Report of

The multi-sectoral nutrition assessment

conducted in the vulnerable areas of the Gaza Strip, occupied Palestinian territory, from October 15 to 31, 2018

- Save the Children
- UNICEF
- World Food Programme

The Nutrition Working Group
occupied Palestinian territory

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Executive Summary

A protracted protection crisis continues in the occupied Palestinian territory (oPt). This crisis remains largely linked to the ongoing occupation, now in its 52nd year, the continuing internal Palestinian divide, and violations of international law. After a relative absence of armed conflict since the 2014 hostilities, 2018 saw a sharp deterioration in the humanitarian situation in the Gaza Strip. Poverty and unemployment affect more than half of all people living in the Gaza Strip, pushing food insecurity to a record high of 68.5% [1].

The health sector in Gaza has been heavily disrupted by years of conflict, restrictions on movements of people and goods, and socio-economic decline. Healthcare services and clinics are understaffed and lack basic resources, with frequent power cuts. Regular stock-outs of essential drugs and equipment occur, and over 95% of the water extracted from the aquifer is unfit for human consumption, resulting in 90% of the population using water from often unreliable water sources[2]. Psychological trauma and poverty have severely affected the population's mental health; many people, including children, suffer from anxiety, distress and depression.

Considering the context and the current situation, the nutrition risks and vulnerabilities among children under the age of five, pregnant women and mothers/caregivers of children under the age of two, and adolescent girls are very high. Since 2014, there has been limited information on the mothers/caregivers and their children under five affected by the ongoing crisis and the impact on the nutritional status of infants or the potential deterioration of infant feeding practices.

Save the Children worked with the Nutrition Working Group, led by UNICEF with the support of the World Food Programme and in collaboration with Ard El-Insan among other members of the nutrition working group members, to conduct a multi-sectoral nutrition assessment to determine the nutrition status and the practices of pregnant and lactating women and children 0-59 months in the most vulnerable communities of the Gaza Strip.

Data was collected using a mixed approach of both quantitative and qualitative methods, which included a household survey composing of anthropometric measurements (children 6 to 59 months, pregnant women and mothers of infants less than six months), a Knowledge, Attitude and Practices (KAP) survey, and an Infant and Young Child Feeding (IYCF) survey. Focus group discussions with primary caregivers and key informant interviews with stakeholders working in nutrition or health-associated programming in the Gaza Strip were also conducted.

The assessment was conducted during October 2018 in the nine of the most vulnerable localities across the five governorates of the Gaza Strip.

A total of 922 households were covered by the assessment. There were 1,047 respondents (pregnant women and mothers of children 0-59 months), who had a combined total of 1,476 children 0-59 months.

The findings show that almost a quarter of the population (23%) has a suboptimal food consumption score (FCS). Approximately 80% of those with a poor FCS are receiving some form of aid. The disaggregated consumption frequency of nutrient-rich food groups in the selected communities shows a high proportion of households are not eating enough iron-rich food groups, hence there is a high risk of iron deficiency anaemia. The coping strategies of the population (how the population is managing the crisis) focus mainly on reducing the quantity and variety of foods eaten (71 of the respondents %).

The nutritional status of pregnant and lactating women is poor, with 18% of pregnant women and 14% of lactating mothers malnourished. This calls for urgent attention and possibly some support to some nutritional programming.

The acute malnutrition rates are still below the World Health Organization (WHO) emergency thresholds (4% of children 6 to 59 months are acutely malnourished).

Despite many investments in health education programmes and training of medical personnel, caregivers have some knowledge of recommended IYCF practices, but their practice is generally poor. More than 6% of infants never breastfeed, and more than 55% of infants are not exclusively breastfeeding. Breastfeeding continuation at one and two years is very low at 45% and 12.5% respectively. Bottle-feeding among the assessed population is extremely high, at 41%, and more than 30% of infants less than 6 months are fed infant formula.

The majority receive the infant formula through relief agencies. The minimum acceptable diet, a combined indicator that measures how many of children's nutritional needs are being met, is at a dangerously low level of 14%.

Food Security Sector, Socio-Economic Food Security Survey, 2018.
UNRWA, Health in the Gaza Strip, webpage. https://www.unrwa.org/activity/health-gaza-strip

More than 40% of children less than five years experienced acute respiratory infections (ARI), while almost 40% experience diarrhoea. Medical attention was sought for less than half of these children. A further analysis was conducted to compare incidences of sickness (diarrhoea and ARI) with recommended breastfeeding practices among infants less than 6 months. The infants less than 6 months that were not exclusively breastfeeding were found to be twice as affected by diarrhoea and ARI, compared with those exclusively breastfeeding.

The assessment of water, sanitation and hygiene (WASH) practices showed that the majority of the respondents wash their hands after using the bathroom and before cooking, but 25% of households have no soap for hand washing and the majority access piped water as their primary water source.

Approximately 93% of caregivers reported concerns about some form of well-being issues for their children. Among the top problems cited were the inability to meet children's basic needs, such as clothing, medicine and education, recurrent sickness, and behavioural and psychological concerns. The insufficiency of food was mentioned as the fourth largest problem for children.

The focus group discussions conducted with mothers of children aged 0-23 months validated several findings of the survey. Mothers recognise the importance of exclusive breastfeeding, but cultural practices and traditions, coupled with misconceptions and misinformation, mean exclusive breastfeeding is not widespread or sustained. Mothers adopt unsafe practices due to financial and economic constraints, such as giving milk to their infant that is not suitable for their age. Complementary feeding practices are even more affected by the current crisis of limited economic capacity and reliance on food aid and external support. Complementary feeding practices are dictated by what is available in the household, and most of the time there is not enough to meet the requirements of a young child.

The interviews with key influencers provide valuable information on the current status of the nutrition programme in the Gaza Strip. There is an agreement that nutrition needs in Gaza has not been demonstrated as acute. This led to not have recognised the needs as a priority, and in the last four years, many international organizations have withdrawn their support.

Overall, the findings demonstrate an urgent need for a concerted and strategic approach to address the gaps and work to improve the situation. In response to the main recommendations of the assessment and the urgent needs highlighted, an operational multi-agency Maternal, Infant and Young Child Nutrition multi-year action plan has been developed. Integration across sectors to guide the collective response and the support of a sustained capacity-building programme for field workers are among the key characteristics of the action plan. Furthermore, the action plan promotes the support of community-based initiatives to sensitise, educate and increase community participation and leadership in the improvement of the nutritional status of the population.

Introduction

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1. Introduction

The Gaza Strip faces a humanitarian crisis that affects the livelihoods of its two million residents and limits their access to essential services. This crisis has been largely driven by an 11 year blockade of the Gaza Strip and an unresolved internal Palestinian divide, exacerbated since March 2018 by the significant increase in Palestinian casualties from demonstrations taking place near the perimeter fence separating the Gaza Strip from Israel, as well as limited escalations in hostilities.

A chronic electricity deficit in the Gaza Strip has also severely affected the availability of essential services, particularly health, water and sanitation services, and undermined the Gaza Strip's fragile economy, particularly the manufacturing and agricultural sectors. Palestinians in the Gaza Strip without access to safe water or sanitation have been identified among the most vulnerable groups in need of humanitarian assistance.

With high levels of poverty and unemployment, food insecurity is also alarmingly high, revealing the long-term impact of the disruptive shocks of recent years. Some 68.5% of households are severely or moderately food insecure, according to the 2018 Socio-Economic and Food Security Survey.

The health sector has been heavily disrupted by years of conflict, sanctions and socio-economic decline. Healthcare services and clinical staff are overstaffed and lack basic resources, with frequent power cuts and stock-outs of essential drugs and equipment. Over 90% of available water is unsuitable for human consumption. Psychological trauma and poverty have severely affected the population's mental health, with many people, including children, suffering from anxiety, distress and depression. The escalation of violence since March 2018 has left 112 people dead and more than 13,375 injured as of 31 July 2018. WHO estimates that more than 257 basic medications are needed immediately. While the health status of the whole population is deteriorating, children, women, the elderly, people with chronic diseases and those with disabilities are particularly at risk.

Considering the context, the nutrition risks and vulnerabilities among children under the age of five, pregnant women, mothers/caregivers of children under the age of 2 and adolescent girls are very high. Less than 50% of infants less than six months are exclusively breastfeeding.

Micronutrient deficiencies are at high levels, with 75% of children under the age of 1 year being anaemic, and more than 30% of pregnant and lactating women suffering from anaemia as well.

There is no unified nutrition surveillance system; the Ministry of Health surveillance system suggests that 4% of the infants are wasted (too thin for their height) and 10% are stunted (too short for their age), while the United Nations Relief and Works Agency for Palestine Refugees (UNRWA) surveillance system suggests that by the end of 2017 6.5% of children under five were wasted and more than 10% were stunted. The 2014 MICS data results revealed that one percent of the children under-5 in Palestine are moderately underweight and a negligible proportion (0.2) are severely underweight, seven percent of children under-5 are moderately stunted i.e. too short for their age, and two percent are severely stunted. Results also show that one percent of children are also moderately wasted (short for their height).

They also show that eight percent of children are suffering from overweight. The data show differences among children suffering from malnutrition according to geographic areas and regions. Eight percent of children in urban and rural areas are stunted, while the lowest prevalence was noted in camps (6 percent). Children in the West Bank showed higher prevalence rates (8 percent) compared to Gaza Strip (7 percent).

