

**Summer Training at  
Jatan Sansthan, Udaipur**

**Nutritional Status of Children and Factors Affecting**

**By  
Niharika Jain**

**Under the guidance of  
Dr. Samer Phadnis**

**MBA Hospital & Health Management  
2017-2019**

  
*Institute of Health Management Research*  
**The IIHMR University, Jaipur**  
**2018**

**CERTIFICATE**

This is to certify that **Niharika Jain** has undergone summer training in Jatan Sansthan, Udaipur from 2<sup>nd</sup> April 2018 to 2<sup>nd</sup> June 2018.

The candidate herself completed the project assigned to her during summer training. Her approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in Hospital and Health Management.

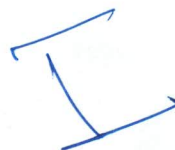
I wish her success in all her future endeavors.



**Dr. Sameer Phadnis**

**Associate Professor**

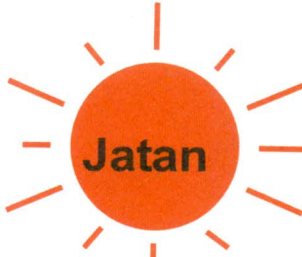
**IIHMR University, Jaipur**



  
for Col. (Dr.) Ashok Kaushik 25.6.18.

**Dean (Academic & Student Affairs)**

**IIHMR University, Jaipur**



Working with young people

5, Tirupati Vihar, Near Celebration Mall,  
Bhuwana, Udaipur 313001 Rajasthan, INDIA  
Ph: +91 9414162192  
Email: jatansansthan@rediffmail.com, www.jatansansthan.org

Sr.No. 37/Internship/IIHMR/2018-19/25

June 01, 2018

### To whomsoever it may concern

This is to be certified that Ms. Niharika Jain D/o Mr. Praveen Kumar Jain is a student of IIHMR Jaipur pursuing MBA in Hospital and Health Management. She completed her internship to understand the "Nutritional Status of Children and the Factors affecting it" in Jatan Sansthan for the period from 02/04/2018 to 02/06/2018:

This certificate provided to her on successful completion of her internship for above mentioned period.

We wish her a bright future.

(Dr. Kailash Brijwasi)  
Executive Director

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I would also thank my mentor Dr. Sameer Phadnis for the guidance and support provided by him which helped in the successful completion of the project.

Finally I would like thank my colleagues and other people who have helped me in completion of the project within limited time frame.

## List of abbreviations

|        |                                   |
|--------|-----------------------------------|
| MTC    | Malnutrition treatment centre     |
| DH     | District hospital                 |
| MUAC   | Mid-upper arm circumference       |
| WHO    | World health organisation         |
| UNICEF | United nations children fund      |
| SAM    | Severely acute malnutrition       |
| NFHS   | National family health survey     |
| AWW    | Anganwadi worker                  |
| ASHA   | Accredited social health activist |
| SC     | Schedule caste                    |
| ST     | Schedule tribe                    |
| IMR    | Infant mortality rate             |



## About the organisation

**JATAN SANSTHAN** is a grassroots not-for-profit organization working with rural and resource poor communities the state of Rajasthan, India in the districts of Rajsamand, Udaipur and Bhilwada. Jatan has its presence in more than 250 villages across these areas, which have traditionally had poor social indicators.

Since its establishment in 2001, Jatan has designed and implemented various initiatives geared towards improving social and demographic indicators by working with youth groups. In the last decade, Jatan has worked on programs related to children, young people and women in the areas of health and education.

### **Vision**

Jatan envisions a society where people live a healthy, safe and empowered life, free from all forms of discrimination.

### **Mission**

- Jatan's mission is to empower communities by giving them spaces to freely express their concerns.
- Jatan aims to provide information that will enable communities to seek social and scientific solutions, so that communities can become their own agents of change.

- Jatan encourages active participation of youth in decision making, policy formulation and advocacy across various forums at national and international level.



Khushi project is the initiation for the development of children by Jatan sansthan, ICDS and Hindustan zinc in Rajsamand, Railmagra and Khamnor blocks of Rajsamand district to improve the anganwadi centres and also to make model anganwadis with extra facilities. In total 504 anganwadis have been covered in this project.

OBJECTIVES:

- Availability of proper and sufficient food at anganwadi centres for the children.
- Proper education and care taken by AWW.
- Health and hygiene maintenance of the children.
- Proper and timely immunisation of the children.
- Availability of referral services at anganwadi centres and raising awareness among community related to malnutrition.
- To enhance the community participation for making the anganwadi centres more effective.

