Effect of Services at Nutritional Rehabilitation Centres (NRC) on Children with Severe Acute Malnutrition (SAM) in Bijapur District of Chhattisgarh

By

Gangesh Gunjan

Dissertation submitted in partial fulfillment of the requirements of the degree

MBA Hospital and Health Management

Academic year, 2017-2019

The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer, Airport
Jaipur 302029, Rajasthan
Ph: 0141 3924700, Fax: 3924738
Website: **www.iihmr.edu.in**

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INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

TO WHOMSOEVER MAY CONCERN

This is to certify that Gangesh Gunjan, student of MBA Hospital & Health Management from The IIHMR University, Jaipur has undergone Dissertation training at Department of Women & Child Development Bijapur, Chhattisgarh from 11th February to 11th May'19.

The Candidate has successfully carried out the study assigned to him "Effect of services at Nutritional Rehabilitation Centers (NRC) on children with Severe Acute Malnutrition (SAM) in Bijapur district of Chhattisgarh" during his dissertation and his approach to the study has been sincere, scientific and analytical.

The Dissertation is for fulfillment of the course requirements.

I wish him all success in all his future endeavors.

Dr. P.R. Sodani
(Dean & Guide)
Pro-president
The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Near Sanganer Airport, Jaipur- 302029, Rajasthan, India.
Ph.: 0141- 3924700, 2791431- 32, Fax: 0141 3924738, E-mail: iihmr@iihmr.edu.in, Web.: www.iihmr.edu.in

Department of Women and Child Development
Bijapur, Chhattisgarh

Certificate of completion of dissertation

This certificate is awarded to

Dr. Gangesh Gunjan

In recognition of having successfully completed his dissertation in the department of

Women and Child Development

And has successfully completed his project on

Effect of services at Nutritional Rehabilitation Centers (NRCs) on children with Severe Acute Malnutrition in Bijapur district of Chhattisgarh

Date – 11th February 2019 to 11th May 2019

Organization – TINI (The India Nutrition Initiative), TATA TRUSTS

He comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning

We wish him all the best for future endeavors

District Program Officer
Department of Women and Child Development
District – Bijapur, Chhattisgarh

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **Effect of services at Nutritional Rehabilitation Centers (NRC) on children with Severe Acute Malnutrition(SAM) In Bijapur district of Chhattisgarh** submitted by **Dr. Gangesh Gunjan** Enrolment No-**IIHMR-U/01/2017-19/0564** under the supervision of Dr.P.R. Sodani, Pro President, The IIHMR University, Jaipur for award of MBA Hospital and Health Management of the University carried out during the period from February 11, 2019 to May 11, 2019 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Signature

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Dr. Gangesh Gunjan

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INTRODUCTION

The most extreme and visible form of under-nutrition is severe acute malnutrition. It leads a child to become frail and skeletal which requires immediate intervention. The children who come in the category of severe acute malnutrition have very low weight for their height and it is also characterised by severe wasting of muscles. Severe acute malnutrition is one of the major causes of death among the children below 5 years of age. According to a study report, children with severe acute malnutrition are nine times more likely to die than well-nourished children. The deaths occurring due to severe acute malnourishment are the direct result of malnutrition. Too much burden of cases with severe acute malnutrition results in significant barriers to sustainable development in developing nations. To bring the children with severe acute malnutrition back to their healthy nutritional status, they require a proper medical and nutritional intervention. This is generally done at NRCs (Nutritional Rehabilitation Centres). Desired nutritional and medical intervention like appropriate antibiotics, deworming tablets, iron supplementation, and micronutrients are provided to the children at NRCs. It is the responsibility of frontline health workers like Anganwadi workers (AWW), ASHAs and ANMs to identify and recognize severely malnourished children in their localities and bring them to nutritional rehabilitation centres for desired intervention. The children are admitted and given nutritional supplements for a minimum period of 14 days (02 weeks) using therapeutic feeding diets i.e. F-75, F-100 and lactose free diet. F-75 and F-100 are the standard recipes, the formula of which has been guided by WHO. These therapeutic diets are prepared using locally available foodstuff. NRC staffs like Feeding Demonstrators and cooks supervise the feeding of the children admitted at NRCs. The required medical intervention to the children is provided by the doctor in charge and the nurses at the nutritional rehabilitation centres. The other important service at NRC is to monitor the anthropometric indicators such as weight, height, and mid upper arm circumference (MUAC)] through validated equipments on daily basis to observe the effect of intervention given to the children on their health status.

This study will help in understanding the effect of medical and nutritional intervention on the children suffering with severe acute malnutrition in Bijapur district of Chhattisgarh.

BACKGROUND

Bijapur is the southernmost district of Chhattisgarh that comes under Bastar region. It is a Left Wing Extremist district with frequent violent activities by Naxalite groups. It shares its western border with Maharashtra and southern border with Telangana. Seasonal migration is also very common in Bijapur. So, it becomes very difficult to track and keep the records of every single child. As per the NFHS 4 data, around 27% children out of 27,777 children under the age of five years are wasted in Bijapur. Around 2000 children below five years of age come under the category of severe acute malnutrition. One of the largest contributors in under-5 child mortality in the district is severe acute malnutrition. To address this situation, there are four NRCs (Nutritional Rehabilitation Centres) in Bijapur district with 10 beds in each of them. Although there are significant number of children with severe acute malnutrition in the district, the bed occupancy in all the four NRCs remain alarmingly low. There could be multiple reasons behind this but what matters more is the affect of services on those children who receive the required interventions at these centres. Education is very poor as an indicator in Bijapur district. Only 40% of the total population are literate. Food practices by the community in Bijapur are such that it is beyond imagination to treat severely malnourished children without giving medical intervention to them. So, it becomes very important for such children to receive the necessary services at NRCs. The decision has to be taken by the parents but the negative attitude of the parents in spite of getting incentives keeps their children away from getting the required intervention. As a result, the total number of children with severe acute malnutrition keeps on increasing in the district. Even though there is a huge increase in the number of children with severe acute malnutrition in Bijapur, the bed occupancy in all the four NRCs of the district has been very low so far. Compared with previous financial year, the bed occupancy of the NRCs has slightly increased this year. This could be probably because of increase in the awareness of the people in Bijapur or the improved services of the centres that played an important role to pull the population receive its services. The timing of this study is notable for a setting like Bijapur district of Chhattisgarh because this was the time when State had freshly elected their new government and at the same time, the people were ready to elect their new government at the Centre. Since, Bijapur is a Left Wing Extremist (LWE) district, most of the decisions taken by the people of Bijapur both at household and community level are influenced by some external factors also.