To date there is no updated information on mothers/caregivers and their children under 5, no information on the impact of the ongoing crisis on nutritional status, or on the potential deterioration of infant feeding practices.

UN OCHA, Palestine, Humanitarian Needs Overview, 2019. https://www.ochaopt.org/content/humanitarian-needs-overview-2019
UNRWA Report. https://www.unrwa.org/activity/health-gaza-strip
WHO. Health Cluster Situation Report March 30 to May 31st, 2018. http://healthclusteropt.org/pages/4/infograhics
http://www.healthclusteropt.org/details/91/health-crisis-infographic-15th-may-2018
UNICEF. Health and Nutrition Profile, Palestine. https://www.unicef.org/sop/what-we-do/health-and-nutrition
Ministry of Health. Nutrition Surveillance, 2016
UNICEF, State of Palestine Multi Indicator Cluster Survey, 2014 https://mics-surveys-prod.s3.amazonaws.com/MICS5/Middle%20East%20and%20North%20Africa/State%20of%20Palestine/2014/Final/State%20of%20Palestine%202014%20MICS_English.pdf

1.1 Assessment objectives

1. To assess the nutritional status of children 0-59 months, and pregnant and lactating women in the most marginalised populations of the Gaza Strip and identify levels of:
    a. Acute malnutrition (wasting): measuring mid-upper arm circumference (MUAC), oedema and weight for height
    b. Chronic malnutrition (stunting): measuring height for age
    c. Overweight: measuring weight for age
    d. Acute malnutrition in pregnant and lactating women: measuring MUAC

2. To conduct a quantitative and qualitative assessment of infant and young child feeding (IYCF) practices among the marginalised population in the Gaza Strip
    a. To understand the priority IYCF needs for children less than 6 months and 6 to 23 months
    b. To identify knowledge gaps, cultural beliefs or behavioural patterns and practices that create barriers to or facilitate recommended infant and young child feeding and care practices.

3. To assess IYCF services in terms of availability, accessibility and level of provision

4. To assess other underlying causes of malnutrition, in particular:
    a. Household food consumption and coping mechanisms
    b. Morbidity and health-seeking behaviour for children 0-59 months (ARI and diarrhoea)
    c. Access to health services by children 12 to 59 months (coverage of MMR vaccine)
    d. Caring practices related to complementary feeding of children 6 to 23 months
    e. Availability of water supply and hand-washing practices

1.2 Target population and respondents

- Children
    - 0-5 months
    - 6 to 23 months
    - 24 to 59 months
- Caretakers of children 0–24 months. Women will be interviewed by preference but men could be interviewed if the only caretaker.
- Pregnant women
- Key agencies providing nutrition services

Methodology

2. Methodology

Data was collected using a mixed method approach of both quantitative and qualitative methods which includes a household survey comprising anthropometric measurements, a Knowledge, Attitude and Practices survey on infant and young child feeding in emergencies, as well as focus group discussions with primary caregivers, and key informant interviews with stakeholders working in nutrition or health-associated programming in the Gaza Strip.

2.1 The household questionnaire

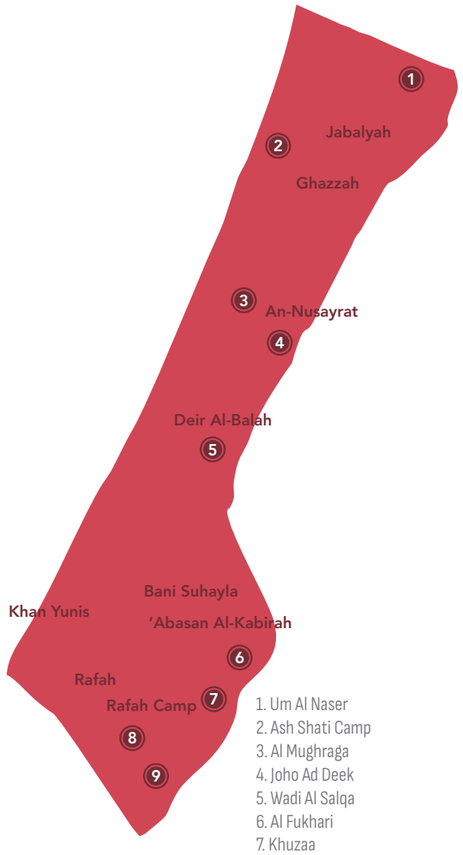
2.1.1 Sample frame

There are five Governorates in the Gaza Strip: Deir Al Balah, Gaza, Khan Yunis, North Gaza and Rafah. Governorates are composed of smaller administrative areas called localities, which also contain distinct 'camps', which are predominantly refugee populations living in high density urban areas. There are a total of 33 localities in Gaza.

The assessment took place across all five governorates. The smallest geographical area for which data is available is the locality. While poverty data is available by governorate in the 2018 Census, it was not available at locality level at the time of the assessment.

Thus, the most comprehensive and accurate poverty data available for the whole of Gaza is from the 2008 Census. As this is outdated, statistical tests were run to identify potential proxy indicators for poverty from the available 2018 census data sets by verifying the relationships to poverty. This analysis was based on analysis conducted the Palestinian Central Bureau of Statistics which identified household size and highest educational attainment as strongly correlated with poverty in the Gaza context.

Figure 1:
Map of selected areas in the Gaza Strip



1. Um Al Naser
2. Ash Shati Camp
3. Al Mughraqa
4. Joho Ad Deek
5. Wadi Al Salqa
6. Al Fukhari
7. Khuzaa
8. Al Naser
9. Al Shokat

Several proxy indicators for poverty were identified. These were the following:

- large household size
- low female literacy rates
- a high percentage of household heads whose highest educational attainment is completion of middle school
- an inverse relationship with % of household heads whose highest educational attainment is a bachelor's degree.

Based on these results, and using a sample frame of all localities in Gaza, the nine poorest performing localities were selected. A tenth locality was selected as a reserve in case of difficulties accessing an area due to security or logistical concerns. (See Fig 1)

Census Summary, Palestinian Central Bureau of Statistics Poverty Profile in Palestine, 2017

2.1.2 Estimation of sample size

Study and sampling design

The aim was to conduct a cross-sectional representative survey of households with a focus on nutrition and feeding of young children and infants in the selected areas. In order to collect the sample sizes for the household survey a two-pronged approach to sampling was used. First the sample size requirements for children aged 6-59.99 months were calculated using the SMART approach and ENA for SMART software. The sample size was calculated using the parameters shown in Table 1. A design effect of 1.5 was used in line with standardised cluster sampling. A 10% estimate of non-response was utilised as a worst-case scenario to account for non-completion or poor-quality data collection. The sample size was calculated based on achieving statistical confidence for anthropometric objectives, not mortality. The ENA software calculated a required sample size of 150 children and 224 households.

Table 1 : Parameters used for the anthropometry requirements[11]

Parameters	Value
Expected prevalence (p)†	6.4%
Relative desired precision (d)	5%
Design effect	1.5
Average household size	5.6
% of U5 in population	14.8
% Non-response	10

In addition to the ENA, a combination of online sample size software[12] and the 2010 CARE US IYCF Sample size calculator was used to calculate sample sizes for IYCF indicators. First, population estimates were developed for the age groups of interest required by indicator and for intervals of 6 months for all children 0-59.99 months by equally dividing the population under 5 into desired age brackets. Eight core indicators were selected to generate sample sizes that would reflect the average and the maximum requirements for the household questionnaire using the parameters described in Table 2 below.

Table 2 : Core indicators used to generate the minimum sample size requirements

Indicator (s)	Estimated population of interest	Estimated prevalence	Precision	Power	Design effect	Individual response rate
Timely initiation of breastfeeding (children 0-23 months)	112,201	41%	5%	20%	1.5	95%
Exclusive breastfeeding under 6 months	28,050	36%	5%	20%	1.5	95%
Timely introduction of complementary feeding	14,025	92%	5%	20%	1.5	95%
Continued breastfeeding at 1 year	18,700	59%	5%	20%	1.5	95%
Minimum dietary diversity	84,151	75%	5%	20%	1.5	95%
Minimum meal frequency	84,151	55%	5%	20%	1.5	95%
Minimum acceptable diet	84,151	36%	5%	20%	1.5	95%
Bottle feeding	112,201	36%	5%	20%	1.5	95%

[11] Data taken from 2014 State of Palestine MICS Survey. https://mics-surveys-prod.s3.amazonaws.com/MICS5/Middle%20East%20and%20North%20Africa/State%20of%20Palestine/2014/Final/State%20of%20Palestine%202014%20MICS_English.pdf accessed 3 October 2018

[12] http://sampsize.sourceforge.net/iface/index.html#prev

The scenarios were run to calculate the sample sizes required at 5% precision with 20% power and 95% confidence intervals. The sample sizes required for Indicators 1 - 3 were however too large owing to budgetary, logistical and time constrains of the project. With the statistical parameters as described above, Indicator 2 for example, indicated that we would require a sample of 3,449 children <2. As such, the precision for Indicators 1, 2 and 3 were lowered to 10% to generate sample sizes that were considered attainable. This has implications for the Confidence intervals for these three indicators, which are discussed in the Findings section.

