REPORT FROM THE FIELD

UMANG – An Emergency Campaign to address malnutrition

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Abstract

Background: World Vision India with its existence in across the country implemented the emergency feeding program for the children with underweight in 53 area development sites spread across 15 states of the country. **Rationale:** Since more than 40% of the children were found to be underweight through our assessment process, we implemented this community based feeding program as an emergency response to children with malnutrition. **Objective:** To rehabilitate the malnourished children and sensitize the community on feeding, caring and health seeking practices. **Material and Methods**: Considering the high prevalence of underweight children, we initiated the program 'UMANG' (Urgent Management and Action for Nutritional growth) on a campaign mode with the involvement of various stakeholders. Malnourished children for this program were selected through a community based screening program. This was a 90 day community based feeding program for the malnourished children conducted either in the anganwadi center or a common place. Underweight children (moderate and severe) and their mothers/care takers attended this program with their contribution from backyard nutrition garden or local market and were taught to prepare a nutritious menu using locally available low cost food materials. Mothers were also sensitized on health seeking, caring and feeding practices to prevent future incidence of malnutrition. The families of the malnourished children were also supported with nutrition (backyard) garden, economic development assistance to improve food diversity at the household level. **Results:** About 50858 malnourished children (54 per cent moderate and 46 per cent severe) were enrolled in UMANG. On comparing the baseline (1st day) and end-line figures (90th day) 38.5 per cent of the children have graduated to normal from moderate and severe underweight. In addition UMANG had spin off benefits such as increase in anganwadi attendance, community based growth monitoring in place, communities with increase in the knowledge on malnutrition and formation of common interest groups to prevent malnutrition. **Conclusion:** UMANG is a comprehensive program which improves the nutritional status of the children and has the potential to prevent future incidences of malnutrition.

Key Words

Anganwadi; Malnutrition.

Introduction

India has improved steadily in terms of economic growth but this growth has only little impact on its social indicators. While child growth is universally used to assess adequate nutrition, health and development of individual children and to estimate overall nutritional status and health of populations, almost half (48%) of the children in India are stunted and 43% of the children under five years are underweight as per NFHS - 3. According to the HUNGaMA report (2011), 42 per cent of children under five are underweight and 59 per cent are stunted among 100 districts across six states. During the

year 2012, World Vision India conducted an internal assessment in its target areas on the health and nutritional status of under five children in 79 blocks spread across 19 states which concluded that 41 per cent of children less than 5 years are under weight (moderate and severe) . Considering the wide spread prevalence of malnutrition and its negative effects on the lives of children, an integrated multi-sectoral response program was rolled out in 86 target sites with the ongoing development activities of the organization.

While these evidences reiterate the scenario of malnutrition across the country, poverty, inadequate feeding practices make it difficult to achieve the needed improvements in children's nutritional status, it also impacts on the desired progress expected in malnutrition response programmes across the country.

Material and Methods

Since World Vision India has the experience of rolling out both nutrition sensitive and nutrition specific programs across the country. We came up with a mandate of targeting the households with children less than 5 years and pregnant women through our multi-sectoral approach which includes, behaviour change communication, water and sanitation, agriculture and economic development assistance and strengthening local governance. Our field observations showed that children from our target communities missed either breakfast or dinner as they had only one meal at home and relied for another meal at the anganwadi centers. This program was developed to educate the parents on the importance of giving three meals in a day and teaching them on including pulses, green leafy vegetables and fruits in the menu for their children. The timing for preparing and serving the cooked food to the children was decided based on the suggestions of Anganwadi workers, CBO and volunteers who were involved in the UMANG program.

Based on our experience in implementing the Positive Deviance Hearth (PD Hearth) which is community based rehabilitation and behaviour change intervention for families with underweight children, we came up with this concept of UMANG, Urgent Management and Action for Nutritional Growth for children. UMANG is a 90 day community based feeding program which targets children who are underweight. Weekly menu was prepared with one meal and one healthy snack for children based on the availability of low cost nutritious food material that would meet atleast 600K calories of energy, 25g of protein and 400 micro grams of Vitamin A. This meal and snack was given to the children as additional food items apart from the snack and meal given at the Anganwadi centers. UMANG was recommended to be run preferably in an anganwadi center expecting an increase in the attendance of children attending the anganwadi center followed by the second option of implementing UMANG in a common place suggested by the community

UMANG was considered as an emergency response program and as a risk reduction strategy to prevent children from further deterioration of health and nutritional status. Since UMANG was run on a campaign mode it led to village/ panchayat level sensitization on malnutrition with the participation of key stakeholders namely CBO, mothers, AWW, ANM, VHN, ASHA, CDPO, CMO, Panchayat and community representatives. Each of these stakeholders had their roles in the implementation of UMANG program especially during the screening of children, community mobilization, food preparation, monthly growth monitoring and facilitating the awareness sessions

