NUTRITIONAL STATUS OF CHILDREN UNDER FIVE YEARS AGE IN RURAL AREAS OF MARDAN

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ABSTRACT

To assess the nutritional status of children under five years' age, a study was conducted during December 1988 in the four randomly selected villages of the target area of Pak-German IRDP, Mardan. A total of 351 children were examined for their weight and height to determine their nutritional status. WHO-NCHS reference scale was used for comparisons. As per WHO-NCHS reference 'scale 63.8% children were in >90% Wt/Ht, 21.9% in 85-90% Wt/Ht, 11.1% in 80-84% Wt/Ht and only 3.2% of the studied children were below 80% Wt/Ht scale of WHO-NCHS. The study reveals that no widespread malnutrition exists in the four villages.

INTRODUCTION

Malnutrition is perhaps the most important public Health problem in the developing countries. It is no exaggerations to say that their future economic advancement is, to a large extent, dependent upon solving this problem[1]. The complex problem of childhood undemutrition is widespread throughout Pakistan. All surveys indicate a strikingly high incidence of poor nutritional status among infants and children[2,3,4]. The results of national Nutrition Survey are consistent with the findings of Micronutrient Survey of 1976-77 which revealed that 43% of children had chronic malnutrition (low height for age), 9.5% had acute malnutrition[5,6].The National figure of 3rd degree malnutrition is 10% while a study in Baluchistan has shown it as high as 16%.[2,3] The malnutrition rates are significantly worst than the national averages for rural areas, and this underlines the importance of addressing nutritional problems in the rural areas on priority basis.[5] Keeping in view the importance of nutrition as a developmental problem the GOP has given due consideration to alleviate the nutritional problems of population in general and vulnerable segment in particular in the 6th five year plan 1.

As Pak-German Integrated Rural Development Program (IRDP) is a multi-sectoral developmental program and improving the food and health situation of the target population is its aim, it is necessary to know the nutritional situation of the people in the project area[7]. Nutrition Surveys are a fast and relatively easy way to know the nutritional status and to assess the prevalence of malnutrition in a population. Under five years age children are more susceptible to become malnourished, and knowing their nutritional status can help in evaluating the status of the general population as a whole. There are various methods of measuring malnutrition using anthropometric measurements; weight for age, height for age, mid upper arm circumference (MUAC), weight for height etc.

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The weight for height assessment is considered to be the most reliable means of assessing acute malnutrition [9]. In this type of assessment all children from 49cm to 110cm (6 months to 5 year age approximately) are included in the survey. The babies under 49cm height are not included because their nutritional status cannot be assessed according to the NCHS/CDC/WHO reference weight for height table and it is presumed that signs of severe malnutrition are normally not present.

In order to better understand the nutritional status in the target areas of IRDP, a nutrition survey of under five year age children using weight for height measurement, was carried out in the selected villages of the project area with the objectives; to assess the existence of malnutrition in under five year age children, to evaluate and scrutinize the efficiency of community development efforts (like schemes for improving fanning systems or health situation) and to plan and organize interventions.

METHODOLOGY:

This survey has been conducted during December 1988 in four randomly selected villages (Sangbhatti, Mashwani, Thanoor, Khonano) of the Pak-German IRDP target area. Basic information about the name and date of birth (where known) was collected about those survey ed. Father's name was also recorded to compare afterwards if children were measured twice. Trained Community Health Workers (CHW) under the expert supervision conducted the survey by recording body' weight and height of 351 under five-year age children in the selected villages by using standard techniques. In each village 4-5 teams were organised to conduct the survey. Each team was comprised of; one team leader (mostly CHW), two measurers and one recorder. All team members were from the respective village and thorough training and supervision was given to them before and during the survey process. Before launchment of the survey total population of the four villages was obtained, under five population estimated and a geographic map of the respective village was made. The survey was conducted at a time in the day which was considered the best from the point of view of the target population availability.

The two days' survey schedule was divided into a "General information" and on "measuring day". The information day served for introduction and explanation of the aim and purpose of the survey to the people, their leaders and other concerned agencies. Furthermore, volunteers of every village who were willing to support the **IRDP** team on the measuring day were identified and later on trained in conducting the survey. While the male team members were sitting in the "Hujra" (Public gathering places outside the houses) with the men, the female members had discussion on survey with the women in the houses. Informing the women was quite useful as all children especially babies were brought out on the measuring day. In every' village nearly all children were measured. All children from 49cm to 110 cm (which is approximately adequate to an age of 6 months to five years) were included in the survey. The babies under the height of 49 cm (approximately 6 months to one-year age) were not included.

