% in 2017 indicating significant improvement in nutritional status among children aged 6 – 59 months.

The reduced prevalence of acute malnutrition is linked to a combination of efforts invested in Dollo Ado camps, one being introduction of blanket wet feeding to children aged from 36 – 59 months who takes there rations twice a day from Monday to Friday every week. Despite the noted reductions, prevalence of GAM was still above the UNHCR recommended level of <10% but far above the WHO acceptable standard of <5%.

Efforts to reduce prevalence of GAM in these camps are of imperative considering that malnutrition is the underlying contributing factor in about 45% of all child deaths, making children more vulnerable to severe diseases. Malnourished children, particularly those with severe acute malnutrition, have a higher risk of death from common childhood illness such as diarrhoea, pneumonia, and malaria.

Prevalence of stunting was far above WHO acceptable standard of below 20% in all the five camps. UNHCR accept prevalence of stunting <30%, and thus, only Bokolmanyo camp with 25.1% was meeting the standards. Melkadida, Kobe and Buramino were at "serious" level with prevalence between 30 and 39% while Hilaweyn was categorized at "critical" level with prevalence >40% according to classifications of public health significance.

The weighted average prevalence of stunting for the five camps has shown an increasing trend from 11% in 2013 to 34% in 2017 indicating significant deterioration among children aged 6 – 59 months suffering from chronic malnutrition. This may implies that nutritional status of under five year in the last five four years was within the WHO acceptable standard and with time while living in the camp the status is getting worse regardless of humanitarian assistance provided to the refugees by UNHCR, ARRA and partners. Persistent reduced funding to provide essential services like primary healthcare, adequate water supply, poor infant and young children feeding practices coupled with constant food reduction are some of aggravating factors that might have been contributed to such severe deterioration.

Enrolment coverage in blanket feeding program for children age 6 – 35 months ranged between 76% and 94%, and between 46% and 79% for children aged 36 – 59 months. Enrolment in the targeted feeding program ranged between 20% and 56% for SAM and between 10% and 30% for MAM.

This indicate that there are cases of malnutrition which have never been captured from the community reflecting poor outreach program in searching active cases, inadequate skills among the screen team members and/or inadequate coordination between community and facility-based health and nutrition services – referral mechanisms and feedback. There was a huge discrepancy between prevalence of acute malnutrition presented by MUAC against the one presented by WHZ in the five camps. These are indicators for alerting nutrition service providers to review nutritional screening of children aged between 6 – 59 months with the focus of improving coverage of the program and subsequent improvement of nutritional status of under five years children in the camps.

Measles vaccination coverage for children age 9-59 months was 99.2% in Bokolmayo, 98.4% in Melkadida, 93.3% in Kobe, 89.2% in Hilaweyni and 91.2% based on card and parental recall. Vitamin A. supplementation coverage was 86.4% in Hilaweyni, and 87.6% Buramino camp. Coverage was above 90% recommended by UNHCR and sphere standards for Bokolmanyo, Melkadida, Kobe and Hilaweyn camps.

5.2 Anaemia

Prevalence anaemia among children 6-59 months showed a slight reduction in Melkadida and Kobe from 44.6% and 51.2% in 2016 to 40% and 38% in 2017respectively. Prevalence however, showed an increase in Hilaweyn from 46.8% to 56.9% in the same period and no change in Bokolomanyo, and Buramino camps where prevalence remained above 40%. The weighted average prevalence in this age group was 44.9% which categorized as "critical" by classification of public health significance being above 40%. This means children in this age group need serious attention to address the situation.

Anaemia prevalence in non-pregnant women aged 15-49 years remained unchanged in three camps when compared to 2016. Prevalence of anaemia was 36.9% in Bokolmanyo, 24.3% in Melkadida, 28.1%, in Kobe, 37.4% in Buramino and 42.9% in Hilaweyn 44.6% making a weighted average prevalence was 34.4% which is above 30% acceptable by UNHCR. According to classification of public health significance the above weighed prevalence is categorized as "serious" and efforts have to be invested to reduce the prevalence.

5.3 Food Security

Proportion of households with a ration card was almost 100% in the all camps. The mean household dietary diversity score (HDDS) was at an intermediate level, in three refugee camps (Bokolmayo 8.3, Melkadida 7.7 and Kobe 7.4) while in Hilaweyn was 6.8 and 5.8 in Buramino. The HDD scores were far below the recommended 12 groups indicating that refugees have less alternatives food groups they consume.

The number of days which the general food ration lasted out of 30 days was 24.7 days in Bokolmayo, 25.7 days in Melkadida, 24.9 days in Kobe, 21.2 days in Hilaweyn and 19 days in Buramino camp.

5.4 WASH

Proportion of households using an improved drinking water source was almost 100.0% in the five camps. Water consumption at household level was above 20 litres pppd recommended by UNHCR except Melkadida with 18.5 litres pppd. A reasonable proportion of households saying they are dissatisfied with water supply was only noted in Buramino camp, counting at 21%.