RATIONALE

Looking at the burden of malnutrition in Bijapur district of Chhattisgarh and in India as a whole, it has become very important to initiate the approach of intervention in such a way that it hits directly to the target. And the target is the reduction in the prevalence of children with SAM. A very important thing to notice towards achieving this specific target is that there is no other way except for giving medical intervention by the experts at nutritional rehabilitation centres (NRCs). But, most of the time the problem lies in the fact that these centres remain either completely or partially vacant. So, the findings of this study might be helpful in bringing the children to NRCs for the required intervention. Awareness and knowledge among the beneficiaries is equally important if the target of reducing the prevalence of children with severe acute malnutrition has to be achieved but what is more important is to make the service providers well prepared to deliver the services. Beneficiaries,often complain about the quality of services given at nutritional rehabilitation centres that the effect of services given to their children at these centres is not helpful for them. So, this study becomes very important in order to find out whether there is significant effect on the children with severe acute malnutrition who receive medical intervention at these centres. The findings of this result will provide an insight on the actual effect of interventions that are provided to the children with severe acute malnutrition. This could lead in a change towards the attitude among the parents of the affected children so that they willingly come to the nutritional rehabilitation centres with their affected children seeking services of these centres. The findings of this result might also be helpful for the frontline workers, also known as unsung warriors who constantly work on Behaviour Change Communication (BCC) and try their best to make the community aware about the various programmes run by the government and the services provided by them in their facilities for the benefits of the community. This study overall might be very crucial in achieving a vision that no child dies of malnutrition in a country like India where the production of feeds is more than enough for its own population.

REVIEW OF LITERATURE

GulrukhHashmi and S. Sathish Kumar in their study onEvaluation of the effects of nutritional intervention measures on admitted children in nutritional rehabilitation centre, Gulbarga, India in June 2014 mention that Children with severe acute malnutrition require immediate attention along with proper nutritional rehabilitation for which nutritional rehabilitation centres (NRC) has been established. Even with establishment of NRCs the proportion of severe acute malnutrition in community has not been reduced. Thus it is necessary to know the effect of nutritional interventions on children admitted to these centres.

According to a study done by the Department of Health and Family Welfare, Telangana in 2018 on rapid assessment of Nutritional Rehabilitation Centres in Telangana, acute malnutrition continues to be a major public health issue and development challenge in India. By referring to the WHO standards in stunting, underweight and wasting, in all the three categories, the severity of malnutrition is ranging between medium to very high (critical) in Telangana. To provide lifesaving care for vulnerable children with severe acute malnutrition, NRCs are a great support but it is very important to ensure that best practices are followed in these centres.

RESEARCH QUESTION

How do the services at NRCs affect in overall growth of the children with severe acute malnutrition?

OBJECTIVES

i. To evaluate the effect of services at NRCs in improving the nutritional status of children with SAM.

ii. To ascertain the awareness and knowledge amongst mothers of the admitted children regarding NRCs.

METHODOLOGY

This study was conducted between 11th February 2019 and 11th May 2019 in the entire NRCs of Bijapur district in Chhattisgarh. A total of 50 children between the age group of 0 to 60 months, who got admitted to four different NRCs in this time-period were observed during their stay at NRCs to analyze the effect of intervention given to them on selective anthropometric indicators. To select the samples for this study, children from different NRCs of Bijapur district, were included during the study period. The investigator visited all four NRCs of the district after every 07 days during the study period. When the sample size reached to a value of 50, the ongoing process of selecting the children for study was stopped.

Weight of the children with severe acute malnutrition was recorded both at the time of admission as well as at the time of discharge. The daily weight of admitted children was also recorded from the NRC registers. Apart from this, MUAC and the various grades of malnutrition at the time of admission as well as at the time of discharge were also recorded. The mothers of the admitted children were interviewed on their knowledge and awareness regarding various types of nutrients, various schemes of government, etc. with the help of a pre-designed structured interview schedule which was pretested before the start of study.

Selected Nutritional Rehabilitation Centre	Number of study subjects
District Hospital, Bijapur	20
CHC, Bhairamgarh	10
CHC, Bhopalpatnam	10
CHC, Usoor	10

Definition of Research Question–It has been observed that the bed occupancy of NRCs remain too low in spite of having a large number of children with severe acute malnutrition in Bijapur district of Chhattisgarh. So, is it the services at NRCs which is

not effective in bringing the children back to their healthy nutritional status or something else, is what this study tried to find out.

STUDY DESIGN

A qualitative observational study design was adopted for this study. It involved “going at NRCs and observing the records. Mothers of the admitted children were interviewed on their knowledge about health issues and services provided at NRCs.

SETTING

This study was done in four different NRCs of the district Bijapur, Chhattisgarh for a period of three months.

STUDY TOOL

A predesigned interview schedule was used as a tool apart from the daily records of growth monitoring devices on nutritional status of admitted children. This tool was undergone pretest before the start of this study.

INTERVIEW SCHEDULE

Socio-demographic details

1. Name	.....
2. Name of the admitted child	.....
3. Age/Sex	.....
4. Project (Block)	.....
5. Sector	.....
6. Village	.....
7. Anganwadi Center	.....
8. Religion	.....
9. Name of the tribe	.....

Knowledge and awareness

Feeding practices	Correct	Partially correct	Incorrect	Don't know
1. Various types of nutrients and their importance				
2. Preparation and use of ORS				
3. Importance of Zinc				
4. Clinical symptoms of Vitamin A deficiency				
5. Causes of malnutrition				
6. Types of feeds provided at NRC				
7. Composition of the feeds (F-75 & F-100)				
8. Lactose free diet (diarrhea cases)				
9. Time interval between feeds				

DURATION OF THE STUDY

03 months (1st Feb 2019 to 30th Apr 2019

SAMPLE SIZE

A total of 50 samples were selected for this study.

SAMPLING TECHNIQUE

50 samples from four different Nutritional Rehabilitation Centers (NRCs) were selected through convenient sampling technique.

DATA COLLECTION PROCEDURE

Primary data were collected through observation and interviewing the selected respondents with the help of a predesigned and pretested interview schedule.

DATA ANALYSIS PLAN

The data were compiled and stored on a pre-fabricated template of Excel sheet. It was further analyzed on Microsoft Excel.

