Rapid Assessment Among Post Conflict Displaced Children in Vavuniya District

by

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Summary

Due to end of hostilities between the Sri Lankan Army (SLA) and the Liberation Tigers of Tamil Eelam (LTTE) has brought with it a similar surge in the number of internally displaced persons (IDPs) from the conflict-affected Northern Province. Civilians who were living in those areas were displaced and currently living in welfare villages in government controlled areas in neighbouring districts. Among host districts, Vavuniya has seen a massive influx of the IDP population within the last three month.

A nutrition survey was necessary to measure the extent and severity of under nutrition among children under the age of five years in order to plan appropriate short, medium and long term interventions.

This study was carried out under the following objectives: to determine the current levels of under nutrition among the children under 5 years in welfare villages in Vavuniya district; to determine factors related to under nutrition among them; to establish baseline needed to target nutrition intervention programmes.

A cross sectional rapid assessment was carried out in 4 welfare villages of the Vavuniya district in Sri Lanka, i.e. Zone 1, 2, 3 and 4. Sample was selected using systematic random sampling method. Calculated sample size was 1200 children less than 5 years. Data collected by interviewing the mother or caretaker of the child. Weight and height or length of the child was measured.

Results: a total of 1137 children less than five years old were studied of whom 35.6%, 30.0% and 46.7% were wasted, stunted and underweight respectively. The total prevalence of under nutrition was higher than survey results in transit camps of Vavuniya and national data. Respiratory Infections (RI) was the top cause of morbidity with a prevalence of 61.9% and diarrhea at 42.0%. Lower respiratory tract infections were 6%.Prevalence of wasting, stunting and underweight is best in Zone 3 and worse in Zone 2. Around 20% of children in Zone 2 born with low birth weights.

Recorded coverage of Measles immunization in children over 9 months of age was 79% and reported coverage was 92%. Around 45% of children were received Vitamin A supplementation after displacement; 36% had received polio vaccine and 35%received deworming medication. 91% of children had BCG scar and 82% have Child Health Development Record (CHDR). Only 3% had scabies and 10% had skin infections. About 85% of children under 2 years currently breastfeeding; Out of non breastfed children 53% stopped the breastfeeding due to lack of milk and 20% due to sickness. Around 22% of children under six months are given formula milk and 63% of children above 6 months had minimum 3 meals per day. 66% of children received some food supplementation.

Three supplementary feeding programmes are being conducted for displaced population; Blanket supplementation of Corn Soya Blend (CSB) by the World Food Programme (WFP) alternative to supplementary foods provided by Thriposha; A UNICEF supported Therapeutic feeding programme to rehabilitate children with severe acute under nutrition, with BP-100 and Plummpy nuts and UNIMIX or High Energy Biscuits (HEB) is provided for children with moderate acute under nutrition, by UNICEF. Coverage was low with Nutrition Rehabilitation programme; coverage for severe wasting was 15% and moderate wasting was 22% and blanket feeding was 38%.

About 8% of fathers were dead and 5% were injured. 58% of households received food 3-4 times per day; 66% were not satisfied with food. Out of that 50% due to lack of taste. About 36% mentioned that children had enough food to eat during the last 7 days. Out of those interviewed 37.7% had limited portion size at mealtimes always.

Availability of water for drinking purposes was 2.8L per person and 15.2L per person for other purposes. Usage of water purification tablets were only 2%. About 82% of them washed hands after toilet and 46% washed hands before eating. Average number of places stayed before reside in the current camp was 9. There were 68 pregnant women in the sample. Average number of clinic visits were done by pregnant women was 2 and 60% were taken tetanus toxoid.

Conclusion and Recommendations:

There was a very high prevalence of wasting with increasing age which was highly significant. It should be increased the awareness among mothers on high incidence of respiratory infections among children and the effects of food restriction during illness which was found to be significant in this study.

It is recommended to continue and scale up support to field staff to accelerate NRP especially to children <2 yrs with rigorous monitoring and proper targeting of NRP to enhance the coverage with continued national monitoring of nutritional status <5 yrs.

Widely disseminate the national infant feeding guidelines in emergencies is essential with initiation of re lactation process and continuous monitoring of breast feeding code.

Ensure accessibility of ORS and Resomal for severely wasted children in field clinics and Zinc supplementation for children with diarrhoea for 10-14 days. It is recommended to strengthen and expand education on prevention and treatment of diarrhoea and hand washing before eating.

To control the high prevalence of ARI, initiate 200,000IU Vitamin A mega dose campaign for children <5 yrs and repeat once after 6 month and then fix into national guidelines and screen for LRTI and early referral.

Initiate a campaign for measles immunisation along with Vitamin A mega dose and deworming, screen for BCG scar and provide facilities for BCG immunisation and continue deworming every 6 months for children 2-5yrs.

There is a need to conduct coverage survey for NRP after one month and establish a community based surveillance to watch over water, sanitation health and nutrition.

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CHAPTER 1

INTRODUCTION

Sri Lanka's warring factions have been alone ethnic lines since 1983, the two fractions being Sri Lankan Government and Liberation Tigers of Tamil Elam (LTTE) whose goal was the creation of a separate state "Tamil Elam". The war commenced in July 1983 with the killing of thirteen soldiers by means of a land mine. From then onward the war extended up to the final crucial stage for over a period of three decades. This war, like many others, took the pattern of repeated violation of ceasefires, cessation of ceasefires and withdrawal from ceasefires.

In January 2008, the Government of Sri Lanka withdrew from the 2002 Ceasefire Agreement (CFA) and announced its intention to defeat militarily. From May 2008 onwards the Sri Lankan Forces made significant advances in the northern Vanni region (Killinochchi and Mullative districts) resulting in the displacement of large numbers of both resident and previously displaced populations due to non-allowing the civilians to move out to Government controlled areas by the Rebels. In September as the conflict neared Kilinochchi the security situation deteriorated drastically and, following a request by the Government of Sri Lanka (GoSL), the United Nation (UN) agencies and International Non Government Organisations (INGOs) relocated their operations from Kilinochchi to Vavuniya.

Access to the conflict-affected population held under the custody of rebels was a challenge not only for the delivery of relief items but also for any meaningful assessment of needs or monitoring of any relief item or food distributions. But World Food Programme (WFP) convoys comprising food items were able to reach Internally Displaced Populations (IDPs) successfully in locations where they had congregated. However, only a limited quantity of non-food items had been delivered through Government Agent (GA) convoys and this became a major concern for the humanitarian community. As humanitarian agencies relocated, mechanisms for humanitarian co-ordination were reviewed and reinforced in Vavuniya. A 'humanitarian hub' was established to support convoy operations and find ways in which the national UN and INGO staff that have remained in the Vanni could be mobilised in support of the relief effort.

While many of the civilians residing in the Vanni had been displaced multiple times, more displacements had occurred into the areas around Mullaitivu and Oddusuddan. However, the strict limitations on the freedom of movement of all civilians in the Vanni; it was required one family member to remain in the Vanni in case another wanted to leave. This effectively prevented people from leaving the Vanni, and they were used them as human shields by the rebels when the Government Forces expanded their operations. Displacement has caused potentially long-term damage to the livelihood of the people in conflict-affected areas (over 60% of cultivable land in the Vanni is now abandoned). Relief assistance needs to be supplemented where possible by early recovery interventions focused on livelihoods and income-generation.

The Government has identified sites in Vavuniya to accommodate the IDPs leaving the Vanni and coming to Government controlled areas. The Government has prepared the ground for receiving / processing all IDPs in the Vanni in preparation for resettlement.

Security forces have started rescue operations for civilians' batch by batch and relocated them in Vavuniya in transit camps. Then the Sri Lankan Forces commenced the biggest hostage rescue mission in April 2009. The rebels lost control of much of their human shield when the Sri Lankan forces blew a three-kilometer wide breach in an earth bund built around the No Fire Zone (NFZ). Sri Lankan Government set up the NFZ as a place for the civilians to run to in order to avoid the shelling. A mass outpouring of refugees arrived in government-controlled areas and the government centers for them got swamped to breaking point.

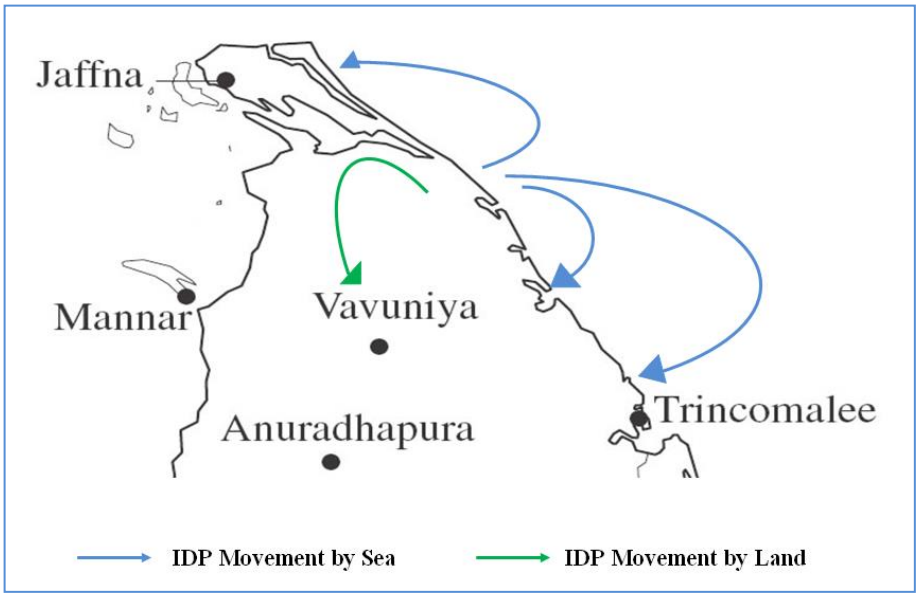


Figure 1: IDP Movements from Killinochchi to Jaffna, Vavuniya and Trincomalee

So more land was cleared and vast tented cities were put up to accommodate more than hundred thousand refugees as shown in Figure 1. According to sources from the Ministry of Defence, a total of

