

Assessment of Health Status of Tribal Children One Year after Getting Treated at Malnutrition Treatment Centers in an aspirational District of Rajasthan, India

Avdesh Gupta

The IIHMR University, India

Abstract: According to UNICEF, under-nutrition is the cause of nearly half of all deaths in children under 5 years of age. This is equivalent to the loss of about 3 million young lives a year. Malnutrition elevate the potential of dying from common infections and recovery is delayed. In India, there has been a decline in the percentage of children who are underweight from 42.5% in NFHS-3 (National Family Health Survey) to 35.7% in NFHS-4, and children who are stunted from 48% in NFHS-3 to 38% in NFHS-4, the magnitude of malnutrition is still high. In Rajasthan, 38.4 percent of the children under the age group of 5 years are reported to be underweight. The demographic groups such as children from Schedule Tribes has largest prevalence of severe acute malnutrition compared to children from other communities due to lack of resources and fair opportunities. This study was conducted to find the factors influencing the nutritional status of tribal children after being discharged from Malnutrition Treatment Centers, with an objective to assess the present nutritional status of children undergone MTCs treatment in the district of Rajsamand to study the factors affecting the health status of the children in their natural environment after one year from community-based follow-up and discharge from in-patient care. Out of 35 children, almost 63% children were presently malnourished, with only 37% of them being in normal category. 23% of them were Severely Acute Malnourished, whereas 40% of the children in MAM category even after having undergone the treatment in MTCs. The factors responsible for rebound malnourishment were found out to be the gender of the child, number of home visits of the anganwadi staff, number of siblings and the family members and the presence of the livestock in the close vicinity of the child.

Keywords: Malnutrition, Stunting, Wasting, Tribal Children, Malnutrition Treatment Centers

1. Background

According to UNICEF, under-nutrition is the cause of nearly half of all deaths in children under 5 years of age. This is equivalent to the loss of about 3 million young lives a year. Malnutrition elevate the potential of dying from common infections and recovery is delayed. The early days of a child's life are crucial and poor nutrition can cause stunted growth, which has been related to impaired cognitive ability and declined performance. Global Hunger Report suggests that malnutrition is responsible for mortality of almost 4 million children a year, which equivalent to one death every 10 seconds, which is quite alarming". (Mulla & Gupta, 2017)

Severe child malnutrition is found in India, which is also a major cause of child mortality in the country. 9 million children are expected to be suffering from SAM, being almost equal to the 50 percent of such children worldwide. Though there has been decline in the percentage of children who are underweight from 42.5% in NFHS-3 (National Family Health Survey) to 35.7% in NFHS-4, and children who are stunted from 48% in NFHS-3 to 38% in NFHS-4, the magnitude of malnutrition is still high. Major problem being faced by the country is chronic malnutrition. (NFHS Sheet, 2015).

Although Rajasthan is the largest state of the India area wise, it is the part of the "BIMARU" and Empowered Action Group states. Rajasthan fairs poorly on the indicators such as health and epidemiological factors. According to

NFHS-4 in Rajasthan, 38.4 percent of the children under the age group of 5 years are reported to be underweight. The Food Security Atlas of Rural Rajasthan suggests that Rajasthan is suffers from extreme food insecurity with 22 of its 32 districts being characterized as 'most food insecure'. Rajasthan has high poverty with low land holdings. Furthermore, NFHS-4 in 2016 found that 23.4% of children under-5 years of age in Rajasthan were wasted, 40.8 were stunted and 38.4% were underweight. The demographic groups such as children from **Schedule Tribes** has largest prevalence of severe acute malnutrition compared to children from other communities due to lack of resources and fair opportunities.

The Situation is even worse in the districts of Jhalawar, Banswara, Rajsamand, Udaipur, Sirohi, Dungarpur and Pratapgarh of Rajasthan. According to NFHS-4, 39.4% of children under-5 years of age in Rajsamand were stunted, 29.4% were wasted in which 11.2% children are severely wasted and 39.5% were underweight.

Appropriate nutritional and clinical management can help in reducing the mortality and morbidity due to malnutrition in children under the age of 5. Government of India, has set up Malnutrition Treatment Centres (MTCs) also called Nutritional Rehabilitation Centres (NRCs) under National Rural Health Mission (NRHM) to provide quality care to SAM children.