As outlined in Table 3, the minimum sample sizes required for infants <2 years of age and 2-4.99 years old were calculated. A factor of 1.15 was applied to the minimum sample size of children <2 to generate a desired sample size figure 15% larger than the minimum, to mitigate against possible data quality issues and ensure targets were met. A factor of three was applied to develop the desired sample size for children 2-4.99 owing to the small minimum sample size required. Utilising desired sample sizes, the study aims to assess a total of 1,012 children <2 and 306 children 2-4.99. Assuming the prevalence of infants <2 per household to be 1.2 amongst targeted households, the minimum household sample is estimated to be 843 households.

Table 3: Minimum sample size requirements by age group

Age group	Min sample size	Desired sample size
<2 years	880	1012
2-4.99 years	102	306
Combined	982	1318
Minimum household sample	843	

2.1.3 Sampling: Households

The target sample for each selected locality was then calculated using a probability approach to ensure that each household had the same probability of inclusion, as can be seen in Table 4. Clusters were divided into sub-clusters based on spatial analysis of household density to ensure all areas were represented.

While total household numbers and locations were available, a household list was not developed. Systematic random sampling was carried out by beginning at the administrative edge of the selected area and counting every 10 households to screen for eligibility criteria. If a household did not meet eligibility criteria (as seen in Annex 4), refused to participate or was abandoned it was marked and the next household was selected. If this household did not meet criteria or refuse, sampling was re-initiated until the next tenth household was identified. In high density urban areas with multi-storey apartment buildings, the unit of interest remained the household, and the number of households in a building was estimated.

If a household was found to have multiple eligible women, a maximum of two women were sampled per household. For each woman, a maximum of two children were eligible for sampling. Purposeful selection of women and children was conducted utilising eligibility and prioritisation criteria as described in Annex 3.

2.1.4 Questionnaire development

The household questionnaire was developed in Excel and uploaded onto Kobo for testing and shared with relevant stakeholders for testing and review. The questions and responses were translated from English to Arabic by Save the Children staff, with input from partners. The questionnaire contains a list of 156 questions categorised into distinct sections with skip and display logic to display relevant questions depending on a respondent's demographic status and responses to previous questions. No respondent will respond to all 156 questions.

2.1.5 Data management and analysis

Data was collected on Samsung Smart tablets on a smart Kobo Collet ® survey which was programmed with skip and display logic to help navigate the data collectors through different options and sections depending on household demographic characteristics and responses to the questionnaire. The surveys were uploaded onto the Kobo cloud every evening during data collection while Save the Children staff conducted plausibility checks.

Data was downloaded onto Excel for cleaning and translation of text entries and exported into ENA Smart Software for plausibility analysis and calculation of anthropometric data. The other data were entered into SPSS for further analysis. Data on food consumption scores and coping strategies were analysed by World Food Programme (WFP) Jerusalem office.

Daily data checks were carried out by the lead assessor and the supporting team. Daily review of data submitted by the teams was conducted by the team.

2.1.6 Training of enumerators

A group of 22 all-female Gaza-based enumerators were selected as data collectors from a pool of Ard El Insan Association (AEI) project and contract staff. All enumerators had previous experience with anthropometry and nutrition. Enumerators were organised in 11 teams of two. Staff underwent three days of training from 3-7 October in Gaza City, conducted by Save the Children, WFP and UNICEF. Training included refreshers on IYCF and anthropometry, introduction to food consumption scoring and coping strategies and a question-by-question run through of the questionnaire and follow up questioning. The training also included introducing the study, sampling methods, security, and utilisation and management of tablets. The final afternoon of training was dedicated to the testing of the questionnaire and a standardisation exercise was conducted, but only limited time was dedicated to verifying the accuracy of the measurements of the 11 teams. Women with children of varying ages were brought into the training site to pilot the questionnaire.

On the first and second days of data collection, all teams were sent to the same area [Al Mugragha and neighbouring Juhor Ad Dik] to allow for more intensive supervision by Save the Children staff. Data collection teams were subsequently allocated to localities with consideration for team travel distance and familiarity. Teams were not allocated to areas where they lived, owing to the potential for bias through familiarity with the target population.

Spot checks were conducted by Save the Children and partners on all 11 data collection teams throughout the data collection phase with more intensive supervision in the first week of data collection. Throughout the duration of data collection, data collectors came together four times to discuss issues and difficulties and provide the opportunity for supportive correction of issues that arose.

All enumerators were trained on child safeguarding policy and Save the Children accountability mechanisms. A toll-free number was given to all the women who were interviewed and they were encouraged to use it in cases of any concerns and issues.

Table 4 :
Location selections for the data collection, with estimated number of households to be covered

	Locality name	Population	Total number of households	% of total households in selected localities	Min household sample required per locality	Sample by Governorate	Sample as a % of households in locality
Deir Al balah	Wadi as Salqa	6,605	1,250	6%	53	53	4.2%
Gaza	Juhor ad Dik	4,538	854	4%	36	423	4.2%
	Al Mughraqa	11,180	1,889	9%	80		4.2%
	Ash Shati' Camp	40,160	7,240	36%	307		4.2%
Khan Yunis	Khuza'a	11,286	2,208	11%	94	141	4.2%
	Al Fukhkhari	6,343	1,109	6%	47		4.2%
North Gaza	Um Al-Nnaser	4,621	787	4%	33	33	4.2%
Rafah	Al Shokat	16,234	3,002	15%	127	195	4.2%
	Al-Nnaser	8,814	1,587	8%	67		4.2%
Total		109,781	19,926	100%	845		

2.2 Focus group discussions

Focus group discussions (FGDs) were conducted to gather additional information on belief systems and other socio-cultural factors that can contribute to or inhibit behaviours identified by the assessment (Annex 5). A total of four focus group discussions were held with women on 22 and 23 October 2018; two in the Gaza Governorate and two in the Middle Area (Dier-el-Balah) Governorate. The two FGDs hosted in the Gaza Governorate were for women from localities in the North Gaza and Gaza City Governorates, and the two hosted in the Middle Area were for women from The Middle Area, Khan Yunis and Rafah Governorates. The all-women FGDs were held in private meeting rooms at two separate (total) AEI clinics in Gaza City and Khan Yunis which were familiar to many of the women. A travel stipend and refreshments were provided, and children were welcome to attend.

Between four and five women from each locality were invited to attend the nearest FGD discussion. Women were invited to the FGD based on their responses on breastfeeding knowledge and practices in the household questionnaire. Half of the women invited had good breastfeeding knowledge and practices and half had poor breastfeeding knowledge and practices. This was done to encourage a difference in opinion which would drive debate and to provide insight into inhibiting and enabling beliefs. A trained Monitoring, evaluation, accountability, and learning specialist from Save the Children acted as the facilitator and encouraged discussion in Arabic, while notes, quotes and comments were written down in Arabic by a note taker. Transcripts were translated by Save the Children staff.

2.3 Key informant Interviews

Key informant interviews were conducted with selected individuals working on health and nutrition Gaza. A list of individuals was developed through a nomination process by Save the Children Gaza and Ramallah, WFP and UNICEF. A total of 12 individuals from 9 organisations were nominated, composed of NGOs, academia, UN and government. Questions were designed to provide expert opinion and organisational-level insight into the perceived situation and trends of nutrition in Gaza and around gaps and priorities in nutrition co-ordination and programming. Interviews were conducted in English, in-person, in private rooms at either Save the Children Gaza offices or the host organisation of the interviewee. The interviews were not recorded owing to concerns over privacy issues; however notes and quotes were taken in English.

Findings from the survey

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3. Findings from the survey

3.1 General demographics of the respondents

A total of 1,047 respondents (all women) participated in the study, from 922 households. Almost all the respondents were married at the time of the assessment and for almost all of them the husband was living with them in the household.

Table 5 :
Demographics of respondents

	No.	Total	(%)
Number of respondents	1,047	1047	100.00%
Number of households	922	922	100.00%
Currently married	1,034	1,047	98.76%
Not currently married	13	13	100.00%
Widows	2	13	15.38%
Divorced women	11	13	84.62%
Married women whose husbands live with them	1,006	1,034	97.29%
Households receiving help from assistance programmes	785	922	85.14%

A total of 1,476 children age 0 to 59 months were included in the assessment; 1044 were aged 0-23 months and 432 were aged 24 to 59 months.

The assessment aimed at measuring with the highest precision and confidence all of the core and some of the optional IYCF indicators. The nutritional status of women and children (6 to 59 months) was also measured.

Table 6 :
Children covered by the assessment by age and gender

Children's ages (months)			Boy	Girl	Boy: Girl ratio
Age	Total	(%)			
0-59	1,476	100.00%	721	755	1.0
<24	1,044	70.73%	501	543	0.9
<6	288	19.51%	133	155	0.9
6-23	756	51.22%	368	388	0.9
6-8	115	7.79%	63	52	1.2
12-15	197	13.35%	88	109	0.8
20-23	176	11.92%	87	89	1.0
24-59	432	29.27%	220	212	1.0

According to the criteria presented in the methodology, the assessment targeted a representative sample of the most vulnerable communities in the Gaza Strip. Among the initial important findings is the fact that on average a household has seven members, and 33% of the households in the assessed communities in Gaza strip have eight or more members.

