

## Assessment of impact of counselling and education to the mothers of malnourished children admitted in NRC

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**Background and Objective** - This single centre interventional prospective study was done to assess the efficacy of nutritional intervention in malnourished children's admitted in the Nutrition Rehabilitation Centre run by UNICEF. The objective was to assess whether this intervention can convert intermittent short term weight gain into static weight gain during hospital stay and in follow up.

**Methodology** -365 malnourished children's admitted in the NRC center, Thatipur, Gwalior between Jan., 2009 to Feb., 2010; were taken into the analysis. The care was provided as per the standard protocol of UNICEF. Clinical record was taken on a standard pro-forma, diet and growth was recorded on standard chart. The children's were divided into three subgroups for analysis; Group I: 0-6 months, Group II : 6 months to 24 months and Group III : 25 months to 60 months. The assessment was done for weight, hemoglobin and clinical examination by pediatrician at time of admission and discharge. There were 365 malnourished children admitted in NRC, Thatipur Gwalior in year 2009 -2010 of which Group I (0-6 month) comprised of 32, Group II (6 month – 24 months) 169 and Group III (25 months to 60 months) 164 contributes 8.76, 46.3 and 44.93 per cent, respectively. Out of total 46.6 per cent were male and 53.4 per cent were female. The male female ratio in Group I, Group II and Group III was 1:1.6, 1:1.6, 1:1.05, respectively. Out of this <3SD malnutrition was present in 14 children's in Group I, 80 in Group II and 87 in Group III, Whereas <4SD malnutrition was present in 18, 89 and 77 children's in Group I, Group II and Group III, respectively. Severe Anemia was present in 1, 6 and 12 children's in Group I, II and III, respectively. When weight at administration was compared with the weight at discharge and at 3 months follow up, it was found that mean weight gain of children in Group I was 800 g at discharge and 2.0 kg at 3 months follow up whereas in Group II mean wt. gain was 700gm at discharge from the hospital and 1.6 kg at follow up. In Group III weight gain at discharge was 700 g and 1.7 kg at 3 months follow up.

The results of the present study showed that incidence of malnutrition was more in children after 6 months of age, which indicates that the weaning of children's was not properly executed by the mothers. The malnutrition was more in females as compared to males in all age groups. The gain in weight at discharge after 14 days of admission in NRC and also at 3 months follow up was significant ( $P < 0.05$ ). This data showed the efficacy of nutritional intervention done at NRC and also the effect of efficient training of mothers about feeding of the children's at home.

**How to cite this article** : Shrivastava, Jyotsna, Shingwekar, A.G., Katare, Charu and Raghuvanshi, Amit (2012). Assessment of impact of counselling and education to the mothers of malnourished children admitted in NRC. *Food Sci. Res. J.*, 3(1): 100-102.

**Key Words** : Nutrition rehabilitation center, Treatment child malnutrition, Nutrition therapy catch up growth, Children, India, In-patient, Nutrition rehabilitation, Protein energy malnutrition, Severe acute malnutrition

### INTRODUCTION

A proper and balanced synchronization between the

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family's socioeconomic environment, child rearing practices and nutritional status of the child can alter the direction of child's growth and developmental trajectory. A child's growth and development is linked to women, because of the natural affection and emotional bond between the child and the mother.

It is understood that child mother relationship is an important factor in affecting the nutritional status of the children. This single centre interventional prospective study was done to assess the efficacy of nutritional intervention in

malnourished children (SAM) admitted in the Nutrition Rehabilitation Centre (NRC) run by UNICEF. The objective was to assess whether this intervention can convert intermittent short term weight gain into static weight gain during hospital stay and in follow up.

## METHODOLOGY

This was a hospital based study carried out on children admitted in N.R.C. Thatipur, Gwalior (M.P.). Children fulfilling admission criteria are kept under observation and provided with medical and therapeutic care. There is focus on improving the skills of mothers on complete feeding care with AWC and follow up of children at house hold level. The study was carried out on a sample of mothers belonging to different cultures. (Hindu, Muslim and backward class) and socioeconomic status, and who had children below 5 years of age. Four hundred mothers who had children below 5 years of age were selected. To know how efficient is N.R.C. management of acute severe malnutrition and breaking the cycle of severe malnutrition which leads to stunting and wasting in children's less than 5 year age group.

The study was conducted in two phases, in the first phase data from admission were collected and admission were done as per UNICEF and WHO guidelines. In second phase socio cultural variable, type of occupation, type of family, age of mother and level of mother awareness were recorded to correlate these variables during all the follow up visit.