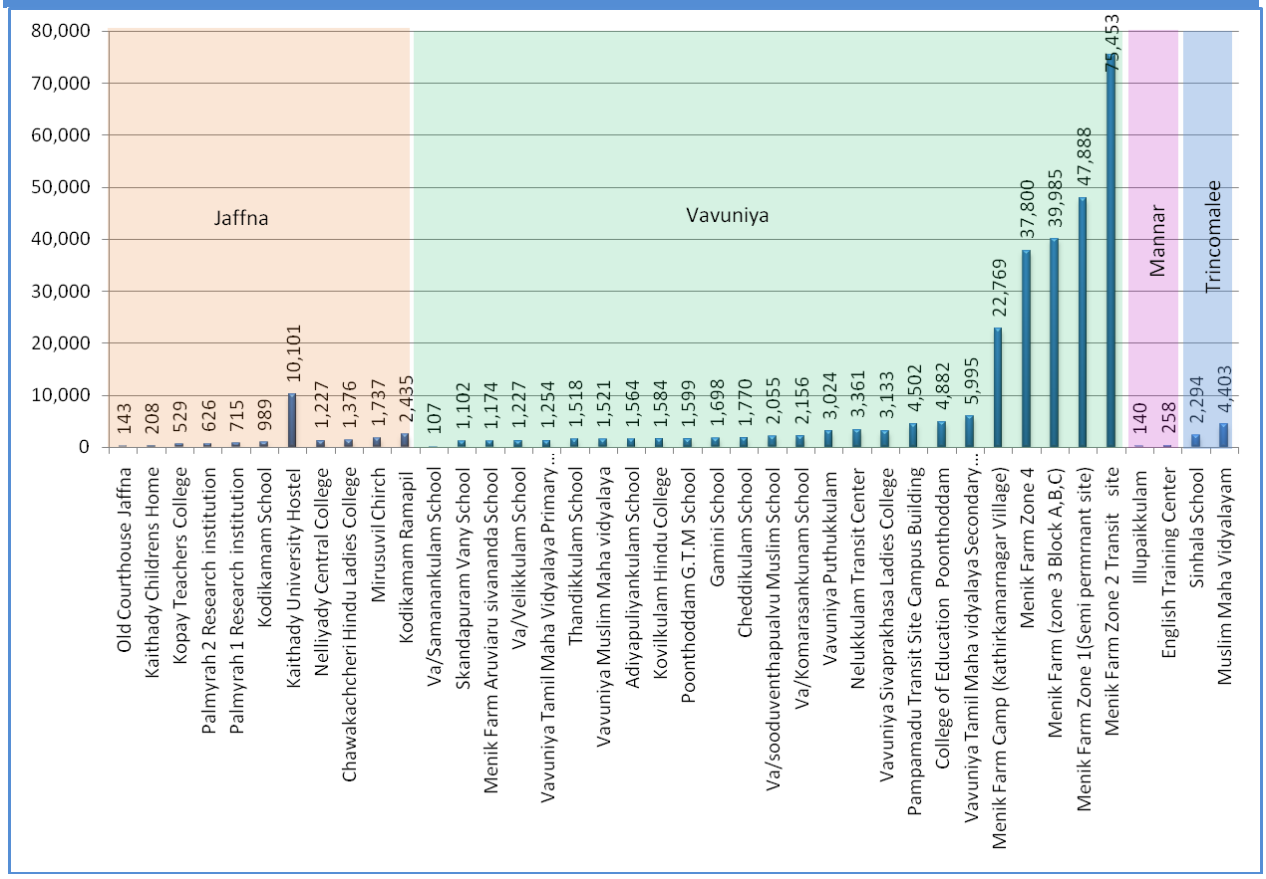
145,674 refugees had arrived to the government controlled areas from 20th April to 16th May. During the period from 27th October 2008 to 21st May 2009, 271,781 persons crossed over to the Government controlled areas from the conflict zone. There are 269,464 people as IDPs in temporary camps. The majority are in Vavuniya 251,596. Other 11,086, 6,642 and 140 are in Jaffna, Trincomalee and Mannar respectively. Details of the numbers and location of the displaced population is shown in Figure 2.

The last batch of civilians was rescued on 17th May 2009 following the assassination of the rebel leader. On the 19th of May 2009, Government of Sri Lanka declared that the war which was a big struggle for 25 years over.

Displaced people are often suffering from the devastating effects of exhaustion, bereavement, separation from loved ones, ill health or injury, poor shelter, inadequate nutrition and food availability, poor water supply, sanitation and impoverishment (Tool and Waldman 1993). These factors are applicable to this community too. War-weary refugees are being separated from family members and are denied permission to leave the camps owing to security reasons. Most of them bear the scars of war such as gunfire, artillery shelling and land mines. There are 2,317 people admitted to hospitals in various districts as on May 18.

Civilians who were living in those areas were displaced and they are currently living in welfare centers in government controlled areas in neighbouring districts. These welfare centers officially function as a security measure in order to screen the potential rebel fighters, and also as a measure to provide the security and the basic needs of the displaced populations until longer-term housing or resettlement can be arranged. Welfare centers are not a new concept as they have been existing in conflict-affected and neighbouring districts in Sri Lanka for several years in response to IDP movements. Displaced families are being provided with food, shelter, health, and all basic facilities including childrens' education in IDP centers scattered in Jaffna, Mannar, Pulmoddai and Vavuniya areas. Five welfare centers have been established so far by the GoSL named as Zone 0, 1, 2, 3 and 4.

Figure 2: IDP Population in Camps in Vavuniya, Jaffna, Mannar and Trincomalee Districts as at 26 May 2009



The following services to cover water and sanitation facilities in welfare centers were established: 3, 154 latrines have been constructed; 200 bathing spaces have been constructed; On an average, a total of 4,400 cubic meters of water is available at the moment, including 3,000 cubic meters drinkable water (10 l/p/d). However, water coverage is not consistent across; 90 water trucks are operating to provide 2,100 cubic meters liters drinkable water to IDPs; 112 tube wells have been installed and provide an additional 850 Cubic meter drinkable water every day; 8 mobile water treatment plant unit providing 1,100 cubic meter drinkable water every day; 1 pipeline of 5.5 km long with pumping station to provide 4,000 cubic meters are under construction; 1,700 garbage bins have been installed; 75,000 hygiene kits have been distributed (1 per family for 300,000 IDPs); 545 water storage tanks with taps have been installed.

The Department of Nutrition of the Medical Research Institute has conducted a rapid nutrition assessment in Vavuniya IDP transit camps in March 2009 with the support from UNICEF. According to the findings approximately 25% of children under-five years of age suffered from acute malnutrition: 5% from severe acute malnutrition and 20% from moderate acute malnutrition. In addition, it showed that one-third of lactating mothers and 40% of pregnant women were underweight. Up to 40% of children under five, 40% of pregnant women and 50% of lactating mothers were found anaemic. However, given the large influx of IDPs who were trapped in the conflict zone for long periods of time, facing irregular and insufficient food provision combined with extreme living conditions, it is speculated that the prevalence of malnutrition among the under-five population has increased since the last survey.

The following services are established to upgrade the nutritional status of children: 10 Nutrition Rehabilitation Centres have been constructed and 2 teams of nutrition service providers are screening and providing assistance in all welfare Zones. Another 8 teams are distributing Ready to Use Therapeutic Food (RUTF) in transit camps as well; A total of 9,000 under-five children have been screened so far for their nutrition status for targeted treatment; A total of 2,500 children are being treated with High Energy Biscuits for moderate malnutrition; Another 1,300 children are being treated with BP-100 and Plumppy Nuts for Severe Acute Malnutrition; More than 14,000 under-five children have been given supplementary feeding using UNIMIX for the last three months and it is being continued with Corn Soya Blend (mixed with oil and Sugar) under blanket supplementary feeding to prevent further deterioration of malnutrition. Training of more than 200 health professionals –including paediatricians, medical officers, nurses and public health midwives (PHMs) – was done on management of severe acute malnutrition. Few safe low-stress breastfeeding spaces have been established in most of IDP transit camps; Additionally, Therapeutic Feeding Centres (TFC) for the inpatient care of children suffering from severe acute malnutrition with complications are being established in the General Hospitals of Vavuniya. So far 20,000 sachets of ORS and 20 Emergency health kits have been given to Health centers in IDP camps by UNICEF. About 350 MT of Therapeutic and supplementary feeding products as well micronutrient and de-worming tablets have been provided for a total value of more than US$1,400,000 by UNICEF.

The main health service provider for the displaced people is the Government, Ministry of Health and Nutrition. The Government has taken adequate steps to ensure the welfare of the displaced persons and procedures at Vavuniya is proceeding satisfactorily. In addition to Government

health staff, there are volunteers from various NGOs as well as INGOs providing assistance. After the recent large influx of IDPs, the management of many of the welfare centers have been taken over by the military.

The Ministry of Education is ensuring the coordination of the education response and the Education Cluster is complementing this with support for constructing temporary learning spaces with water and sanitation facilities and blackboards and distribution of learning and teaching material. Approximately 40,000 children including host community children have access to education in a temporary learning space or under tarpaulins; About 13,000 children are currently participating in education in 67 temporary learning spaces in welfare zones in Vavuniya and Jaffna. Approximately 40,000 children have been provided with school material and 1,500 teachers have received teaching material to provide schooling.

This survey is mainly concentrated on refugees accommodated in welfare centers in Vavuniya District. There are five zones, zone 0 to 4. Zone 0 is the model village. People in zone 0 are provided with dry rations and they themselves prepare the meals. All the other zones are provided with cooked food. In addition to these, all the children are being screened for malnutrition and are provided with food supplementation according to their status of malnutrition. Most of the civilians rescued at the final stage have been relocated in Zone 4.

In order to collect baseline information in the displaced camps, facilitate relevant actions, and subsequently monitor the situation by the Department Nutrition of the Medical Research Institute of Ministry of Health, with the collaboration of UNICEF conducted a rapid assessment in Vavuniya district among the people who had got displaced due to hostilities. Based on this information, it is expected to strengthen the Nutrition Rehabilitation Programme for these displaced people.

Objectives

1. To measure the nutritional status and determinants of the displaced children under five living in camps in Vavuniya District
2. To compare the nutrition status with previous surveys
3. To collect baseline information to monitor nutrition interventions and food aids
4. To assess the mortality among them during the past 3 months

CHAPTER 2

METHODOS

This was a representative cross sectional survey among displaced people living in welfare centers. These locations were named as zones. There were 5 zones at the time of the survey. Assessment was done to cover all 5 zones: Zone 0, 1, 2, 3 and 4. Zone 0 and 1 were considered as one zone and the other 3 zones were taken as independent areas. The study population was identified as children less than 5 years. SMART methodology was adopted for this assessment.

Sample size

The required sample size for the survey was calculated considering the prevalence of wasting among children under 5 years as 25%, confidence interval as 95% and precision as 5%. The non-response rate was taken as 5%. When calculating the size of the sample following factors was taken into consideration using the formula given below:

n = t2 x (p x q) / d2

n = sample size

t = confidence interval

p = expected prevalence of malnutrition in the population

q = 1 - p, expected proportion of children not presenting malnutrition

d = absolute precision.

A sample size of 300 for the each zone and a total of 1200 for all zones.

Sampling

Welfare centers were named as zones. All the zones were well organized as blocks and in each block there were rows of tents and semi permanent houses arranged in a systematic manner. Systematic sampling was used based on a proper arrangement of tents and semi permanent households which enabled to cover all households comprehensively. The following steps were adopted for systematic sampling.

- The number of population and the number of tents or semi permanent structures were taken by each zone.
- The number of children between 0 and 59 months of age in each zone was calculated taking the estimate of 10% of the population.

- The required number of households to be visited in order to complete the sample of 300 in each zone was determined and the sampling interval was calculated to find out the number of households required in the sample. In Zone 0, 1 and 3 every 15th households was visited and all children under 5 years found in selected households were included in the sample. In Zone 2 and Zone 4, every 20th household was visited.
- If more than one eligible child was found in a household, both are included in the sample. If there was no child found in selected household, next 15th or 20th household was visited. If a child was not present at the time of the visit, the data collectors went back to the household in order to measure the child.

Data collection

A survey team composed of 15 people: the supervisor, ten enumerators and 4 measurers. One day training was done and the objectives of the survey, the sampling method and its rationale were detailed, stressing the importance of a representative sample. All measurers are well trained people who had previous experience in participating in national nutrition surveys for the last 10 years and they are staff members of the Department of Nutrition. Data collection period was 13th to 31st May 2009.

All the health staff was informed about the study and permission was obtained from the relevant health authorities and security personnel. Verbal consent was taken from the parent or guardian of children prior to the study, after explaining to them the purpose and the study methods to them.

Data were collected using the following techniques.

Interviewer administered questionnaire: An interviewer-administered questionnaire was used to collect information from the mother of the child or from a responsible caregiver. The following information was gathered: basic information (date of birth if not age, sex); morbidity and feeding data; access to water and sanitation; measles immunization status, duration of displacement, availability of food and coping mechanisms; coverage of supplementation programme etc. If there was a pregnant woman in the selected household period of gestation, number of clinic visit and the coverage of tetanus toxoid.

Anthropometric measurements: Weight and height/length of children were measured using standard techniques described by the World Health Organisation (WHO) [2]. Measurements were taken by the staff of MRI who were especially trained. Weight was measured with minimal clothing and without shoes to the nearest 100 g with Seca electronic weighing scale and accuracy checked using the standard weights (no corrections have been made for the weight of the clothing). Length was measured for children under 2 years of age and height was measured for children over 2 years to the nearest 0.1 cm with a measuring board.

