

Study of Nutritional Intervention among Malnourished Children at Malnutrition Treatment Center (MTC), Jharkhand

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ABSTRACT

Background. Child malnutrition is the major public health problem over the world. Developing countries are highly affected. Protein-energy malnutrition occurs when there are deficiencies in protein, energy foods or both, relative to a body's needs. Nutritional intervention programs run in all over the world to reduce the prevalence of childhood malnutrition. MTC runs with Collaboration of UNICEF and State Government. The MTCs are facility based care units where Moderate acute malnourished (MAM) and severely Acute Malnourished (SAM) children (Z-Score <-3SD and <-4SD of the median WHO child growth), or a Mid-Upper Arm Circumference <115 mm /<11.5 cm below 5 years are admitted with their Mothers for treatment, stabilization and rehabilitation.

Objective. 1.To study the effects of nutritional intervention measures undertaken by MTC. 2. To find out the role of socio-economic status and awareness and knowledge among mothers of the admitted children. **Methods.** The study was conducted over 3 MTC of Bokaro and Ranchi district (Jharkhand). Total 40 respondents were taken at the age group 6-60 month. The primary data were collected with the help of schedule. The schedule consist of personal details like name, age, sex of children, type of family, parents occupation, education of parents etc. and anthropometric measurement, appetite test, discharge data collect from MTC. **Result.** Malnutrition was found to be higher in the age group of 11-20 months. Moderate and severe malnutrition was higher in girl child. PEM prevalence was higher among the children of illiterate mothers and farmer/laborer parents. In MTC, the admitted children given high-energy milk and other ready-to-use therapeutic food (RUTF) due to this most of the children are cured. **Conclusion.** A child age group 11-20 month, female child, having uneducated mother, living in a household with poor wealth status, laborer class parents are associated with increased odds of being malnourished. MTC provide treatment, stabilization and rehabilitation.

Keyword – Malnutrition, Nutrition intervention programs, Under-five Children, Malnutrition treatment center.

INTRODUCTION

The World Health Organization defines malnutrition “deficiencies, excess or imbalance in a person's intake of Energy and / or nutrient.” Malnutrition occurs due to diet, environment, and a host of other condition (2). Malnutrition refers to the situation where there is an unbalanced diet in which some nutrients are in excess, lacking or wrong proportion. Simply put, we can categorize it to be under nutrition and over nutrition. Despite India's 50% increase in GDP since 1991, more than one third of the world's malnourished children live in India. Among these, half of them under 3 are underweight and a third of wealthiest children are over-nutrient.

Nearly half of all deaths in children under 5 are attribute to under nutrition. This translates into the unnecessary loss of about 3 million young lives a year. Under nutrition puts children at greater risk of dying from common infections and contributes to delayed recovery. In addition, the interaction between under nutrition and infection can create a potentially lethal cycle of worsening illness and deteriorating nutritional status. Poor nutrition in the first thousand days of child's life can also lead to stunted growth, which is irreversible and associated with impaired cognitive ability and reduced school and work performance (5, 8).

According to JME in India under 5 years children Survey report (4)-

Survey Year	WHO Global Database	Survey Sample Size	Severe Wasting	Wasting	Over Weight	Stunting	Under Weight	Income Group
2005-06	2799	49233	6.8	20	1.9	47.9	43.5	Lower middle
2013-14	3291	91273	4.6	15.1		38.7	29.4	Lower middle
2015-16	3302		7.5	21		38.4	35.7	Lower middle

According to the National Family Health Survey (NFHS) under 5 years in India are (6)-

Survey Year	Stunted	Wasted	Severely Wasted	Under Weight
NFHS-3 (2005-06)	48.0	19.8	6.4	42.5
NFHS-4 (2015-16)	38.4	21.0	7.5	35.7

According to the National Family Health Survey (NFHS) under 5 years in Jharkhand are (7)-

Survey Year	Stunted	Wasted	Severely Wasted	Under weight
NFHS-2 (1998-99)	54.1	28.1		51.5
NFHS-3 (2005-06)	49.8	32.3	11.8	56.5
NFHS-4 (2015-16)	45.3	29.0	11.4	47.8

Under-5 Mortality rate in India is 50% and in Jharkhand is 54%. Under – nutrition has also been implicated in the etiology of several disease such as pneumonia, tuberculosis etc. which leads to higher Mortality rate and shown to reduce the physical and mental development of children.

