

# **Preliminary SMART Survey Report of Nutrition in Mingkaman IDP Camps, Awerial County, Eastern Lakes State in South Sudan during April 23<sup>rd</sup> –May 2<sup>nd</sup>, 2016.**

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## **Acknowledgements**

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## **Executive Summary**

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From April 27<sup>th</sup> –May 2<sup>nd</sup>, 2016 a total of households in Mingkaman IDP camps, Awerial County were assessed. This report contains the preliminary results of all indicators assessed in the survey (see specific objectives). The final report is expected to be completed by April 26<sup>th</sup>, 2016.

## Summary of key anthropometric and mortality findings:

### Anthropometry

- **575** children 6-59months were assessed
- Analysis for GAM was done with **567** children 6-59months
- GAM prevalence was **25.0% (20.9↔29.7 95% CI)** and SAM prevalence was **7.6 % (5.6↔10.2 95% CI)** based on **Weight-for-Height and the presence of bilateral oedema.**
- GAM prevalence based on **MUAC** was **12.7%(9.5↔16.8 95%CI)** and SAM prevalence based on **MUAC** was **3.1%(2.0↔5.0 95% CI)**
- No cases of oedema were identified.
- Total stunting was **10.7 % (8.3↔ 13.7 95% C.I.)** and severe stunting was **1.6 % (0.8↔ 3.1 95% C.I.)**
- Total underweight was **22.0 % (18.3↔ 26.2 95% C.I.)** and severe underweight was **4.9 % (3.1 ↔7.7 95% C.I.)**

### Mortality

- Crude death rate was **0.51 ( 0.28↔ 0.93 95% CI)**
- Under 5 death rate was **0.75 (0.32↔1.74 95% CI)**

**Findings have excluded extreme values (SMART Flags  $\pm$  3SD from the observed mean).**

## I. Introduction

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### Background

Awerial County is one of the counties of Eastern Lakes State, South Sudan.

Following the outbreak of violence in December 2013, internally displaced persons (IDPs) started arriving in Mingkaman Site with the majority of them arriving from Jonglei State. In December 2014, IDPs were relocated to three new sites in the Mingkaman area despite many of them also living outside these three designated sites<sup>1</sup>.

Since October 2015 a large influx of internally displaced persons (IDPs) crossed the Nile to reach Mingkaman from neighboring Jonglei State. In November and December, new arrivals came following attacks which took place on the 17th of November, targeting civilian populations, government and NGO assets in Jelle and Parker Payams, Twic East County, Jonglei State.<sup>2</sup> REACH found a total population of 52,942 in the established Mingkaman Spontaneous Settlement, with 12,019 reported to have arrived between 13 November and 13 December 2015. REACH found that the primary areas of origin of new arrivals were Twic East County and Bor South County. REACH also established that 60% of households at the site were expecting new arrivals from both Bor South County and Twic East County in January 2016.

According to the IOM biometric demographic data, the population of the IDPs in Mingkaman in Feb 2015 was 71,361 individuals, with 12,349 households.

According to an IRNA report conducted in Mingkaman / Awerial in early December 2015 the humanitarian situation for the new arrivals was alarming with women and children being among the most affected in terms of health, nutrition and general living conditions<sup>3</sup>.

IMC currently implements Nutrition, health and GBV programs in Awerial/Mingkaman IDP camps and host community. IMC runs Community based Management of Acute Malnutrition in 8 OTP/TSFP sites and Infant and Young child feeding through Mother Support groups.

The last anthropometric SMART survey in the area during the lean season conducted by IMC in August 2015 showed a Global Acute Malnutrition (GAM) prevalence of 14.1% (10.4 ↔ 18.8, 95% C.I.) and a Severe Acute Malnutrition prevalence (SAM) of 2.4% (1.1 ↔ 5.5, 95% C.I) indicating a *serious* nutrition situation in the area.

The nutrition survey was carried out in Mingkaman IDP camps, Awerial County, Eastern Lakes State. The study population for the anthropometric measurement and health (morbidity and immunization) will be children from the age of 6 to 59 months; whereas all households will form the population for retrospective mortality.