Data analysis

Data was entered in Epi6 software package and the analysis was carried out by using SPSS software package and ENA package for mortality. Age was calculated in months from the child's birthday. Weight-for-age, weight-for-height and height-for-age were calculated for children by using Anthro 2007 software. The WHO 2005 standard was used and the Z score below -2SD was taken as cut off values to estimate prevalence of stunting, wasting and underweight according to the recommendations made by the World Health Organisation (WHO) [3]. The children below the -3SD of weight-for-height was taken as cut off values to estimate severe acute under nutrition (SAM) and moderate acute under nutrition ((MAM) between -3SD and -2SD of weight-for-height according to the recommendations made by WHO (1995). The analysis was composed of descriptive analysis, which consists of building distributions according to the variables and an interpretative analysis where cross tabulations were used to make comparisons between groups. Chi square test was applied and the level of significance was taken when the P value is below the 0.05.

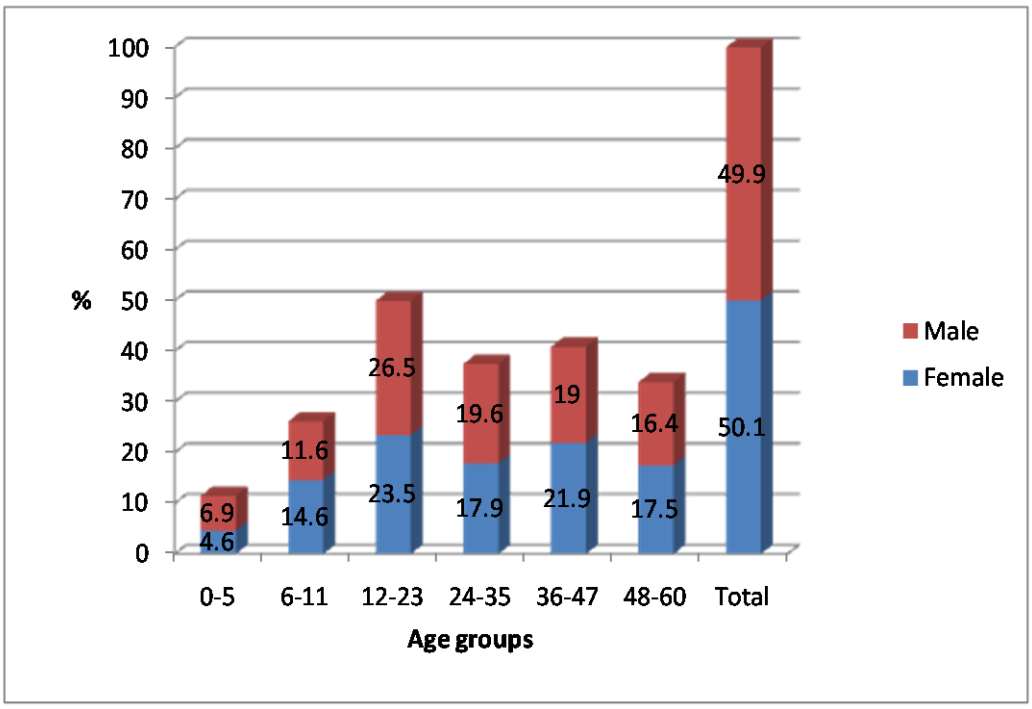
CHAPTER 3
RESULTS

A total of 1,137 children less than five years among the displaced population in Vavuniya district were covered by the study. From this point onward, welfare centers in Zone 0 and 1 were considered as Zone 1.

3.1. Demographic characteristics

As shown in Figure 1 and Table 1 in Annexure 2, 18.8% were infants and 5.7% were below 6 months of age in the study sample. The highest number of children (25.0%) was present in the age group of 12-23 months. There were 49.9% boys and 50.1% girls.

Figure 3.1
The age group distribution of children studied by sex (n=1137)



3.2. Nutritional situation

3.2.1. Prevalence of wasting, stunting and underweight in children

The findings of the study revealed (Table 3.1) that the prevalence of wasting (percentage below the -2SD of weight-for-height WHO standard) was 35.6%. The prevalence of stunting (percentage below the -2SD of height-for-age WHO standard) was 30.0%. The prevalence of underweight (percentage below the -2SD of weight-for-age WHO standard) was 46.9%. Only 3 children were found with oedema.

Table 3.1

Prevalence of under nutrition (Wasting, Underweight and Stunting) and confidence interval (CI) by age group

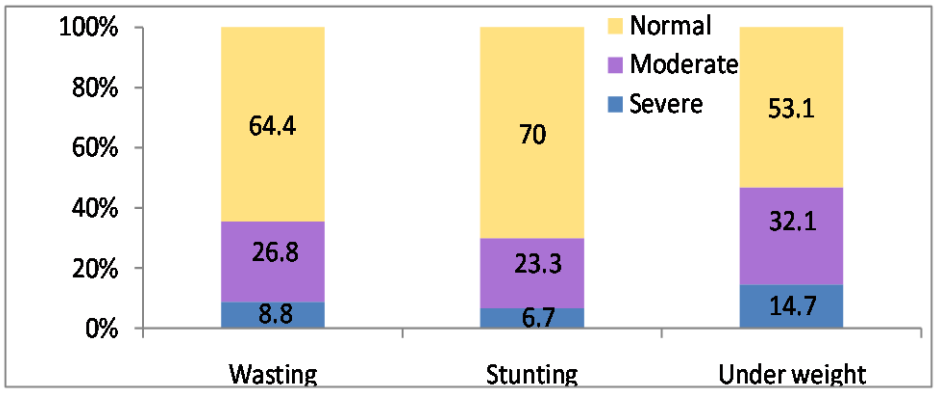
Age	Wasting[1]		Stunting[2]		Underweight[3]		
(months)	%	CI %	%	CI %	%	CI %	N
0 – 5	23.4	12.3-34.6	25.0	13.6-36.4	37.5	24.9-50.1	64
6 – 11	40.3	31.6-48.1	26.2	18.9-33.8	46.3	37.6-54.3	148
12 – 23	43.1	37.2-49.1	30.7	25.2-36.3	51.2	45.2-57.2	283
24 – 35	40.5	33.3-47.1	38.1	31.4-45.1	52.9	45.6-59.6	209
36 – 47	28.3	22.2-34.4	29.6	23.5-35.8	45.1	38.4-51.8	226
48 – 60	28.2	22.1-35.5	25.0	19.2-32.1	39.4	33.1-47.5	191
Total	**35.6**	**32.7-38.4**	**30.0**	**27.4-32.9**	**46.9**	**44.0-49.9**	**1120**

([1]Chi square=24.4, df = 5, P-value=0.000; [2]Chi square=10.7, df = 5, P-value=0.058; [3]Chi square=11.9, df = 5, P-value=0.035 <--)

Wasting increased with age up to 2 years and was lowest at the age of 0-5 months. The highest prevalence of wasting (43.1%) was documented at around 12 – 23 months. Second highest prevalence was observed between 24-35 months (40.2%). As with wasting, the prevalence of underweight and stunting also increased with age up to 24-35 months. In this population, the highest prevalence of underweight (52.9%) and stunting (38.1%) was documented between 24-35 months.

Figure 3.2

Prevalence of wasting, stunting and under weight with severity (n=1120)



Out of the study sample 8.8% was severely wasted (percentage below the -3SD of WHO weight-for-height standard), 6.7% was severely stunted (percentage below the -3SD of WHO height-for-age standard) and 14.7% was severely underweight (percentage below the -3SD of WHO weight-for-age standard). The majority of the wasted, stunted and underweight children were within the moderate category (between the -2SD and -3SD of WHO standard) as shown in the Figure 3.2.

Table 3.2 shows the prevalence of wasting, stunting and underweight in the different welfare centers. The prevalence of wasting among zones varied from 28.8–45.2%. It showed that the lowest prevalence was in Zone 3 which is 28.8%. The highest prevalence was in the Zone 2 (45.2%). The highest prevalence of underweight and stunting was also observed in Zone 2 (57.7% and 33.5% respectively) similar to the prevalence of wasting.

Table 3.2

Undernutrition (Wasting, Underweight and Stunting) by Zone

Welfare Centers	Wasting[1] %	Stunting[2] %	Underweight[3] %	N
Zone 1	28.8	28.4	40.9	215
Zone 2	45.2	33.5	57.7	310
Zone 3	28.0	26.3	38.2	293
Zone 4	38.1	31.1	48.3	302
Total	**35.6**	**30.0**	**46.9**	**1120**

([1]Chi square=24.9, df = 3, P-value=0.000; [2]Chi square=26.8, df = 3, P-value=0.000;

[3]Chi square=24.2, df = 3, P-value=0.236 <--)

Based on the established epidemiological criteria for assessing severity of under nutrition in population by the WHO, this study demonstrated a very high prevalence of wasting in all zones which are above the **trigger point** of 15% prevalence among children less than five years.

3.2.2. Comparison of child nutritional status

The prevalence of wasting and underweight is high in this survey compared to the results of the survey carried out among transit camps in Vavuniya in March and National data (Figure 3.3 and 3.4). Though the results of the survey which was carried out in transit camps could not directly comparable with the current survey this shows the under nutrition prevalence has gone up because the period of displacement prior to coming to Vavuniya has been long. This comparison indicates the immense challenge of reducing the percentages to the national level.

Figure 3.3
Prevalence Wasting, Stunting and underweight compared with National and previous data

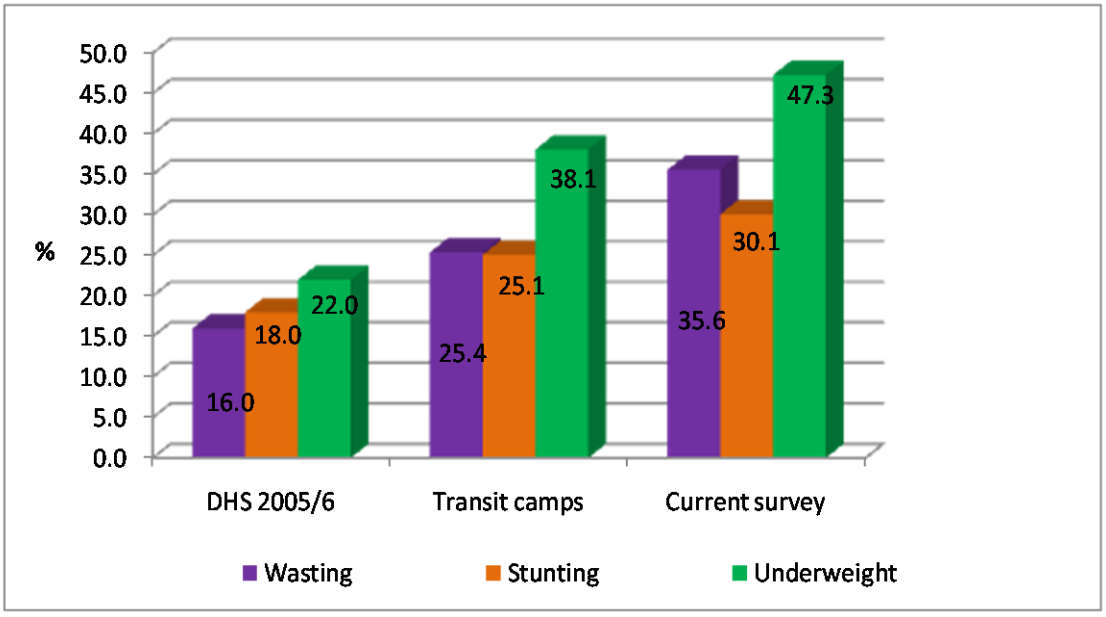
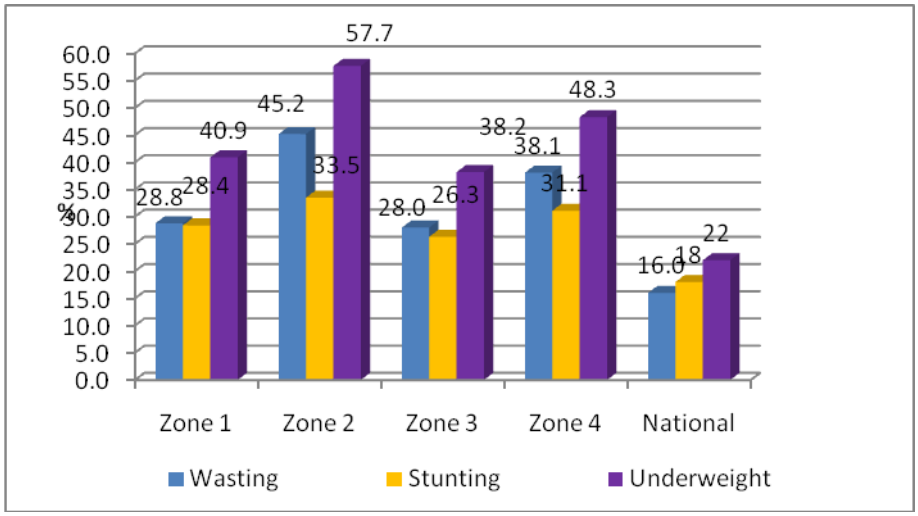