Sanitation indicators showed as high as 23.7% of households using unimproved toilet in Kobe camp. This includes using pour flash elsewhere, open defecation or in the field and public toilets like in the market and hospitals with no control of cleanliness. In such situation refugees may be subjected to risks of outbreak of waterborne diseases including acute watery diarrhoea.

6. Conclusions

Generally prevalence GAM in children aged 6-59 months has reduced significantly compared to 2016. However, in Buramino and Kobe refugee camps, the prevalence of GAM still remained above the WHO emergency threshold of ≥15%, and categorized as "critical" according to classification of public health significance. Improvements was also noted in SAM prevalence among the same age group. Improvement of nutritional status in children might have been contributed by the increased cereals in the general rations from 10kg to 13.5g per person per month, introduction of BSFP among children aged 6-35 months and wet feeding among 36 to 59 months children attending childhood development centres. Other linked factors includes; increased funding to nutrition partners to improve facility-based programme, Infant and Young Child Feeding Practices (IYCF), active case finding, defaulter tracing and improved hygiene through distribution of soap.

While GAM was noted to reduce, the weighted average of prevalence of stunting for the five camps seemed to increase significantly from 11% in 2013 to 34% in 2017. This may imply that the number of children suffering from chronic malnutrition has been increasing gradually caused by many underlying factors including inadequate primary healthcare, personal hygiene, environmental sanitation and poor feeding practices among infant and young children coupled with frequent food reduction in the general rations.

7. Recommendations

7.1. Immediate-term

1. Infant and Young children Feeding Practices indicators showed low proportion of "timely initiation of complementary feeding" and "continued breast feeding up to two years". Given better access of RCH clinics by pregnant and lactating mothers, health providers should use this platform to delivery key messages for improvement of IYCF practice.
2. Food rations has been provided below the recommended daily energy of 2100 kcal per person per day. It is strongly recommended to review rations for the refugee food basket to reaching the minimum daily recommended allowance of both macro and micronutrients – minerals and vitamins. Present recommendations immediate, midterm and long there or as per sector with defining by priority.
3. Prevalence of anaemia among children aged 6-59 moths was "high" in the five camps and one camp among women. Considering the WHO acceptable level of prevalence < 20% which has not been attained, there is need to continue with blanket supplementation to children aged 6 – 35 months with supercereal plus and supercereal to children aged 36 – 59 month.
4. Enrolment coverage of SAM and MAM was very low in OTP and TSFP while attendance was high at BSFP both dry and wet feeding. The two-stage screening of MUAC and subsequent Weight for Height should be done twice a month at BFSP while solely Weight for Height is performed once a month to ensure capturing of all acute malnourished children and admit them in appropriate feeding program.

7.2. Medium-term

1. Strengthen outreach program to ensure effective identification and referral of children identified through nutritional screening in the community. Wet feeding as part of BSFP in children aged 36 – 59 months is done at schools by SCI. This imposes challenges related to screening and monitoring of nutritional status of the children since SCI has no such capacity. It is strongly recommended to provide this service within IMC facilities since they are mandated and have capacity of screening, identification and treatment of SAM and MAM cases.

2. Strengthen outreach program for active case finding in terms of capacity building and linkage with other programs like growth monitoring for children aged 0-59 months at community level to speedup referral of suspected cases of acute malnutrition to nutrition facilities.
3. Organize a regular joint monitoring and supportive supervision on the health, nutrition and WASH sectors from country office by both UNHCR and partners.

7.3. Long-term

1. Strengthen and scale up livelihood projects for improvement of the household food security to bring positive impact at household level.
2. UNHCR should plan to conduct an in-depth study to identify underlying causes of malnutrition in Dollo Ado camps as prevalence of GAM has persistently being high while prevalence of chronic malnutrition measured by stunting keeps increasing overtime.
3. Despite high vaccination coverage from the aggregate sum of card and parental information, coverage by card alone was very low. It is imperative to keep conveying messages to parents and caregivers on the importance of keeping safe the vaccination card. Also, lost or damaged cards should be replaced with new ones while keeping information which was available from the old card.

4. Appendices

Plausibility check for the SESN data for all camps

Overall data quality for Bokolomanyo camp

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	Score
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (2.5 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.920)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.546)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (9)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (9)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (4)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (1.09)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.11)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**1** (-0.34)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**5** %

The overall score of this survey is 5 %, this is excellent.

Overall data quality for Melkadida camp

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	Score
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**5** (3.3 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**4** (p=0.009)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**4** (p=0.043)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (3)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (10)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (7)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	

.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (1.07)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.06)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.02)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**15** %

The overall score of this survey is 15 %, this is acceptable.

Overall data quality for Kobe camp

Criteria	**Flags***	**Unit**	**Excel.**	**Good**	**Accept**	**Problematic**	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (2.2 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.729)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**2** (p=0.073)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**10** (1.18)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.19)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**1** (-0.38)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**13** %

The overall score of this survey is 13 %, this is good.