ETHICAL CONSIDERATIONS

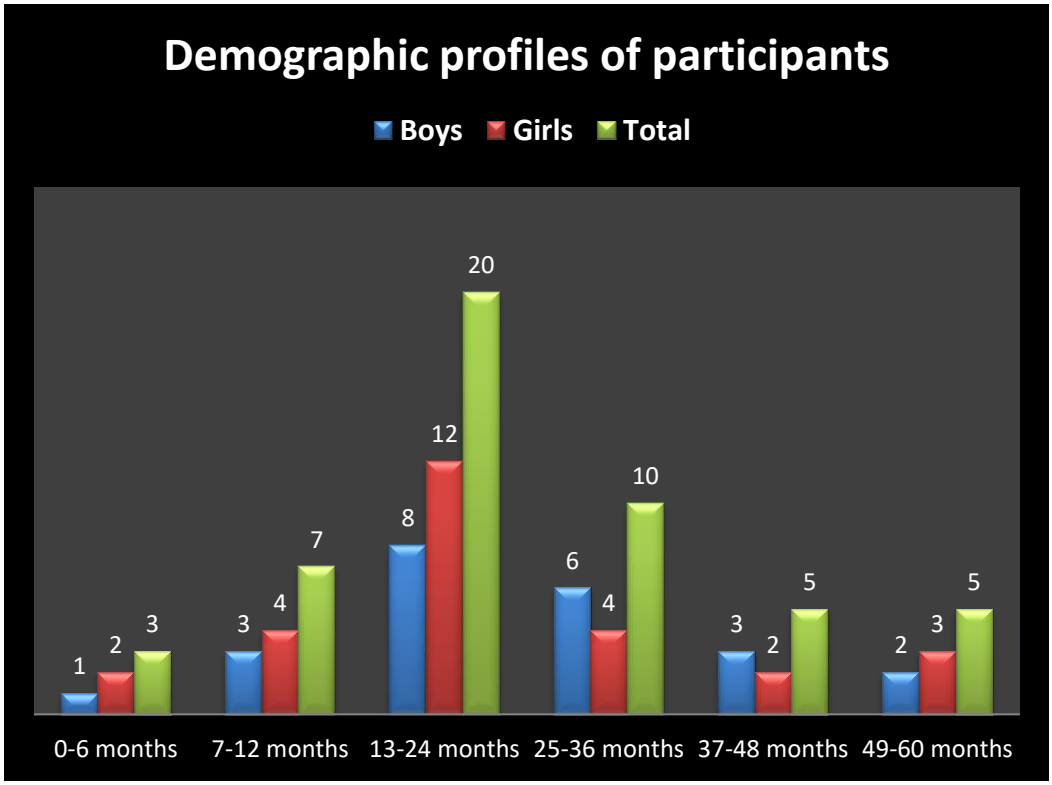
Ethical clearance for this study was obtained from the Department of Health & Family Welfare, Bijapur district. Data collection was done after seeking informed consent and explaining the purpose of the study to all the respondents.

RESULTS:

Socio-demographic profiles of participants

Age-group (months)	Bijapur Block	Bhairamgarh Block	Bhopalpatnam Block	Usoor Block	Boys	Girls	Total
0-6	3	0	0	0	1	2	**3**
7-12	4	3	0	0	3	4	**7**
13-24	14	3	2	1	8	12	**20**
25-36	5	2	2	1	6	4	**10**
37-48	3	1	1	0	3	2	**5**
49-60	2	1	1	1	2	3	**5**

Fig. 1 Socio-demographic profiles of participants



Weight analysis of the admitted children

Age grp. (months)	Mean weight at admission (overall) in Kg	Mean weight at admission (boys) in Kg	Mean weight at admission (girls) in Kg	Mean weight at discharge (overall) in Kg	Mean weight at discharge (boys) in Kg	Mean weight at discharge (girls) in Kg
0-6	2.78	1.45	3.00	3.28	1.60	3.56
7-12	4.84	4.82	4.86	5.42	5.17	5.58
13-24	6.38	6.58	6.21	7.02	7.14	6.89
25-36	7.15	6.92	7.49	7.90	7.67	8.26
37-48	9.55	9.47	9.77	10.36	10.18	10.87
49-60	10.83	11.00	10.75	11.32	11.15	11.24

Fig. 2 Weight analysis of the admitted children (0-6 months of age group)

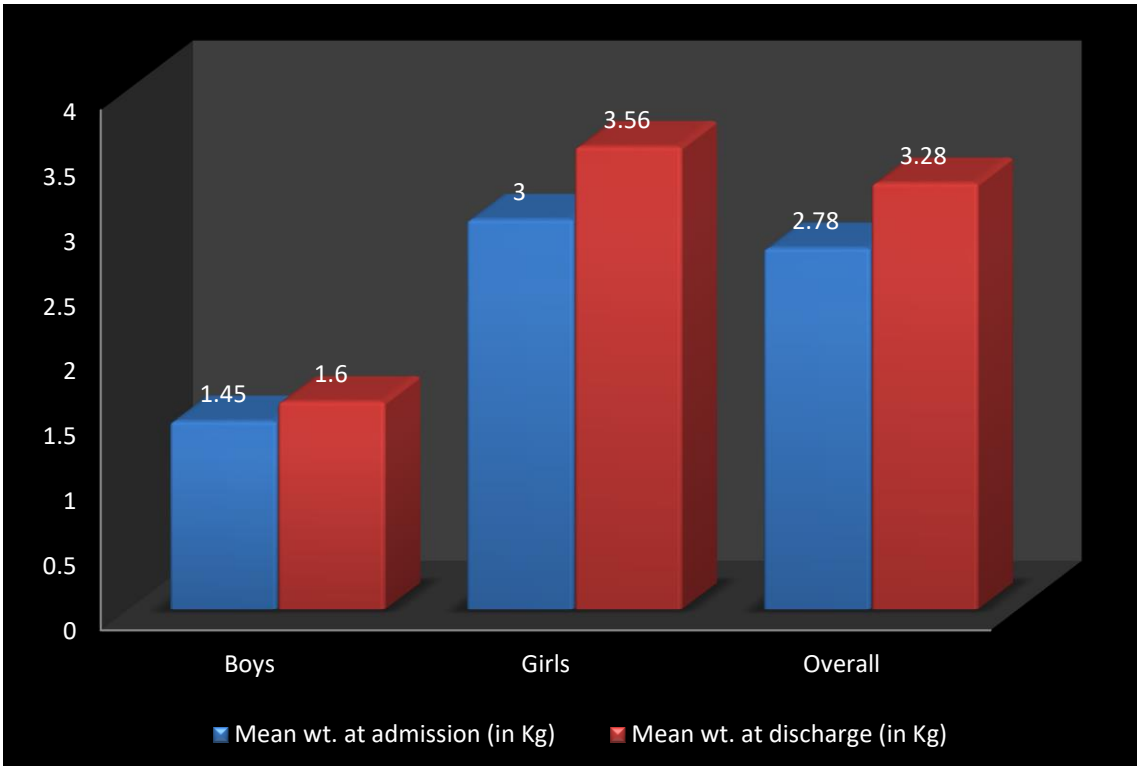


Fig. 3 Weight analysis of the admitted children (7-12 months of age group)

