EVALUATION OF THE EFFECTS OF MEASURES TAKEN FOR NUTRITION ON CHILDREN ADMITTED TO NUTRITION REHABILITATION CENTRE

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ABSTRACT

Youngsters who are experiencing serious intense ailing health require quick consideration with legitimate wholesome recovery, for which Nutrition Rehabilitation Centres (NRC) have been set up. But despite the establishment of several nutritional rehabilitation centres, the proportion of severe acute malnutrition in the community has not decreased. It is too necessary to know the impact of nutritional interventions on children admitted to these centres. For this work, a longitudinal observational study was done among the children who have been admitted to the Nutrition Rehabilitation Centre from January 2019 to December 2019. A predefined proforma was used to collect socio-demographic information. And all the data received from those selected children were recorded and analysed in a Microsoft Excel 2010 and SPSS 21.

Keywords: Severe acute malnutrition, Nutrition Rehabilitation centre, Anthropometric indicators, MUAC (Mid-Upper Arm Circumference), children.

INTRODUCTION

Nutrition is one of the most important factors affecting the growth and development of children and nutritional status is the best global indicator of well-being in children. However, even after a decade of galloping economic growth, India is facing the problem of malnutrition among under five-year children. Malnutrition weakens immune response and aggravates the effects of infection. children who are malnourished tend to have more severe diarrheal incidents and are at a higher risk of pneumonia, trapping the children in a vicious cycle of malnutrition (Pelletier DL 2003).

Lack of healthy sustenance keeps on being significant wellbeing trouble on the planet, especially for a country like India. Around the world, kids with moderate and serious intense lack of healthy sustenance are about 60 million and 13 million separately. Worldwide, malnutrition is one of the significant hazard factors for sickness and mortality, among young children. Approximately, 8 to 11 million under-five kids die every year globally and malnutrition contributes to more than 35% to this mortality. Lack of healthy sustenance keeps on being a significant general medical issue, chiefly in southern Asia and sub-Saharan Africa(WHO Report 2009). Food consumed by the people has inadequate macronutrients (protein, carbohydrates and fat, creating protein deficiency), micronutrients (electrolytes, minerals and vitamins, create micronutrient deficiencies) or both.

In India, 36% of under-five kids are underweight, 38 % are hindered and 21 % are waste (NFHS4 2015-16). The occurrence of stunting in kids under age five is the most common in Bihar (48%), Uttar Pradesh (46%), Jharkhand (45%), Meghalaya (44%) and Jharkhand has the most noteworthy level of underweight (48%) and wasting (29%). WHO and UNICEF has recommended network (both in emergency and non-emergency territories) and centre-based facilities for severe acute

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malnutrition. Comparable proposals are made by the Indian Foundation of Paediatricians, yet centre-based administration has developed as a state-sponsored and controlled model in India (Dasgupta R. 2014).

Following the rules of WHO and in response to the state of malnutrition in India, nutrition rehabilitation centres were developed in the state of Madhya Pradesh where severely acute malnourished children can be admitted and take treatment. At these centres nutritional and medical interventions that include suitable antibiotics, deworming tablets, iron supplementation and micronutrients are provided to the children. Supervised feeding of therapeutic diets (F-75, F-100) is given and medical intervention is provided by a doctor in charge and nurses at the centre.

The kids those have not shown any symptoms of infection and edema were discharged after a base time of 14 days from the treatment centre. These children have received the prescribed quantity of micronutrients and were gaining at least 8-10g/kg/day. The youngsters again came for follow up at 15 days, 1 month, 3 months and a half year after the discharge from NRC. The anthropometric estimations were taken on the subsequent visits and the kids were treated for ailments and readmitted if needed (Operational Guidelines on Facility Based Management of Children with Severe Acute Malnutrition, 2011). The National Rural Health Mission (NRHM), Ministry of Health and Family Welfare encouraged the state government for the establishment of the NRCs at various district hospitals.

In Rajasthan despite 40 NRCs, the percentage of severely malnourished children has increased from 6% to 11%. Thus, it is essential to evaluate the impacts of NRCs in developing the health and nutritive status of children. The present study is conducted to estimate the effects of nutritional interventional measures on the children admitted to the nutritional rehabilitation centre, Udaipur Rajasthan.