Overall data quality for Hilaweyn camp

Criteria	**Flags***	**Unit**	**Excel.**	**Good**	**Accept**	**Problematic**	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (1.7 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.960)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (8)

Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (7)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**5** (1.13)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.06)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**1** (-0.31)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**18** %

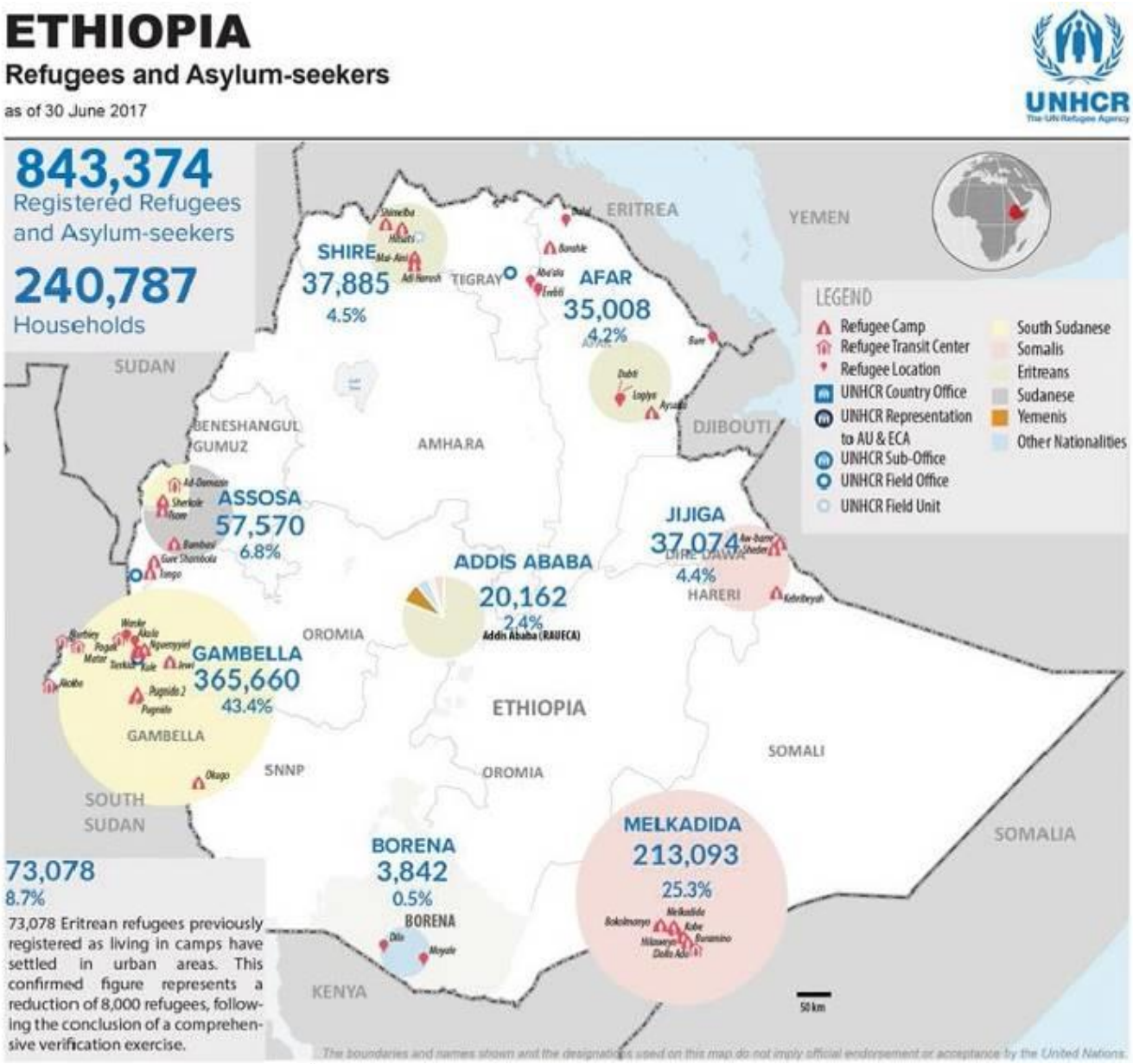
The overall score of this survey is 18 %, this is acceptable.

Overall data quality for Buramino camp

Criteria	**Flags***	**Unit**	**Excel.**	**Good**	**Accept**	**Problematic**	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (2.0 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.457)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (7)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**5** (1.14)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.06)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**1** (-0.33)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**16** %

The overall score of this survey is 16 %, this is acceptable.

MAP of the surveyed area



Surveyed camps

IOM Operation in Dollo Ado, Ethiopia

Emergency Response on the Horn of Africa Drought Crisis

International Organization for Migration (IOM)
Special Liaison Office in Addis Ababa
P. O. Box 25283 Code 1000, Addis Ababa, Ethiopia
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http://www.iom.int/jahia/lahia/ethiopia

Date: 09/11/2011

The names and boundaries on this map do not imply acceptance or official recognition by the International Organization for Migration.

Appendix 5

Nutrition Surveys Questionnaires March 2016

Greeting and Reading of Rights

THIS STATEMENT IS TO BE READ TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSE BEFORE THE INTERVIEW. DEFINE A HOUSEHOLD AS A GROUP OF PEOPLE WHO LIVE TOGETHER AND ROUTINELY EAT OUT OF SAME POT. DEFINE HEAD OF HOUSEHOLD AS MEMBER OF THE FAMILY WHO MANAGES THE FAMILY RESOURCES AND IS THE FINAL DECISION MAKER IN THE HOUSE.