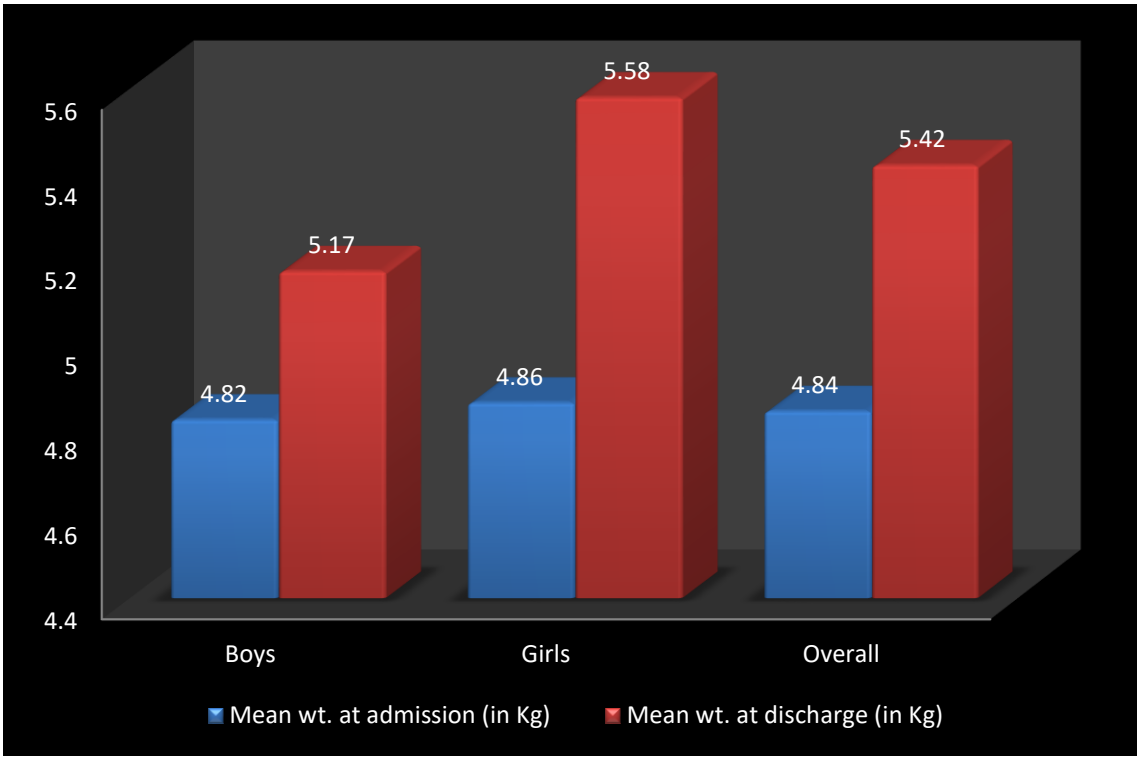


Fig. 4 Weight analysis of the admitted children (13-24 months of age group)

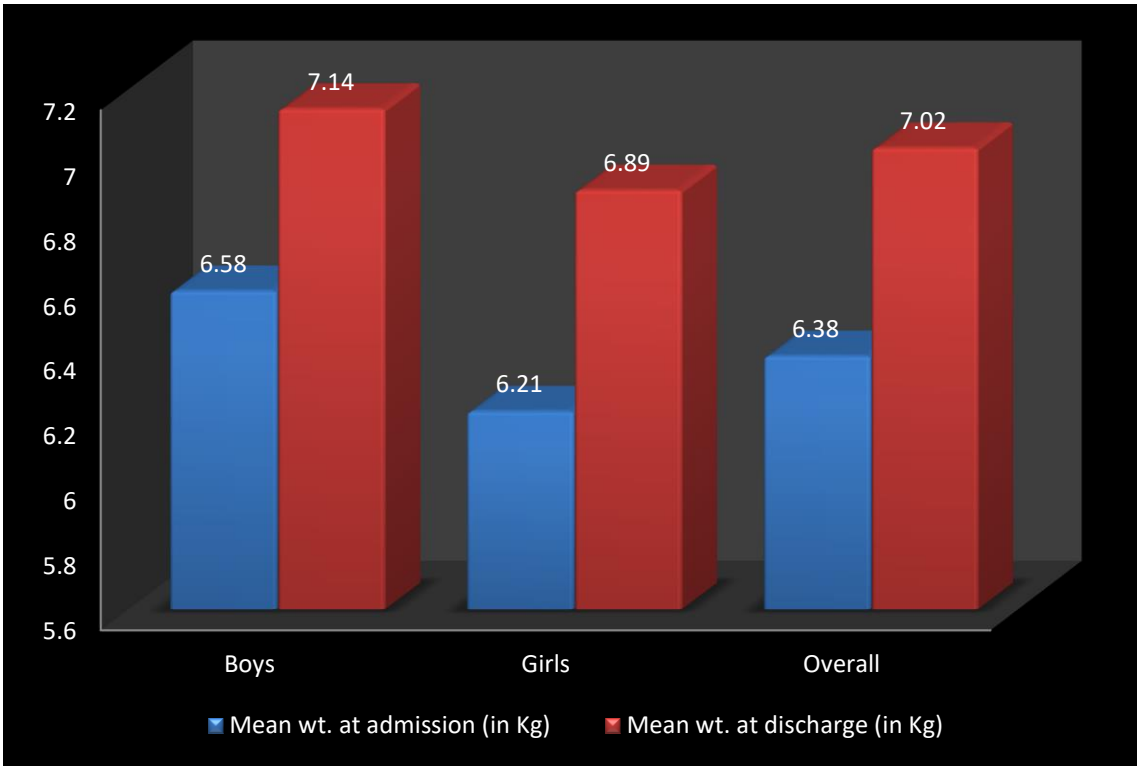


Fig. 5 Weight analysis of the admitted children (25-36 months of age group)