The prevalence of Global Acute Malnutrition (GAM) in Mingkaman IDP camps, Awerial County based on weight for height z scores /and or oedema was 25.0% [20.9↔29.7,95% CI) and the prevalence of Severe

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<sup>1</sup> REACH camps\_ssd\_factsheet mingkaman\_July 2015

<sup>2</sup> REACH- mingkaman-spontaneous-settlement-population-count

<sup>3</sup> child\_protection\_rapid\_assessment\_2016 report\_mingkaman.

Acute Malnutrition (SAM) was 7.6% [5.6↔10.2,95% C.I.]. The overall GAM prevalence is indicative of critical nutritional situation based on the WHO standards<sup>4</sup>

## 1.1 Survey Objectives

### Main Objectives

The overall objective of this survey was to assess the nutritional and health status among children 6-59 months of age and the mortality situation in Mingkaman IDP camps and probable factors contributing to malnutrition.

### Specific Objectives

1. To estimate the prevalence of malnutrition among children aged 6-59 months in Mingkaman IDP camps
2. To estimate retrospective crude rates and under five mortality rates in Mingkaman IDP camps
3. To estimate the coverage of measles vaccination (9-59months), deworming (12-59months) and vitamin A supplementation in children 6-59months in Mingkaman IDP camps
4. To estimate the prevalence of morbidity among children 6-59 months in the last two weeks prior to the survey dates.
5. To understand the health seeking behaviour of the caretakers of children 6-59 months
6. To estimate the prevalence of acute malnutrition among the pregnant and lactating women (PLWs) using Mid-Upper Arm Circumference (MUAC).

## 2. Methodology

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### 2.1 Sample size Anthropometry

The sample size for the nutrition survey was determined using ENA for SMART software (version July 9<sup>th</sup>, 2015). The following assumptions based on the given context were made to obtain the number of children to survey.

**Table 1: Sample size number of children**

Parameter	Values used	Rationale
Estimated prevalence %	18.8	Awerial/Mingkaman, August 2015 SMART survey. 14.1 % [10.4 ↔ 18.8 95% C.I.] Higher C.I used as a conservative estimate as the nutrition situation is perceived to have deteriorated following scale down of health and nutrition interventions
±desired precision %	4.5	As per SMART guidance based on the estimated prevalence

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<sup>4</sup> WHO cut off points for wasting using Z scores (<-2 Z scores in populations: <5% acceptable; 5-9% poor; 10-14% serious; >15% critical).

Design effect	1.87	Awerial/Mingkaman August SMART survey, 2015 DEFF was high 2.37, the survey had been done just immediately following influx of IDPs Variations at the moment not expected to be much thus a conservative estimate of 1.87 (reduced by 0.5) to cater for the variations
Average household size	8.9	Pre-Harvest Yirol East County SMART Survey 2015 by CCM. Secondary data (IMC RRM data also and REACH reports indicates influx of IDPs.
% of children under-five	18.3	Pre-Harvest Yirol East County SMART Survey 2015 by CCM
% of non-response households	5	Anticipated non response
Children to be included	<b>590</b>	
Households to be included	<b>423</b>	

## 2.2 Sample size Mortality

The sample size for the retrospective mortality survey was determined using ENA for SMART software (version July 9<sup>th</sup>, 2015). The following assumptions based on the given context were made to obtain the population and number of household to be included.

**Table 2: Mortality sample size number of children calculation parameters**

Parameter	Values used	Rationale
Estimated death rate per 10000/day	0.60	Pre-Harvest Yirol East county SMART survey April, 2015 0.27 [0.12↔0.60]. Higher C.I used as a conservative estimate. Majority of the IDPs are from the neighbouring counties of Bor, Yirol East, Twic East, Duk which are in the same livelihood zone.
±desired precision per 10000/day	0.35	As per SMART guidance
Design effect	1.38	Pre-Harvest Yirol East County SMART Survey 2015.
Recall period in days	107	Start date of 15 <sup>th</sup> January was used (emergency food distribution )
Average household size	8.9	Pre-Harvest Yirol East County SMART Survey 2015. Secondary data (IMC RRM data and REACH reports indicates influx of IDPs.
% of non-response households	5	Anticipated non response
Population to be included	<b>2642</b>	
Households to be included	<b>312</b>	

### 2.3 Survey Sample size

It was determined that a total of 590 children 6-59 months, which included 423 households were required for the anthropometric survey and a total of 2642 persons in 312 households were required for the retrospective mortality survey as a representative sample.