Hello, my name is _____ and I work with [organization/institution]. We would like to invite your household to participate in a survey that is looking at the nutrition and health status of people living in this camp.

UNHCR and other IPs working in the nutrition and health sectors are sponsoring this nutrition survey

Taking part in this survey is totally your choice. You can decide to not participate or stop taking part at any time and for any reason. If you stop being in this survey it will not have any negative effects on how you or your household is treated or what aid you receive.

If you agree to participate, I will ask you some questions about your family. We will then measure the arm circumference, weight and height of children who are older than 6 months up to 5 years. In addition to these assessments we will also test a small amount of blood from the finger of the children and women to see if they have anaemia.

Before we start to ask you any questions or take any measurements, we will ask you to give your verbal consent. Be assured that any information that you will provide will be kept strictly confidential.

You can ask me any questions that you have about this survey before you decide whether to participate.

Thank you

Questionnaire for <u>WOMEN 15-49 YEARS</u> (every other HH)

This questionnaire is to be administered to all women aged between 15 and 49 years IN THE SELECTED HH

Date (dd/mm/yyyy)	**Camp**	**Block Number**
|__|__|/|__|__|/2015		
	Team Number	

W1	**W2**	**W3**	**W4**	**W5**	**W6**	**W7**	***W8**	**W9**
Woman ID	**HH**	**Consent given** **1=yes** **2=no** **3=absent**	**Age (years)**	**Are you pregnant? *(Wax Maad Leedahay)*** **1=yes(go to W8 and W9)** **2=no (go to HB)** **8=unk (go to HB)**	**Are you currently enrolled in the ANC?** **1=yes** **2=no**	**Are you currently receiving iron-folate tablets? (*SHOW PILL*)** **1=yes** **2=no** **8=unk**	**Hb (g/dL)** ***(FOR NON PREGNANT WOMEN ONLY)***	**Woman referred for anaemia** **1=yes** **2=no**
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

12								
13								
14								
15								

W10: REFER TO CLINIC FOR SEVERE ANAEMIA IF HB <8.0 G/DL UNK=UNKNOWN

Questionnaire for <u>CHILDREN 6-59 MONTHS</u> (every HH)

THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO ALL CARETAKERS OF A CHILD THAT LIVES WITH THEM AND IS BETWEEN 6-59 MONTHS OF AGE

Date (dd/mm/yyyy)	**Camp**	**Block Number**
|__|__|/|__|__|/2015		
	Team Number	
	|__|__|	

C1	**C2**		**C3**	**C4**	**C5**	**C6**	**C7**	**C8**	**C9**	**C10**	**C11**	**C12**	**C13**	**C14**	**C15**	**C16**
Child No	**HH** No	**Name**	**Did you arrive in the camp in the last 3 months (since 1st January 2013 to date)** 1=yes 2=no	**Sex** (m/f)	**Birthdate*** dd/mm/yyyy	**Age**** (months)	**Weight** (kg)	**Height** (cm) ±0.1 cm	**Oedema ***** (y/n)	**MUAC ***** (cm)	**Is child enrolled in a nutrition programme?** 1=TFP(SC/OTP) 2=TSFP 3.BFP 4=None	**Is this child enrolled into BSFP?** **1=Yes** **2=No**	**Measles** 1=Yes card 2=Yes recall 3=No or don't Know	**Vit. A in past 6 months** (SHOW CAPSULE) 1=Yes card 2=Yes recall 3=No or don't Know	Has [name] had **diarrhoea in the last two weeks**, including today? # 1=yes 2=no 8=unk	**Hb** *(g/dL)* **REFER CHILDREN WITH <7G/DL**
1																
2																
3																

4																
5																
6																

**Record from EPI/health card/age documentation if available. Leave blank if no valid age documentation. **Estimate using event calendar and recall if age documentation not available. #Diarrhoea:3 or more loose stools within*

24hrs *****C9 & C10: REFER TO CLINIC FOR MALNUTRITION IF NOT ALREADY ENROLED IN SFP / OTP IF OEDEMA=Y OR MUAC < 12.5CM; C19:REFER IF HB IS<7 G/DL**

Infant and young child feeding questionnaire (1 questionnaire per child 0-23 months)

Date (dd/mm/yyyy)	Camp	Block Number
|__|__|/|__|__|/2015		|__|__|
HH Number	**Team Number**	**Child Number**
|__|__|__|	|__|__|	|__|__|