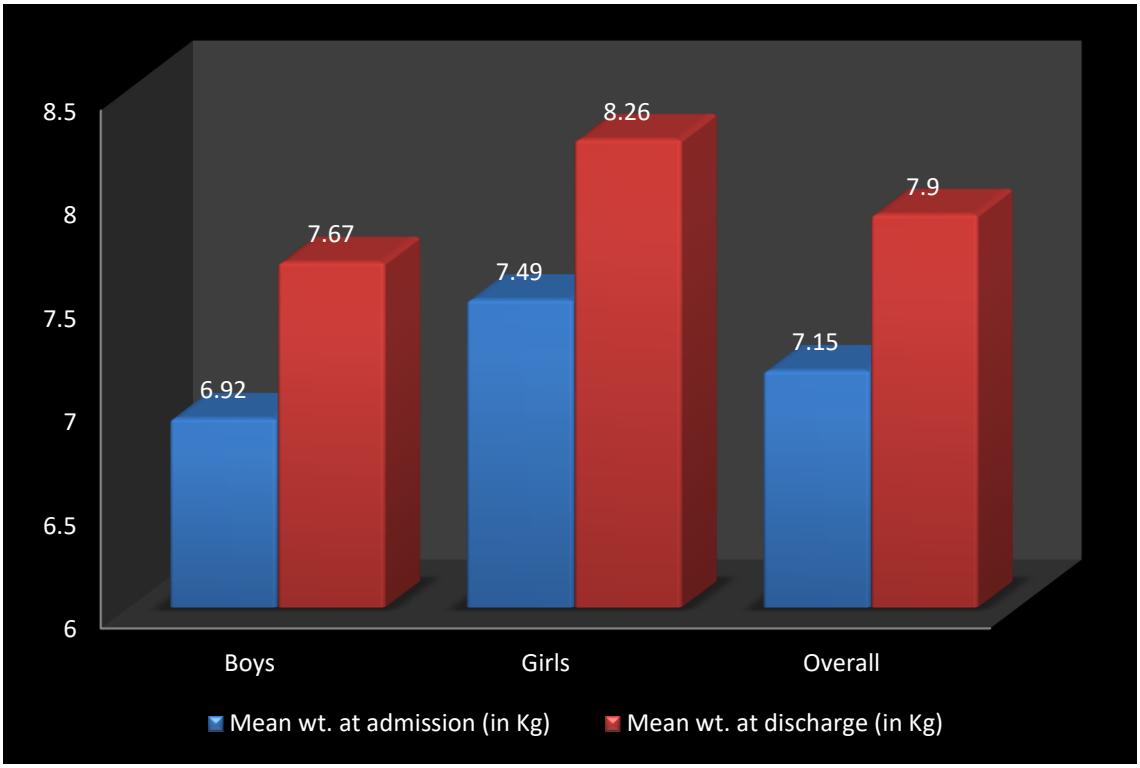


Fig. 6 Weight analysis of the admitted children (37-48 months of age group)

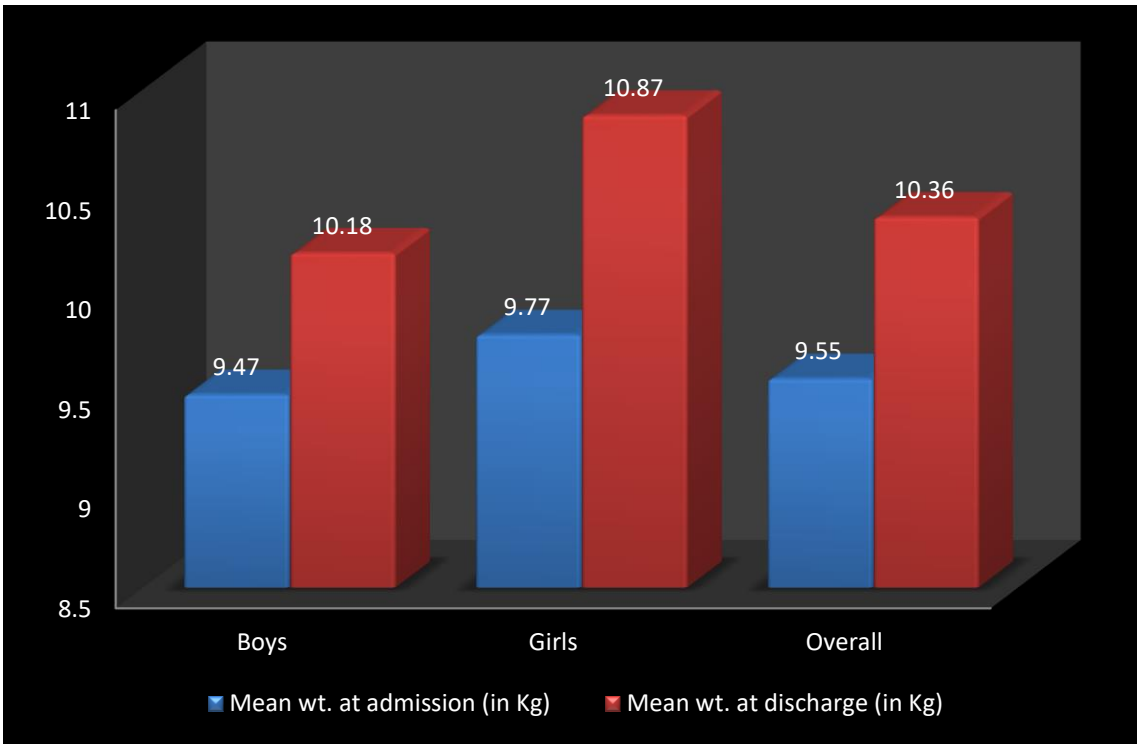
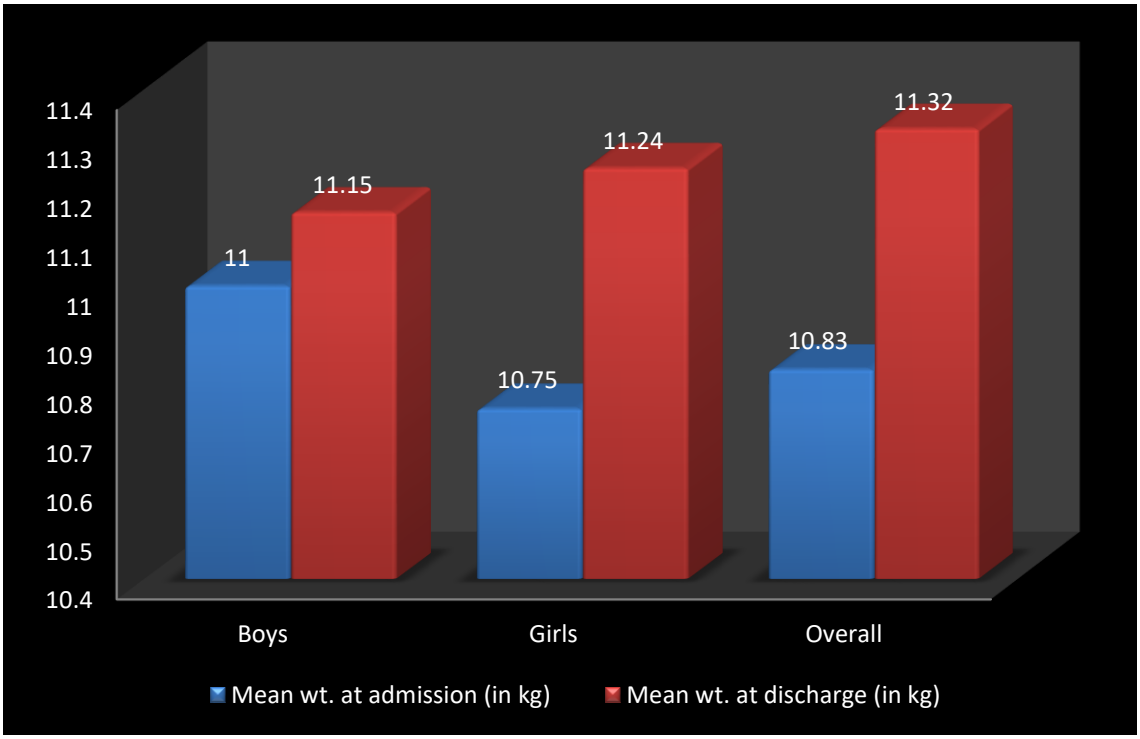