Some of the major causes for malnutrition in Jharkhand are economic inequality. Due to the low social status of some population groups, their diet often lacks in both quality and quantity. In Jharkhand, Mothers generally lack of knowledge in feeding children. Consequently, new infants and children are unable to get adequate amount of nutrition from their mothers.

Nutritional intervention programs have however been found in various parts of the world to be capable of reducing the prevalence of childhood malnutrition. In India Nutritional intervention programs run by different names like Nutritional Rehabilitation Center (NRC), Malnutrition Treatment Center (MTC) etc. MTC runs with Collaboration of UNICEF and State Government. Funds are raised from UNICEF and Medical guidelines providing by WHO makes a successful MTC program run all over India in every state in Governmental Hospitals (1). The MTCs are facility based care units where severely acute malnourished (SAM) and Moderate Acute Malnourished (MAM) children (Z-Score <-3SD and <-4SD of the median WHO child growth), or a Mid-Upper Arm Circumference <115 mm /<11.5 cm below 5 years are admitted with their Mothers for treatment, stabilization and rehabilitation. Generally, these children require high-energy milk and other ready-to-use therapeutic food (RUTF) such as F-75 and F-100. These foods are specially formulated to give children experiencing malnutrition the essential food and micronutrients they need to recover. Mothers stay with the children at MTC and attend counseling sessions on how to take care of the SAM child after discharge from MTC. Special foods, nutritional supplements, medicines are administered according to the guidelines ministry of health and family welfare (3).

OBJECTIVES

1. To find out the role of socio-economic status.
2. To find out awareness and knowledge among mothers of the admitted children.
3. To study the effects of nutritional intervention measures undertaken by MTC.

MATERIAL AND METHOD

The present study has covered three MTC (Phusro, Chas, and Ranchi) from Bokaro and Ranchi district, Jharkhand. The study is complied with the help of primary data. The duration of the study was only four month (Sep. to Dec. 2017). Total 40 respondents were selected from three MTC age group between 6-60 months. The primary data were collected with the help of specially prepared schedule. The schedule consists of personal details like name of the child, age, sex, types of family, parents occupation, educational status and nutrition related question etc. In MTC Anthropometric measurement, clinical examination and appetite test are taken at the time of children admitted. Parents and staff of MTC were informed about the purpose of this study and role of data collection so as to obtain full participation. Data were entered and analyses in MS-excel.

RESULT AND DISCUSSION

From the present study of malnutrition (PEM) in under 5 year children was observed in three MTC. However, it was found to be higher (50%) in the age group of 11-20 months as compared to other age groups. The higher occurrence of grade III and IV malnutrition were found in this age group. Female (70%) were higher prevalence of malnutrition in comparison to males (30%) and also grade III and grade IV malnutrition was found to be higher in female than in males (Table.-1).

It was also notice that the children of illiterate mothers had higher prevalence of PEM and also those children whose father were farmer (55%)/ laborers (32.5%) in comparison to those who are in other work (Table.-2).

At the time of admission 37 (92.5%) children pass appetite test and 3 (7.5%) children fail. It decides the F-75 and F-100 diet. F-100 diet given to 37 (92.5%) children and rest of given F-75 diet. Out of 40 children after treatment 20 (50%) cured, 19 (47.5%) defaulter and 1 (2.5%) medical referral (Table.-3).

Table. 1- Prevalence of PEM amongst under 5 years old children (n=40)

Age Group (Month)	Total children Studied	Grade III Malnutrition	Grade IV Malnutrition
Age Wise			
<10	17.5%	14.28%	25%
11-20	50%	53.57%	41.66%
21-30	15%	10.71%	25%
31-40	12.5%	14.28%	8.33%
41-50	2.5%	3.57%	
51-60	2.5%	3.57%	
Sex Wise			
Male	30%	32.11%	25%
Female	70%	67.85%	75%
Grand total	40	28	12