	QUESTION	ANSWER CODES	
SECTION 1			
1.	Sex	Male.....1 Female.....2	__
2.	Birthdate (*Taariikh dhalasho*) RECORD FROM AGE DOCUMENTATION. LEAVE BLANK IF NO VALID AGE DOCUMENTATION.	Day/Month/Year... __ __ / __ __ / __ __ __ __	
3.	Child's age in months *(Da'da bilo ahaan)* ESTIMATE USING EVENT CALENDAR AND RECALL IF AGE DOCUMENTATION NOT AVAILABLE		__ __
4.	Has [NAME] ever been breastfed? *Ilmahan mala naas nuujiyay waligii*	Yes.....1 No.....2 DK.....8	__ **IF ANSWE IS 2 or 8 G TO Q**
5.	How long after birth did you first put [NAME] to the breast? *Markuu ilmuhu dhashay muddo goormaad ku duwday naaska*	Less than one hour.....1 Between 1 and 23 hours.....2 More than 24 hours.....3 DK.....8	__
6.	Was [NAME] breastfed yesterday during the day or at night? *Ilaa shalay iyo xalay ma siisay naas*	Yes.....1 No.....2 DK.....8	__
SECTION 2			
7.	Now I would like to ask you about liquids that [NAME] may have had yesterday during the day and at night. I am interested in whether your child had the item even if it was combined with other foods.	ASK ABOUT EVERY LIQUID. IF ITEM WAS GIVEN, CIRCLE '1'. IF ITEM WAS NOT GIVEN, CIRCLE '2'. IF CAREGIVER DOESN'T KNOW, CIRCLE '8'. EVERY LINE MUST HAVE A CODE.	

	Yesterday, during the day or at night, did [NAME] receive any of the following? *illaa shalay ilmaha ma siisay wax ka mid ah waxyaalaha hoos ku qoran ?*				
			Yes	No	DK
	7A: Plain water for example (Biyo caadiah ama biyo madow)	7A……1		2	8
	7B: Infant formula for example (*Nan, mamix, choice, S26, Sahha,caanaha ilmaha, sida mamix-caanah dasada yar)*	7B……1		2	8
	7C: Milk other than breast milk, such as tinned, powdered, or fresh animal milk for example *(Caanaha naaska marka lagareebo,sida ookale,canaha daasada ama qardaasyada,caano xoolo)*	7C……1		2	8
	7D: Juice or juice drinks: (*Sharaab sida cambe liin iwm*)	7D……1		2	8
	7E: Clear broth:(fuud/maraq xoolo)	7E……1		2	8
	7F:Sour milk or yogurt for example *(Caano fadhi ama gadhood, suusac iwm*	7F……1		2	8
	7G: Thin porridge for example (*Boorash khafiif ah)*	7G……1		2	8
	7H: Tea or coffee with milk (*Shaah ama bun caano leh iwm)*	7H……1		2	8
	7I: Any other water-based liquids Sodas, other sweet drinks, herbal infusion, gripe water, clear tea with no milk, black coffee, ritual fluids *(biges, bun, casmale, biyo tiira,soda)*	7I……1		2	8
8.	Yesterday, during the day or at night, did [NAME] eat solid or semi-solid (soft, mushy) food? For example *(illaa shalay ilmaha ma siisay cunta la tumay ama cunta yar adag ama cunta adag)*	Yes……1 No……2 DK……8			|__
SECTION 3					

9.	Did [NAME] drink anything from a bottle with a nipple yesterday during the day or at night? (*Cunuga makucabay masaasad, duuda am dalo ib leh*)	Yes ..... 1 No ..... 2 DK 8	|__
SECTION 4			
10.	Is child aged 6-23 months? *(Cunuga majiraa 6-23 bilood***)** REFER TO Q2	Yes ..... 1 No 2	|__ **IF ANSWE** **IS 2 STO** **NOW**
11.	Now I would like to ask you about some particular foods [NAME] may eat. I am interested in whether your child had the item even if it was combined with other foods. Yesterday, during the day or at night, did [NAME] consume any of the following? *(Imika waxaan doonayaa in aan kuwareysto cuntooyiin qaas ah oo cunuga uu cunay ama gooni ha u cuno ama rashiin kujiro shaygan)*	ASK ABOUT EVERY ITEM. IF ITEM WAS GIVEN, CIRCLE '1'. IF ITEM WAS NOT GIVEN, CIRCLE '2'. IF CAREGIVER DOESN'T KNOW, CIRCLE '8'. EVERY LINE MUST HAVE A CODE.	
		Yes No DK	
	11A. Flesh foods like *hilib, kaluun, digaag, beer, /wadna, kilyo iwm*	11A.....1 2 8	
	11B. CSB+	11B.....1 2 8	
	11C. CSB++/Super cereal +(SHOW SACHET)	11C.....1 2 8	
	11D. Plumpy'Nut® (SHOW SACHET)	11D.....1 2 8	
	11E. Plumpy'Sup® (SHOW SACHET)	11E.....1 2 8	
	11G. Infant formula: for example Nan, mamix, choice, anchor, S26*(caano boodhe, sahha)*	11G.....1 2 8	
	11H. List any iron fortified solid, semi-solid or soft foods designed specifically for infants and young children available in the local setting that are different than distributed commodities.*(Serifam , Cerelac)*	11H.....1 2 8	

Food Security questionnaire (1 questionnaire per every other household)

Date (dd/mm/yyyy)	Camp	Block Number
|__|__|/|__|__|/2015		|__|__|
HH Number	**Team Number**	
|__|__|__|	|__|__|	

