Original Research Article

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A study on assessment of nutrition and health status of the children one year after discharge from the Nutritional Rehabilitation Centre in South India

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ABSTRACT

Background: Nutrition rehabilitation centers (NRCs) were started to control severe malnutrition and follow-up of children with severe acute malnutrition is essential because mortality rate of 10-30% has been reported after discharge from hospital.

Methods: A community based cross sectional study with the objectives to assess the current health status of the children discharged from the NRC and to assess the healthy practices learned by mothers during their stay at NRC. We included children those discharged from May to October 2013. The children were approached house to house visit and assessed for their health status with a pretested semi structured questionnaire. Mothers of the children were also interviewed for the knowledge and practices of the dietary and child care.

Results: Among 67 children, 8 (11.9%) children could not be traced and 7 (10.4%) were reported dead, 52 were included 27 were boys and 25 were girls with a mean age of 35 months. The current nutritional status was 71.2% were not in very low weight, 17.3% were moderately underweight, and 11.5% were still severely underweight. Children who had more number of follow-ups had a better nutritional status which was significant (p<0.0001). 94% of the mothers had knowledge about correct feeding practices and food preparations; 86.5% were aware of good hygiene; 75% aware of the danger signs. Only 59.5% of the mothers could recollect the structured play therapy.

Conclusions: Community based followup of the children following discharge from NRC and appropriate feedback to the mothers is very much essential for sustained results.

Keywords: Severe acute malnutrition, Nutritional rehabilitation centres, Underweight

INTRODUCTION

Nutrition rehabilitation centre (NRC) is a unit in a health facility where children with Severe Acute Malnutrition (SAM) are admitted and managed. Children are admitted as per the defined admission criteria and provided with medical and nutritional therapeutic care. 1 Childhood under-nutrition is an important public health and

development challenge in India. Children with severe acute malnutrition (SAM) have nine times higher risk of dying than well-nourished children.² The National Family Health Survey-4 (NFHS-4) revealed that 6.4% in India and 4.5 percent of under-five years of age are severely wasted in Andhra Pradesh.³ With appropriate nutritional and clinical management, many of the deaths due to severe wasting can be prevented. Follow-up of children

with severe acute malnutrition (SAM) is essential because mortality rate of 10-30% has been reported after discharge from hospital. To prevent deaths among severe malnourished children identified under the drive, the Government further started the Nutrition rehabilitation centers (NRCs) under the Bal Shakti Yojna with support from UNICEF. The objectives of the programme are to control malnutrition among the children aged 1–5 years in the state and to bring down the percentage of severely malnourished children to less than 1%.

METHODS

Objectives

To assess the current nutritional and health status of the children approximately one year after discharge from NRC and to assess the healthy practices learned by mothers during their stay at NRC.

Study design: A community based cross sectional study

Study period: January to March 2015

The children were assessed after one year, so that they can complete the full course of follow up visits and acquire the desired nutrition as per the WHO growth charts.

Sample size and inclusion criteria

Based on the In-patient register, children who were discharged from May 2013 to October 2013 (i.e. 6 months) from Nutritional Rehabilitation Centre (NRC) residing in Kurnool urban were included in the study. So the final sample was 67.

Exclusion criteria

At least three attempts were made to trace the children by house to house visits through address given in the NRC register and also with the help of anganwadi teacher in their area, if not traced then they were excluded. Those who got admitted in NRC from other than Kurnool urban area were excluded

Data collection and analysis

Data was collected by using pretested semi-structured questionnaire and health status was assessed by anthropometric parameters. Ethical clearance was obtained from the institutional ethics committee. Informed consent was taken before the interview. Improvement in current weight of more than 2SD (8 kgs to 14 kgs) by using WHO growth charts used in India. Mothers of the children were also interviewed for the knowledge and practices of the dietary and child care learnt in the NRC. Data was entered in Microsoft excel and analysis was done using EPI INFO version 7. The results were shown in proportions and chi-square test was

applied to see the significance in improvement of health status with p<0.05.

RESULTS

A total of 67 children were identified from the register out of them 8 (11.9%) were unable to trace after three consecutive house visits and 7 (10.4%) were reported dead. So, the final sample size of 52 was included in the study.

Table 1: Distribution of the study participants according to socio-demographic profile (n=52).