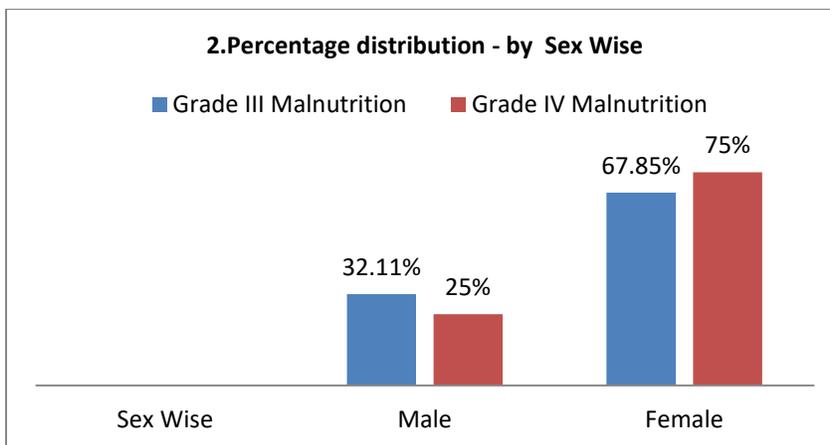
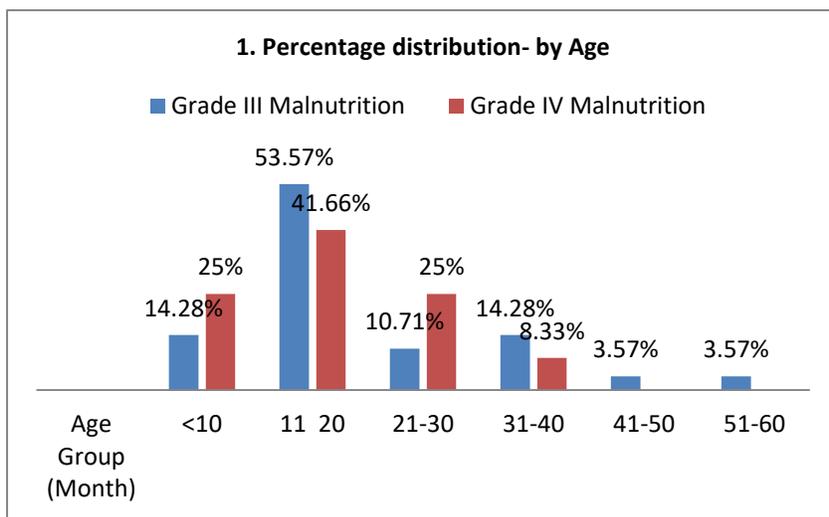


Table. 2- Educational status of mother and Occupation of father (n=40)

Educational Status of Mother	Total children Studied	Grade III Malnourished	Grade IV Malnourished
Illiterate	29 (72.5%)	19 (67.85%)	10 (83.33%)
Primary	10 (25%)	8 (28.57%)	2 (16.66%)
Secondary			
Diploma and above	1 (2.5%)	1 (3.57%)	
Occupation of Father			
Laborer	13 (32.5%)	10 (35.71%)	3 (25%)
Farmer	22 (55%)	15 (53.57%)	7 (58.33%)
Service			
Business	3 (7.5%)	2 (7.14%)	1 (8.33%)
Not working	2 (5%)	1 (3.57%)	1 (8.33%)
Grand total	40	28	12