No	QUESTION	ANSWER CODES	
SECTION 1			
1.	Does your family receive general food ration distributed by ARRA? *Reerku mahelaa rashiinka ey bixiso hayada ARRA*?	Yes.....1 No.....2	|__| **IF ANSWER IS 1 GO TO Q3**
2.	Why do you not receive the general food ration? *Waa maxaay sababta uu reerka u qaadanin rashiinka lagabixiyo xarada?*	No ration card.....1 Lost card.....2 Traded card.....3 Not registered but eligible.....4 Not eligible (not in targeting criteria)....5 Other.....6	|__|
3.	How many days did the food from the general ration from the [insert] cycle of [insert] month last? *(Imisa cisho ayuu raashinka bishu idin gaadhsiiya(qor inta maalmood) hadday tahay 30 cisho u wareeg S5)*	Number of Dates _____ _____ **IF ANSWER IS > or =30 days GO TO Q5**	|__|__|
4.	What is the *main* reason the general ration did not last until the next distribution? (*haddi cuntadu inikufilneen 30 casho maxaa sabaabay)*	Amount given is not adequate.....1 Part of food sold to buy other items .....2 Food sold for milling cost.....3 Food sold to pay debt.....4 New arrival family.....5 Gave to livestock.....6 Shared the food with kins .....7 Others.....8	|__|
5.	In the last month, have you or anyone in your household borrowed cash, food or other items with or without interest? (*Bishii lasoodaafay qof qooyska kamid ah masoodensaday lacag, ama raashin ama wax kale oo an riba lahayn)*	Yes.....1 No.....2 Don't Know.....8	|__|

6.	In the last month, have you or anyone in your household sold any assets that you would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)? *(Bishii lasoodaafay qof qooyska kamid ah ma iibiyay alaabta guriga, harurka, qalabka, iyo xoolo, iwm)*	Yes.....1 No.....2 Don't Know.....8	|___|
7.	In the last month, have you or anyone in your household been requested increased remittances or gifts as compared to normal? (*Bishii lasoodaafay qof qooyska ah madalbaday in loo soo xawilo lacag dheerad ah ama deeq ka badan intii hore)*	Yes.....1 No.....2 Don't Know.....8	|___|
8.	In the last month, have you or anyone in your household reduced the quantity and/or frequency of meals? *(Bishii lasoodaafay qof qooyska ah ma dhimay qiyaasta rashiinka guriga lagakariyo ama madimay waqtiyaha raashiinka lacuna guriga)*	Yes.....1 No.....2 Don't Know.....8	|___|
9.	In the last month, have you or anyone in your household begged? *Bishii lasoodaafay qof qooyska ah maraasaday caawitan ama masw baryotamay)*	Yes.....1 No.....2 Don't Know.....8	|___|
10.	In the last month, have you or anyone in your household engaged in: killing of wild animals, cutting of big trees and selling, stealing, cross boarder smuggling, charcoal burning or any other risky or harmful activities *Bishii lasoodaafay qof qooyska ah maka qeeyb qaatay waxyaala sida cidoodka oo la ugaarto, dhirta oo laguro, kutoroban iwm)*	Yes.....1 No.....2 Don't Know.....8	|___|
11.	Do you have one or more children 5-14 years of age currently living in the household? Qooyska ma leeyahay cunug da'disa 5-14 sano ama kayar?	Yes.....1 No.....2	|___| **IF ANSWER IS 2 GO TO SECTION 2**
12.	In the last month, have you or anyone in your household sent your child or children 5-14 years to	Yes.....1 No.....2	|___|

	work outside the household in order to get income (cash or in-kind)? *Bishii lasoodaafay qof qooyska ah ma u diray cunug 5-14 in uu kasoo shaqeeeyo meel ka baxsan guriga sifa uu dahqaale guriga u keeno)*	Don't Know……..8	
SECTION 2			
13.	Now I would like to ask you about the types of foods that you or anyone else in your household ate yesterday during the day and at night. I am interested in whether you or anyone else in your household had the item even if it was combined with other foods. *(Fadlan qeex cunnooyinka ee shalay reerku cunay maalinimadii. Ka bilow cuntada u horraysa)*	**READ THE LIST OF FOODS AND DO NOT PROBE. RECORD *(1)* IN THE BOX IF ANYONE IN THE HOUSEHOLD ATE THE FOOD IN QUESTION, OR *(0)* IN THE BOX IF NO ONE IN THE HOUSEHOLD ATE THE FOOD.**	
	1A. **Cereals from own food aid ration**: wheat ,rice or any foods made from these (Canjeero, Cambuulo, Baris; rooti,Iyo boorash)	1A……..……|___|	
	1B. **Cereals purchased, exchanged ,home-grown ,gift and not from own food ration**: wheat ,rice, pasta, bread, porridge (Baris, Basto, Rooti, Iyo boorash)	1B……..……|___|	
	1C. Fortified blended foods: CSB+, CSB++ or any other food made from these.	1C……..……|___|	
	2. **White roots and tubers**: Any green bananas, plantains, white potatoes, white yam, white cassava, or other foods made from roots *(moos ceyriin,* *baradho)*	2……..……|___|	
	3A. **Vitamin A rich vegetables and tubers**: Any carrot, pumpkin, squash, or sweet potato that are orange inside + other locally available vitamin A rich vegetables (e.g. red sweet pepper) *(qumbe, karoot)*	3A……..……|___|	