Figure 3.4

Prevalence Wasting, Stunting and underweight of zones compared with previous data



3.2.3. Acute Under nutrition (wasting)

In Table 3.3, it is noted that boys appeared to have significantly higher prevalence of wasting than girls (40.4% in boys and 30.9% in girls). The prevalence of severe wasting among boys (11.3%) was higher than that of the girls (6.4%). The difference is statistically significant.

Table 3.3

Weight for height Z- score (wasting) by sex

Sex	Wasting							
	Normal >-2		Moderate ≥ -3 &<-2		Severe <-3		Total	
	n	%	n	%	N	%	n	%
Female	387	69.1	137	24.5	36	6.4	560	50.0
Male	334	59.6	163	29.1	63	11.3	560	50.0
Total	**721**	**64.4**	**300**	**26.8**	**99**	**8.8**	**1127**	**100.0**

(*Chi square=13.9, df = 2, P-value=0.001 <--)

Table 3.4 shows the highest prevalence of severe wasting was between 6-11 months (13.5%) and moderate wasting was between 12-23 months (30.9%). Majority of wasted children were moderately wasted (26.9%).

Table 3.4

Weight for height Z- score (wasting), by age group

Age group	Wasting						
	Normal ≥-2		Moderate ≥ -3 &<-2		Severe <-3		Total
	N	%	N	%	N	%	N
0 - 5	*47*	77.0	*11*	18.0	*3*	4.9	*61*
6 - 11	*89*	60.1	*39*	26.4	*20*	13.5	*148*
12 - 23	*160*	56.7	*87*	30.9	*35*	12.4	*282*
24 – 35	*126*	59.7	*65*	30.8	*20*	9.5	*211*
36 – 47	*160*	71.4	*56*	25.0	*8*	3.6	*224*
48 - 60	*137*	72.1	*42*	22.1	*11*	5.8	*190*
Total	**719**	**64.4**	**300**	**26.9**	**97**	**8.7**	**1116**

(*Chi square=33.4, df = 10, P-value=0.000 <--)

The prevalence of severe wasting between zones varied from 5.8-11.5% as shown in Table 3.6. It showed that the lowest prevalence was in Zone 3 and the highest prevalence was in the Zone 2 (11.5%). The highest prevalence of moderate wasting was also observed in Zone 2 (33.5%) and the lowest prevalence of moderate wasting was reported from Zone 3 (22%).

Table 3.5

Weight for height Z- score (wasting), by zones

Welfare centers	Wasting							
	Normal ≥-2		Moderate ≥ -3 &<-2		Severe <-3		Total	
	N	%	N	%	N	%	N	%
Zone 1	154	71.3	48	22.2	14	6.5	216	19.2
Zone 2	172	55.0	105	33.5	36	11.5	313	27.8
Zone 3	213	72.2	65	22.0	17	5.8	295	26.2
Zone 4	187	67.7	84	27.7	32	10.6	303	26.9
Total	**726**	**64.4**	**302**	**26.8**	**99**	**8.8**	**1127**	**100.0**

3.1.4. Low Birth Weight (LBW)

Birth weight provides valuable determinant of child survival. The birth weight of the children was obtained. From the total surveyed sample birth weight could only be obtained from 83.7% of the children (n=943) due to non availability of child health development record (CHDR) or not recording in CHDR. The mean birth weight of the children was 2.4 (SD=1.2) kgs.

Figure 3.5: Distribution of birth weight of surveyed children in Zones compared to the National level

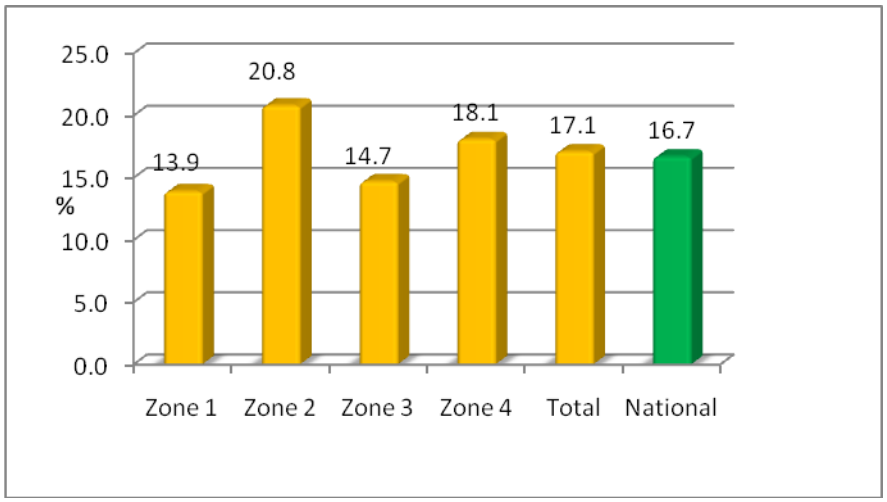


Figure 3.5 shows that 17.1% babies were born with weight less than 2.5Kg. These results were similar to the National data of DHS results in 2005/6 which recorded low birth weight at 16.7%. It is interesting to note that 20.8% of children in Zone 2 were born with low birth weight and the lowest low birth weight prevalence was reported from Zone 1 (13.9%).

3.3. Determinants of child nutritional status and child survival

A child's nutritional status is the **immediate result of his or her dietary intake and health status. These two immediate** causes are the product of **three underlying causes**, namely **household food security, care for children, and access to health services and a healthy environment**. These underlying causes are the product of **basic causes**, namely **education, economic structure, displacement period** and **potential resources**. The main findings from the survey hereafter have been organized to follow this framework in order to facilitate a more comprehensive understanding of the current child under nutrition situation in displaced population.

3.3.1. Immediate causes

a. Diseases

The prevalence of important child illnesses 2 weeks prior to the study was determined. Diarrhoeal diseases were determined by passing 3 or more stools per day. Acute respiratory tract infection (ARI) was defined as cough or cold with or without fever. Breathing rate was counted by the trained health personnel in the Department of Nutrition when the child had ARI to determine the lower respiratory tract infections (LRTI). When the breathing rate is more than 50 breaths per minutes for children less than one year and more than 40 breaths per minute for children 1-5 years was considered as LRTI (WH0 2005).

Table 3.6

Morbidity pattern by age group

(illnesses during the 2 weeks preceding the study)

Age group (months)	Diarrhoea[1]		ARI[2]		N	LRTI[3]		N
	N	%	N	%		N	%	
0 – 5	8	12.9	36	58.1	62	3	11.1	27
6 – 11	66	44.6	106	71.6	148	4	5.5	73
12 – 23	135	47.7	190	67.1	283	12	10.2	118
24 – 35	101	47.4	127	59.6	213	3	3.7	81
36 – 47	94	40.9	137	59.6	230	4	4.1	98
48 – 60	69	35.8	103	53.4	193	2	2.8	71
Total	**473**	**41.9**	**699**	**61.9**	**1129**	**28**	**6**	**468**

([1]Chi square=31.5, df = 5, P-value=0.000; [2]Chi square=16.6, df = 5, P-value=0.005 ; [3]Chi square=7.6, df = 5, P-value=0.179)

Table 3.7 shows that 41.9% children had diarrhoeal diseases, 61.9% of children under five had suffered from ARI and only 6% had LRTI. The highest prevalence of diarrohea (47.7%) among the children 12 -23 months, ARI (71.6%) was observed among the children of 6-11 months and LRTI among the children under 6 months (11.1%).

Table 3.7

Morbidity pattern by Zones

(Illnesses during the 2 weeks preceding the study)

Welfare centers	Diarrhoea[1]		ARI[2]		N	LRTI[3]		N
	N	%	N	%		N	%	
Zone 1	97	44.5	139	63.8	218	8	6.0	133
Zone 2	147	46.7	183	58.1	315	12	6.9	175
Zone 3	120	39.9	177	58.8	301	8	4.9	164
Zone 4	113	37.3	204	67.3	303	0	0.0	0
Total	**477**	**42.0**	**703**	**61.8**	**1137**	**28**	**5.9**	**472**

([1]Chi square=6.7, df = 3, P-value=0.082; [2]Chi square=7.3, df = 3, P-value=0.064 ; [3]Chi square=0.6, df = 2, P-value=0.742)

Prevalence of diarrohea varied from 37.3% to 46.7% between welfare centers as shown in Table 3.8. The highest prevalence of diarrhoeal diseases (46.7%) and LRTI (6.9%) was observed in children in Zone 2 and ARI was highest in children in Zone 4 (67.3%) and the lowest in Zone 2 (58.1%). Respiratory rates were not examined in the study sample in Zone 4 due to lack of trained human resources.

Table 3.8

Proportion of children had scabies and other skin infections in zones

Welfare centers	Scabies[2]		Skin disease[1]		Total	
	N	%	N	%	N	%
	7	3.2	22	10.1	217	19.2
Zone 1	12	3.8	21	6.7	315	27.8
Zone 2	7	2.4	23	7.7	297	21.2
Zone 3	8	2.6	48	15.8	303	21.8
Zone 4	**34**	**3.0**	**114**	**10.1**	**1132**	**100.0**

([1]Chi square=1.3, df = 3, P-value=0.728; [2]Chi square=16.9, df = 3, P-value=0.001)

Children were examined for scabies and other skin infections by the trained staff of the Department of Nutrition. Table 3.9 presented the scabies and other skin infections prevalent among children. Only 3% had scabies and 10.1% children were suffering from other skin

infections such as eczema, Pitriasis etc. The highest prevalence of scabies was observed in Zone 2 (3.8%) and children living in Zone 4 had a higher percentage of skin infections than the others.

b. Dietary intake

Frequency of meals

Daily feeding frequency is important to maintain the nutritional status in children. This study also revealed the frequency of feeding among children over 6 months (Table 3.10). About two third of the children (62.7%) were fed 3-4 times per day and 14.6% of children were fed more than 5 times daily. Only 6.2% were fed once per day. Though the recommended frequency of feeding is more than 3 times per day, 20.5% of children aged 6-23 months were fed only once compared to other age groups.