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Table 7 :
Household size

Household members	No.	Total	(%)
3	96	922	10.41%
4-5	256	922	27.77%
6-7	269	922	29.18%
8-9	160	922	17.35%
>=10	141	922	15.29%
Average number of household members		6.8	
Median number of household members		6	

3.2 Food consumption score and coping mechanisms of Households

The survey used the food consumption score methodology to estimate the amount and variety of food consumed by households. The score is calculated by counting the number of days on which particular food items (grouped in specific food groups) had been consumed during the seven days preceding the survey. Based on the results of this assessment, 23% of surveyed household had poor food consumptions scores, and half of sample had poor and borderline scores (as shown in Table 8)

Table 8 :
Food consumption status

Food consumption score)	(%)
Acceptable	50%
Borderline	27%
Poor	23%

The poor FCS is worse (23%) compared to national results, which showed that 7% of households in the Gaza Strip had poor FCS in 2016[13], so this reflects that the situation had worsened among the assessed populations.

Among households that had poor food consumption scores, 80% received assistance.

Table 9 :
Food consumption score by receiving assistance

Food consumption score	Receiving assistance	
	No	Yes
Acceptable	27%	73%
Borderline	26%	74%
Poor	20%	80%
All households	25%	75%

Households were given a dietary diversity score based on the seven food groups covered by the FCS. The average dietary diversity score per household was 6.06.

There are no agreed thresholds to identify adequate or inadequate scores, but the International Food Policy Research Institute suggests that a dietary diversity score of 6 is considered of medium quality[14].

The nutrition quality analysis was used to define categories of household food insecurity. The survey found that a high proportion of households are not eating enough iron rich foods, and are therefore at high risk of iron deficiency anaemia. More than 40% of households are not able to eat enough Vitamin A rich foods; in the long run this may have an impact on the normal functioning of the immune system, growth and development, as well as reproduction.

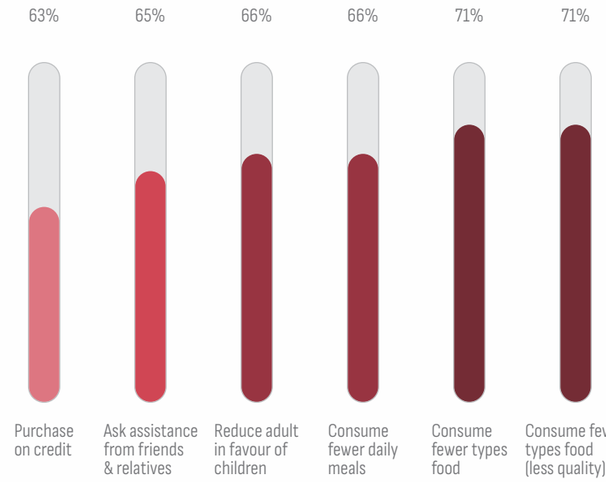
Table 10 :
Consumption of nutrient-rich foods

FCS-N	Heme iron rich food groups	Protein rich food groups	Vitamin A rich food groups
Consumed at least daily (7 or more times)	7%	73%	57%
Consumed sometimes (1-6 times)	82%	26%	38%
Never consumed (0 times)	11%	1%	5%

[13] Food Security Sector, Socio-Economic Food Security Survey, 2016.
[14] FAO, Food Security Indicators, 2014. http://www.fao.org/fileadmin/user_upload/food-security-capacity-building/docs/Nutrition/NairobiWorkshop/5.WFP_IndicatorsFSandNutIntegration.pdf

The coping strategies index measures people's behavioural responses to food insecurity. These coping strategies are easy to observe. It is quicker, simpler, and cheaper to collect information on coping strategies than on actual household food consumption levels. Hence, the coping strategies index is an appropriate tool for emergency situations when other methods are not practical or timely. The assessment results indicate that among the population assessed, reducing meals and consuming meals of less quality (variety) are among the top choices that households make in responding to the current crisis, as shown in Figure 2.

Figure 2 :
Coping strategies



Both the food consumption scores and the coping mechanism strategies confirm that the assessed populations are currently experiencing some form of food insecurity, affecting the quality and quantity of foods consumed by all the members of the household.

3.3 Nutritional status of mothers and children

3.3.1 Nutritional status of pregnant and lactating women

The nutritional status of pregnant and lactating women was among the key indicators measured during the assessment. The assessment was conducted using MUAC as a standardised approach. As there is no global agreement on the cut-off for determining if pregnant and lactating women have to be considered malnourished hence needing immediate nutritional support, Table 6 reports the findings using the two commonly used cut-offs (210 mm and 230 mm). The higher cut off (230 mm) will help prevent further deterioration in the nutrition status of the population. The results show 18.5% of pregnant women and 14% of lactating mothers among the assessed population are acutely malnourished and require nutritional support.

In conclusion, maternal nutritional status is of concern and the high quality of the data (no issues were encountered, monitored and/or documented by the teams and the supervisors) coupled with a representative sample size among the assessed population in the Gaza strip, surface an immediate concern, with levels of malnutrition that vary *between 14 and 18% among lactating and pregnant women.*

Table 11 :
Nutritional status of pregnant and lactating women, based on MUAC

	INDICATOR	Number	Total	(%)
MUAC	Pregnant women with MUAC less than 210 mm	7	135	5.19%
	Lactating women with MUAC less than 210 mm	11	285	3.86%
	Pregnant women with MUAC less than 230 mm	25	135	18.52%
	Lactating women with MUAC less than 230 mm	40	285	14.04%

3.3.2 Nutritional status of children 6 to 59 months

Anthropometric findings were interpreted based on WHO standards 2006[15].

For this purpose the following definitions are used: Global acute malnutrition is defined as <-2 z scores weight-for-height and/or oedema, severe acute malnutrition is defined as <-3z scores weight-for-height and/or oedema). The survey used SMART flags (Exclusion of z-scores from Observed mean SMART flags: WHZ -3 to 3; HAZ -3 to 3; WAZ -3 to 3).

As presented above, the total number of children included in the assessment was above the estimated sample size requirement, and the majority of the children were aged 0 to 23 months.

Due to time constraints it was not possible to run the IYCF survey and the anthropometric assessment of children 6 to 59 months separately to maintain the appropriate age ratios. At the same time, the plausibility check surfaced issues with the precision of measurements. The measurement errors were consistent across all the teams.

[15] WHO. Child Growth Standards, 2006. https://www.who.int/childgrowth/en/

Based on discussion and review with the teams of enumerators, the following were documented a) some enumerators were rounding up measurements b) height boards used were not standard c) some of the teams were measuring and/or weighing children with and without clothes but not in a standardised way.

The database has been reviewed, as well as the plausibility for each data point linked to the nutritional status of the children. Limitations linked to measurement errors for height and MUAC were recognised, while other key tests showed good quality data.

After general reviews and discussions, it was agreed that due to the several and consistent measurement issues, the results may present an overestimation of the current situation.

It is therefore recommended that only the total result of the anthropometric assessments (global acute malnutrition, acute malnutrition, stunting and overweight) should be used and that a corrective factor should be used to help prevent any overestimation in the final analysis.

The final analysis will consider the total lowest range of measurements that was generated by the ENA software, using a standard deviation (SD) of 1, without disaggregation for gender and age.

Standard deviation provides information about the quality of actual measurements that have been taken. Based on the WHO Technical Review, the standard deviation for weight-for-height should be less than 1.1 in high quality data. In a similar study, data from more than 200 small-scale surveys was nearly always normally distributed and had standard deviations between 0.8 and 1.27. Both of these analyses were based on the National Center for Health Statistics Standards. The range of acceptable standard deviations for SMART surveys is 0.8 to 1.2.

As data quality decreases (i.e., as mistakes in measurements are introduced), the distribution of data around the mean 'melts' (gets wider), and standard deviation increases.

So the Prevalence calculated with SD of 1 assumes that the data are normally distributed, and a distribution is drawn using the survey mean and a standard deviation of one. When SD=1, the curves for no exclusion, WHO flags and SMART flags will all be the same shape; however, they will be shifted slightly to the left or right depending on the mean (their central point), in doing so, we will ensure the non-inclusion of values that could lead to overestimation of the results.

Based on this, the level of Acute Malnutrition (Weight for Height is estimated at 3.8% (SD=1) below the WHO emergency thresholds.

Both the skewness and the Kurtosis test show a normal distribution with data symmetrically distributed, meaning there are no differences between the teams' measurements. But the results show that the majority of the acutely malnoushed children live in pockets of the assessed areas, denoting the possibility that some of the areas may have more vulnerable populations.

The MUAC measurement confirms a very similar finding, showing a Global Acute Malnutrition (GAM) rate of 4% below the WHO emergency thresholds.

Similar to weight-for-height (wasting) also weight for age (underweight) measures may have been affected by the measurement issues described earlier. Applying the corrective factor, and generating the results using a standard deviation of 1, we estimate that the current underweight rate in the assessed population is 6.0%.

Stunting (chronic malnutrition) is among the worst forms of malnutrition as it can be irreversible. The same considerations apply to this important nutritional indicator. Using the corrective factor, the stunting rate in the assessed communities is estimated at 7.4% (SD=1).

Less than 2% of children were found to be overweight, which is not of major concern.

Even using the conservative findings, there is a significant deterioration between the findings of the MICS survey 2014 (lowest quintile) and the current situation. The malnutrition levels are still below the WHO emergency thresholds but have slowly deteriorated and the situation will need to be continuously monitored, considering also the deterioration of maternal nutrition and food security at the household level, among other factors.

3.4 Maternal delivery practices, micronutrient supplementation and nutrition knowledge

A third critical component of the assessment is about maternal practices including safe deliveries, micronutrient supplementation and knowledge of basic good nutrition practices.