Malnutrition Treatment Centres: "The MTCs are attached to existing public health facilities such as CHCs and districts

Volume 9 Issue 8, August 2020

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hospitals. Children less than 5 years of age are referred to the MTC majorly by community-level health workers if they are found to have severe wasting and/or mid-upper arm circumference (MUAC) < 115 mm and/or bilateral pitting oedema. At MTCs, the children get nutritional as well as medical rehabilitation with a therapeutic diet for a minimum of 14 days. The child has to be accompanied by the mother or any primary care giver. Anthropometric measurements, including weight, height and MUAC, are monitored by the MTC staff according to the framework laid by the government".(Tandon, 1984)

At MTC, the primary care giver is trained on the ill effects on malnutrition and they are taught the preparation of therapeutic diets. The care givers are also provided with INR 100 to compensate for daily wage loss. Discharge of children from MTC is initiated when the child shows no signs of bilateral pitting edema, fever and/or infection, and has gained at least 5 g/kg body weight per day during the stay in the centre. After the discharge the child undergoes 2 months of follow-up, where they attend the MTC on particular dates at the intervals of 15-day. Discharge from the centres happen after the follow-up period if the children have achieved the designated weight gain of >15% of admission weight.

"Severely malnourished children after being discharged from the MTCs are given more consideration at the Anganwadis set up by government. They receive double the ration, which is Take Home Ration(THR), as compared to healthy children with the increased home visits of the Anganwadi staff. To ensure proper nutrition is received by the child, two feeds are provided at the AWCs within a 4-hour period and the final feed is administered by the relatives to the child at home".(Chaturvedi et al., 2018)

"There has been several studies conducted on the effectiveness of MTCs in the areas of Rajasthan, Jharkhand and Madhya Pradesh such as a study of seven MTCs in Madhya Pradesh found a major increase in child's body weight from admission to discharge. (Taneja et al., 2012) Also, a study in Madhya Pradesh indicated that high number of children belonging to the marginalized population groups suffer from severe malnutrition. Under-nutrition decreased from 91.4% to 46.24%, many children were still in the vulnerable position and if not monitored properly could again fall in the malnutrition category".(Taneja et al., 2012)

"Attempts have been made to analyze the importance of compliance to the follow-ups in the course of two months from discharge. A study of MTCs in Jharkhand reported that a large population of children did not achieve the targeted weight gain due to loss to follow-up".(Aguayo et al., 2014)

"A study on MTC of Andhra Pradesh observed that there is significant weight gain from admission to the discharge and from discharge to third follow up but the weight gain is not present at fourth visit which could be due to lack of sufficient information on various health problems and procedure for making the diets amongst mothers or primary care givers. The MTCs are successful in making the condition better for admitted children, but the effects are not sustained following discharge due to lack of adequate

parental awareness".(Pagali, Bollipo, Korrapolu, & Rahman, 2018).

"Another study in Baran district of Rajasthan done over the period of admission to discharge and over the period of follow-ups, that is 2 months, shows that MTCs are effective in saving lives of SAM children but not in maintaining long term control on malnutrition".(Mulla & Gupta, 2017).

The literature has suggested that MTCs are effective in controlling malnutrition in the children of 5-59 months if there is compliance to the follow-ups i.e for the 2 months period but very little literature is available on long term effectiveness of MTCs in curbing malnutrition. The focus of the past studies has been on the data from MTCs and follow ups, but the literature lacks on-ground information on the factors responsible for reoccurrence of malnutrition once the child gets discharges from the MTCs.

Therefore, this study was conducted to find the factors influencing the nutritional status of children after being discharged from Malnutrition Treatment Centers, with an objective to assess the present nutritional status of children undergone MTCs treatment in the district of Rajsamand comprising of 3 blocks - Rajsamand, Railmagra and Khamnor and to study the factors affecting the health status of the children in their natural environment after one year from community-based follow-up and discharge from in-patient care.