Table 3.9

Number of meals eaten by children > 6 months per day by age group

	Age groups in months									
Number of meals[1]	**6 - 11**		**12 - 23**		**24 – 35**		**≥ 36**		**Total**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Once	15	10.2	29	10.3	12	5.6	10	2.4	63	6.2
Twice	22	15.0	28	9.9	19	8.9	33	7.8	97	9.6
3 – 4 times	47	32.0	156	55.3	141	66.2	324	76.6	637	62.7
≥ 5 times	52	35.4	56	19.9	26	12.2	21	4.9	146	14.6
No answer	11	7.5	13	4.6	15	7.0	35	8.3	73	6.9
Total	**147**	**13.8**	**282**	**26.5**	**213**	**20.0**	**423**	**39.7**	**1016**	**100.0**

([1]Chi square=146.8, df = 12, P-value=0.000)

Type of food

Table 3.11 shows the food consumption of children during the past 24 hours prior to the interview day. There is an increase trend of consuming family food with the increasing of age. In this population 33.1% of children aged 6 -11 months, 60.8% of children between 12 - 23 months, 79.3% of children aged 24 – 35 months and 80.3% of children aged over 36 months were given family food. About 18% of children were given biscuits, sugar added in tea and

beverages. About 21.6% of children were given formula milk during the past 24 hours and highest with children between 6-11 months (31.8%).

Table 3.10

Type of food eaten by children >6 months during last 24 hours by age groups (n=1017)

	Age groups in months									
Type of food given*	**6 - 11**		**12 - 23**		**24 - 35**		**≥ 36**		**Total**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Family food	49	33.1	172	60.8	169	79.3	339	80.3	729	68.4
UNIMIX	13	8.8	9	3.2	9	4.2	17	4.0	40	4.5
Formula milk / Full cream milk	47	31.8	86	30.4	38	18.3	58	13.7	230	21.6
Others (biscuits etc.)	39	32.5	51	69.8	34	16.9	53	65.4	177	17.9

(*Multi responses)

3.3.2. Underlying causes

a. Care for children

The effective promotion of healthy caring practices for women and their children plays an essential role in ensuring that children are free to grow to their highest potential. These practices include adherence to **Infant and Young Child Feeding (IYFC) guidelines, accessing antenatal care during pregnancy and seeking or providing appropriate treatment when a child is sick.**

Breastfeeding

There were 498 children under 2 years of age. Mothers were asked for the currently breastfeeding information and the age and the reason for stopping breastfeeding.

Majority of the children under 2 years (84.7%) were currently on breast feeding as shown in Table 3.12. The highest prevalence of current breastfeeding practice was observed in Zone 2 where the wasting is highest. About 23.6% of children under 2 years had weaned before the age of 6 months. Out of the mothers who had stopped breastfeeding, half (52.9%) had stopped due to lack of milk, 20.6% due to sickness and 17.7% due to other reasons such as separation

of the mother due to displacement etc. Overall breast feeding practices are quite satisfactory. Breast feeding is still an integral part of the culture in Sri Lanka, and the results of this study confirmed that the traditional preference for breast milk still continues despite the displacement.

Table 3.11

Breast-feeding practices among children under 2 years in Zones

Currently	**Zone**									
Breast feeding[1]	**0 & 1**		**2**		**3**		**4**		**Total**	
(n=478)	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Yes	78	83.0	122	89.7	104	87.4	101	78.3	**405**	**84.7**
No	16	17.0	14	10.3	15	12.6	28	21.7	**73**	**15.3**
Age at which breast-feeding was stopped[2] (n=72)	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
1 - 5 months	4	23.5	3	17.6	5	29.4	5	29.4	**17**	**23.6**
6 - 11 months	3	17.6	6	37.5	1	6.3	6	37.5	**16**	**22.2**
12 - 17 months	5	29.4	4	12.9	9	29.0	13	41.9	**31**	**43.1**
18 – 24 months	4	29.4	1	12.5	0	0.0	3	37.5	**8**	**11.1**
Reasons for stopping breastfeeding (n=68)	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
No milk	7	19.4	8	66.7	9	25.0	12	33.3	**36**	**52.9**
Mother sick	3	21.4	3	21.4	3	21.4	5	35.7	**14**	**20.6**
Mother not with the child	2	33.3	1	16.7	0	0.0	3	50.0	**6**	**8.8**
Other reasons	3	27.3	0	0.0	3	27.3	6	54.4	**12**	**17.7**

([1]Chi square=7.6, df = 3, P-value=0.055; [2]Chi square=12.3, df =9, P-value=0.194; [3]Chi square=9.4, df =12, P-value=0.669)

Feeding during illness

The study also showed that in 35.6% children the amount of food given to them was reduced during illness. In 53.7% cases the pattern of being fed remained the same. In 0.2% children were given more food during illness. About 14% of children aged 6-11 months were given only liquids (Table 3.13).

Table 3.12

Pattern of feeding during illness by age groups (n=629)

	Age groups in months									
Feeding pattern	**6 - 11**		**12 – 23**		**24 - 35**		**≥ 36**		**Total**	
during illness	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Amount of food reduced	29	34.5	66	36.3	46	38.0	83	34.3	224	35.6
Only liquid were given	12	14.3	7	3.8	7	5.8	6	2.5	32	5.1
No change	39	46.4	98	53.8	62	51.2	139	57.4	338	53.7
Amount of food increased	0	0.0	1	0.5	0	0.0	0	0.0	1	0.2
No answer	4	4.8	10	5.5	6	5.0	14	5.8	34	5.4

([1]Chi square=22.5, df = 12, P-value=0.033)

b. Household food security

Food security refers to access by all people at all times to sufficient, safe and nutritious food for a healthy and active life. There are three components to food security: ***availability*** (sufficient quantities of appropriate food are available or food assistance); ***accessibility*** (adequate income or other resources to access appropriate food or food aid) and ***utilization*** (food is properly used through appropriate food processing and storage practices, adequate knowledge and application of nutrition and child care, and adequate health and sanitation services).

Availability

Over half of the households (57.5%) consumed cooked food 3-4 times per day as shown in Table 3.14. Only 5% of households consumed food once a day. 56% of households in Zone 1 has received food ration for them to cook the food. One third of households (33.9%) were satisfied with food. Out of that half of the households (49.8%) mentioned that they do not like the taste of food and the other half mentioned food was not properly cooked (49.9%).

Table 3.13

Food availability of households and the quality of food

Frequency of receiving cooked food (n=1137)	Zone									
	1		2		3		4		Total	
	N	%	N	%	N	%	N	%	N	%
Once	18	8.3	4	1.3	17	5.6	17	5.6	**56**	**4.9**
Twice	31	14.2	40	12.7	11	3.7	27	8.9	**109**	**9.6**
3 - 4 times	41	18.8	228	72.4	191	63.5	194	64.0	**654**	**57.5**
≥ 5 times	6	2.8	2	0.6	2	0.7	0	0.0	**10**	**0.9**
Food ration	122	56.0	41	13.0	80	26.6	65	21.5	**308**	**27.1**
Satisfied with food (n=1016)										
Yes	**43**	**43.0**	**120**	**38.3**	**118**	**39.3**	**63**	**20.8**	**344**	**33.9**
No	**57**	**57.0**	**193**	**61.7**	**182**	**60.7**	**240**	**79.2**	**672**	**66.1**
Reason for dissatisfaction* (n=671)										
Amount not enough	**4**	**7.3**	**2**	**1.0**	**0**	**0.0**	**0**	**0.0**	**6**	**0.9**
Taste not good	**31**	**56.4**	**86**	**44.6**	**104**	**56.8**	**113**	**47.1**	**334**	**49.8**
Bad smell	**1**	**1.8**	**9**	**4.7**	**0**	**0.0**	**0**	**0.0**	**10**	**1.5**
Not properly cooked	**35**	**63.6**	**105**	**54.4**	**74**	**40.4**	**121**	**50.4**	**335**	**49.9**
Not used to	**0**	**0.0**	**1**	**0.5**	**0**	**0.0**	**0**	**0.0**	**1**	**0.1**

(*multi responses)

Accessibility

Food access for many households has improved with food aid.

Food supplementation programme

Three supplementary feeding programmes are being conducted for displaced population. There was a blanket supplementation of Corn Soya Blend (CSB) by the World Food Programme (WFP) alternative to supplementary foods provided by Thriposha (fortified supplementary food produced in Sri Lanka by the Government).

Table 3.14

Therapeutic and Supplementary feeding and nutritional status of children over 6 months (n=1059)

Wasting (weight-for-height)	Therapeutic and supplementary food									
	BP-100		Plummpynut		HEB		UNIMIX		CSB/Thriposha	
	N	%	N	%	N	%	N	%	N	%
Severe <-3	4	4.2	11	11.6	11	11.1	13	13.7	33	34.7
Moderate ≥ -3 &<-2	4	1.4	10	3.5	37	12.3	30	10.4	100	34.6
Normal ≥-2	0	0.0	5	0.7	110	15.2	56	8.3	282	41.8
Total	**8**	**0.8**	**26**	**2.5**	**158**	**14.0**	**99**	**9.3**	**415**	**39.2**
Stunting (height-for-age)										
Severe <-3	0	0.0	5	7.5	15	9.5	9	13.4	23	34.3
Moderate > -3 &<-2	5	2.0	6	2.4	51	14.4	58	8.2	105	41.2
Normal >-2	3	0.4	14	1.9	90	16.2	67	9.3	288	38.9
Total	**8**	**0.8**	**26**	**2.4**	**156**	**14.6**	**99**	**9.3**	**416**	**39.1**
Underweight (weight-for-age)										
Severe <-3	5	3.2	15	9.6	15	8.7	18	11.5	56	35.7
Moderate > -3 &<-2	3	0.9	6	1.7	51	14.0	34	9.7	137	38.9
Normal >-2	0	0.0	5	0.9	93	15.6	47	8.5	225	40.5
Total	**8**	**0.8**	**26**	**2.4**	**159**	**14.0**	**99**	**9.3**	**418**	**39.3**

A UNICEF supported Therapeutic feeding programme is going on to rehabilitate children with severe acute under nutrition, with BP-100 and Plummpy nuts. In addition UNIMIX or High Energy Biscuits (HEB) is provided for children with moderate acute under nutrition, by UNICEF.

Table 3.15 shows how 3 supplementary feeding programmes was targeted for the children with wasting, stunting and underweight. Therapeutic feeding programme is supposed to cover only children with severe wasting but the study results indicates that BP-100 was provided to children with moderate wasting and Plummpy nut was provided even to children who are not wasted also. Similar findings is observed with UNIMIX and HEB which are the food items targeted for children with moderate wasting but the study results indicate that 15.2% and 9.3% of non wasted children were also provided with HEB and UNIMIX respectively. On the contrary CSB and Thriposha should be given to all children despite their nutritional status but the study results show only 34.7% of children with severe wasting, 34.6% of children with moderate wasting and 41.8% of normal children also has received CSB and Thriposha. It indicates that the feeding programmes are poorly targeted.

Table 3.15

Therapeutic and Supplementary feeding of children over 6 months in different zones (n=1071)

Welfare center	Therapeutic and supplementary food									
	BP-100		Plummpynut		HEB		UNIMIX		CSB/Thriposha	
	N	%	N	%	N	%	N	%	N	%
Zone 1	3	1.5	1	0.5	1	0.5	1	0.5	118	57.6
Zone 2	0	0.0	4	1.4	10	3.4	9	3.1	97	33.1
Zone 3	4	1.4	5	1.8	35	12.5	32	11.4	194	69.0
Zone 4	1	0.3	16	5.5	110	37.7	58	19.9	12	4.1
Total	**8**	**0.8**	**26**	**2.4**	**157**	**14.6**	**100**	**9.3**	**421**	**39.3**

Table 3.16 shows the proportion of children who have received blanket supplementary feeding (CSB / Thriposha) in different welfare camps. The lowest coverage was observed in Zone 4 and the highest coverage was in Zone 3. It is interesting to note that the highest coverage of other feeding programmes was observed from Zone 4 though it was established very recently compared to other zones.