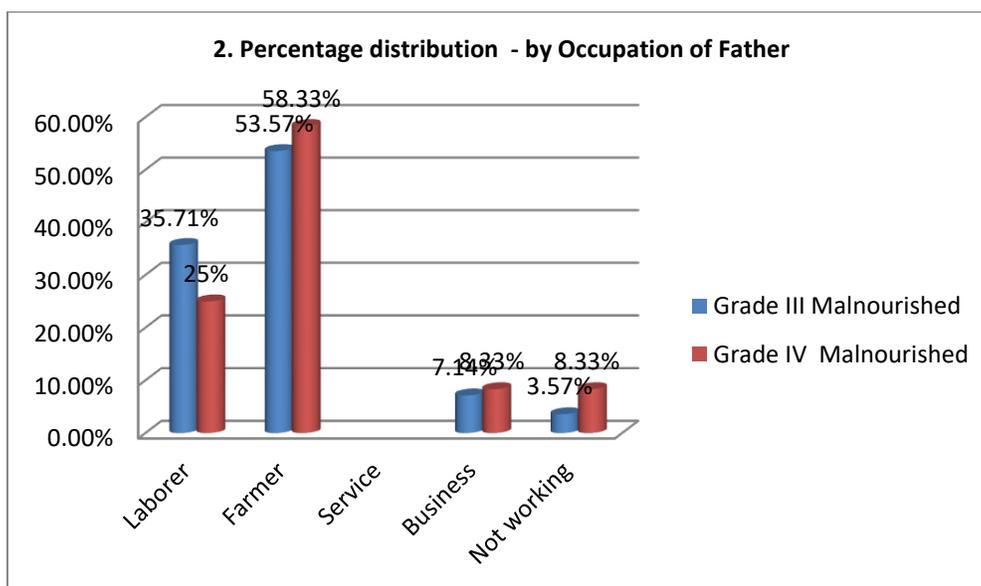
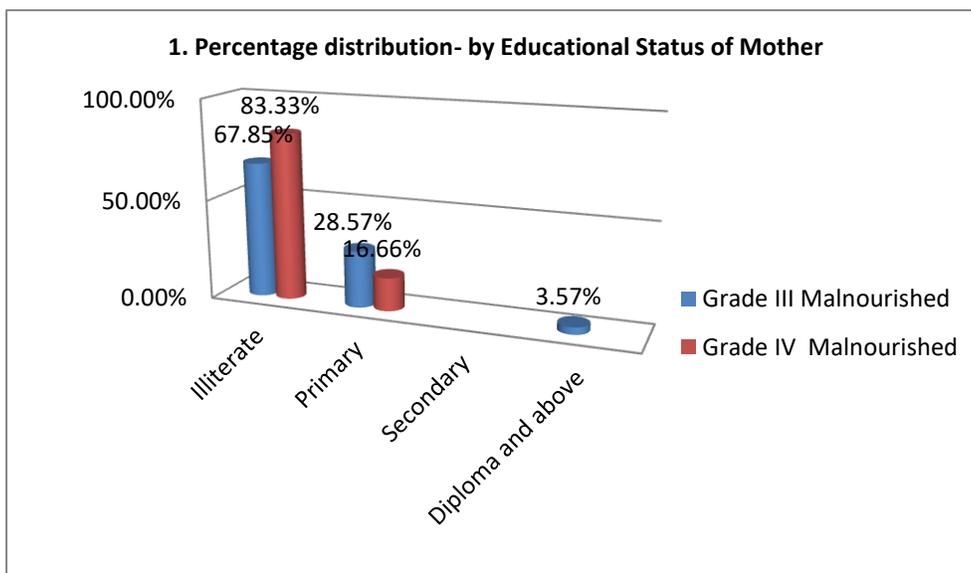
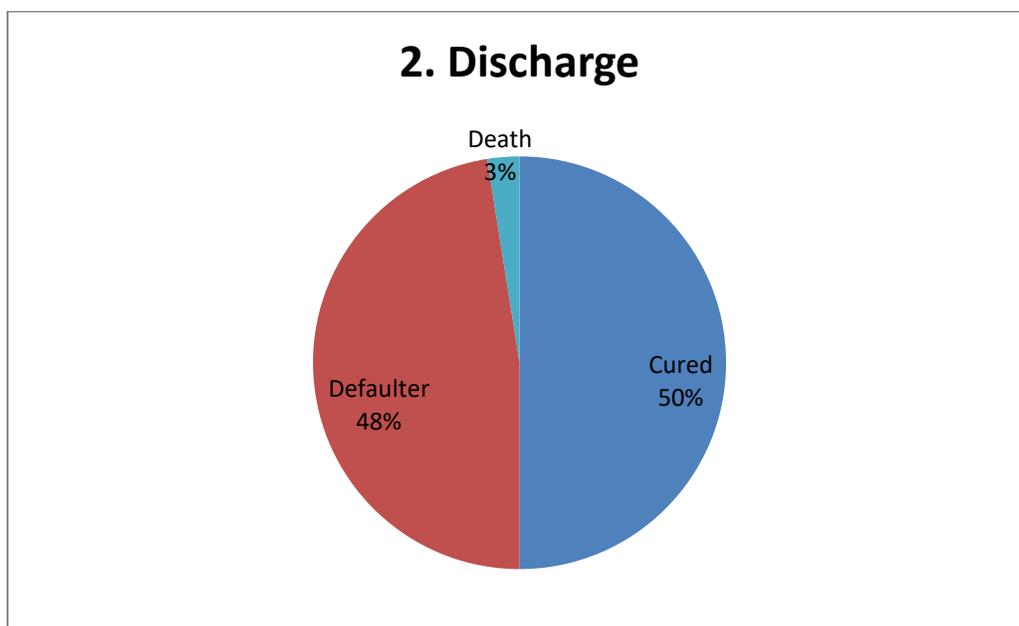
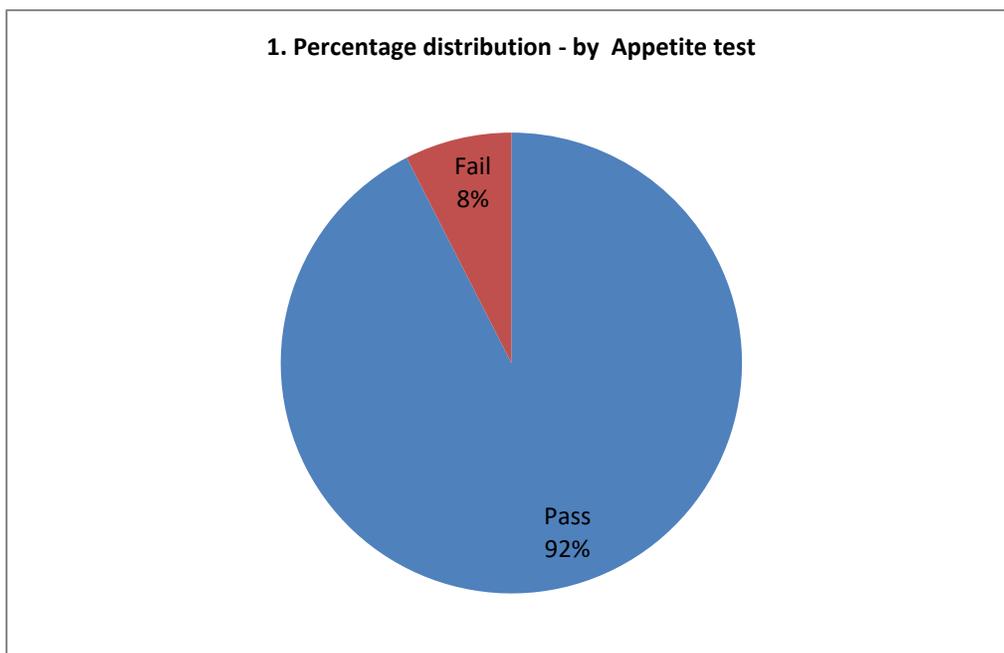


Table. 3- Prevalence of Malnutrition in relation to appetite test and discharge from MTC (n=40)

Appetite test	Total children Studied
Pass	37 (92.5%)
Fail	3 (7.5%)
Discharge	
Cured	20 (50%)
Defaulter	19 (47.5%)
Non-Respondent	
Medical referral	
Death	1 (2.5%)
Grand total	40



CONCLUSIONS

The occurrence of overall and grade III and IV PEM was highest amongst the age group 11-20 month. Majority of the children were Female. This is because parents were lack of attention towards the girl child. Children of illiterate mothers had higher prevalence of PEM. Lack of proper education and awareness of nutrition among mothers cause the big impact in health of children. The children of Laborers and farmer were affected most. It is quite often seen that in laborer and farmer class both the parents work through the day, resulting in child receiving almost no attention. In MTC most of the children are cured because they provide Ready-to-use therapeutic food, special attention, treatment etc. Also we conclude that by educating the parents of basic nutritional requirement like high-energy and high-protein diet and consume locally available low cost nutritious foods for rapid weight gain.

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