3B. Dark green leafy vegetables: Any dark green leafy vegetables, including wild forms + locally available vitamin A rich leaves such as amaranth, arugula, cassava leaves, kale, spinach *(Caleen cagaaran sida kosta gooman cagaar iwm)*.	3B……|___|
3C. **Other vegetables**: Any other vegetables (e.g. bamboo shoots, cabbage, green pepper, tomato, onion, eggplant, zucchini) + *other locally available vegetables (tamata, basal, cabash, basbas cagaar. Ton)*	3C…… |___|
4A. **Vitamin A rich fruits**: Any mango (ripe, fresh and dried), ripe papaya, and 100% fruit juice made from these + *other locally available vitamin A rich fruits (canbo kartay, cambe,, papaya,qara*)	4A……|___|
4B. **Other fruits**: Any other fruits such as apple, avocados, banana, coconut flesh, lemon, , including wild fruits and 100% fruit juice made from these*(ananas, tufax, afkadho, moos, liin- iwm)*	4B……|___|
5A. **Organ meat**: ber, kilyo, wadna iwm	5A……|___|
5B. Flesh meats: hilib xoola sida ari, lo' geel, ida, digaag ama hilib cidood	5B……|___|
6. **Eggs**: bet/ukun noc kasta	6……|___|
7. Fish and seafood: kaluun, kaluun laqalajijay,, tuna/kaluunka gasacadaha, iwm	7……|___|
8A. **Legumes, nuts and seeds from own food aid ration**: Misir/Digir	8A……|___|
8B. **Legumes, nuts and seeds purchased, exchanged, home-grown, gift and not from own food aid ration**: Any dried peas, lentils, nuts, seeds or foods made from these (Misir, *sida digir marawe, digir soomali*,	8B……|___|

	9. **Milk and milk products**: Any milk, infant formula, cheese, yogurt or other milk products (*caano dhamaan, cano fadhi, garoor*)	9……|___|
	10A. **Oils and fats from own food aid ration:** Vegetable oil (saliida lagabixiyo xarada –sida saliid cadeey)	10A……|___|
	10B. **Oils and fats purchased, exchanged , home-grown, gift and not from own food ration** Oil, fats, ghee or butter added to food or used for cooking *(saliida xarada aan lagabixinin-sida macsaro, sixin, subag iwm*.)	10B……|___|
	11. **Sweets***:* sugar, honey, sweetened soda or sweetened juice drinks, sugary foods such as chocolates, candies, cookies, sweet biscuits and cakes *(macmacaanka (sokor, malab, soda, cabitaan lamacaaneyay, nacnac, buskut, doolsha halwa)*	11……|___|
	12. **Spices, condiments, beverages**: (*filfil madoow, cusba,heel, basbaas, shah, bun* .)Any spices (black pepper, salt), condiments (soy sauce, hot sauce), coffee, tea, alcoholic beverages	12……|___|

Wash questionnaire (1 Questionnaire per every other Household)

Date (dd/mm/yyyy)	**Camp**	**Block Number**
|__|__|/|__|__|/2016		
HH |__|__|__|		**Team Number** |__|__|

No	**QUESTION**	**ANSWER CODES**	
SECTION WS1			
WS1	How many people are currently living in this household?	|__|__|	
WS3	Are you satisfied with the water supply? THIS RELATES TO THE DRINKING WATER SUPPLY	Yes ..... 1 No..... 2 Partially..... 3 Don't know..... 8	|__| **IF ANSWER IS 1, 3 OR 8 GO TO WS9**
WS4	What is the ***main*** reason you are not satisfied with the water supply? DO NOT READ THE ANSWERS **SELECT ONE ONLY**	Not enough.....01 Long waiting queue.....02 Long distance.....03 Irregular supply.....04 Bad taste .....05 Water too warm.....06 Bad quality .....07 Have to pay .....08 Other (specify) .....96 Don't know.....98	

SECTION WS2

Observation Based Questions (*done after the initial questions to ensure the flow of the interview is not broken*)

No	**OBSERVATION / QUESTION**	**ANSWER**			
WS9	CALCULATE THE TOTAL AMOUNT OF WATER USED BY THE HOUSEHOLD PER DAY THIS RELATES TO ALL SOURCES OF WATER (DRINKING WATER AND NON-DRINKING WATER SOURCES)	Please show me the containers you used yesterday for collecting water ASSIGN A NUMBER TO EACH CONTAINER	Capacity in litres	Number of journeys made with each container	Total litres SUPERVISOR TO COMPLETE HAND CACLULATION

	IF HOUSEHOLD BORROWED CONTAINERS TO COLLECT WATER OR DID NOT COLLECT WATER YESTERDAY, LEAVE BLANK				
		Total litres used by household			