The coverage of community based therapeutic feeding programme was 15.8%; only 4.2% and 11.6% of children with severely wasting received BP-100 and Plummpy-nut respectively. Coverage of the feeding programme of children with moderate wasting was 22.7%; 10.4% was received UNIMIX and 12.3% was received High Energy Biscuits. Blanket supplementation coverage with CSB or Thriposha was 39.3%. It is supposed that 2 packets of CSB / Thriposha should be distributed as a blanket supplementation for a one month period. Amount of BP-100 and Plummpy nut varied with the weight of the child and the duration is 7 or 14 days. UNIMIX is distributed daily by the MSF after the preparation with sugar and oil. HEB ration is 8 biscuits per day and 2 packets per week. Table 3.17 indicates the mean amount received at the last visit and mean duration of the food consumed. It was satisfactory only with CSB / Thriposha and unsatisfactory with other food. BP-100, Plummpy nut and HEB should be distributed for 7-14 days supply and UNIMIX daily.

Table 3.16

Coverage of food supplementation programme in children over 6 months

Type of food supplementation programme	N	%	Mean (SD) amount of pkts. received at the last visit	Mean (SD) duration in days to be used
Therapeutic Feeding among severe wasted children (n=95)				
BP-100	4	4.2	4.6 (2.7)	9.8 (3.8)
Plummpy Nut	11	11.6	13.7 (10.3)	1.6 (2.7)
Feeding among moderately wasted children (n=289)				
HEB	37	12.3	1.2 (0.5)	3.0 (6.2)
UNIMIX	30	10.4	57.7 (47.8)*	1.0 (0.6)
Blanket feeding among children>6months (n=1059)				
CSB / Thriposha	418	39.3	2.9 (9.4)	27.7 (8.2)

(* UNIMIX is given in grams)

Coping mechanism

About 36% mentioned that children had enough food to eat during the last 7 days. Others who did not have enough food to give the children coped up with different mechanisms as shown in Table 3.25. Out of those interviewed 37.7% had limited portion size at mealtimes always. Common coping mechanism adopted (16.2%) pretty often about 3-6 times per week was the reduction of the number of meals a day, 7.7% had skipped entire days without eating, 11.7% reduced the number of meals eaten in a day and 1.9% had got food from outside the camp (friends, relatives and purchasing) everyday.

Table 3.17

Coping mechanism of the family during the past 7 days (n=1133)

Coping mechanism	All the time (Everyday)	Pretty often (3-6/ week)	Once in a while (1-2/week)	Hardly at all (< 1 week)
Limit portion size at mealtimes	427 (37.7%)	183 (16.2%)	115 (10.2%)	408 (36.0%)
Restrict consumption of adults in order for small children to eat	13 (1.1%)	87 (7.7%)	165 (14.6%)	868 (76.6%)
Reduce number of meals eaten in a day	4 (0.4%)	132 (11.7%)	109 (9.6%)	888 (78.4%)
Skip entire days without eating	10 (0.9%)	21 (1.9%)	23 (2.0%)	1079 (95.1%)
Got food from outside the camp (friends, relatives, purchase)	2 (0.2%)	20 (1.8%)	8 (0.7%)	1103 (97.4%)

c. Health services and Healthy Enviornment

Health services and healthy environment are pre-conditions for well-nourished children primarily because in their absence, children are more likely to be affected by childhood diseases. The availability of and a household's access to health services are often measured using outcome indicators, such as immunization status and place of delivery. The degree to which a household has a healthy environment is traditionally measured by input indicators, such as having an improved drinking water source and improved sanitation facility.

Measles Immunisation

Measles vaccine is given to all children at 9 months and 3 years (MR vaccine) by the Ministry of Health under the National Immunisation programme. As shown in Table 3.19, 78.9% of children over 9 months were given measles vaccination. This information was obtained from the child health development records (CHDR) and given in Table 3.19 as recorded coverage. When the CHDR or vaccination records were not available information was obtained from the mother and given as reported coverage. Recorded coverage of measles vaccination for children over 9 months and children between 9-36 months was 79.0% and 80.7% respectively. However, the reported coverage for both age groups was 91.5% and 87.6%. The lowest reported coverage was observed in Zone 2 for both age groups (76.4% for children over 9 months and 86.6% for children between 9-36 months). The lowest recorded coverage was in children in Zone 4 as shown in Table 3.7. It is important to maintain the coverage of measles vaccination close to 100% in an emergency situation especially with high prevalence of under nutrition to sustain the child survival which is the WHO recommendation.

Table 3.18

Proportion of children over 9 months[1] (n=1006) and children between 9-36 months[2] (n=580) given the measles vaccine

Welfare centers	Coverage of measles vaccination No. (%)					
	Recorded		Reported		Not given	
	>9 months	9-36 months	>9 months	9-36 months	>9 months	9-36 months
Zone 1	162 (84.4)	95 (81.9)	176 (91.7)	102 (87.9)	16 (8.3)	14 (12.1)

Zone 2	210 (76.4)	122 (80.9)	249 (90.6)	129 (86.6)	26 (9.5)	20 (13.4)
Zone 3	215 (81.7)	122 (83.0)	243 (92.3)	129 (87.8)	20 (7.6)	18 (12.2)
Zone 4	208 (75.4)	129 (76.8)	253 (91.7)	148 (88.1)	23 (8.3)	20 (11.9)
Total	**795 (79.0)**	**468 (80.7)**	**921 (91.5)**	**508 (87.6)**	**85 (8.4)**	**72 (12.4)**

([1]Chi square=10.9, df =6, P-value=0.09; [2]Chi square=7.5, df =6, P-value=0.276-)

Vitamin A supplementation

Vitamin A mega dose supplementation is undertaken as a routine programme in Sri Lanka for children at the age of 9 months and 18 months. Children are supposed to be given 100,000 IU single dose of Vitamin A supplement at this age. The Ministry of Health has given an additional dose of Vitamin A megadose to all displaced children above 6 months living in welfare centers. Information was obtained on the coverage of this special Vitamin A megadose. The highest coverage was reported from Zone 1 (69.5%) and the lowest coverage from Zone 2 (22.8%). Overall coverage of the Vitamin A supplementation was 45.3% (Table 3.20).

Table 3.19

Proportion of children who received the Vitamin A mega dose after being displaced

Welfare centers	Children above 6 months received Vitamin A capsule[1]				
	Received		Not received		
	N	%	N	%	N
Zone 1	141	69.5	62	30.5	203
Zone 2	66	22.8	224	77.2	290
Zone 3	170	60.3	112	39.7	282
Zone 4	106	36.4	185	63.6	291
Total	**483**	**45.3**	**590**	**54.7**	**1066**

(Chi square=143.2, df = 3, P-value=0.000)

Polio vaccination

All children under five were given a dose of polio after the displacement and this study revealed that only 35.9% children had received polio after the displacement from Vanni (Table 3.21). The highest coverage was reported from Zone 1 (61.6%) and the lowest coverage was from Zone 2 (12.2%).

Table 3.20

Proportion of children who received the oral polio vaccine after being displaced

Welfare centers	Children aged 0-60 months received oral polio vaccine[2]				
	Received		Not received		
	N	%	N	%	N
Zone 1	130	61.6	81	38.4	213
Zone 2	35	12.2	252	87.8	288
Zone 3	169	59.1	117	40.9	288
Zone 4	35	14.3	209	85.7	248
Total	**369**	**35.9**	**659**	**64.1**	**1037**

(Chi square=246.8, df = 3, P-value=0.000)

Deworming

The Ministry of Health has provided all children above two years with an additional dose of mebandasole 500mg for deworming after the displacement. This study revealed only 35.7% children received deworming medication (Table 3.8). The highest coverage was observed from Zone 1 (59.7%) and the lowest coverage from Zone 2 (19.9%).

Table 3.21

Proportion of children who received the Deworming tablets after being displaced

Welfare centers	Children above 2 year received deworming tablets[3]				
	Received		Not received		
	N	%	N	%	N
Zone 1	71	59.7	48	40.3	119
Zone 2	35	19.9	141	80.1	176
Zone 3	73	42.0	101	58.0	174
Zone 4	49	28.8	121	71.2	170
Total	**228**	**35.7**	**411**	**64.3**	**639**

(Chi square=55.4, df = 3, P-value=0.000)

BCG Immunisation

The presence of BCG scar was examined by the trained health personnel of the Department of Nutrition and it was found that 90.9% of children had BCG scar (Table 3.23). Similar percentages were reported from children in all Zones. The highest percentage was found among children in Zone 4 (93.4%).

Table 3.22

Proportion of children with BCG scar

Welfare centers	Children aged 0-60 months having BCG scar[1]				
	Having		Not having		N
	N	%	N	%	
Zone 1	195	89.9	22	10.1	217
Zone 2	284	90.2	31	9.8	315
Zone 3	267	89.9	30	10.1	297
Zone 4	283	93.4	20	6.6	303
Total	1029	90.9	103	9.1	1132

([1]Chi square=3.1, df = 3, P-value=0.37)

Availability of CHDR

The registration of all the children and the provision of child health development card (CHDR) at birth or soon after the birth by the health personnel is a routine activity by the Ministry of Health. All services such as immunization, growth monitoring etc. are provided by the Ministry of Health through clinic services and recorded in the CHDR. This study revealed that 82.1% of children had CHDR. Percentages varied from 79.2% to 86.7% between zones (Table 3.9).

Table 3.23

Proportion of children with the availability of CHDR

Welfare centers	Availability of child's CHDR[2]				
	Available		Not available		N
	N	%	N	%	
Zone 1	189	86.7	29	13.3	218
Zone 2	253	80.3	62	19.7	315
Zone 3	252	83.7	49	16.3	301
Zone 4	240	79.2	63	20.8	303
Total	**934**	**82.1**	**203**	**17.9**	**1137**

([1]Chi square=3.1, df = 3, P-value=0.37; [2]Chi square=6.1, df = 3, P-value=0.107)

Water and sanitation

Table 3.25 shows that 68.8% of them got drinking water from the tube wells and that 20.7% got water from the Bowsers. Similar sources were used for water obtained for other purposes other than drinking. Only 1.2% used water purification tablets to clean the water for drinking purposes.

Table 3.24

Main source of water and purification of water by households

Main source of drinking water (n=1147)	**Welfare centers**									
	Zone 1		**Zone 2**		**Zone 3**		**Zone 4**		**Total**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Water tank	18	8.2	25	7.9	10	3.3	46	14.9	**99**	**8.6**
Tube well	161	73.2	244	77.2	225	74.3	159	51.6	**789**	**68.8**
Bowser	40	18.2	44	13.9	58	19.1	96	31.2	**238**	**20.7**
Bottled	1	12.5	1	0.3	4	1.3	1	0.3	**7**	**0.6**
Other (River)	0	0.0	2	0.6	6	2.0	6	1.9	**14**	**1.2**
Main source of water for washing and other purposes (n=1143)										
Water tank	58	26.5	27	8.5	11	3.6	20	6.5	**116**	**10.1**
Tube well	98	44.7	164	51.9	171	56.6	199	65.0	**632**	**55.3**
Bowser	32	14.6	47	14.9	92	30.5	65	21.2	**236**	**20.6**
Bottled	0	0.0	2	0.6	0	0.0	0	0.0	**2**	**0.2**
Other (River)	31	14.2	76	24.1	28	9.3	22	7.2	**157**	**13.7**
Availability of water purification tablets										
Yes	0	0.0	7	2.2	5	1.7	2	0.7	**14**	**1.2**
No	218	100.0	308	97.8	296	98.3	301	99.3	**1123**	**98.8**

Table 3.26 shows 81.7% washed hands after using toilets and only 0.5% did not wash the hands. 46.2% always washed hands before eating with soap and 16.7% washed hands without using soap. Zone 1 had lower percentage and the highest percentage was from Zone 4. Mean

quantity of drinking water and water for other purposes were used by households were 11.6L and 62.4 per household. Consumption of drinking water and water for other purposes per person was 2L and 13.5 respectively.