LITERATURE OF REVIEW

The average weight increase for the study group during their stay at the centre was 8.1±1.32 g/kg/day; for males being 7.43± 1.43 g/kg/day; for females, it is 7.74 ±0.95 g/kg/day. In a study done (Mamidi et al 2011) in Hyderabad, the average weight increase was 5g/kg/day whereas in a study done by (G Taneja et al 2012) it was 9.25±5.8g/kg/day and 86% of the children did not achieve more than 15% of their initial weight. A study done by (Aguyo et al 2012) showed that 81.6% did not achieve the target weight.

The normal length of stay at the NRC was 7.17±1.6 days instead of the rules of 14 days period. This is far less than, that seen in different studies done by (Shah & Javdekar, 2017) where the term was 16 days and in the study of (G Taneja et al 2012) the length of stay was 14 days. Majority of guardians who didn't remain for 14 days gave the explanation that family members were not approving for treatment at NRC. Individuals from urban territories may not be enthusiastic to stay at NRC when their homes are in that area so they leave the NRC when the kid feels better although he might not have put on weight.

RESEARCH METHODOLOGY

The present study was carried out at the Nutritional Rehabilitation Centre, RNT Hospital, Udaipur Rajasthan, India. Children between 6-60 months of age group admitted to the NRC between 1st January 2019 to 31st December 2019, whose parents gave consent, were included in the study. Children with chronic diseases like congenital heart diseases, HIV, cerebral palsy, chronic renal diseases etc.

Total insights of the patients including name, age, caste, sex, address, religion, anthropometric details and result pointers were taken over the proforma. Weight at the hour of induction and release and daily were noted from the NRC registers. Normal weight gain was determined to check whether it was as per the accessible rules(Rawat R. 2015). The data was analysed using SPSS version 21 and

expressed in frequency, percentages and proportions. The difference between mean and standard deviation between weights at admission and discharge was calculated using paired t-test. The statistical significance was evaluated at 5% level of significance (95% Confidence Interval).

RESULTS AND INTERPRETATION

The present study included 120 children admitted to NRC in Udaipur Rajasthan. The majority (40.83%) of the kids were in the age group of 12-23 months. The proportion of females (52.5%) among the admitted children was greater than males (47.5%) (Table1).

Table 1: Distribution of the study participants according to socio-demographic determinants.

Variables	Frequency(N=120)	Percentage
Age		
12-23	49	40.83
24-35	38	31.67
36-47	19	15.83
48-60	14	11.67
Gender		
Males	57	47.5
Females	63	52.5
Religion		
Hindus	67	55.83
Muslims	23	19.17
Others	30	25
Socioeconomic status		
Class I	0	0
Class II	11	9.167
Class III	17	14.167
Class IV	22	18.33
Class V	70	58.33

The value of mean weight at admission was 7.59±1.19 kgs. For males, it was 7.43±1.43 kgs and for females, it was 7.74±0.95 kgs. The total mean weight at discharge was 8.62±1.45 kgs. For males, it was 8.71±1.76 kgs and for females, it was 8.53±1.13 kgs.

There is a statistically significant difference found between mean. weight at admission and mean weight at discharge for all children ($t=4.133$; $p<0.001$), for males it was $t=2.96$ $p=0.003$ and for females $t= 2.842$ $p<0.005$ (Table 2).

There is a significant difference found between mean weight at admission and mean weight at discharge for all children ($t=4.133$; $p<0.001$), for males it was $t=2.96$ $p=0.003$ and for females $t=2.842$, $p<0.005$.

The mean MUAC at admission was 11.84±0.66 cm and at discharge was 12.30±0.725 cm. The difference was observed to be statistically highly significant ($t=12.54$, $p<0.001$). The mean MUAC for the boys at admission was 11.88±0.7 cm and at discharge, it was 12.29±0.7 cm.

The difference was observed to be statistically highly significant ($t=12.54$, $p<0.001$) for all the admitted children; for boys ($t=8.085$, $p<0.001$); for girls ($t=9.647$, $p<0.001$).