As the two indicators always produce different household samples, the larger, that is the Anthropometry sample which required the highest number of households was used for both anthropometry and mortality surveys.

All randomly selected households were included in the survey; the total number of 6-59 month children included in the survey, 575 (97.5%) which was more than the 80% minimum sample size required by the SMART methodology and thus no reserve clusters were done.

**Table 3: Percent of households and children 6-59 months included in the survey**

Number of HH planned	Number of HH surveyed	% surveyed /planned	Number of children 6-59 months planned	Number of children 6-59 months surveyed	% surveyed /planned
423	414	97.9 %	590	575	97.5%

### 2.4 Number of households per cluster

The number of households to be completed per day was determined according to the time the team could spend on the field excluding transportation, other procedures and break times. The details below are taken into consideration when performing this calculation based on the given context:

1. Departure from office at 8.00 am and back at 6.00 pm.
2. Average travel time to reach each cluster (one-way): 10mins.
3. Duration for initial introduction and selection of households: 1hr 30mins.
4. Time spent to move from one household to the next: 5min.
5. Average time in the household: 30 min.
6. Breaks: 1 lunch break of 30mins

The above gives an average 6.6hr (400 min) of working time in each cluster. If on average teams spend 30 min in each HH and 5 min traveling from one HH to another, each team could comfortably reach 12HH per day. One day in each cluster was assumed.

The total number of households in the sample was then divided by the number of households to be completed in one day to determine the number of clusters to be included in the survey.

423 HH/ 12 HH per day = 35.2 when rounded up gives **36 clusters**

Based on this calculation 36 clusters were planned to be included in the survey. From those 36 clusters, all (100%) were surveyed.

## **2.5 Cluster Sampling Strategy**

### **First stage sampling- Selection of clusters**

The first stage, which was selection of clusters was based on probability proportional to population size (PPS). Sectors were considered as the smallest geographical unit/primary sampling unit. An updated sampling frame of primary sampling units was obtained and the population data used was updated together with the local authorities and other actors. All sectors from the updated sampling frame with their respective population sizes were entered into ENA for SMART (July .9<sup>th</sup>, 2015 update version), and 36 clusters were selected using Probability proportional to size(PPS) .Additional 4 reserve cluster where also selected by the software, to be included in case less than 90% of the clusters and/or less than 80% of children were surveyed.

The reserve clusters were not surveyed as the sample size in terms of children was achieved and all the planned clusters visited.

### **Second stage sampling- Selection of households**

**Household definition:** Based on the context household was defined as, consisting of all persons with family or other social relationships among themselves eating from the same cooking pot and sharing a common resource base group .In homes with multiple wives, those living and eating in different houses were considered as separate households. Wives living in different houses and eating from same pot were considered as one household.

The required number of households (a total of 12 per cluster) was selected using simple random sampling using random number tables.

The survey team introduced themselves and the objectives of the survey to the village leader at the sectors, and in collaboration with the sector chiefs/leaders, the team prepared a list of all households in the sectors by walking across the selected clusters and listing households)

In case a sector was be big >150 households, segmentation was done after which one segment was randomly selected to be sampled.

The team started the survey from any convenient household of the randomly selected households (**12** households) to carry out anthropometric and mortality questionnaires. Revisits were done to households in which eligible children (under five) or entire family were found to be absent at first attempt. Households were not be substituted.

## 2.6 Survey Teams

The survey was conducted using 6 teams; each team comprising of 4 members (1 survey supervisor, 1 team leader/interviewer and 2 enumerators). The survey supervisors were International Medical Corps surveillance officers. The other member of the data collection team were largely drawn from county health department and nutrition program staff from other agencies operating in the area, and with prior experience in nutrition surveys.

Each team was assisted by a sector guide (recruited at the sector level) to lead and guide the survey team within the sectors in locating the selected households.