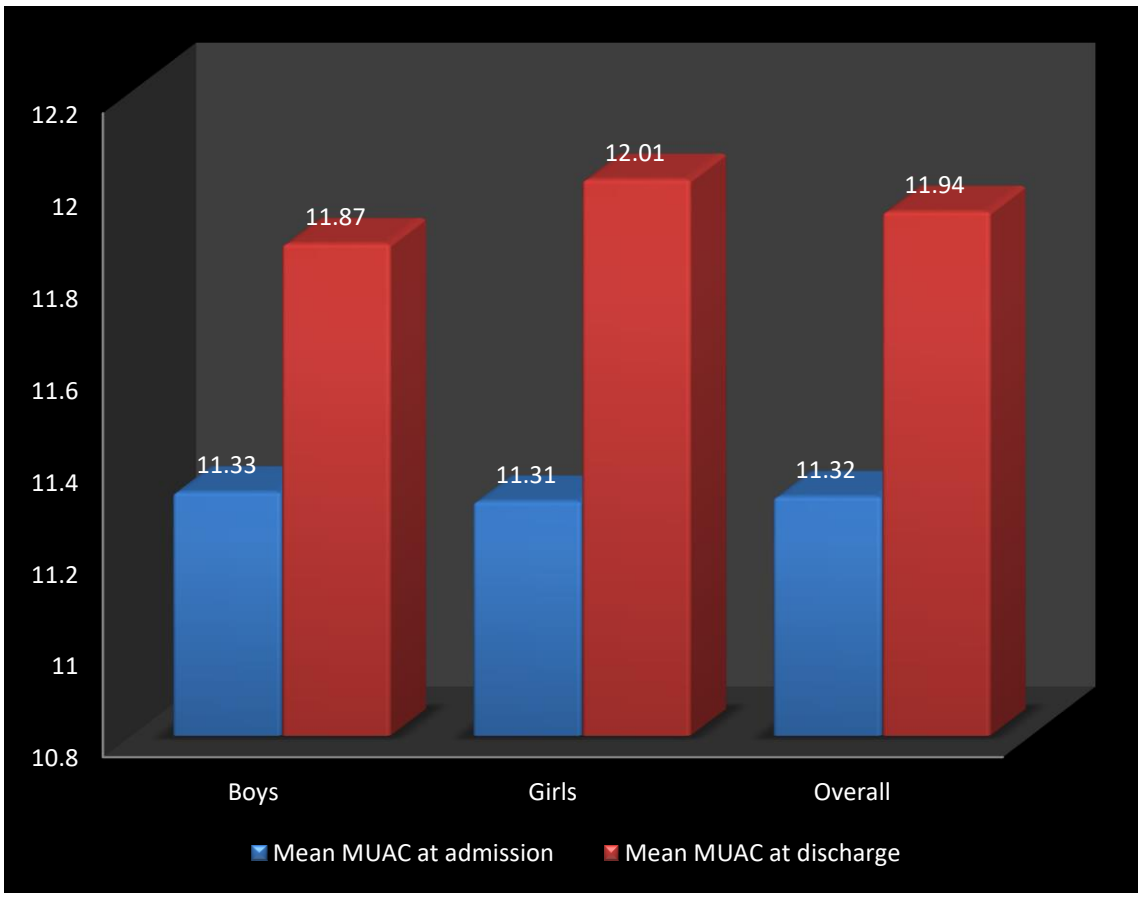
Fig. 7 Weight analysis of the admitted children (49-60 months of age group)



Analysis of MUAC

Mean MUAC at admission (overall) cm	Mean MUAC at discharge (overall) cm	Mean MUAC at admission (boys) cm	Mean MUAC at discharge (boys) cm	Mean MUAC at admission (girls) cm	Mean MUAC at discharge (girls) cm
11.32	11.94	11.33	11.87	11.31	12.01

Fig. 8 MUAC analysis of the admitted children



Awareness and knowledge among the mothers of children admitted at NRCs

Out of 50 respondent mothers, only 36% of the mothers were aware about the existence of Nutritional Rehabilitation Centres in the district. Most of the respondents did not know about the actual name of the centre. Only 8% of the respondents had some knowledge about the various types of nutrients and their importance, while only 2% of them correctly knew about the actual method of preparation and use of Oral Rehydration Solution (ORS). 24% of the respondent mothers had inadequate knowledge about the use of ORS and Zinc supplements. Only 6% of the respondent mothers had some knowledge about the clinical symptoms of vitamin A deficiency.