Appendix 6

Seasons	Religious Holidays	Local Event (in camp of surrounding villages)	Somali Calendar	Month/Year	Age in Months	Height Range
End of Jiilal			Jamadul awal	March, 2017	0	
Mid of Jiilal			Malmadone / RabicuThani	February, 2016	1	
Beginning of Jiilal			Mowlid / Rabicul Awal	January, 2016	2	
End of Deyr	Mowlid celebration		Safar	December, 2015	3	
Mid of Deyr			Zako / Muharram	November, 2015	4	
Beginning of Deyr			Arafo / Dul-Hijjah	October, 2015	5	
End of Xagaa	Eid Al Adha		Sidatal / Dul Qicdah	September, 2015	6	
Mid of Xagaa			Soon fur / Shawwal	August, 2015	7	
Beginning of Xagaa	Eid Al Fitri	Ramadhan	Soon/Ramadhan	July, 2015	8	
End of Gu'	Beginning of Ramadhan	Refugee Day	Shacbaan	Jun, 2015	9	65-70
Mid of Gu'			Rajab	May, 2015	10	
Beginning of Gu'			Jamadul Aakhir	April, 2015	11	
End of Jiilal			Jamadul Awal	March, 2015	12	71-76
Mid of Jiilal			Malmadone / RabicuThani	February, 2015	13	
Beginning of Jiilal			Mowlid / Rabicul Awal	January, 2015	14	
End of Deyr	Mowlid celebration		Safar	December, 2014	15	
Mid of Deyr			Zako / Muharram	November, 2014	16	
Beginning of Deyr			Arafo / Dul-Hijjah	October, 2014	17	
End of Xagaa	Eid Al Adha		Sidatal / Dul Qicdah	September, 2014	18	
Mid of Xagaa	Eid Al Fitri		Soon fur / Shawwal	August, 2014	19	77-80
Beginning of Xagaa		Ramadhan	Soon/Ramadan	July, 2014	20	
End of Gu'	Beginning of Ramadhan	Refugee Day	Shacbaan	Jun, 2014	21	
Mid of Gu'			Rajab	May, 2014	22	
Beginning of Gu'			Jamadul Aakhir	April, 2014	23	
End of Jiilal			Jamadul awal	March, 2014	24	
Mid of Jiilal			Malmadone / RabicuThani	February, 2014	25	81-86
Beginning of Jiilal	Mowlid celebration		Mowlid/Rabicul Awal	January, 2014	26	
End of Deyr			Safar	December, 2013	27	
Mid of Deyr			Zako / Muharram	November, 2013	28	
Beginning of Deyr	Eid Al Adha		Arafo / Dul-Hijjah	October, 2013	29	
End of Xagaa			Sidatal / Dul Qicdah	September, 2013	30	
Mid of Xagaa			Soonfur/Shawaal	August, 2013	31	
Beginning of Xagaa	Beginning of Ramadhan	Ramadhan	Soon/Ramadan	July, 2013	32	
End of Gu'		Refugee Day	Shacban	Jun, 2013	33	
Mid of Gu'			Rajab	May, 2013	34	87-90
Beginning of Gu'			Jamadul Aakhir	April, 2013	35	
End of Jiilal			Jamadul awal	March, 2013	36	
Mid of Jiilal			Malmadone / RabicuThani	February, 2013	37	
Beginning of Jiilal	Mowlid celebration		Mowlid/Rabicul Awal	January, 2013	38	
End of Deyr			Safar	December, 2012	39	
Mid of Deyr			Zako / Muharram	November, 2012	40	
Beginning of Deyr	Eid Al Adha		Arafo / Dul-Hijjah	October, 2012	41	
End of Xagaa			Soonfur/Shawaal	September, 2012	42	
Mid of Xagaa	Eid Al Fitri	Ramadhan	Soon/Ramadan	August, 2012	43	
Beginning of Xagaa	Beginning of Ramadhan	Ramadhan	Shacban	July, 2012	44	
End of Gu'		Refugee Day	Rajab	Jun, 2012	45	
Mid of Gu'			Jamadul Aakhir	May, 2012	46	
Beginning of Gu'			Jamadul awal	April, 2012	47	91-99
End of Jiilal			Malmadone / RabicuThani	March, 2012	48	
Mid of Jiilal			Mowlid/Rabicul Awal	February, 2012	49	
Beginning of Jiilal			Safar	January, 2012	50	
End of Deyr			Zako / Muharram	December, 2011	51	
Mid of Deyr	Eid Al Adha		Arafo / Dul-Hijjah	November, 2011	52	
Beginning of Deyr			Sidatal / Dul Qicdah	October, 2011	53	
End of Xagaa	Eid Al Fitri		Soonfur/Shawaal	September, 2011	54	
Mid of Xagaa		Ramadhan	Soon/Ramadan	August, 2011	55	
Beginning of Xagaa			Shacban	July, 2011	56	100-
End of Gu'		Refugee Day	Rajab	Jun, 2011	57	
Mid of Gu'			Jamadul Aakhir	May, 2011	58	
Beginning of Gu'			Jamadul awal	April, 2011	59	