## 2.7 Field Supervision

The survey supervisors were in charge of the data quality control in the teams as they ensured that selection was done correctly, interviews done correctly and consistently from one household to the other and anthropometric measurements correctly taken. All the filled questionnaires were reviewed in the field by the survey supervisors for accuracy and completeness before the teams left the given clusters. The survey supervisors reported daily and submitted all the verified filed forms to the survey manager for review and feedback given every evening. Field visits were also done by the survey manager during the survey period to ensure quality during data collection

Daily data entry and regular plausibility checks were done and feedback given to survey team.

## 3. Results

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### 3.1 Anthropometry

Global acute malnutrition (GAM) is defined as  $<-2$  z scores weight-for-height and/or oedema and severe acute malnutrition (SAM) is defined as  $<-3z$  scores weight-for-height and/or oedema).

All exclusion of z-scores was determined by applying SMART flags (WHZ -3 to 3; HAZ -3 to 3; WAZ -3 to 3) which are based on the observed survey mean. ENA version July 9<sup>th</sup>, 2015 was used for analysis.

**Table 4: Distribution of age and sex of sample of Mingkaman IDP camps, Awerial County, April 2016.**

	Boys		Girls		Total		Ratio
AGE (mo)	no.	%	no.	%	no.	%	Boy:girl
6-17	66	46.5	76	53.5	142	24.7	0.9
18-29	61	46.6	70	53.4	131	22.8	0.9
30-41	76	49.4	78	50.6	154	26.8	1.0
42-53	62	57.4	46	42.6	108	18.8	1.3
54-59	25	62.5	15	37.5	40	7.0	1.7
<b>Total</b>	290	50.4	285	49.6	575	100.0	1.0



**Table 5: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex, Mingkaman IDP camps, Awerial County, April 2016**

	<b>All</b> n = 567	<b>Boys</b> n = 286	<b>Girls</b> n = 281
<b>Prevalence of global malnutrition (&lt;-2 z-score and/or oedema)</b>	(142) 25.0 % (20.9 - 29.7 95% C.I.)	(82) 28.7 % (22.0 - 36.4 95% C.I.)	(60) 21.4 % (16.8 - 26.7 95% C.I.)
<b>Prevalence of moderate malnutrition (&lt;-2 z-score and &gt;=-3 z-score, no oedema)</b>	(99) 17.5 % (14.5 - 20.9 95% C.I.)	(55) 19.2 % (14.6 - 24.9 95% C.I.)	(44) 15.7 % (11.9 - 20.3 95% C.I.)
<b>Prevalence of severe malnutrition (&lt;-3 z-score and/or oedema)</b>	(43) 7.6 % (5.6 - 10.2 95% C.I.)	(27) 9.4 % (6.4 - 13.7 95% C.I.)	(16) 5.7 % (3.4 - 9.3 95% C.I.)

The prevalence of oedema is 0.0 %

**Table 6: Distribution of acute malnutrition and oedema based on weight-for-height z-scores, Mingkaman IDP camps, Awerial County, April 2016**

	<b>&lt;-3 z-score</b>	<b>&gt;=-3 z-score</b>
<b>Oedema present</b>	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
<b>Oedema absent</b>	Marasmic No. 47 (8.2 %)	Not severely malnourished No. 527 (91.8 %)

**Table 7: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex, Mingkaman IDP camps, Awerial County, April 2016**

	<b>All</b> n = 575	<b>Boys</b> n = 290	<b>Girls</b> n = 285
<b>Prevalence of global malnutrition (&lt; 125 mm and/or oedema)</b>	(73) 12.7 % (9.5 - 16.8 95% C.I.)	(32) 11.0 % (7.5 - 16.0 95% C.I.)	(41) 14.4 % (10.3 - 19.8 95% C.I.)
<b>Prevalence of moderate malnutrition (&lt; 125 mm and &gt;= 115 mm, no oedema)</b>	(55) 9.6 % (7.0 - 13.0 95% C.I.)	(28) 9.7 % (6.4 - 14.3 95% C.I.)	(27) 9.5 % (6.6 - 13.5 95% C.I.)
<b>Prevalence of severe malnutrition (&lt; 115 mm and/or oedema)</b>	(18) 3.1 % (2.0 - 5.0 95% C.I.)	(4) 1.4 % (0.5 - 3.6 95% C.I.)	(14) 4.9 % (3.0 - 8.0 95% C.I.)

