



## ORIGINAL RESEARCH PAPER

Home Science

**A STUDY TO EVALUATE THE EFFECT OF NUTRITIONAL INTERVENTION MEASURES ON ADMITTED CHILDREN IN SELECTED NUTRITION REHABILITATION CENTER OF BHIND DISTRICT OF THE STATE MADHYA PRADESH (INDIA)**

**KEY WORDS:**

**Swathi Raj Jain**

**ABSTRACT**

**BACKGROUND:** Acute malnutrition is one of the major public health problems in developing countries like india and one of the contributing causes for high rates of mortality and morbidities among children and mothers.it is an underlying cause of about 50% deaths in children.

**MATERIALS AND METHODS:** The present study was conducted from January 2017 to January 2018 70 children admitted to ater (bhind district) NRC and the follow up period to analyze the effect of interventional measures on select anthropometric indicators. mothers of the children were interviewed on health issues and therapeutic practices at the NRC using a predesigned and pretested interview schedule.

**RESULTS:** the study group consisted of 30 girls and 40 boys;60%were between 13 and 36 months of age.63 children were analyzed for anthropometric indicators following a dropout rate of 7%.a significant difference was obtained between the weight of children at admission and discharge. the mothers of the children lacked adequate information on health issues and composition and preparation of therapeutic diets at the centers.

**CONCLUSION:** The NRC were effective in improving the condition of admitted children, but the effects were not sustained following discharge due to high drop-out rate and lack of adequate parental awareness. there is an urgent need to link these centers with community-based models for follow-up and improve health education measures to maintain the gains achieved.

### INTRODUCTION:

#### NUTRITION REHABILITATION CENTRE

NRC is a in a health facility where children with severe acute malnutrition (SAM)are admitted and managed.a steady linkage with ICDS identifies and refers severely malnourished children in the community using MUAC tape.children are admitted in NRC as per the defined admission criteria adopted in line with IAP 2006 and new WHO 2009 recommendations and provided with medical and nutritional therapeutic care.

once discharged from the NRC,the child continues to be in the nutrition rehabilitation program till she/he attains the defined discharge criteria from the program.in addition to curative care special focus is given on timely,adequate and appropriate feeding for children:and on improving the skills of mothers and caregivers on complete age appropriate caring and feeding practices.in addition ,efforts are made to build the capacity of mothers/caregivers through counselling and support to identify the nutrition and health problems in their child.

continue their stay in NRC FOR 14-21 days.four follow ups of the children discharged from NRC at an interval of 15 days is done.the criteria for discharge of children 6m-60m from the programme is 15% weight gain of the admission weight(WHO recommendation 2009).

#### HUMAN RESOURCE

NRC in m.p is in form of facility based care unit governed by;  
1-one doctor  
2-one female feeding demonstrator  
3-2 nurse(10 bedded NRC/3 nurse(20 bedded nrc)  
4-1 cook(10 bedded NRC)/2 cook(20 bedded NRC)  
5-2 caretakers(10 bedded NRC)/3 care takers(20 bedded NRC)

#### MATERIALS AND METHODS

The present study was conducted in 1 NRC(ATER) located near bhind district divisions of the state Madhya Pradesh from January 2017 to December 2017.through anthropometric analysis and continuous monitoring of weight,length and appetite, the nutritional status during the period of initial stay and the entire follow-up period using available records of anthropometric indicators of the admitted children recruited in the study at the NRCS. initial recruitment of the children was done during the months of jan 2017 and the follow up period extended up to july 2017. Weight at the time of admission and discharge and daily weights were recorded from the NRC registers;average weight gain was calculated to see if it was in accordance with the available guidelines.in addition,the MUAC and grades of malnutrition at admission and discharge were also recorded and the average duration of stay at the centers studied to establish any difference amongst the different age groups.

The children included in the study were followed up for 6 months to observe the compliance during the follow up period;follow up records at the centers were analyzed to calculate the number of subjects with loss of weight at each follow up visit,and the mean loss of weight compared to the previous follow up visit.

A predesigned and pretested semistructured interview schedule was used to interview the mothers of the admitted children on awareness regarding government programmes focusing on nutrition,basic concepts of nutrition,etiologies of malnutrition,and the impact of hands on training provided at the centers,which focused on the composition and preparation of therapeutic diets at the centers.

#### RESULT

##### ANALYSIS OF THE ADMITTED CHILDREN BASED ON MUAC

MUAC data were analysed for 65 children.six children were not

**Fig 1-ADMISSION AND DISCHARGE CRITERIA**

Children less than 6 months of age	
1-admission criteria Problem of breastfeeding ;the infant is too weak to suck 2-and /or The mother has not enough milk 3-and /or Biletral pitting oedema 4-and/or w/h or w/L<-3Z score (WHO-2005 standards)	<b>DISCHARGE CRITERIA</b> 1-child is gaining weight on breast milk alone,regardless of current weight or w/H% 2-NO medical complications 3-absence of bilateral oedema for at least past 10 days
<b>CHILDREN AGE 6 MONTHS UP TO 60 MONTHS</b>	
1-admission criteria -W/H or W/L<-3 Z score(WHO-2005 standards) 2-and/or -MUAC<11.5cm 3-and/or Presence of bilateral oedema.	Discharge criteria 1-15% weight gain from admission wt.or weight on the day free of oedema. 2-absence of bilateral oedema for at least 10 days. 3-no medical complications.