During two months course active counseling of mother done by demonstration like different ways of cooking food, type of low cost nutritive food and household edible with high calorie and low cost items. They were followed up and efforts were made to establish correlation with these socioeconomic factors and outcome at follow up.

A questionnaire was designed to frame accurate questions and to seek accurate response regarding, general information and nutritional assessment. Anthropometry included body measurement such as a length, weight and MAUC at the time of admission, at discharge and at the end of follow up period *i.e.* 60 days after discharge. Discharge weight and follow-up weight are used for children, clinical risk assessment by examination by Pediatrician. During hospitalization the child was monitored for vital parameters, feeding patterns and calorie intake, whether the appetite improved, disappearance of edema and appearance of danger signs. Child was considered for discharge when weight for height reached 90 per cent.

## OBSERVATIONS AND ASSESSMENT

Table 1 depicts age wise distribution reveals that the no. of children admitted to nutrition rehabilitations center (NRC) below 24 months is about half of the total children age below 5 years (17.7% and 28% of children in age group 6-12

month and 12-24 month, respectively) which is in accordance to previous studies that malnutrition usually affect younger age group. Majority of the malnourished children were seen in 1-3 years of age.

**Table 1.** Distribution of children according to age

Sr. No.	Age in months	No. of children	Percentage
1.	6m. – 12m	68	17
2.	12m. – 24m	111	27.7
3.	24-36m	112	28
4.	36-48m	65	16.25
5.	48m-60m	44	11
Total		400	

The study highlighted the effect of education and counseling provided to mother at the time of discharge. The results presented in Table 2 indicated appreciable improvement in weight of the children in all the age groups except 10-11 months and 26-27 months where mean weight gain were 11 per cent and 3 per cent, which was not statistically significant. Improvement in weight of the children in the age group 8-9, 14-15 and 32-34 months was statistically significant ( $p < 0.05$ ) at 74<sup>th</sup> day. Difference in weight at  $D_1$  and  $D_{74}$  in rest of the children was highly significant ( $p < 0.01$ ) showing remarkable improvement. Out of 400 children, 111 were either dropouts or medical transfer from the program. The results revealed positive impact of education and counseling on mothers awareness level with regards to childcare, hygiene, feeding practices and preparation of low cost recipes.

**Table 2.** Evaluation of effect of nutrition education provided to mothers in terms of wt gain of children admitted in NRC

Age (months)	No. of children	Mean wt. $D_1$ Vs $D_{74}$	"t" Value	Df	S/NS
8-9	19	6.25 7.03	2.1	8	<0.05
10-11	13	6.18 7.61	1.5	12	NS
12-13	24	5.87 7.45	2.8	23	<0.01
14-15	18	6.57 7.76	2.7	17	<0.05
19-21	11	5.6 7.9	3.08	10	<0.01
22-23	23	5.8 7.5	4.3	22	<0.01
24-25	24	5.4 6.1	1.8	23	NS
26-27	19	4.9 7.4	4.03	18	<0.01
28-29	15	5.4 7.2	2.5	14	<0.01
32-34	12	5.8 7.3	1.8	11	<0.05
35-37	26	5.8 7.3	4.3	25	<0.01
38-42	14	5.3 7.1	3.3	13	<0.01
45-48	15	5.6 7.2	3.1	14	<0.01
50-60	20	5.58 7.11	3.2	19	<0.01

$D_1$ - Admission day

$D_{74}$ - Followup day (74 days after day of admission at NRC, excluding 14 days of stay at NRC)

S/NS-level of significance NS=Non-significant

Inadequate or improper education, particularly of women is often an underlying cause of malnutrition. Studies on nutrition in Bangalore, India found that 50 per cent population was illiterate and incidence of child mortality was 5 per cent for children under 1 year and 3 per cent for pre-school children (Taneja, 1997; Shetty, 1992). Lack of education is a deep rooted etiological factor leading to PEM as it directly affects living condition, infant feeding habits (Mdeonis Monteiro, 1993). Nutritional stress is more common in this age group as this is the transitional period and critical one in child's development this observation is in accordance with those reported by other workers (Gupta *et al.*, 1980; Abolghassem, 1983; Walia *et al.*, 1994). The literacy of parents, specially of female counter part must be improved for a long term cost effective benefit, in reducing infant and under 5 mortality rate. This will also help proper child rearing and improving nutritional status of children.

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**Received : 25.01.2012; Revised: 26.02.2012; Accepted : 27.03.2012**