100% of women gave birth in a health facility. 19% delivered by C-section, above the 15% threshold recommended by WHO.

Table 12 :
Nutritional status of pregnant and lactating women, based on MUAC

Delivery (N=1476)	No.	(%)
Normal	1,192	80.70
C-section	284	19.22

At the time of the assessment, 13% of the respondents were pregnant and 27% were lactating.

Table 13 :
Respondents' status at the time of the assessment

Status (N=1047)	No.	(%)
Pregnant	135	12.89
Lactating	285	27.22
Neither pregnant nor lactating	626	59.78

The assessments revealed that a third of the pregnant women were not taking any nutritional supplements (such as iron, folic acid and/or multivitamins containing iron and folic acid) and that only 70% of those that were using supplements had supplements with the minimum recommended amount of iron.

Table 14 :
Pregnant women and use of supplements

Supplement use	No. s	Total	(%)
Pregnant women taking supplements	100	135	74.07
Pregnant women who show the type of supplement being taken	90	100	90.00
Of those taking supplements, % with recommended minimum dose of iron	63	90	70.00
Of those taking supplements, % with folic acid	81	90	90.00

Women were asked if they knew what anaemia was and only 20% were able to provide a satisfactory answer; even less knew about micronutrient deficiencies.

Table 15 :
Knowledge of anaemia and micronutrient deficiencies

Knowledge of anaemia and micronutrient deficiencies (Total N=1013)*	No.	(%)
Women who know what anaemia is	205	20.24
Women who know what micronutrient deficiencies are	134	13.23

*34 respondents did not answer

3.5 Mothers' knowledge and attitudes on infant and young child feeding practices

Respondents' knowledge and attitudes towards IYCF practices were measured. 88% of the women knew that babies should start breastfeeding within an hour of birth.

Table 16 :
Knowledge on when to start breastfeeding

When should you start breastfeeding?	No	(%)
Immediately/within one hour	919	87.77
Within one day	87	8.31
Within two days	23	2.20
When the mother is ready	12	1.15
When the baby wants	3	0.29
Don't know	2	0.19
After three days	1	0.10

When asked about the number of times that a baby should be breastfed, less than 50% of the women answered correctly, between 8 to 12 times (day and night).

Table 17 :
Knowledge on breastfeeding frequency

How many times a day should you breastfeed?	No	(%)
1-2	9	0.86%
2-4	51	4.87%
4-8	267	25.50%
8-12	495	47.28%
12+	224	21.39%

More than 50% knew that an infant should be exclusively breastfed for at least six months. But almost 40% believe it should be less (9.93%) or more (29.61%) than six months and 5% did not know. In the focus groups, caregivers confirmed they understand and are fully aware of the benefits of breastfeeding and the importance of exclusive breastfeeding, but their mothers/grandmothers and partners exert strong influence over the way they feed their children.

Table 18 :
Knowledge on the recommended duration of exclusive breastfeeding

How long should you breastfeed exclusively?	# responses	(%)
Less than 6 months	104	9.93%
At least 6 months	580	55.40%
More than 6 months	310	29.61%
Don't know	53	5.06%

When asked about their coping strategies when faced with breastfeeding complications, such as perceived breast milk insufficiency, more than 50% answered that they drink additional fluids and 40% start using infant formula.

Table 19 :
Mothers' solutions to breast milk insufficiency

What should you do if you have insufficient breast milk?)	No	(%)
Drink more fluids	533	50.91%
Top up each breastfeed with a bottle of formula	431	41.17%
Increase frequency of breastfeeding	220	21.01%
Unsure / Don't know	141	13.47%
Seek advice/assistance with positioning and attachment	37	3.53%

When asked about sources of information about breastfeeding, 51% said that they received breastfeeding information during their antenatal care visits and 18% confirmed that contact with health professionals during delivery and follow up visits were opportunities where they were given information. Many caregivers in the focus groups said that they are also invited to attend group meetings and discussions, but they are not allowed to attend, so their mothers or grandmothers attending on their behalf.

Table 20 :
Sources of information about breastfeeding

How did you learn about breastfeeding?	No	(%)
Antenatal clinic visits	538	51.38%
Health professionals during birth, at hospital or during follow up	191	18.24%
Discussions with NGOs/Programmes	73	6.97%
Family/friend/relatives	84	8.02%
Information, education and communication materials	36	3.44%
Never received breastfeeding information	218	20.82%

Knowledge and attitudes around complementary feeding and foods were also assessed. When asked about the type of foods that could be given to children aged 6 to 23 months, the majority said thin porridge, plain water and yoghurt. No one mentioned meat and fish and only 12% included fruits among the foods that could be given to a young child.

Table 21 :
Complementary food preferences for children 6 to 23 months

What should you give children aged 6 to 23 months?	No	(%)
Thin porridge	465	44.41%
Plain water	438	41.83%
Yoghurt	428	40.88%
Vegetables	225	21.49%
Clear broth	184	17.57%
Juice	171	16.33%
Formula	143	13.66%
Fruits	124	11.84%
Potato	107	10.22%
Milk	101	9.65%

3.6 Infant and young child feeding practices

WHO/UNICEF indicators were used to assess the current IYCF practices of the assessed population. 93.6% of the children had been breastfed at some point. 'Ever breastfed' means that a child has received even just one drop of breast milk. More than 6% of infants among the assessed population never breastfed and should be considered as at high risk of morbidity, growth faltering and potential issues in their normal development.

Table 22 :
Breastfeeding

Was your child ever breastfed? (N=1047)	No	(%)
Yes	977	93.31
No	67	6.39
No answer/NA	3	0.02

Among the reasons for never breastfeeding their infants, the mother and the baby being sick were the two main reasons provided by the respondents. As there are few, and rare, medical contraindications to breastfeeding, this is an area that deserves reflection, including in relation to the current skills and knowledge of health professionals in supporting breastfeeding.

Table 23 :
Reasons for never breastfeeding

Why did you not breastfeed your baby? (Total N= 67)	No	(%)
Mother was sick	27	40.30%
The baby was sick	18	26.87%
The baby refused	11	16.42%
No/not enough milk	6	8.96%
Preterm baby	3	4.48%
Caesarean delivery	3	4.48%
Breast problem	2	2.99%
Other	2	2.99%

62.75% of children 0-23 months were initiated into breastfeeding within an hour of birth as per the WHO recommendation. 36.8% of infants were not breastfed within the first hour, despite all the deliveries happening in health facilities.

Table 24 :
Early initiation of breastfeeding

When did you start breastfeeding your child? (N=1047)	No	(%)
Within 1 hour	657	62.75
Between 1 and 23 hours	259	24.73
24 or more hours	58	5.53
Never	67	6.39
Don't know	3	0.28
No response	3	0.28
Total	1047	100

Provision of prelacteal foods (foods given to newborns before breastfeeding) is a practice that has negative effects on breastfeeding initiation and exclusive breastfeeding. More than 40% of the respondents confirmed that their newborns were given liquids other than breast milk during the first three days of life.

Table 25 :
Prelacteal foods

Did you give your child anything other than breast milk in the first three days? (N=1044)	No	(%)
Yes	419	42.13

44.8% of infants were exclusively breastfed. The focus group discussions revealed that many caregivers do know the important of exclusive breastfeeding, but that beliefs and influences from other family members (such as grandmothers and mothers) have an impact on the way they feed their children. More than 55% of infants in the assessed population were not receiving all the benefits and the protection that exclusive breastfeeding provides.

Table 26 :
Exclusively breastfeeding from 0 to 5 months

Is your baby exclusively breastfed	No	(%)
Yes	129	44.79
No	159	55.20
Total	288	100

Breastfeeding continues to provide benefits and protection to children up to 1 and 2 years of age. The situation among the assessed population is dire as only 45.7% of children are breastfeeding up to 1 year of age.

Table 27 :
Breastfeeding up to 1 year (12 to 15 months)

Are you still breastfeeding?	No	(%)
Yes	90	45.68
No	107	54.31
Total	197	100

And only 12.5% of children are breastfed until 2 years of age.

Table 28 :
Breastfeeding up to 2 years (20-23 months)

Are you still breastfeeding?	No	(%)
Yes	22	12.5
No	154	87.5
Total	176	100

14% of the caregivers with children under the age of 2 years complained of some breastfeeding difficulty. The most common issues were the perceived lack of breast milk and the respondent not feeling well.

Table 29 :
Breastfeeding difficulties

Have you had any difficulties with breastfeeding? (Total N=1044)	No	(%)
Caregivers having difficulties with breastfeeding	148	14.17

Table 30 :
Type of breastfeeding difficulty

What kind of difficulty have you experienced (N= 148)	No	(%)
No/not enough milk	59	40
I was sick	44	30
The baby is sick	13	8.9
Other:	32	21.91
Working/busy	9	
It is painful	7	
I had no time for it	7	
The baby refused	6	
It changes my body	3	

Bottle-feeding practices and use of infant formula were also assessed. 41.2 % of children less than 2 years of age were using a bottle at the time of the assessment. During focus group discussions, many mothers confirmed they use milk to top up or replace breast milk, even if they know how important breastfeeding is for the children.

Table 31 :
Bottle feeding

Is your child bottle fed?	No	(%)
Yes	430	41.2
No	614	59.8
Total	1044	100

32% of infants less than 6 months were using infant formula at the time of the assessment. When asked about the source of infant formula, more than 40% said that relief agencies were providing it. During focus group discussions, most of the caregivers said they were using milk provided by the UNRWA. They all knew that that milk is not suitable for small children, but the current economic situation forces them to use it. It is not clear if and what kind of support was extended by the same agency to ensure safe and appropriate preparation and use.