Underweight children (moderate and severe) and their mothers/care takers attended this program with their contribution (40 per cent) from backyard nutrition garden or local market while 60 per cent of the implementation cost was taken up by World Vision India. During this program women were taught to prepare a nutritious food using locally available low cost food materials. They were also sensitized on health care seeking, caring and feeding practices to prevent future incidence of malnutrition. In addition to the implementation of UMANG, the families of the malnourished children were also supported with nutrition garden, economic development assistance to improve food diversity at the household level

Selection and Description of participants: UMANG was rolled out in 53 Area Development project sites of World Vision India, spread across 15 states of the country. These development projects are generally run for a time frame of 15 years and above so that we intend to develop sustainable programs. Children with in the age group of 12 – 59 months (1- 5 years) were part of this implementation process. In communities where UMANG was rolled out, children were screened for wasting and underweight through a weight monitoring campaign. Children were initially screened for underweight both moderate (below minus two standard deviations from median weight for age of reference population) and severe (below minus three standard deviations from median weight for age of reference population) and were further screened using the Mid Upper Arm Circumference tapes to measure wasting. Children with less than 11.5 cm of circumference and those with complications like bilateral pitting

oedema, anorexia, high fever, severe dehydration and anemia were referred to the nearby Nutrition Rehabilitation centers or Malnutrition rehabilitation centers or primary health care centers for rehabilitation and treatment. While those with circumference more than 11.5 cm were enrolled in the UMANG program (Figure 1).
Technical Information: We customized the WHO Anthro tool Z scores on an excel sheet for entry and analysis of data. This tool is referred as "WHO Anthro Enhanced Excel Tool" based on which our area development field offices reported the data which was later compiled at the country level for analysis. Data was analyzed using cross tabulations and Pearson's Chi-square test for comparing proportions. Two- tailed p-values less than 0.05 were considered significant.

Results

About 50858 children were enrolled in UMANG during the period May 2012 to September, 2013. It was observed that 46 per cent of children were with moderate underweight and 54 per cent were severely underweight. For the purpose of analysis the data was cleaned based on the i) availability of growth monitoring information for the children 1st, 30th, 60th and 90th day, ii) children who were only moderate and severe during Day 1, iii) child entries has gender information, iv) children are within the age group of 12 to 59 months, v) child enrolled in the program does not exceed 59 months on the 90th day of UMANG program. During this cleaning process we dropped the data of 26004 children and had the data of 24621 children for further analysis.
Of the 24621 children 54 per cent of them were moderately underweight and 46 per cent severely underweight. The cleaned data had high percentage of children with moderate underweight when compared with severely underweight children. The number of boys was comparatively greater than the girls in this processed data (Table 1).
Significantly a greater proportion of children (48.01 per cent boys and 50.6 per cent of girls) graduated from moderate underweight to normal weights (P= 0.01). About quarter of children graduated from severe underweight to normal weight (26.5 per cent of boys and 24.8 per cent of girls). Even though UMANG program was successful in graduating moderate and severely underweight children to normal weight, we also have children who did not show graduation to normal. About 44 per cent of moderate and 36 per cent of severe under-weight children remained in the same nutritional category at the end of the 90 day UMANG program. Among 13364 children, 15 per cent of them lost their weight at the end of the program and moved to severe underweight category (Table 2).
Moderately and severely underweight children within the age group of 12-24 months had maximum graduation to normal (53.6 per cent and 31.3 per cent respectively) when compared with the other age groups (Table 3).

Discussion

Socio-economic conditions prevailing in a community determines the nutritional status of the children living in the community. Literacy of the mothers being observed as an important predictor in determining the nutritional status of the children, UMANG has created a platform to educate the mothers and their family members on nutrition, it mobilized the community for a collective action on the need for proper child care practices and taught them on healthy cooking, feeding practices, hygiene and sanitation practices.
High prevalence of underweight children has been observed in the age group of 12-24 months when compared with children aged less than 5 years in one of the study conducted at urban Allahabad anganwadi centers, possible reasons for this difference was explained by the authors as improper weaning practices . The result of our study shows that there were a high proportion of children in the age group of 12-24 months who graduated to normal from moderate and severe underweight category. One such interpretation for high proportion of children graduating in UMANG among this age group could be due to greater nutritional demands in this group when compared with children from other age group.
Through UMANG program we had an average weight gain of 1.57kg at the end of the intervention. With average weight as 9.3kg at the start of UMANG, we had 10.87kg at the end of UMANG program, with an average weight gain of 1.7g/kg/day. This is little less than the weight gain reported in a study conducted at rural East Africa on children with underweight, the children were given moringa oleifera leaf powder in a form of an energy dense supplemental food as ready to use products for a period of 5 weeks at the end of the program the children had a mean weight gain of 2.5g/kg/day.
Few of the possible reasons for children who did not show progress in weight and those who underwent weight deterioration could be due to the presence of co-morbidities among children, poor attendance during the 90 day

program, poor eating habits among children and poor feeding practices at home which has not been explored during this study period.