2. Methodology

A Cross-sectional mixed study was conducted during a time frame of two months from 1 April to 31 May,2019.Data was collected by **home visits** from the households of tribal children been to the MTCs in the past one year. Data on the health and nutritional status of children at admission, discharge, and follow up in the past one year was obtained from JatanSansthan, Udaipur. A tool was formed and pre-tested in the field, which collected data on Caregiver's socio-economic and demographic characteristics, Children's morbidity after MTC, Dietary intake of child and caregiver, present Anthropometric measurements including MUAC, height and weight.

The study participants were selected from the three blocks of Rajsamand district, Rajasthan-Khamnor, Railmagra and Rajsamnd, who have undergone MTC treatment in past one year with an inclusion criteria of tribal children aged 6-59 months, undergone treatment from MTCs in the 3 blocks of Rajsamand with the minimum duration of stay at MTCs being 10 days with minimum of 2 follow-ups. By analyzing the records received from JatanSansthan, and carefully examining it by the inclusion criteria, a sample size of 35 out of 45 tribal children were selected for the study. (45 being the total number of children who received the MTC treatment in the year 2018-19 in the district).

3. Results

The Children taken under the study were almost 50% males and 50% females. Out of 35 children, almost 63% children

are presently malnourished, with only 37% of them being in normal category. 23% of them are Severely Acute Malnourished, whereas 40% of the children are in MAM category even after having undergone the treatment in MTCs.

Retention of weight gain was better in girls than boys despite the privileges given to the males in Rajasthan. Presently, 9% of children showed Severe stunting whereas 20% and 31% were stunted and borderline stunted, respectively. Only 40% of them were normal and had proper growth after the treatment. Caregivers of 75% and 78.6% children who went under SAM and MAM category again, respectively, reported that the frequency of visits of anganwadi workers was very less or null. Caregivers of 69.23% children under normal category reported high frequency of Anganwadi staff visits. According to ICDS guidelines, minimum number of anganwadi staff visit must be more than three.

A positive correlation was seen in the number of off-springs and the high chances of falling into the trap of malnourishment again. On an average, the caregivers having children who were healthy after the treatment had 2 off-springs as compared to 2.6 offspring of caregivers having children who could not recover from malnourishment even after the complete MTC treatment.

The average gap between the offspring's was seen to be much more i.e. 30 months in the children who remained in the normal category than those who again fell into malnourished category i.e. 21.5 months. A positive relation was found between the high average household members and less number of meals received by the child. Moreover, the lesser the meals taken by the child, poorer was its nutritional condition with highest number of SAM children being found in the household with large number of family members.

It was observed that all the children identified as SAM had suffered through an illness such as, fever, diarrhea, in the past one year. Also, a positive correlation was seen with having livestock in the same area where the child spends maximum time and the episodes of diseases. Less number of children identified in normal category suffered from diseases in last one year. Although all the households of such children had livestock but 70% of them had separate living area thus establishing a fact that fewer episodes of diseases occurred when the livestock was kept away from the child.

4. Conclusions

- Females showed better results than males in retaining the weight gain and thus prevented rebound malnourishment.
- Anganwadi staff has a key role to play in creating awareness about the nutrition and feeding habits. The more they visit the houses of children, better is the awareness and health outcomes.
- High number of offspring to a mother causes intense competition for resources. Every child does not get proper nutrition and thus again fall into the category of malnutrition.

- Smaller gaps between the pregnancies reduces the lactation duration of a child and makes the mother's body weak and hence decreases the nutritional aspect of a child.
- Large number of family members living in a same house causes scarcity of resources. The children don't get proper meals which makes them malnourished.
- The livestock if kept in the same area as of the family increase the incidence of diseases and contamination. And diseases such as diarrhea have been well documented to cause malnutrition amongst children.

5. Discussion

Though, according to the literature, Malnutrition Treatment Centres combined with community follow-up program have been successful in reducing malnutrition but only for a shorter duration. When a child returns to its natural environment which even lacks basic facilities, s/he has high chances of again getting malnourished. To tackle this problem a revised strategy should be made by ICDS in which focus should be given on increased visits of Anganwadi staff to the children who have got treated in MTCs. More awareness should be spread on family planning and its effects on the health of the mother and child. Sanitation and hygiene should be given priority and information on practices of keeping livestock in the house must be disseminated effectively.

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