Fig. 9 Awareness of respondents regarding the existence of NRCs

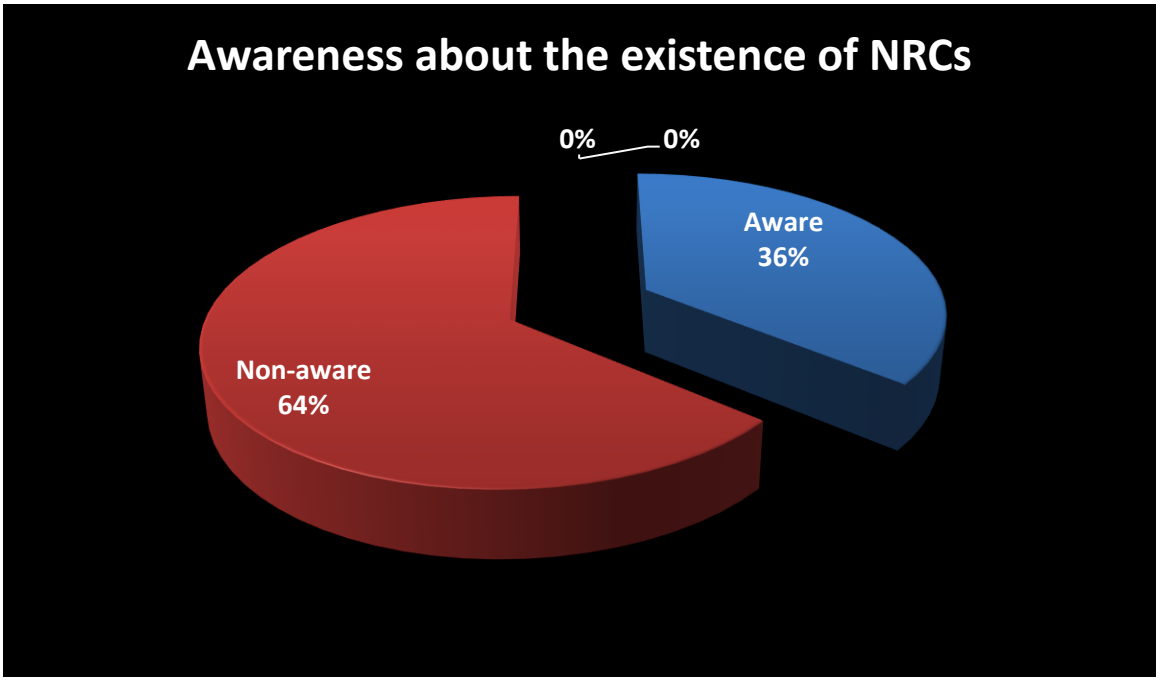


Fig. 10 Knowledge regarding various types of nutrients

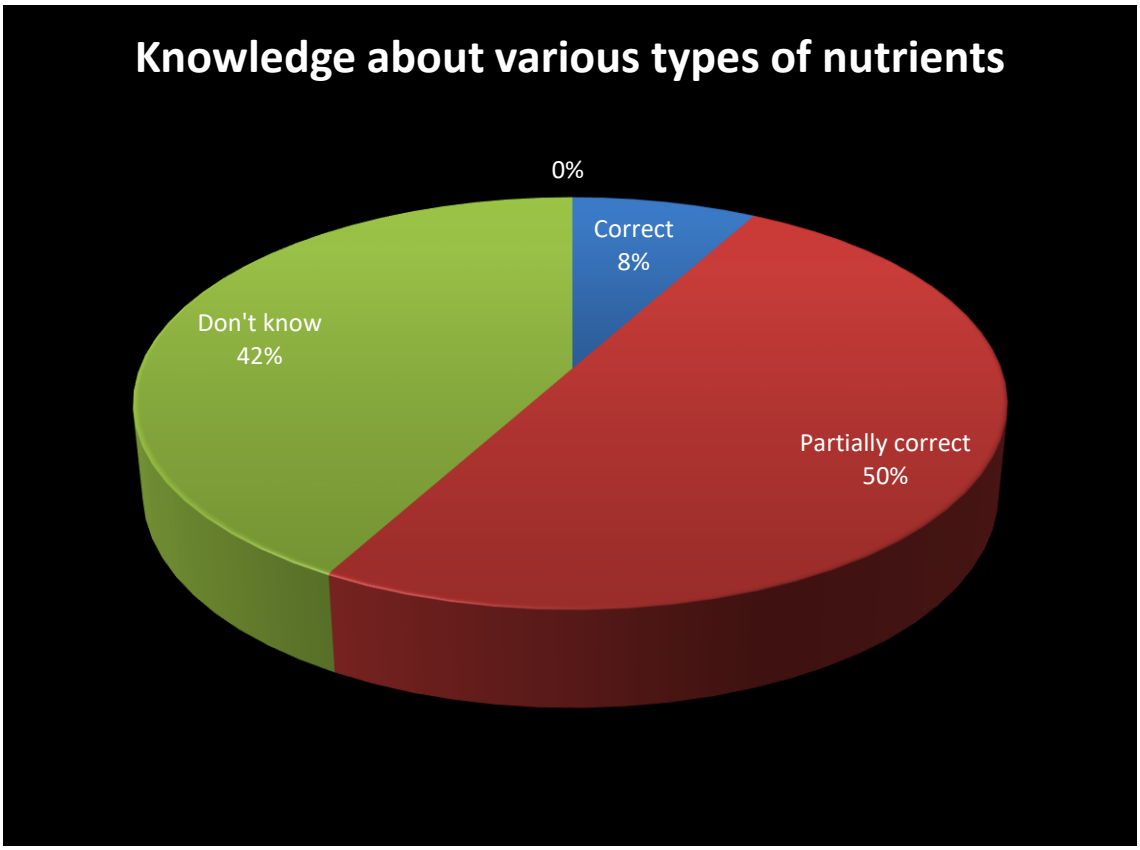
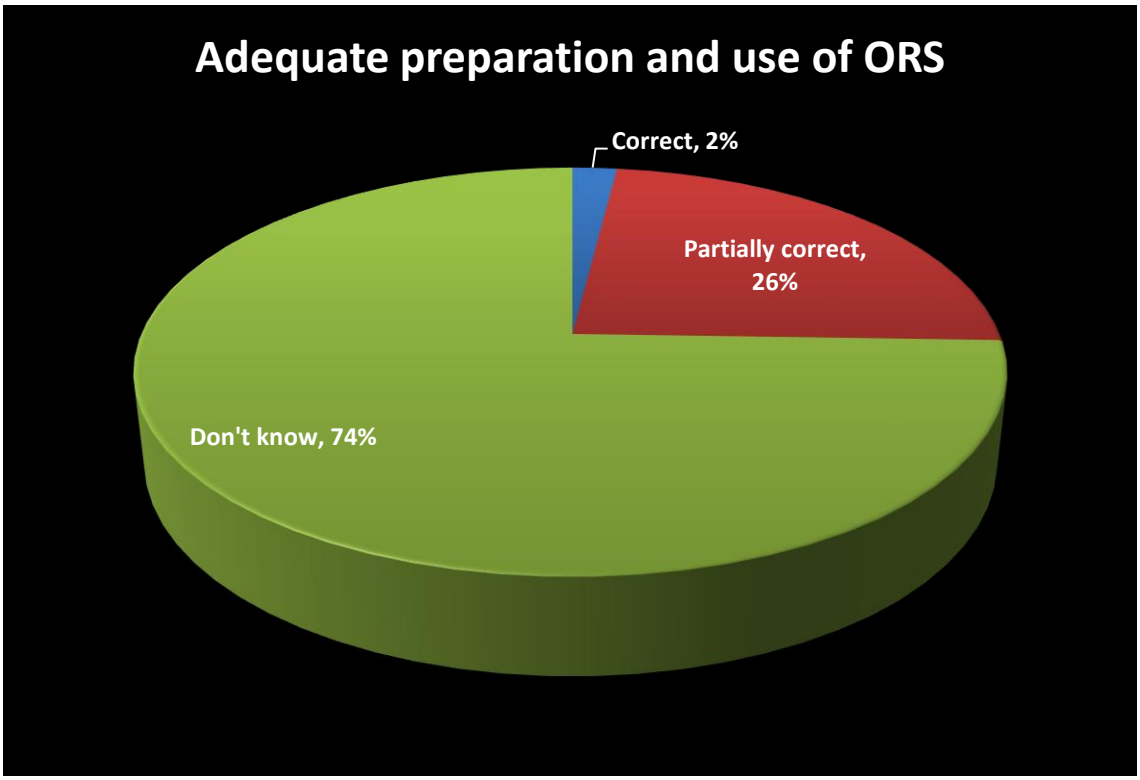