Similarly, for girls, the mean MUAC at admission was 11.8±0.65 cm and at discharge was 12.30±0.75 cm and the difference were statistically highly significant ($t=9.647$, $p<0.001$) (Table 3).

Table 2: Comparison of mean weights of study participants at admission and discharge

Age(months)		Mean weight at admission			Mean weight at discharge	
Males(kg)	Males(kg)	Females(kg)	Total	Males(kg)	Females(kg)	Total
12-23	6.28±0.85	6.12±0.76	6.20±0.81	7.33±0.92	6.89±0.71	7.11±0.82
24-35	7.01±1.21	7.02±0.78	7.01±1.00	7.86±1.52	7.82±0.70	7.84±1.11
36-47	7.21±1.43	7.22±1.05	7.23±1.24	8.68±1.73	8.15±1.38	8.42±1.56
48-60	9.23±2.21	10.6±1.22	9.92±1.72	10.96±2.88	11.24±1.73	11.10±2.31
Total	7.43±1.43	7.74±0.95	7.59±1.19	8.71±1.76	8.53±1.13	8.62±1.45

Table 3: Comparison of MUAC of study participants at admission and discharge.

Age(months)	MUAC at admission			MUAC at discharge		
	Males (cm)	Females (cm)	Total	Males (cm)	Females (cm)	Total
12-23	11.8±0.7	11.9±0.7	11.7±0.7	12.18±0.7	12.17±0.7	12.17±0.7
24-35	11.5+0.8	11.7±0.8	11.7±0.8	11.98+0.8	12.28±0.8	12.13±0.8
36-47	11.9±0.5	11.2±0.6	11.9±0.5	12.4±0.4	12.15±0.7	12.28±0.55
48-60	12.3±0.8	12.41±0.5	12.3±0.6	12.6±0.9	12.63±0.8	12.62±0.8 5
Total	11.88±0.7	11.8±0.65	11.84±0.66	12.29±0.7	12.30±0.75	12.30±0.7 25

DISCUSSION

The current survey revealed that out of the 120 kids admitted to NRC majority of them (40.83%) was 12-23 months. The proportion of females (52.5%) among the admitted children was greater and the majority of the children (58.33%) belonged to class V, i.e. lower class. There is a vital differentiation found between mean load at affirmation and mean load at release for all kids ($t=4.133$; $p<0.001$), for guys it was $t=2.96$ $p=0.003$ and for females $t=2.842$ $p<0.005$. An examination done by (Rawat 2015) uncovered that means the load on confirmation was 6.4 kg and on release 7.09 kg and there was no factually huge distinction seen between the mean load at release and the mean load at admission (Rawat R.2015). Colecraft et al (2004) in an investigation at multi day-care NRC additionally detailed a critical increment in weight for age for the conceded kids.

Present examination indicated that mean MUAC at admission was 11.84±0.66 cm and at release was 12.30±0.725 cm. The thing that matters was seen to be measurably exceptionally noteworthy ($t=12.54$, $p<0.001$). The mean MUAC for the young men at admission was 11.88±0.7cm and at release, it was 12.29±0.7cm which was statistically significant ($t=8.085$, $p<0.001$). Correspondingly for young ladies, the mean MUAC at admission was 11.8±0.65 cm and at release was 12.30±0.75 cm. The observed difference was statistically significant ($t=9.647$, $p<0.001$). This is similar to the study done by (G Taneja et al 2012) among kids admitted to NRCs in Madhya Pradesh which uncovered that mean MUAC at affirmation was 11.32±1.18cm and at release was 11.94±1.38 cm. The thing that matters was seen to be factually critical ($t=9.548$, $p<0.001$).

The mean MUAC for the young men at affirmation was 11.33±0.98cm and at release, it was 11.87±1.01cm which was factually noteworthy ($t=6.876$, $p<0.001$). Additionally, for young ladies, the mean MUAC at admission was 11.31±1.38 cm and at release was 12.01±1.33cm. The observed difference was statistically significant ($t=6.723$, $p<0.001$).

CONCLUSION

NRCs give life-saving care to kids with SAM as exhibited by the effect on the chosen anthropometric pointers of the malnourished youngsters. Anyway, protocols must be improved to build the number of youngsters achieving the objective weight.

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