Table 32 :
Sources of infant formula

Where do you get infant formula?	No	(%)
Provided by a relief agency or NGO	176	41
Bought in a private pharmacy	172	40
Bought privately from shop or market	56	13
Provided by medical professional in a government hospital or clinic	17	4
Other	9	2
Total	430	100

Complementary feeding practices were assessed. 78.3% of children 6 to 8 months were introduced to complementary feeding in line with the WHO/UNICEF recommendations. During the focus group discussions, the caregivers said that they knew it is important to provide solid and semi-solid foods, but that the current situation limits their capacity to do so.

Table 33 :
Timely introduction of complementary feeding (infants 6 to 8 months)

When did you introduce complementary foods?	No	(%)
6-8 months	90	78.26
Before 6 months	25	21.74
Total	115	100

Caring practices are critical to the development and growth of the child, especially in the first 2 years of life. 54% of children are eating alone, and this may have an impact on the way the child appreciates the foods being provided and mean they miss out on the positive educational and social benefits of eating with the family.

Table 34 :
Who the child eats with and how the child is encouraged to eat (children 6 to 23 months)

Who does the child eat with? (N= 756)	No	(%)
With family or siblings	333	44
Alone	408	54
Other	15	2
How do you encourage your child to eat? (N=756)	**No. (multiple responses allowed)**	**(%)**
Don't feed them until they are better (when sick)	355	46
Give the food they like	204	25
Force feed	106	14
Other	106	14

Diet diversity was also assessed. Children from 6 to 23 months should consume foods from at least four of the seven food groups. 85% of the children aged 6 to 23 months from the assessed families are not able to meet this minimum standard. This confirms the information given by the caregivers during focus group discussion, saying that it is very difficult for them to provide the necessary foods for their children.

Table 35 :
Diet diversity

Diet diversity	No.	(%)
>=4 food groups	111	15%
<4 food groups (s)	645	85%
Total	756	100%

Every breastfed child aged 6 to 8 months should be fed at least twice a day and a child aged 9 to 23 months at least three times a day. In the assessed population, 61% of children 6 to 23 months are not fed as often as they should be. Table 36

Table 36 :
Meal frequency

Does your child eat the recommended minimum number of times a day?	No	(%)
Yes	136	38.63
No	216	61.37
Total	352	100

Non-breastfed children aged 6 to 23 months should be fed at least four times a day, but currently only 10.89% of children 6-23 months that are not breastfed meet this requirement.

The minimum acceptable diet is a composite indicator that measures if the nutritional needs of a child are met both in terms of diversity and frequency). Only 14% of breastfed children aged 6 to 23 months in the assessed communities meet the criteria.

3.7 Child morbidity

Child morbidity was assessed, focusing on diarrhoea and acute respiratory infections (ARI). The results show that 33% of children 0 to 59 months, and 37% of those under two years, had had diarrhoea in the two weeks prior to the assessment. About 44% of children were taken to a health provider after experiencing diarrhoea. During the focus group discussions, caregivers all agreed that generally it had become more difficult to access health services from the clinics, as only UNRWA was accessible and affordable, but sometimes UNRWA clinics could not provide the needed medications.

Table 37 :
Prevalence of diarrhoea in children 0-59 months

Age	Children with reported diarrhoea in last 2 weeks			Children with diarrhoea taken to the health provider		
Age	No.	Total	(%)	No.	Total	(%)
<60M	483	1476	32.7	214	483	44.31
<24M	388	1044	37.16	169	388	43.56
<6M	79	288	27.43	27	79	34.18
6-23M	309	756	40.87	142	309	45.95
24-59M	95	432	21.99	45	95	47.37

Around 42% of children under the age of 5 and under the age 2 had ARI in the two weeks prior the assessment, with almost 70% needing some medical attention.

Table 38 :
Prevalence of ARI in children 0-59 months

Age	Children with reported ARI in last 2 weeks			Children with ARI taken to the health provider		
Age	No.	Total	(%)	No.	Total	(%)
<60M	623	1476	42.21	432	623	69.34
<24M	444	1044	42.53	307	444	69.14
<<6M	74	288	25.69	47	74	63.51
66-23M	370	756	48.94	260	370	70.27
24-59M	179	432	41.44	125	179	69.83

Analysis was conducted focusing on morbidity in infants less than 6 months of age. More than 27% of infants less than 6 months suffered from diarrhoea.

Table 39 :
Prevalence of diarrhoea in infants less than 6 months

Infants <6 months with reported diarrhoea in last 2 weeks	No	(%)
Yes	79	27.4
No	209	72.6
Total	288	100

27 of those infants (9.4%) were exclusively breastfeeding.

Table 40 :
Infants less than 6 months who experienced diarrhoea and were exclusively breastfeeding

Description	No.	(%)
Yes	27	9.4
No	261	90.6
Total	288	100

The number of infants who had diarrhoea and were not exclusively breastfeeding was almost double this, confirming the risks of any form of suboptimal breastfeeding during the first six months of life.

Table 41 :
Infants less than six months that experience diarrhoea and were not exclusively breastfeeding

Description	No.	(%)
Yes	50	17.4
No	238	82.6
Total	288	100

74 infants less than 6 months (26%) experienced ARI in the two weeks prior the assessment.

Table 42 :
Infants less than 6 months who experienced ARI 2 weeks before the survey?

Description	No.	(%)
Yes	74	25.7
No	214	74.3
Total	288	100

9.7% of those that experienced ARI were exclusively breastfeeding at the time of the assessment.

Table 43 :
Infants less than 6 months who experience ARI 2 weeks before the survey and are not exclusively breastfeeding?

Description	No.	(%)
Yes	28	9.7
No	260	90.3
Total	288	100

Almost double the numbers of those that experience ARI were those that were not exclusively breastfeeding at the time of the assessment.

Table 44 :
Infants less than 6 months who experience ARI 2 weeks before the survey and are not exclusively breastfeeding?

Description	No.	(%)
Yes	46	16
No	242	84
Total	288	100

3.8 MMR vaccination coverage

Access and utilisation of health service is an important indicator, and vaccination coverage is a helpful measure to assess it. Almost 90% of children aged 12 to 59 months had received their MMR dose at the time of the assessment, below the 95% recommended by WHO[16].

Table 45 :
MMR vaccination coverage among children 12-59 months

MMR vaccination status (N=932)	No.	(%)
Children who have a vaccination card	895	96.03
Children who have received MMR vaccine (validation: vaccination card)	802	86.05
Children who have received MMR vaccine (validation: caregiver's recall)	16	1.72
Children who have received MMR (card and caregiver's recall)	818	87.77

3.9 Children's well-being

Children's well-being was measured by looking at the caregiver's perceptions at the time of the assessment. 93% of caregivers reported some form of well-being problem for their children. Among the top problems cited were the inability to meet children's basic needs such as clothing, medicine and education, recurrent sickness and behavioural and psychological concerns. The insufficiency of food was mentioned as the fourth largest problem.

Table 46 :
Well-being problems of children 0-59 months

Well-being Problems

Problem (N=1476)	No. of cases reporting the issue	(%)	Average frequency
No. of reported problems	1377	93.29	
Child's needs are not affordable (clothing/medicine/education)	412	27.91	Weekly
Sickness/physical problems	305	20.66	Every 2 weeks
Behavioural and psychological problems	273	18.50	Daily
Not enough food	150	10.16	Weekly
Parents' absence	46	3.12	Weekly
Weaning or breastfeeding problems / Lack of infant formula	43	2.91	Weekly
Teething	41	2.78	Weekly
Family abuse (hitting/beating/shouting)	32	2.17	Weekly
Wants to go out (picnic/play)	27	1.83	Daily
Security/fear	17	1.15	Weekly
Eating problems	13	0.88	Daily
Sleeping disorders	10	0.68	Daily
Home is not suitable	8	0.54	Every 6 months
No issue reported	255	17.28	NA

[16] These figures are reported with a caveat that they are in specific localities and not the national figures. The MoH has recognised defaulters in some geographical areas and they do follow up

3.10 Water and sanitation: Attitudes and practices

Attitudes and practices around water and sanitation were also assessed. More than 80% of caregivers wash their hands after using the bathroom, and 80% when preparing food.

Table 47 :
When do caregivers wash their hands?

When do you wash your hands? (Total N= 1047)	No. of responses	(%)
After using the bathroom	862	82.33
Before preparing food	828	79.08
After cleaning	732	69.91
Before using the bathroom	458	43.74
When buying food	344	32.86
When coming home	343	32.76
When sick	317	30.28
When going out	276	26.36
All the time	129	12.32
After/before eating	33	3.15

Piped water remains the main common source of water for the assessed population, with more than 84% users.

Table 48 :
Usual source of water for domestic use

Where do you usually get your water? (Total N = 1047)	No. of responses	(%)
Piped water	888	84.81
Water well (private or agricultural)	149	14.23
Desalination plant (filling point)	142	13.56
Desalination plant (tanker)	97	9.26
From mosque/public standpipes/schools	11	1.05

25% of the households did not have soap at the time of the assessment, and almost all the households were able boil water.