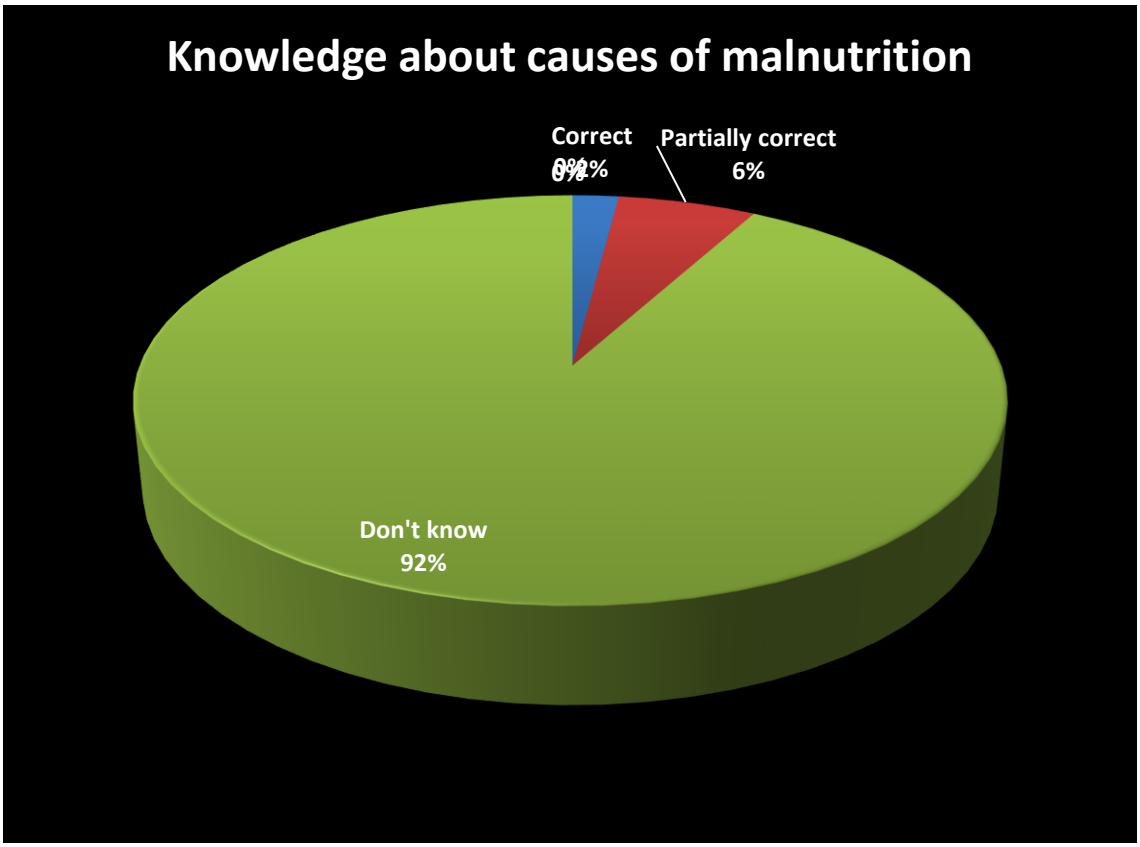
Fig. 11 Adequate preparation and use of ORS



Knowledge of respondent mothers regarding the causes of malnutrition

A very significant number of respondent mothers, which is 92% of them, had no knowledge about the causes of malnutrition. A very low number of respondent mothers (6%) had partial knowledge about the various types of nutrients. About 4% of the respondent mothers said that inadequate diet and poor quality of food are the reasons behind malnutrition.

Fig. 12 Knowledge about causes of malnutrition



CONCLUSION

The findings of this study clearly show that there is slight improvement in the nutritional status of children with severe acute malnutrition who were admitted to nutritional rehabilitation centres. This improvement was brought by medical and nutritional intervention on the children with SAM in just a few days. So, the affect of NRCs on children with severe acute malnutrition can be said as positive. It is already a well known fact that severe acute malnutrition is the most dangerous form of under-nutrition because there are high chances of mortality among the cases with SAM. So, in order to bring the affected children back to their normal nutritional status, an appropriate intervention at the level of nutritional rehabilitation centres is an immediate requirement.

Knowledge, awareness and attitude of the beneficiaries also play an important role in reducing the prevalence of severe acute malnutrition. The attitude of beneficiaries towards receiving the services at NRCs has been negative in Bijapur district. So, community-based model approach needs to be adopted such a situation. In this approach the services that are provided at NRCs can be replicated at the level of Anganwadi Centers. These services can be delivered by frontline healyh workers like Anganwadi Workers, ASHAs and ANMs at AWC only. But, to have this possible, frequent training of frontline health workers is required to increase their capacity. If possible, joint training of these frontline health workers with proper supervision would be a great idea.

Focussed group discussion should be carried out among the community people so that they get appropriate information about the various schemes of governments. It will also help in increasing their knowledge and awareness about various health issues.

After the intervention that are given at nutritional rehabilitation centres to the children with severe acute malnutrition, their nutritional status gets improved but the real problem lies in the fact that this improvement does not get sustained. So, to get a sustainable result in improving the healthy nutritional status of children with severe acute malnutrition, regular home visits for follow-up by the frontline health workers should be encouraged.

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