Table 3.25

Consumption of water, hygiene practices and sanitation by households

Use of water by family during last 24 hours	**Welfare centers**									
	Zone 1		**Zone 2**		**Zone 3**		**Zone 4**		**Total**	
	Mean	**SD**	Mean	**SD**	Mean	**SD**	Mean	**SD**	Mean	**SD**
Drinking water	10.9	7.7	9.6	7.5	14.2	9.9	11.6	6.1	**11.6**	**8.1**
Other than drinking	74.3	64.9	33.7	29.8	79.5	66.7	66.6	47.1	**62.4**	**56.1**
Consumption of water per person										
Drinking water	2.6	1.6	2.3	2.3	3.3	2.2	2.9	1.6	**2.8**	**2.0**
Other than drinking	19.5	18.2	8.1	6.3	18.4	13.9	16.4	11.5	**15.2**	**13.5**
Washing of hand after using toilets										
Always with soap	147	67.1	225	71.7	263	87.4	292	96.4	**927**	**81.7**
Sometime with soap	66	30.4	82	26.1	36	12.0	5	1.7	**189**	**16.7**
Wash without soap	4	1.8	3	1.0	2	0.7	4	1.3	**13**	**1.1**
Did not wash	0	0.0	4	1.3	0	0.0	2	0.6	**6**	**0.5**
Washing of hand before eating										
Always with soap	90	41.4	126	40.4	163	54.3	143	47.2	**522**	**46.1**
Sometime with soap	98	45.0	115	36.9	107	35.7	98	32.3	**422**	**36.9**
Wash without soap	30	13.8	69	22.1	30	10.0	62	20.5	**191**	**16.9**
Did not wash	0	0.0	2	0.6	0	0.0	0	0.0	**2**	**0.2**

3.3.3. Basic causes

Number of household members

Nearly two third of the household (61.1%) consisted of less than 5 members and 35.6% of household had about 5-7 members. Only 3.2% of household consisted of more than 7 members (Table 3.27). The pattern was similar in all zones except in Zone 4 where more households were with less than 5 people (67.3%).

Table 3.26

Number of people per household in zones

Welfare centers	Number of people per household						
	< 5		5 – 7		≥ 8		Total
	N	%	N	%	N	%	N
Zone 1	134	61.5	76	34.9	8	3.7	218
Zone 2	181	57.5	123	39.0	11	3.5	315
Zone 3	175	58.1	117	38.9	9	3.0	302
Zone 4	204	67.3	89	29.4	10	3.3	303
Total	**694**	**61.1**	**405**	**35.6**	**38**	**3.2**	**1137**

*(*Chi square=8.5, df = 6, P-value=0.201-)*

Number of children under five

Most of the households (95.6%) which were visited had one child or 2 children under five years. Only 4.4% of the houses had children 3 to 4 (Table 3.28). Similar pattern was observed in all zones except in Zone 3 where the majority of households had less than 3 children (98.3%) each.

Table 3.27

Number of children under the age of five per household in zones

Welfare centers	Number of children under five per household				
	≤ 2		3-4		Total
	N	%	N	%	N
Zone 1	207	95.0	11	5.0	218
Zone 2	296	94.3	18	5.7	314
Zone 3	296	98.3	5	1.7	301
Zone 4	287	94.7	16	5.3	303
Total	**1086**	**95.6**	**50**	**4.4**	**1136**

*(*Chi square=7.4, df = 3, P-value=0.058 <--)*

Current status of parents

The majority (96.3%) of households had the mother. In about 8% of households it was found that the father was dead and also 1.9% of the mothers were dead. In eleven households the father and mother both were dead (Table 3.29). Only 78.6% of fathers were alive and living in the household with the family. More fathers were dead in zone 2 (11.2%) and zone 4 (10.2%) compared to other 2 zones. More injured fathers were found in Zone 4 (10.6%) and only 0.6% mothers were injured in total. Around 3% of fathers and 1% of mothers were missing and no information was available about them.

Table 3.28

Distribution of households studied by status of parents (n=1134)

Status of the parents	Welfare centers									
	Zone		Zone 2		Zone 3		Zone 4		Total	
Father	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Dead	10	4.6	35	11.2	13	4.3	31	10.2	**89**	**7.8**
Alive & together	193	88.5	241	77.0	241	80.1	217	71.6	**892**	**78.6**
Alive & injured	2	0.9	12	3.8	13	4.3	32	10.6	**59**	**5.2**
Alive & separated	7	3.2	8	2.6	23	7.6	18	5.9	**56**	**4.9**
Missing / unknown	6	2.8	17	5.4	11	3.7	5	1.7	**39**	**3.4**

Mother**	N	%	N	%	N	%	N	%	N	%
Dead	2	0.9	10	3.2	3	1.0	6	2.0	**21**	**1.9**
Alive & together	213	97.7	290	92.9	296	98.3	293	96.7	**1092**	**96.3**
Alive & injured	0	0.0	3	1.0	2	0.7	2	0.7	**7**	**0.6**
Alive & separated	2	0.9	0	0.0	0	0.0	2	0.7	**4**	**0.4**
Missing / unknown	1	0.5	9	2.9	0	0.0	0	0.0	**10**	**0.9**
Total	**218**	**19.2**	**312**	**27.5**	**301**	**26.5**	**303**	**26.7**	**1134**	**100.0**

*(*Chi square=61.9, df =12, P-value=0.000; **Chi square=32.7, df =12, P-value=0.001<--)*

Education of the mother

Figure 3.30 shows the distribution of years of schooling among mothers. There is no significance difference between different zones regarding mothers education. In the study population only 1.5% of mothers had not attended schools and majority (69.0%) had attained secondary level of education. A very few (1.0%) had obtained higher education.

Table 3.29

Level of education of mothers in Zones

Mother's education in years (n=1132)[1]	Welfare centers									
	Zone 1		Zone 2		Zone 3		Zone 4		Total	
	N	%	N	%	N	%	N	%	N	%
No education	1	0.5	8	2.6	1	0.3	7	2.3	**17**	**1.5**
Primary (1- 5)	27	12.4	36	11.6	39	13.0	38	12.5	**140**	**12.4**
Secondary (6-11)	149	68.3	209	67.4	209	69.4	214	70.6	**781**	**69.0**
Tertiary (12-13)	40	18.3	52	16.8	49	16.3	42	13.9	**183**	**16.2**
Higher (Degree/Diploma /Postgraduate)	1	0.5	5	1.6	3	1.0	2	0.7	**11**	**1.0**

([1]Chi square=12.4, df =12, P-value=0.411)

Father's occupation

Father's occupation before the displacement was shown in Figure 3.31. Majority (41.6%) were involved with the daily paid jobs and 24.1% were engaged in agricultural activities. Only 11.7% had done monthly jobs. Similar pattern was observed in every zone.

Table 3.30

Fathers occupation before displacement in Zones (n=1133)

Father's occupation	Welfare centers									
	Zone 1		Zone 2		Zone 3		Zone 4		Total	
	N	%	N	%	N	%	N	%	N	%
Agriculture	56	25.8	78	25.0	71	23.6	68	22.4	**273**	**24.1**
Fishery	18	8.3	25	8.0	36	12.0	25	8.3	**104**	**9.2**
Business	21	9.7	31	9.9	39	13.0	43	14.2	**134**	**11.8**
Monthly paid job	27	12.4	34	10.9	42	14.0	30	9.9	**133**	**11.7**
Daily paid job	92	42.4	141	45.2	110	36.5	128	42.2	**471**	**41.6**
Remittance from others	0	0.0	0	0.0	2	0.7	2	0.6	**4**	**0.3**
No answer	3	1.4	3	1.0	1	0.3	7	2.3	**14**	**1.2**

(Chi square=21.6, df =18, P-value=0.250<--)

Displacement

Families included in the study were affected and on average they have changed 9 (SD±5.9) places during the displacement. The mean days of displacement from own residence varied from 223.3 – 405.3 days and the mean was 322 days. Duration of living in the current place varied from 10.3 – 39.2 days and on average 30 days (Table 3.32).

Table 3.31

Details on displacement (N=1137)

Mean number of days of displacement	Welfare center									
	Zone 1		Zone 2		Zone 3		Zone 4		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Leaving own home	235.3	186.2	263.2	223.3	405.3	520.0	363.8	450.1	**322.3**	**387.9**

Leaving last point of residence	53.4	36.4	25.4	15.2	42.4	79.4	11.9	20.5	**31.6**	**48.3**
Living in this place	39.2	26.6	25.5	17.2	45.4	21.3	11.9	10.3	**29.8**	**23.2**
No. of places changed	5.0	3.0	9.9	5.9	9.4	7.0	10.9	5.2	**9.1**	**5.9**

3.3.4. Mortality and injuries

Number of deaths for last 3 months and injuries during last one year was obtained. It was reported 19 deaths among children under 5 years and 167 deaths over 5 years during the last 3 months.

Table 3.32

Pattern of mortality and injuries

Mortality during last 3 months	**No.**	**%**
Under 5 years (n=1137)		
No deaths	1121	98.6
One	13	1.1
Two	3	0.3
Total under five deaths	19	
Others (> 5 years) (n=1135)		
No deaths	1021	90.0
One	92	7.9
Two	18	1.6
Three	6	0.2
Four	1	0.1
Five	1	0.1

Six	2	0.2
Total > 5 deaths	167	
Injuries during last one year (1135)		
Index child	45	4.0
Family member		
0	805	70.9
1	264	23.3
2	56	4.9
3	8	0.7
4	2	0.2

Table 3.33: Summary of key equations

Crude mortality rate (CMR) = Number of deaths in the sample x 1000 / Recall period*
(Number living in sample + ½ deaths in the sample–½ live births in the sample) ^
X 1000
Recall period*

Under five mortality rate (U5MR) = Number of deaths among those < 5 years of age in the sample x1000
(Number living < 5 years of age + ½ deaths among those < 5 years) ^ Recall P
* Recall period is 3 months
^ The denominator is an estimate of the sample population at the midpoint of the recall period

Under five child mortality rate (U5MR) and crude mortality rate (CMR) was calculated using ENA software. Number of live birth in the sample during the recall period was 33 and the household members in the sample were 6524 and under five children in the sample was 1600.

Under five mortality rate = 1.33 (0.73 – 1.92) / 10,000 per day

Crude mortality rate = 2.82 (2.39 – 3.24) / 10,000 per day

The objective of the overall emergency assistance programme should be to achieve a crude mortality rate less than 1 per 10,000 persons per day and an under-five mortality rate of less than 2 per 10,000 children per day as soon as possible. The results indicate that the U5MR was at acceptable level but the crude mortality rate was still out of control.

3.3.5. Risk of child under nutrition by selected factors

Table 3.36 shows that a male child had a greater risk of suffering from wasting than a female child, which is highly significant. There is an increasing prevalence of wasting with the increasing age which is also highly significant. Two immediate causes (dietary intake in relation to the frequency of feeding and the disease prevalence) contributed to the prevalence of wasting and showed that there is a significant difference between the wasted and not wasted groups with diarrhoea and ARI. The following factors were determined as underlying causes related to wasting. They are source of drinking water, sanitary facilities, household size, number of under 5 children in the household and status of parents. All these factors were not significantly related to the wasting. Low birth weight is highly significant with wasting.