The weight for height measurements were obtained with a salter weighting scale, and a standardized portable measuring board. Four height boards were made by a local carpenter and four salter hanging scales with hanging trousers for smaller children were provided by UNICEF Peshawar. All children of 85cm or taller were measured in a standing position while those shorter than 85 cm were measured in a recumbent position. The measurements were recorded to the nearest

0.5cm and 0.1 kg. The scales were tested before the day of the survey by hanging a plastic bag of one litre water (1 kilogram) as a standard weight. Before each weighting it was checked and made sure that the scale read 'zero'. The measurements were consecutively compared to the NCHS/CDC/WHO international reference standard in order to determine the percentage of children within or greater than the reference median between 80% and 70% and less than 70% of the median. After recording all the facts, the weight for height percentages were calculated based on the NCHS/CDC/WHO weight for height chart and thus nutritional status of the children was assessed.

RESULTS

A total of 351 children were measured from the four selected villages In the village Sangbhatti, located about one mile west of Shewa at the foot of a hill, 57.7% of the measured children were boys, the remaining 42.4% were girls. Merely one girl was with a calculated NCHS of 76.4% (below the mark of 80% weight /Height) showing moderate malnutrition 10.3% children (70% girls) were categorized between 80-84% weight/height, 22.7% children (31.8% girls) were falling in the group between 85-89% weight/ height and for 66% children (40.6 girls) a NCHS over 90% was determined. Out of above 66% children 28% showed a NCHS of more than 100%. In mashwani, the largest village among the four, 56.6% of the measured children were boys and the remaining girls. The weight for height calculation show that 2.6% (among them 50% girls) are lying below the NCHS of 80% and out of them (2.6%) one girl (25%) was severely malnourished with less than 70% weight/ height. A total of 7.8% children (among them 50% female) were in the group between 80-84% weight/height. For 19.5% children a NCHS of 85-90% was calculated and a total of 70.1% children were in the category' of above 90% NCHS weight/height. In the 3rd village Thanoor, 54.1% of the measured children were boys and girls 45.9%. Among them 6.6% are moderately malnourished with less than 80% weight/height, 8.2% are in the group between 80-84 weight/ height and for 19.7% a NCHS 85-90% was calculated. While 65.6% were above 90% NCHS weight/height. In Khonano, the smallest village of the selected four, 46,2% of the measured children were boys and remaining girls. Only 2.6% (one girl) were moderately malnourished with a NCHS of 80%, 17.9% are falling in group 80-84% weight/height, 25.6% in 85-90% weight/height reference of NCHS and 53.8% were found above 90% NCHS.

Table – 1: Distribution of Children According to Sex and Villages

No	Village Name	Approximate Population	No of Household	Children Examined				Total
				No.	Male %	No.	Female %	
1.	Sangbhatti	353	42	56	57.7	41	42.2	97
2.	Mashwani	555	69	78	50.6	76	49.4	154
3.	Thanoor	243	42	33	54.1	28	45.9	61
4.	Khonano	209	27	18	46.2	21	53.8	39
Total	Four Villages	1360	180	185	52.7	166	58.3	351

Table – 2: Distribution of authropometric measurement of children in different villages expressed as % of the WHO reference table

No	Village Name	85- 90% WT/HT		80-84% WT/HT		<80% WT/HT		>90% WT/HT		Total	
		No	%	No	%	No	%	No	%	No	%
1.	Sangbhatti	1	1	10	10.3	22	22.7	64	66.0	97	27.6
2.	Mashwani	4	2.6	12	7.8	30	19.5	108	51	154	27.6
3.	Thanoor	4	6.6	5	8.2	12	19.7	40	65.6	61	17.4
4.	Khonano	1	2.6	7	17.9	10	25.6	21	53.8	39	11.7
Total	Four Villages	74		34		10		233	100	351	100

DISCUSSION

As can be easily seen from the results, the tables 1 &2 and the pie chart, there is no widespread malnutrition existing in the four villages. According to Umbach and Noor,7 in a well-nourished population between 2 and 2.5% of the under 5 year children arc less than 80% weight for height. In less developed countries with no nutritional emergency between 5% and 7% of children can be below 80% WT/HT. More than 8% children below' the limit of 80% WT/HT indicate nutritional problems in a community to some extent and proportions above 10% of children below 80% WT/HT show severe nutritional problems within a community. Altogether 351 children were measured in the four villages: Merely 2.8% of them are found malnourished below 80% WT/HT. In the next group of NCHS (80-84%) are 9.7% children whereas 21.1% are falling between 85-90% WT/HT. The biggest group (two third of all) i.e. 66.4% (66.4) are above 90% WT/HT.