A qualitative study with a focussed group discussion was implemented in target communities after UMANG, it was acknowledged for its spin off effects in creating awareness on malnutrition on a large scale, mothers being aware of the nutritional status of their children, increase in the attendance of children at anganwadi centers, formation of common interest groups for the issue of malnutrition and transfer of knowledge and good practices between the mothers.

Conclusion

UMANG is a comprehensive program which has positive impact on the nutritional status of the children and creates behavioural change in the communities.

Recommendation

Mass sensitization on malnutrition for communities and engagement of all stakeholders is feasible through this campaign mode. UMANG can be replicated in community settings to rehabilitate children with malnutrition and create lasting impact that would prevent further incidences of malnutrition in the community.

Limitation of the study

The program is community based with involvement of various stakeholders; it raises the concern regarding the sustainability of the nutritional status of the children, about the stagnant growth in some children and on the follow up of children who were referred to nutrition rehabilitation centers which remain as critical factors for improving the nutritional status of children.

Relevance of the study

Most of the programs intended for rehabilitation of children with malnutrition, focuses on weight for height (wasting) data, while there has been a limited importance given to the rehabilitation of children with underweight. UMANG is a program which helps in early identification of children with under nutrition and inculcates healthy feeding practices among the communities which does not have much of food diversity. Being a community based program run across the country UMANG has the relevance to be adopted in any setting that would create awareness on malnutrition in communities at large

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Tables

TABLE 1 DISAGGREGATION OF CHILDREN BASED ON AGE, GENDER AND NUTRITIONAL STATUS AT THE TIME OF ENROLMENT (DAY 1)

Age in Months	Gender	Moderate		Severe		Total	
		No.	%	No.	%	No.	%
12 to 24	Boys	1803	26%	1846	27%	3649	53%
	Girls	1789	26%	1489	21%	3278	47%
	Total	3592	26%	3335	24%	6927	100%
25 to 36	Boys	1956	29%	1601	23%	3557	52%
	Girls	1898	28%	1407	21%	3305	48%
	Total	3854	29%	3008	22%	6862	100%
37 to 48	Boys	1677	25%	1609	24%	3286	49%
	Girls	1865	28%	1522	23%	3387	51%
	Total	3542	27%	3131	24%	6673	100%
49 to 59	Boys	1134	27%	887	21%	2021	49%
	Girls	1242	30%	896	22%	2138	51%
	Total	2376	29%	1783	22%	4159	100%

TABLE 2 COMPARISON OF CHILDREN BEFORE AND AFTER THE INTERVENTION BASED ON GENDER DISAGGREGATION OF DATA

Nutritional status on Day 1			Nutritional status at the end of 90 days							
Nutritional status	Gender	No.	Normal		Moderate		Severe		Total	p- value
			No.	%	No.	%	No.	%		
Moderate	Boys	6570	3156	48.0	2402	36.6	1012	15.4	6570	0.01
	Girls	6794	3437	50.6	2389	35.2	968	14.2	6794	
	Total	13364	6593	49.3	4791	35.9	1980	14.8	13364	
Severe	Boys	5943	1576	26.5	1761	29.6	2606	43.8	5943	0.07
	Girls	5314	1317	24.8	1654	31.1	2343	44.1	5314	
	Total	11257	2893	25.7	3415	30.3	4949	44.0	11257	

TABLE 3 COMPARISON OF CHILDREN BEFORE AND AFTER THE INTERVENTION BASED ON AGE GROUP DISAGGREGATION

Age in Months	No. of children at enrolment		Graduation pattern						
	Nutritional Status	No.	Normal		Moderate		Severe		Total
			No.	%	No.	%	No.	%	No.
12 to 24	Moderate	3592	1925	53.6	1099	30.6	568	15.8	3592
	Severe	3335	1044	31.3	879	26.4	1412	42.3	3335
	Total	6927	2969	42.9	1978	28.6	1980	28.6	6927
25 to 36	Moderate	3854	1936	50.2	1338	34.7	580	15.0	3854
	Severe	3008	765	25.4	940	31.3	1303	43.3	3008
	Total	6862	2701	39.4	2278	33.2	1883	27.4	6862
37 to 48	Moderate	3542	1635	46.2	1349	38.1	558	15.8	3542
	Severe	3131	709	22.6	992	31.7	1430	45.7	3131
	Total	6673	2344	35.1	2341	35.1	1988	29.8	6673
49 to 59	Moderate	2376	1097	46.2	1005	42.3	274	11.5	2376
	Severe	1783	375	21.0	604	33.9	804	45.1	1783
	Total	4159	1472	35.4	1609	38.7	1078	25.9	4159
Total	Moderate	13364	6593	49.3	4791	35.9	1980	14.8	13364
	Severe	11257	2893	25.7	3415	30.3	4949	44.0	11257

Figures

FIGURE 1