Table 3.34

Weight for height Z- score (wasting) and risk factors

Risk factors	Wasting				Total	Test
	Yes		NO			statistics
	n	%	n	%		
Sex						
Female	174	30.8	391	69.2		$\chi^2 = 11.3$,
Male	227	40.4	335	59.6		$P = 0.001$
Age (months)						
0 - 5	15	23.4	49	76.6		$\chi^2=24.4$, $P=0.000$
6 – 11	60	40.3	89	59.7		
12 – 23	122	43.1	161	56.9		
24 – 35	85	40.5	125	59.5		
36 – 47	64	28.3	162	71.7		
48 – 60	53	28.2	135	71.8		
Illness						
Diarrhoea[1]	200	42.1	275	57.5	475	[1]$\chi^2=15.2$, $P=0.000$
No Diarrhoea	201	30.8	451	69.2	652	
ARI[2]	281	40.3	416	59.7	697	[2]$\chi^2=17.9$, $P=0.000$
No ARI	120	27.9	310	72.1	430	
Frequency of feeding						
<=3	74	42.0	102	58.0	176	χ^2= 3.4
>=4	291	34.7	548	65.3	839	P=0.07
Birth Weight						
Low birth weight	89	55.6	71	44.4	160	χ^2=33.0
Normal	246	31.7	530	68.3	776	P=0.000
Total	**399**	**35.5**	**724**	64.5	1123	

3.3.6. Pregnant women

There were 84 pregnant women in the study sample. Majority of pregnant women (63.1%) were between 13-28 weeks. About 42% mothers visited clinic once and only 17.6% had not gone for clinics. About 63% were received tetanus toxoid.

Table 3.35

Number of weeks, number of clinic visits and tetanus toxoid vaccination in pregnant women (n=84)

Number of weeks in pregnancy	No.	%
<12	16	19.0
13 – 28	53	63.1
29 – 40	15	17.9
Number of clinic visits		
0	15	17.6
1	36	42.4
2	11	12.9
3	10	11.8
≥ 4	13	15.4
Given tetanus toxoid		
Yes	53	63.1
No	23	27.4
No answer	8	9.5

Table 3.38 indicates with the increasing duration of pregnancy number of clinic visits had also gone up. Mean number of clinic visits made by the Pregnant women above 28 weeks was 3.13 (SD2.0). Similar observation has seen with the tetanus toxoid also. About 87% of pregnant women with over 28 weeks had received tetanus toxoid.

Table 3.36

Number of pregnancy weeks (POA) by mean number of clinic visits and tetanus toxoid

Number of clinic visits	POA			Total
	<12 n %	12-28 n %	>28 n %	
Mean no. of clinic visits (SD)	0.19 (0.4)	1.83 (1.2)	3.13 (2.0)	**1.75 (1.6)**
Received tetanus toxoid				
Yes	**1 (12.5)**	**39 (73.6)**	**13 (86.7)**	**53 (69.7)**
No	**7 (87.5)**	**14 (26.4)**	**2 (13.3)**	**23 (30.3)**

LIMITATION OF THE STUDY

In the Welfare centers - Zone 0 and 1, sixty three (63) children out of selected households in the sample could not be included due to security concerns. They were not accessible due to the movement of diplomats in these zones very frequently. Till the diplomatic missions were over permission to enter zones was refused by the security personnel.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

This nutrition assessment demonstrated a number of important findings. The prevalence of wasting among under five children stood at 35.6% with the sever wasting at 8.8%. However, it is a high prevalence which indicates the effect of short-term deprivation on the nutritional status of under 5 children. There was a significant difference between boys and girls and between zones. This study revealed that the highest prevalence of wasting was observed in children between the age of 12-23 months and children living in Zone 2. This study also documented a high prevalence of stunting among children (30%) compared to the national data (18%). The very high level of wasting well above the trigger level was shown in all zones. It highlighted the higher prevalence of diarrohea and wasting was in children between the age of 12-23 months. This study reported high prevalence of ARI (62%) was in children aged 6-11 months. Poor coverage of therapeutic and supplementary feeding programme was noted. Feeding during illness is not at all satisfactory. Only two third of children were received Vitamin A megadose supplementation, deworming and polio vaccination after the displacement. Reported coverage of measles immunisation was 79%. One fifth of children in Zone 2 was born with low birth weight.

It is recommended to;

Child Nutrition

1. Acute under nutrition levels in displaced population suggest accelerate interventions is needed
2. Continued and scaled up support by UN and NGOs to MoH hospital and community-based treatment of acute malnutrition including initiative on prevention of malnutrition, especially for children under two years old
3. Interventions to ensure optimal infant and young child feeding are needed urgently. This should include active support to mothers as well as provision of an enabling environment (Baby Friendly Communities)
4. The National Infant and Young Child Feeding guidelines should be widely disseminated and implemented

5. Breastfeeding education and promotion needs to be strengthened
6. Continued national monitoring of child nutritional status, including monitoring of the underlying causes of malnutrition.
7. Provision of iron supplementation to low birth weight babies from 2 months onward.
8. Initiate a campaign for measles immunisation along with Vitamin A mega dose and deworming
9. Screen for BCG scar and provide facilities for BCG immunisation
10. Continued deworming every 6 months for children 2-5yrs
11. Strengthen the food supplementation programme to enhance the coverage with rigorous monitoring
12. Proper Targetting of the Nutrition Rehabilitation programme to increase the coverage of severe and moderately wasted children with functioning nutrition centers in all zones. It is recommended to amalgamate health and nutrition clinics and open the clinic whole day to increase the coverage of health and nutrition activities.
13. Conduct periodic assessment to monitor the nutritional status of children under 5 years and relevant interventions.
14. Provision of iron supplementation to low birth weight babies from 2 months onward.
15. Conduct coverage survey for Nutrition Rehabilitation programme

Diarrhoea Management

1. Strengthened and expanded education by all partners on the proper treatment of diarrhoea, especially targeted to mothers with children under two years of age
2. Educate mothers on feeding during illness.
3. Partners and stakeholders should ensure accessibility of Resomal, and or ORS solution amongst in field clinics
4. By considering the high prevalence of diarrohea it is recommended to provide Zinc supplementation to all the children with diarrhea for 10-14 days and the development of national protocol.

Respiratory infections

- To control high prevalence of RTI it is recommended to initiate 200,000IU Vitamin A mega dose campaign for all children under five years and repeat after 6 months and then follow the national guidelines

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Annexure-1

Rapid Assessment among displaced population due to Hostilities in Vavuniya District – May 2009

Interviewer administered questionnaire – For Mothers of children under five

(In case of absence of the mother, immediate caregiver of the particular child should be interviewed)

Date (dd/mm/yy) …….. Team …… Child No:……			Registration No: family/respondent: ……..		
1. ZONE: 0 1 2 3 4			2. Block:		
3. When did you leave your own home (days)?			4. Since then how many times you changed places?		
5. When did you leave last point of residence (days)?			6. Number of days you have been living here?		
7. How many people in the family have been injured last one year?				8. Is this child injured? 1=yes 2=no	
9. Child's date of birth (dd/mm/yy)	……/……/……		10. Sex of the child	1=male 2=female	
11. Number of family members 11a. No of under 5 children in the family 11b. Did he/she receive OPV after arriving the camp			12. Number of people died in the family during last 3 months 12.1. <5 years 12.2. others (>5 years)		
13. Father of the child 1=dead 2=alive and together 3= alive and injured 4=alive and separated 5=other			14. Mother of the child 1=dead 2=alive and together 3= alive and injured 4=alive and separated 5=other		
15. What are the years of schooling? Mother/caretaker 0= no schooling 1-13= grade 14=diploma 15=degree 16= postgraduate			16. What was child's father's Occupation before displacement 1=agriculture 2=fishery 3=business 4=job (monthly payment) 5=job (daily payment) 6=remittances from friends or relatives 99=no answer		
17	Did the child have diarrhoea during the last 2 weeks?		1=yes 2=no		
18	Did the child have cough or cold with fever during the last 2 weeks?		1=yes 2=no		

19	If so, what is the breathing rate per minute? (Inspect and count)			Rate ……./min	
20	How did you change the feeding pattern during the illness?	1=amount of food reduced 2=only liquids were given 3=no change 4 = amount of food increased 99=no answer			
21	Did the child receive the Vitamin A mega dose after being displaced?			1=yes 2=no	
22	Did the child receive the de worming tablets after being displaced?			1=yes 2=no	
23	Does your child have CHDR? (inspect)			1=yes 2=no	
24	Did the child receive measles vaccine? (Check with the CHDR)			1=yes 2=no 3=yes no CHDR	
25	Are you currently breastfeeding your child? (Ask If the child is less than 2 years old only)			1=yes 2=no 88=NA	
26	When did you stop breastfeeding your child (in months)? (Ask If the child is less than 2 years old only) 88=NA				
27	If so why? 1=No milk 2=Mother sick 3=mother not with the child 4=mother separated during displacement				
28	How many times did you feed your child during the last 24 hours? (Other than breast feeding)			1=once 2=twice 3=3-4 times 4=5 or more times 99=no answer	
29	What did you give to your child in addition to breast milk during last 24 hours?			1=family food 2=unimix 3=formula milk 4=others…… 0= none	

30	Did your child receive any of the following items after you have arrived this camp?			Amount Last received	For how many days?
30.1	BP 100	1=yes 2=no		30.1.1.	30.a
30.2	Plummpy Nut	1=yes 2=no		30.2.2	30.b
30.3	UNIMIX	1=yes 2=no		30.3.3	30.c
30.4	CSB / Thriposha	1=yes 2=no		30.4.4	30.d
30.5	High Energy Biscuits	1=yes 2=no		30.5.5	30.e

31	How many times did you get the cooked food during the last 24 hours?	1=once 2=twice 3=3-4 times 4=5 or more times 99=no answer	
32	Are you satisfied with the food?	1=yes 2=no	
33	If not, Why?	1= amount not enough 2= taste is not good 3= bad smell 4=not properly cooked 5=not used 6=others……	
34	In the past 7 days, has there been times when you had to adopt any of the following coping mechanisms:	1= All the time (Everyday), 2= Pretty often (3-6/ week), 3=Once in a while (1-2/week), 4= Hardly at all (< 1 week)	
	a. limit portion size at mealtimes		
	b. restrict consumption of adults in order to feed small children		
	c. reduce number of meals taken in a day		
	d. No meal for whole day		
	e. got food from outside the camp (friends, relatives, purchase)		
35	How much water did your family consume for drinking during the last 24 hours? (in Liters)		
36	How much water did your family consume for other than drinking during the last 24 hours? (in Liters)		
37	What is the main source of drinking water?	1=water tank 2=tube well 3=bowser 4=bottle 5=other……..	
38	What is the main source of water for washing and other purposes?	1=water tank 2=tube well 3=bowser 4=bottle 5=other……..	
39	Did you receive any water purification tablet?	1=yes 2=no	
40	Did you wash your hand after using toilet?	1=Always with soap 2=Sometime with soap 3=yes without soap 4=did not wash 99=no answer	
41	Did you wash your hand before eating?	1=Always with soap 2=Sometime with soap 3=yes without soap 4= did not wash 99=no answer	

42	Child's height /length(in cm)		43. Oedema 1=yes 2=no	
44	Child's weight (in kg)		Child's birth weight (in kg) take from CHDR	
45	Presence of Skin Infection (Examination) a. Scabies		1=yes 2=no	
	b. Skin Infection		1=yes 2=no	
46	Presence of BCG scar		1=yes 2=no	
47	Is there any member in the family pregnant?		1=yes 2=no	
48	If so, how many weeks?			
49	Did they take tetanus toxoid? (check with the card)		1=yes 2=no	
50	How many antenatal clinic visits were done?			

Annexure-2

Table 1

The age group distribution of children studied by sex (n=1129)

Age (months)	Female		Male		Both sex	
	N	%	N	%	N	%
0 – 5	26	4.6	39	6.9	65	5.7
6 – 11	83	14.6	66	11.6	149	13.1
12 – 23	134	23.5	150	26.5	284	25.0
24 – 35	102	17.9	111	19.6	233	18.7
36 – 47	125	21.9	108	19.0	230	20.5
48 – 60	100	17.5	93	16.4	193	17.0
Total	**570**	**50.1**	**567**	**49.9**	**1137**	**100.0**