**Table 8: Prevalence of underweight based on weight-for-age z-scores by sex, Mingkaman IDP camps, Awerial County, April 2016**

	<b>All</b> n = 569	<b>Boys</b> n = 287	<b>Girls</b> n = 282
<b>Prevalence of underweight (&lt;-2 z-score)</b>	(125) 22.0 % (18.3 - 26.2 95% C.I.)	(73) 25.4 % (19.4 - 32.5 95% C.I.)	(52) 18.4 % (14.5 - 23.2 95% C.I.)
<b>Prevalence of moderate underweight (&lt;-2 z-score and &gt;=-3 z-score)</b>	(97) 17.0 % (13.9 - 20.7 95% C.I.)	(54) 18.8 % (14.0 - 24.7 95% C.I.)	(43) 15.2 % (11.6 - 19.8 95% C.I.)
<b>Prevalence of severe underweight (&lt;-3 z-score)</b>	(28) 4.9 % (3.1 - 7.7 95% C.I.)	(19) 6.6 % (3.9 - 11.1 95% C.I.)	(9) 3.2 % (1.8 - 5.7 95% C.I.)

**Table 9: Prevalence of stunting based on height-for-age z-scores and by sex, Mingkaman IDP camps, Awerial County, April 2016**

	<b>All</b> n = 561	<b>Boys</b> n = 279	<b>Girls</b> n = 282
<b>Prevalence of stunting (&lt;-2 z-score)</b>	(60) 10.7 % (8.3 - 13.7 95% C.I.)	(34) 12.2 % (8.7 - 16.8 95% C.I.)	(26) 9.2 % (6.3 - 13.3 95% C.I.)
<b>Prevalence of moderate stunting (&lt;-2 z-score and &gt;=-3 z-score)</b>	(51) 9.1 % (7.0 - 11.7 95% C.I.)	(27) 9.7 % (6.6 - 14.0 95% C.I.)	(24) 8.5 % (5.9 - 12.1 95% C.I.)
<b>Prevalence of severe stunting (&lt;-3 z-score)</b>	(9) 1.6 % (0.8 - 3.1 95% C.I.)	(7) 2.5 % (1.2 - 5.0 95% C.I.)	(2) 0.7 % (0.2 - 2.9 95% C.I.)

**Table 10: 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	567	-1.32±1.07	1.41	1	7
Weight-for-Age	569	-1.17±1.05	1.27	0	6
Height-for-Age	561	-0.53±1.17	1.06	1	13

\* contains for WHZ and WAZ the children with oedema.

### 3.2 Mortality

Mortality data was collected using the mortality individual questionnaire, results are summarized (Table 11) below.

**Table 11: Mortality rates, Mingkaman IDP camps, Awerial County, April 2016**

Parameters for Mortality	Results (CI 95%)
CMR (deaths per 10 000/day)	0.51 (0.28-0.93)
U5MR (deaths in children <5/10 000/day)	0.75 (0.32-1.74)
Persons recorded within recall period	2933.5
Current residents <5 years old	625.5
Percentage of children under five	22.7%
Mean household size	7.1
Total deaths during the recall period	16
Total deaths during the recall period <5 years old	5
Recall Period (days)	107
<b>Causes of death</b>	
Unknown	25.0%
Injury/traumatic	68.85
Illness/non traumatic	6.3%
<b>Location of death</b>	
In current location	68.8%
During migration	6.3%
In place of last residence	25.0

### 3.3 Additional Variables Health

**Table 12: Morbidity, Immunization and Mosquito net usage, Mingkaman IDP camps, Awerial County, April 2016**

Parameters	n	N	%
Vitamin A	420	575	32.9
Measles recall (9-59 months)	423	536	78.9
Illness	330	575	57.4
Fever	125	330	38.6
Cough	70	330	21.6
Diarrhea	105	330	23.9

Skin infection	72	330	16.4
Eye Infection	34	330	7.7
Others	34	330	7.7
Dewormed (12-59 months)	245	493	49.9
Mosquito Net use , 6-59 m	360	575	62.6