The village Thanoor shows the worst situation with 6.6% children malnourished. Mashwani and Khonano have both the same percentage of 2.6% of children being malnourished which indicates a satisfactory nutritional situation of the community and Sang Bathi with only 1% children below 80% WT/HT shows the best result. A possible explanation for the comparatively poor result in Thanoor might be the remote location of the village arid the poor health situation. In Thanoor the female team found out that the hygienic conditions and the health situation of the village women were quite poor. About 36 women and their children came to the team when they heard that a lady doctor was present. They were complaining about several diseases, especially some children were suffering from worms. This indicator for bad hygienic conditions was not observed in the other three villages. Interesting is that one male CHW is available in Thanoor but no female Traditional Birth Attendance (TBA), who could also know about proper hygienic conditions and nutrition for babies and children. It must be considered that particularly the women are affected by poor health because for them it is even more difficult to visit a doctor than for men. The other reason might be the long distance to the nearest bazaar town, which can lead to a lack of food. This question may be kept in mind for the reiteration of the survey.

For all four villages it turned out that no strong correlation between sex and malnutrition could be found. The thesis that girls are more neglected in the Pukhtoon society could not fully be proved by this survey but there are kints in the different calculations which indicate a worse nutritional status of girls. Indeed, out of 10 children below 80% seven 70% are girls. But in a small sample like that these numbers cannot be used as an indicator. In the next higher group of 80-84%

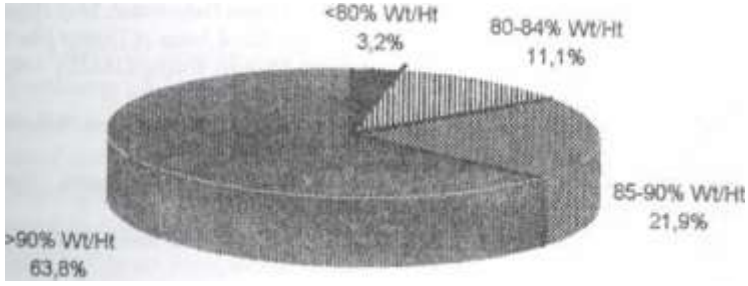
WT/HT 10% children were found. Among them 60% were females. This may give a sign for better nutritional status of boys. It is known and admitted that in the Pukhtoon society boys are the preferred children, which can lead to the above mentioned neglect. The encouraging and good results of the other three villages can be due to that, the people are farmers and cattle holders. Especially the milk of the so called water buffaloes has a very rich composition of fats and proteins and is usually used for nutrition purposes. Secondly, the rainfalls in the last two years have been exceptionally good so that in Barani areas the harvests had been satisfactory.

Hitheroto no comparisons are possible because no other nutrition surveys have been carried out so far but nevertheless one can come to the conclusion that the nutritional status in the villages is better than reported by other studies.3,5,6,7.

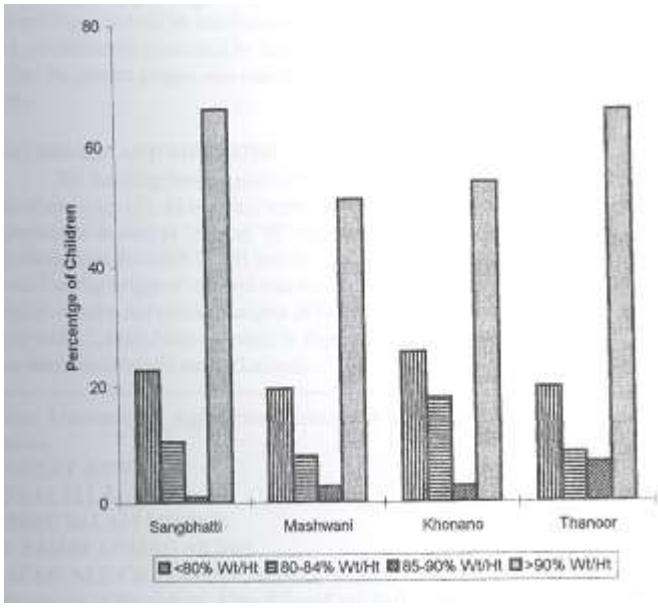
CONCLUSION

As mentioned in the beginning the nutrition survey can serve as an indicator for the IRDP team concerning the effectiveness of several schemes and activities supported by the project. In the four villages no nutritional emergency can be found but the project team should keep an eye to the situation in Thanoor. One proposal is to carry out a workshop about health, hygienic and nutrition in Thanoor with a special arrangement for the women. In the other villages such a workshop is not needed. The second proposal is to repeat the survey regularly in the same villages to the same time in the following years. The staff of IRDP is now well trained and the CHW's can support these surveys so that it is not an expensive affair.

Pie Chart: Percent Distribution of Children Wt/Ht Measurement According to WHO Reference Table.



Bar Diagram: Results of Nutrition Survey in the Four Villages



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