Table 49 :
Water and soap availability and ability to boil water

Approval to verify hand washing	Women who Approved	Total Women	(%)
	932	1047	89.02%
Is water available for who accept the water place observation			
Yes	871	932	93.45%
No	61	932	6.55%
Is there soap or antibacterial hand-wash available at the place where you wash your hands?			
Yes	700	932	75.11%
No	232	932	24.89%
Can you boil the water?			
Yes	1026	1047	97.99%
No	21	1047	2.01%

Findings from the focus group discussions

4

4. Findings from the focus group discussions

Four focus group discussions were facilitated in the assessed communities, with a total of 37 participants, as discussed in the Methodology section.

Key questions were asked about the way the women feed their infants and the factors influencing their decisions.

Mothers of infants less than six months provided important insights.

- Most of the women say that they practice exclusive breastfeeding.
- "It is better to commit to exclusive breastfeeding rather than supplementary food we cannot afford", one woman said.
- Some women use child formula, yogurt or Cerelac (a brand of instant cereal) to supplement breastfeeding. Cerelac, infant formula, milk with biscuits, and mashed boiled apple were also mentioned by the women
- One woman said that she gave her baby milk provided by UNRWA when he was 1.5 months because she could not afford formula.
- One woman gives child formula because she has twins and another one because her health is not good to breastfeed.
- One woman mixed the UNRWA milk with starch for her 5 month-old child because she could not afford formula.
- Some mothers start giving their children milled rice, fruit smoothies, sweets, pudding and sago in addition to a formula at four months, when they believe breast milk is not enough for the child.
- Several women said that they feed the child in addition to breastfeeding.

  One woman said that she fed her child formula after he refused to breastfeed.

Mothers of children 6 to 23 months provided very useful information on the current practices:

- Among the foods being provided were boiled egg, particularly egg yolk, yogurt, UNRWA milk, pudding, rice with milk and mashed boiled fruit or vegetables such as apple, squash, potato and carrot. They also start to give children lentil soup, minced meat, and bread soaked in milk or tea.
- Starch, milled rice, semolina and ordinary meals such as lentil, tomato sauce, vegetable soup, and carrots are all fed to children.
- "I feed him from what I eat, not because I'm lazy but because that is what we can afford for him," a mother said.
- All women consider their child as one of the household after 6 months and feed them from the normal family cooking: mainly lentils, milled rice and bread with tomato sauce; nothing special. Some women give their child Cerelac, bread with tea, pudding, yogurt, fruity yogurt and date biscuits.
- "I have a child suffering from malnutrition but I cannot feed him other than what we can afford."

What factors affect what children are given to eat?

All the mothers agreed that the financial situation of the family is the main factor affecting what children are fed. Mothers know what should be given to a child but they can't afford to buy appropriate foods, such as fruits and vegetables, for their children, and are forced to feed things they know are not suitable for a child.

- Some women said that their own nutritional status means they don't have enough milk to breastfeed so they are forced to use child formula if they can afford it or the milk provided by UNRWA, which is not appropriate for children.
- Sometimes, the children refuse to eat and mothers force them to eat.
- Some children are difficult to feed or do not like leaves and vegetables.
- Women agreed that a mother's feeding is important for child feeding. "A mother should eat diverse types of food, especially sweets, to help her to breastfeed the child," one mother said.
- Children prefer some types of food to others. "They start to hate lentils because we cook them frequently."
- Many can't afford to buy certain foods. One woman said, "I close the door at cooking time to prevent my children seeing our brother-in-law and smell his cooking because we can't buy it for them."
- "When our UNRWA coupon was delayed one month, our life became too hard; it enables us to get the essentials for the household: lentil, sugar, humus, flour, milk and oil. We cannot live anymore without it".
- "When the milk is finished today, I must wait for second and third day until it is available again."
- Sometimes other family members go against mothers' wishes about how children should be fed. "My mother-in-law forces me to feed the child tea with bread and sometimes she feeds him by herself."
- Some families feed their children chamomile and anise as they can't afford formula.

What types of food you do not give your child?

When asked about foods that were not suitable for children, mothers listed various foods, but in some cases said they fed these to their children anyway as they did not have a choice. Foods cited as unsuitable included:

- Meat, because it is difficult to digest

  Spicy food, chocolates and tea.
- Some women don't allow their children to eat chips and indomie (a brand of instant noodle).
- Some said that they would prefer not to give their children fried potato but they have to do so because it is available and affordable.

What do pregnant and breastfeeding women eat?

- All women agreed on the importance of diet diversity, but not all types of food are available and they depend on whatever is available: mainly cooked potato, fried tomato, cooked lentils, zatar and doqqa. "I am pregnant in the fourth month, I have not gained any additional weight," a woman said.
- Women said they know they should drink more milk and eat fish, for example, but they cannot comply with this due to their social conditions.
- "Sometimes I stay hungry."

Where do mothers of young children seek advice and support about nutrition during pregnancy and once their children are born?

Mothers listed various sources of advice, including:

- Vaccination booklet
- Mother or mother in law
- UNRWA clinic
- Awareness-raising sessions at private clinics
- Internet
- Some said that husbands prevent their young wives from going out to attend awareness session, so older women (mothers or mothers-in-law) attend instead of them then transfer their knowledge to the younger women.
- Some women said that they do not go to such sessions, as they do not have money to pay for transportation.
- One woman faced a problem with early delivery and was told she did not need to see a specialist doctor. When she insisted on seeing the specialist, the doctor diagnosed her case as urgent case and transferred her to the hospital.

Where do mothers seek treatment for their sick children under 2 years?

The mothers mainly use UNRWA clinics, as they provide free services. However the medicines they need are not always available, and there are no specialist doctors.

- Some attend the UNRWA clinic, and then buy the recommended medicines from pharmacies.
- Some attend private clinics, when UNRWA does not provide the service or medication they need. But private clinics are expensive.
- Some women complain of degrading and nonprofessional treatment from doctors in the clinics.

What are your priorities regarding support/help needed to feed your baby or young child?

- Provision of complementary food for the children
- Distribution of formula
- Provision of medicine, formulas, diapers, complementary and healthy food for children.
- Some women raised the issue of lack of electricity, which means they are not able to refrigerate food so it spoils quickly.
- Psychosocial support for mothers

  They suggest distributing healthy meals for children in schools or preparing it in local associations.
- Hold awareness-raising sessions for fathers' On housework and children rearing.
- Establish safe play areas with fun days and promote healthy practices to children.
- They also raised the problem of sewage in the streets where children play and how it affects the health of children.

Highlights from the semi-structured interviews

5

5. Highlights from the semi-structured interviews

What are some of the biggest problems in child health in the Gaza Strip?

1. Lack of parental knowledge on care practices on health and nutrition
2. Lack of parental knowledge on the proper development of emotional skills
3. Direct contact with front line behaviours
4. Tradition is a strong influence, children learn from their own experience and repeat learned behaviours
5. Poverty is the biggest second reason after cultural believes and traditions
6. Emotional and psychological reflection with negative effects violence, careless & neglect for children
7. Women have more children than they can afford
8. Environmental pollution aggravates a lot of immune system disorders.
9. Water, sanitation and hygiene factors that are adversely working against children
10. There has been a significant increase in women's education, which represents a significant opportunity for improvement in children's health
11. The incidence of chronic malnutrition, stunting and wasting had gone down but is going up again.
12. Micronutrient deficiencies
13. Awareness of mothers of complimentary feeding, breastfeeding, behaviours of parents, cooking practices, mothers cannot take individual decisions as they do not have decision-making power in the household
14. There is some awareness, but even those who know can't practice optimal infant and young child feeding
15. They know they shouldn't fry food, but they do because fried food is more filling
16. The prevalence of Vitamin D and iodine deficiencies
17. Nutritional habits are so bad here
18. We don't have supplements go give children in clinics, no budget, no donors,
19. We only produce iron supplements in Gaza
20. Vitamins A & D have not been available for 2-3 years
21. Zinc deficiency

What trends have you seen in child nutrition/malnutrition in the Gaza Strip in the last five years?

1. Overall, there is some improvement in child health
2. Anaemia has improved, but the incidence of rickets has got worse
3. "I feel chaos, the population density"
4. Food security and food quality have got worse
5. The last 2 MICS and micronutrient surveys showed deterioration in micronutrient status, and stubbornly high levels of micronutrient deficiency, despite ongoing programmes (fortification, supplementation)
6. All projects in Palestine were designed without taking into consideration the causes of children's malnutrition
7. Rates of wasting are high in the areas where we work
8. MoH surveillance system for the last 5 years. Annual results since 2006, no change in indicators. 70% anaemia.
9. Major increase in obesity

What trends do you expect to see in the next 5 years?

1. Hope that the morbidity and mortality will decrease, lowered risk of dangerous pregnancy.
2. "We see a huge work of INGOs in the field, and I think we will have a good accomplishment"
3. Prevalence of malnutrition will increase
4. We will jump from a mild public health problem to moderate
5. Major increase in obesity

In your professional opinion, why do women in Gaza not exclusively breastfeed?
What are the main reasons and what do you think can help improve this?