**Table 13: Health seeking behaviour, Mingkaman IDP camps, Awerial County, April 2016**

Parameters	n	N	%
None Sought	44	330	13.3%
Hospital	114	330	34.5%
PHCC/PHCU	125	330	37.9%
Private physician	19	330	5.8%
Shop	20	330	6.1%
Pharmacy	8	330	2.4%
TOTAL	330		100%

**Table 14: Maternal Nutrition (women of reproductive age 15-49years)**

Parameters	n	N	%
<b>Current Physiological status</b>			
Currently pregnant	71	486	14.6
Breastfeeding <6months	46	486	9.5
Breastfeeding 6-24months	152	486	31.3
Pregnant and breastfeeding	5	486	1.0
Not pregnant not breastfeeding	189	486	38.9
Breastfeeding >24months	23	486	4.7
TOTAL	<b>486</b>		
<b>Prevalence of malnutrition by MUAC (MUAC &lt;21cm</b>			
Breastfeeding <24months and pregnant	<b>13</b>	274	<b>4.7</b>

#### 4. Recommendations

SN	Activity	Time Frame	Responsible Organization	Remarks
1	Continue the implementation of the ongoing community management of acute malnutrition (CMAM) in the IDP camps as GAM prevalence is critical and above the emergency thresholds according to WHO classification standards Ensure that there is no break in the pipeline of nutrition commodities evidenced by the relapse of many cases to SAM.	Continuous	IMC/CCM  WFP	
2	Immediate scale-up of the CMAM program to cover all the IDP camps and host community (around 8 nutrition sites; services were suspended by IMC following funding cut)	As soon as possible (May)	IMC WFP, UNICEF, Nutrition Cluster partnership	UNICEF to fast track PCA signing
3	Immediate roll out of blanket supplementary feeding program	As soon as possible (May)	IMC in partnership with WFP	
4	Recruit, additional nutrition staff plus community volunteers to scale up management & prevention of acute malnutrition ; strengthen community mobilization through case finding (MUAC screening), defaulter tracing, and home visits and roll out massive community MUAC screening .Justified by the fact that 72.6 % of malnourished cases by MUAC are not in in program	As soon as possible (May)	IMC	UNICEF to fast track PCA signing
5	General Food Distribution (GFD) to continue to bolster the household food security for both the IDPs and host community	As soon as possible (May)	WFP	
6	Increase awareness through community mobilization on immunization and deworming.	Continuous	IMC, County health department and other actors	
7	Multi sectoral approach in managing malnutrition. Because malnutrition is as a result of many other factors. The linkages should be with WASH and Food Security and Livelihood programs.	As soon as possible	IMC, partners	

## Annexes

### Annex I: Selected Clusters

<b>Selected clusters, Mingkaman IDP CAMPS, Aerial County, April 2016 SMART Survey</b>			
<b>Site (IDP CAMPS)</b>	<b>Sector</b>	<b>Population estimation</b>	<b>Cluster</b>
0	1	660	1
	2A	2904	2
	2B	1266	3
	3A	3768	4,5
	4	4512	6,RC,7
	5	6270	8,9,RC
	6	1926	10
	7	4656	11,12,13
	8	2916	14,15
1	1	3582	16,17
	2	2376	18
	3	2760	19,20
	4	2142	21
	5	2094	22
	6	2022	23
	7	4044	RC,24
2	1	3792	25,26,27
	2	2508	28
	3	2970	29,30
	4	4254	31,32
3	1	3132	33,34
	2	2706	35
Marik	Marik	2016	36,RC
Yolakot	Yolakot	1350	

## Annex 2: Plausibility report

Plausibility check for: SS\_201604\_IMC\_AWERIAL\_MINGKAMAN IDP CAMPS.as

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

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

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	Score
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Flagged data (% of out of range subjects)	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	0 (1.2 %)
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Overall Sex ratio (Significant chi square)	Incl	p	>0.1	>0.05	>0.001	<=0.001	0 (p=0.835)
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Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1	>0.05	>0.001	<=0.001	0 (p=0.461)
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Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	0 (3)
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Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	0 (10)
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Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	0 (5)
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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 (1.07)

Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	0 (1 (-0.23))
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Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	0 (-0.19)
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Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	0 (p=0.294)
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OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	3 %
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The overall score of this survey is 3 %, this is excellent.