Variables	Number	Percentage (%)
1. Age groups		
<2 years	5	9.6
2-4 years	40	76.9
>4 years	7	13.5
2. Gender		
Male	27	52
Female	25	48
3. Religion		
Schedule caste (SC)	18	34.6
Scheduled tribe (ST)	17	32.7
Other backward caste (OBC)	17	32.7
4. Family type		
Nuclear	36	69.2
Joint	16	30.8
5. Mother's education		
Illiterate	26	50
Literate	26	50
6. Mother's occupation		
Housewife	22	42.3
Working women	30	57.7

Table 1 showing the socio-demographic variables, out of them 27 was boys and 25 were girls respectively with the mean age of 35 months. More than three fourth of them were in 2 to 4 years of age and less than 10% of them were less than 2 years and 13.5% of them were more than 4 years. Out of 52 34.6% of them were belong to schedule caste and 32.7% belongs to schedule tribes and remaining belong to other backward caste and others. More than two third of children belongs to the nuclear families. More than half of the mothers were working women. Almost 70% of the mothers were illiterates and 30% were literates. Table 2 showing the association of current nutritional status with the occupation of the mother, discharge weights, follow-up visits and ill health episodes after discharge from NRC. There was a significant improvement of nutritional status of children whose mothers were housewives, children with better discharge weight, attended one or more follow-up visits and doesn't experience any illness episode after discharge (p<0.05). Table 3 showing the mother's ability of recalling the practices learnt in the NRC. Around 94% were able to recollect about feeding practices, and preparation of food with low cost ingredients and 86.5%

about hygiene practices, 75% were aware about the danger signs and 59.6% about structured play therapy.

Table 2: Distribution showing the association of health status of the child with respect to different variables.

Variable	Weight range		Danilar
	<-2SD (%)	>-2SD (%)	P value
Mother's occupation			
Housewife	0 (0)	22 (100)	
Working mothers	15 (50)	15 (50)	$X^2=13.12$; p<0.005
Total	15 (28.8)	37 (71.2)	
Discharge weights	Current weights		
<-2SD	15 (33.3)	30 (66.7)	
>-2SD	0 (0)	7 (100)	$X^2=14.5$; p<0.05
Total	15 (28.8)	37 (71.2)	
Follow-up visits	Current weights		
No	10 (90.9)	1 (9.1)	
≥1	5 (12.2)	36 (87.8)	X ² =22.486; p<0.001
Total	15 (28.8)	37 (71.2)	
Ill health episodes	Current weights		
Yes	13 (76.5)	4 (23.5)	
No	2 (5.7)	33 (94.3)	X ² =24.57; p<0.001
Total	15 (28.8)	37 (71.2)	

Table 3: Distribution table showing the ability of mother's to recall about practices learnt at the NRC.

Practice	Yes (%)	No (%)
Feeding practices	49 (94)	3 (6)
Hygiene practices	45 (86.5)	7 (13.5)
Preparation of food	49 (94)	3 (6)
Danger signs	39 (75)	13 (25)
Structured play therapy	31 (59.6)	21 (40.4)

DISCUSSION

In the present study 52 children were studied, among them mean age of the children were 35 months, males were almost equal to females. Similarly for a study conducted by Taneja et al also reported similar age and gender pattern.7 A major proportion of the admitted children belonged to the marginalized population groups. The findings are in accordance with that of NFHS-IV, which states that children belonging to the ST, SC, and OBC and that those with illiterate mothers have the highest rates of malnutrition. In the present study, all the children whose mothers were housewife were improved in weight significantly compared to children of the working mothers (p<0.005). Colecraft et al in a study at four day care NRCs also reported a significant increase in weight for age for the admitted children.⁸ In the present study, there was a significant improvement of nutritional status was observed in children who attended one or more follow-up visits. (p<0.001) similar findings were reported by Taneja et al and Ramarao et al. ^{7,9} In the present study, there was a significant improvement of nutritional status was observed in children who didn't experienced any illness episode. (p<0.001) The mothers of the children are

made to stay at the centers where counseling sessions focusing on health and nutrition aspects are conducted for them¹⁰. The mothers are also provided hands on training on composition and preparation of the therapeutic diets and given compensation for daily wage loss as per guidelines during their stay at the NRCs. In the present study, around 94% of the mothers were able to recollect about feeding practices, 86.5% about hygiene practices, 94% about food preparation with low cost ingredients, 75% about danger signs and 59.6% about structured play therapy. As the study was done in a follow up manner we didn't seen the average weight gain during the hospital stay. Community based follow-up of the children following discharge from Nutritional Rehabilitation Centre (NRC) and appropriate feedback to the mothers is very much essential for sustained results.

CONCLUSION

Majority of children were improved in their health status after getting discharge from Nutritional Rehabilitation Centre (NRC). Mother's occupation, follow up visits had significant influence over health status of children. Majority of mothers had improved their knowledge of

healthy practices learnt during the stay at NRC. Continuous growth chart monitoring should be maintained to prevent malnutrition in the under five children.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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