1. Inherited behaviours
2. The partners here are doing the right thing, but perhaps it is not enough
3. The treatment programme is effective, but the prevention is less. The prevention needs to be expanded in scope specifically targeting the most vulnerable groups like pregnant and lactating women and children
4. Women want to give infant formula, despite the risk of being stigmatised
5. Pressure to have children – women stop breastfeeding to have more children
6. There is a view that large children are healthier
7. Women don't have the independence to make their own decisions
8. Historically there has been poor breastfeeding practice
9. Where women work, maximum maternity leave is 4 months. This forces women to introduce infant formula.
10. We lack data for the reasons and causes of malnutrition.
11. False advice to use formula
12. Commission from companies by health providers
13. Health education of mothers is not enough
14. More support for mothers required
15. There is confusion around excusive breastfeeding. People believe that complimentary feeding makes the baby stronger

Can you tell me a bit about the NUTRITION programming in Gaza?
What are the objectives of the NUTRITION programme?
What are the main activities and methodologies to achieve these objectives?

1. Five or six years ago there were comprehensive programmes on nutrition in Gaza and West Bank. All UN agencies and NGOs were working together. In the last 4 years, nothing has really happened. All major agencies have been phasing out
2. The main weakness is that there is no clear strategy that we are following, so each actor works separately
3. The micronutrient survey data is outdated
4. The health & nutrition sector, nutrition is not well discussed
5. We have a mix of all programmes
6. Supplementation of folic acid & iron to pregnant and lactating women
7. Educational programme for mothers during vaccination visits

Impact of NUTRITION
What are the most important gains or impact of the NUTRITION programme?

1. The treatment components on malnutrition have been very successful
2. No significant impacts or benefits

Problems encountered

1. Priorities of stakeholders are different and treatment-focused
2. This is easier and more clearly defined and easier to get behind
3. The cause of the data and coordination shortfalls are political and relationship issues
4. We face a big problem with anaemia, with micronutrient deficiency
5. We are also facing a problem with obesity. This is always a disease of wealth
6. Food diversity is not the problem. All types of food are available, but perhaps the problem is lack of purchasing power. This is the main problem, people can't afford food.
7. Funding is a big issue. We need funds for brochures.
8. We need political stability
9. Coordination and workshops happen outside of Gaza, people are unable to go

What lessons have been learned from the NUTRITION programme?

1. The results need to address to address underlying factors
2. Time-bound actions with indicators and target on health and nutrition
3. Community improvement, inclusion and mobilisation
4. We need more joined up thinking and coordination in the health and nutrition cluster
5. In the WFP country strategic plan for the next five years there is a focus on nutrition
6. The national strategies need to be updated to include nutrition
7. We should be asking ourselves, why are nutrition indicators the same, why are these are not changing?
8. Maybe we need further investigation on causes to malnutrition
9. We need better coordination
10. Health workers need training on how to change behaviours & beliefs

Conclusions

6. Conclusions

The assessment provided insights and valid information on most if not all the proposed indicators.

Due to limitations regarding the anthropometric results it has been recommended that, only total prevalence generated using a standard deviation of 1, will be used for acute malnutrition, stunting, underweight and overweight. Disaggregation by age, gender and severity will not be used.

All the remaining indicators, including women's nutritional status, IYCF knowledge and practices, and relevant underlying causes (health, caring practices, immunisation, WASH, food security and child protection) are of high quality and will be used to the fullest extent possible.

The assessment should be considered as representative of the areas sampled only (see the list of localities in section 2.1.1).

The following are the key highlights of the assessment.

6.1 Food consumption score and coping strategies index

A large proportion of the population has a sub optimal FCS, and even those that are receiving some form of support, have yet to meet a minimum acceptable FCS. The current coping strategies of the population show a deterioration of the diet in terms of variety and frequency. The disaggregation of nutrient-rich foods shows concerns around the consumption of iron rich foods and partially around vitamin A rich foods.

6.2 Women and children's nutritional status

An alarming and unforeseen deterioration of the nutritional status of pregnant and lactating women has been measured. 18% of pregnant women and 14% of lactating mothers are malnourished. This calls for urgent attention and possibly some rethinking and support to nutritional programmes.

As measurements issues and programmatic quality concerns have an impact on the findings on children's nutritional status, a very conservative and cautionary approach is recommended. The malnutrition rates are still below the emergency thresholds of WHO. It is indeed important to continue monitoring the situation through surveillance and subsequent assessments, considering that all other aggravating factors have deteriorated.

6.3 Infant and young child feeding: Knowledge, attitudes and practices

In general, the knowledge on recommended IYCF practices is generally available among the assessed vulnerable communities. However, practices are dangerously low, with more than 6% of infants never breastfeed, more than 55% of infants not exclusively breastfeeding, and very low continuation rates at 1 and 2 years of ages. Bottle-feeding among the assessed population is extremely high at 41% and more than 30% among the infants less than six months old. The majority receive the infant formula through relief agencies, but it is not clear what support is provided in relation to its safe preparation and use. The minimum acceptable diet, a combined indicator that measures how much the nutritional needs of the children are met, has been estimated at a dangerously low 14%.

6.4 Child morbidity, vaccination coverage and WASH Practices

Among the surveyed families, 40% or more of children less than 5 years and 2 years experienced ARI, while almost 40% of the same children experience diarrhoea. Less than half of these children sought medical attention. A further analysis was conducted to associate the sickness (diarrhoea and ARI) with breastfeeding practices among infants less than 6 months. The non-exclusively breastfeeding infants were twice as affected by diarrhoea and ARI, compared with the exclusively breastfeeding.

90% of the surveyed children 12-59 months received the MMR vaccine, below the recommended 95%.

The majority of the respondents wash their hands after using the bathroom and before cooking. 25% have no soap for hand washing and the majority access piped water as their usual water source.

6.5 Focus group discussions with mothers of children 0-23 months

The focus group discussions conducted with mothers of children 0-23 months from the assessed communities validated the several findings of the survey. Mothers recognize the important and value of exclusive breastfeeding, but cultural practices and traditions, coupled with misconception and misinformation, limit its widespread and sustained practice. Financial and economic constraints force mothers to use unsafe practices including feeding infant's milk that is not suitable for their age. Complementary feeding practices are even more affected by the current crisis, with limited economic capacity, and reliance on food aid and external support, the complementary feeding practices are really dictated but what is available in the household, and most of the time is not sufficient to meet the requirements of a young child.

6.6 Interviews with key influencers

The interviews with key influencers provided valuable information on the current status of the nutrition programme in the Gaza Strip. In the last four years most of the support has been withdrawn. Major concerns are growing overweight and obesity, but at the same time the fact that all the underlying causes of acute malnutrition and stunting are deteriorating fast, with a fast decline in food security and challenges in accessing healthcare services. Among the main recommendations is to strengthen the preventive programming, ensure a more comprehensive and coordinated effort, and for actors to be guided by a common strategy.

Recommendations

7. Recommendations

The findings of the assessment provide an important platform for the Nutrition Working Group (NWG) and the Health Cluster to review and agree on key pragmatic and strategic directions for the next three years. It is strongly recommended that the findings of the Nutrition Assessment be shared with the large community of the Health Cluster and possibly with other clusters.

1. Presentation and dissemination of the key findings to relevant clusters (Health, WASH, Protection, Food Security and Livelihoods)
2. Organize a workshop for the members of the NWG to develop a three-year common plan of action in line with Humanitarian Response Plan (HRP) and assessment findings
3. Design a maternal nutrition programme that may include
   a. Antenatal counselling
   b. Provision of nutritional support and nutritional supplements
   c. Postnatal counselling
   d. Regular screening and follow up
   e. Community promotion and mobilisation
4. Training of front line workers (health facility and community based) on the provision of Infant and Young Child Feeding Counselling with a Psychosocial First Aid Component
   a. Focusing on the management of breastfeeding complications
   b. Management of non-breastfed infants
5. Design a programme focusing on detecting and supporting infants in special circumstances that may need special support (re lactation, wet nursing, safe breastmilk substitute programming)
6. Facilitate the creation of IYCF areas within existing health facilities where screening, assessment, counselling, and micronutrient supplementation can be provided by skilled and trained personnel
7. Support the creation of community-based systems, led by women, such as mother support groups and/or care groups aimed at strengthening the peer support system, increasing resilience and preparedness within the community systems
8. Facilitate and support community-based activities aiming at promoting good complementary feeding practices using local and indigenous products
   a. Community cooking demonstrations with some basic support for mothers (ingredients, utensils, water, etc.)
9. Engage and support selected health facilities offering maternity services in practicing the Baby Friendly Hospital Initiative standards
10. Support a communication campaign on optimal infant and young child feeding practices with key messages appropriate for the context and using multimedia channels (smart phones, local radio and TV channels)
11. Integrate and ensure convergence of WASH and Food Security and Livelihoods initiatives to a) target mothers and their children under two years of age b) pregnant women (in the assessed populations)
   a. Cash or vouchers to access fresh products/fresh foods
   b. Livelihoods opportunities for women
   c. Provision of basic WASH utensils and products to families with children under two years
   d.Integration of WASH behavioral change sessions in cooking sessions/demonstrations and in the communication campaign
12. Integrate in the current Child Protection programme, the provision of qualified and appropriate nutritional support to infants and young children that are orphans, abandoned, or separated
13. Map, orient and sensitise all relief agencies providing infant formula and other nutritional products on the need to ensure safe preparation, use and administration in line with international recommendations and standards
14. Strengthened the surveillance system ensuring standard equipment, protocols and procedures are in place for the measurement and categorisation of the different forms of malnutrition
15. Integrate key IYCF indicators in the current surveillance system
16. Plan for an anthropometric assessment of children 0-59 months, pregnant women and mothers of infants less than six months, in 2020.

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