#### INFRASTRUCTURE

NRCS are essentially set up in district and community health centers with NRC ward of bed strength of 20 or 10,a kitchen with proper cooking and feed demonstration space and attached toilet/bathrooms.a possibility of having kitchen garden can also be explored considering the availability of space.NRC wards are painted with child friendly pictures keeping in mind the emotional and psychosocial development of child.the SAM children admitted

included because of default, one child had been referred to another health care facility and MUAC was not measured in children less than 6 months. further 11 children from one particular study center were not included in the analysis as the center staff did not measure MUAC at discharge.

### DURATION OF STAY AT THE NRCS

no significant difference was observed among the different age groups with respect to duration of stay at the centers.

### ANALYSIS OF FOLLOW-UP DATA

Though there was an increase in mean weight of the children who returned for the follow up visits, it was offset to a certain extent by the loss of weight experienced by some children in the study group.

### KNOWLEDGE AND AWARENESS AMONG MOTHERS OF BENEFICIARIES AT THE CENTERS

#### AWARENESS REGARDING COMMUNITY PROGRAMMES ON NUTRITION AND COCEPTS OF NUTRITION

Though 36% of the mothers were aware of the existence of NRCS, most of them were ignorant about the actual name of the center. 3% had heard about the bal shakti programme, 7% had some knowledge about the various types of nutrients and their importance, 2% correctly knew about the preparation and use of oral rehydration solution (ORS), while 23% had inadequate knowledge about its use. 6% of the mothers had proper knowledge about the clinical symptoms of vitamin A deficiency.

#### AWARENESS REGARDING ETIOLOGY OF MALNUTRITION

92% of the mothers had no knowledge about the etiologies of malnutrition. inadequate diet and poor quality of food were considered to be the main reasons responsible for malnutrition by 4% mothers each with repeated infections and lack of immunization being the other contributing factors.

#### KNOWLEDGE REGARDING THERAPEUTIC FEEDING PRACTICES AT NRCS

56% of the mothers said that they had been taught the preparation of the therapeutic diets at the centers. though majority of mothers had proper information regarding the time interval of feeds at the NRCS just 4% had correct knowledge (the correct constituents and correct method of preparation) about F-75 diet and 2% about F-100. none of the mothers had any knowledge about the lactose free diets. mothers also raised concerns about the reimbursement provided at the NRCS, the unavailability of daily diets for them at the centers, and the absence of provision of food to accompanying siblings of the admitted child.

### DISCUSSION

The study findings show that a major proportion of the admitted children belonged to the marginalized population groups. the findings are in accordance with that of NFHS-3, which states that children belonging to the SC, ST, and OBC and that those with illiterate mothers have the highest rates of malnutrition.

Though the number of children suffering from severe malnutrition decreased from 91.4% to 46.24%, 43 children were still in the high risk group at the time of discharge. appropriate criteria must be designed which specifically adopt a target weight for each child with the child being discharged once the target weight is achieved provided the child has been appropriately rehabilitated with nutritional and medical measures.

The median duration of stay at the centers was 14 days, which is much less than earlier programmes for children with severe protein energy malnutrition (range from 6 weeks to 8 months). the short duration of stay not only decreases costs but also minimizes the absence of mothers from their homes which has important implications at the society level. effectively, the duration of stay needs to be balanced between the chances of cross exposure to infection and the readiness of the mothers to effectively manage their children at home.

The mothers attending the centers had limited knowledge regarding the basic concepts of nutrition, the government health programmes on nutrition and the composition and preparation of therapeutic feeds at the centers. mothers are specifically kept at the centers so that they can be integrated in to the effective care of the children and are taught the preparation of the therapeutic diets from locally available material. surprisingly, this fact is often ignored and at the centers and much attention is paid to the improvement in nutritional status of the children, which is essentially considered to be the criteria of the success of the programme. begin in his critical assessment of 21 NRCS across 6 latin American countries found nutrition education to be lacking at most of the centers he visited.

44% of the mothers said that they had not been taught the preparation of the therapeutic diets. this is clearly reflected in the fact that 48.78% of the children had lost weight within 15 days of discharge. the period immediately following discharge is most important as mothers find it difficult to comply with the intervention strategies taught at the center, which indirectly lowers the compliance to follow-up visits. educating the AWWs on the feeds prepared at the centers can help the mothers when they go back to their homes and help maintain the growth achieved at the centers. the loss of children during follow-up visits can only be reduced to a certain extent and hence nutrition education measures must be stressed upon during the initial stay at the centers. counselling sessions focusing on the general health education measures should be undertaken to prevent malnutrition and mothers should be mandatorily made to prepare the therapeutic diets at the centers.

### ACKNOWLEDGMENTS

I am thankful to Dr RAJESH SHARMA (INCHARGE NUTRITION REHABILITATION CENTER) for his help in the completion of the study.

### REFERENCES

1. bal shakti yojna. government of Madhya Pradesh, innovative schemes and programme interventions under NRHM, department of public health and family welfare, Bhopal. (last accessed on 2009 aug 20). available from: <http://www.mp.gov.in/health/nrhm/innovativenrhm.pdf>.
2. park k. 20th ed. jabalpur; Banarsidas bhanot; 2009. textbook of preventive and social medicine in obstetrics, pediatrics and geriatrics; growth charts used in india; pp. 470-1. chapter.
3. secretariat health services; Government of Madhya Pradesh; guidelines to improve services in functioning of nutrition rehabilitation centers. no R.C.H/O9/5734; 30.06.09.