## INTRODUCTION AND BACKGROUND

Undernutrition is inadequate consumption, poor absorption or excessive loss of nutrients which results in stunting of physical, psychosocial and cognitive growth of child that makes him/her susceptible to illness. It can be of three types:

- Wasting- weight for height ratio
- Stunting- height for age ratio
- Underweight – weight for age ratio

Undernutrition is one of the biggest cause of under-five mortality and nearly half of deaths are attributed to this reason in India , it ranked second in child underweight out of nineteen countries and hence India lags in reducing its IMR which is 34 per 1000 live births according to SRS(sample registration system).

According to NFHS-4 – 93.4 lakh children are having severe acute malnutrition(SAM) and out these 10% are with medical complications who require admission to MTC. According to annual health survey Rajasthan has topped the list in highest number of underweight children born and one of the basic reason behind it is maternal malnutrition but to save the life of the children government has initiated this facility. Also Rajasthan is one of those states of India where significant number of tribal people are present who are more prone to malnutrition.

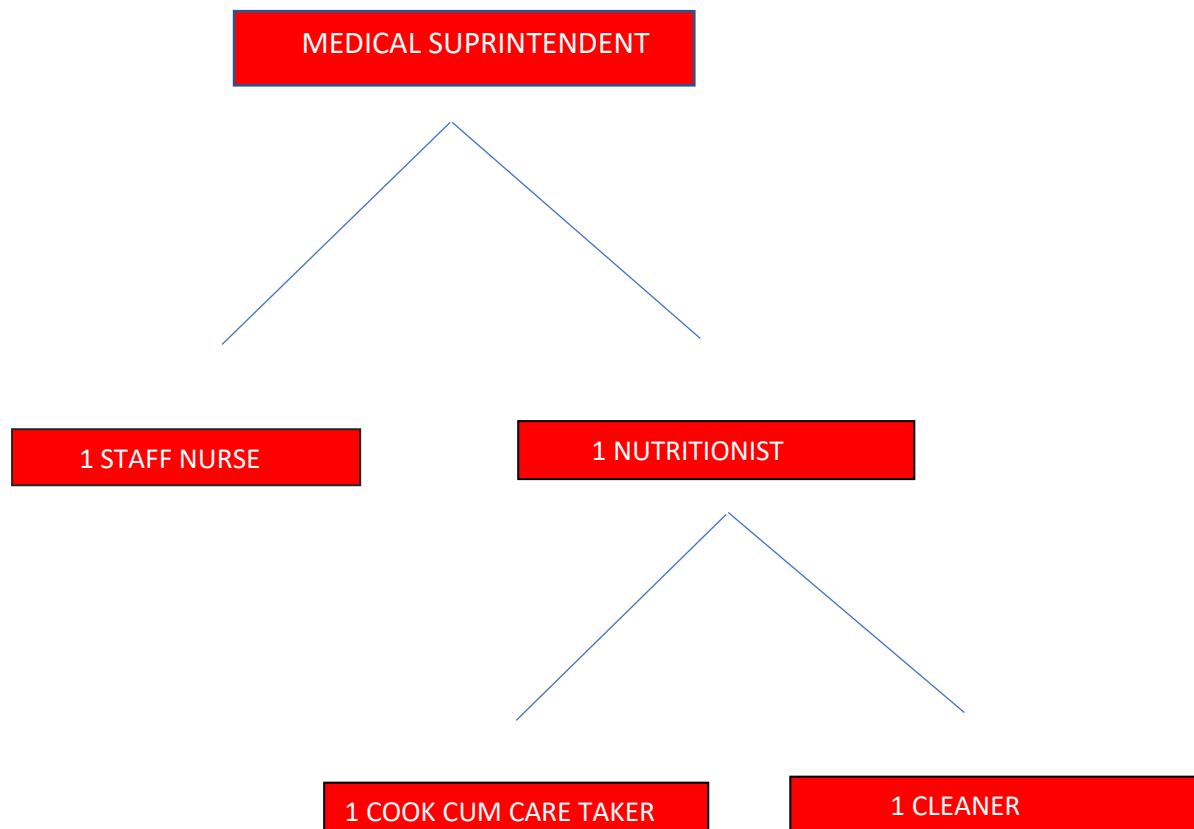
The treatment offered by these centres are based on WHO guidelines. In December 2000, the Rajasthan department of women and child development and UNICEF jointly started anchal se angan tak(ASAT) strategy in seven districts Rajsamand, Baran, Jhalawar, Alwar, Tonk, Jodhpur, in 2005 special plan for management of SAM was initiated under this strategy in 14 blocks of seven districts that is Malnutrition Treatment Centre as a pilot initiative.

In Rajasthan total 88 malnutrition treatment centres were present in the year 2014-15. The remotest part of southern Rajasthan such as Udaipur, Banswara, Rajsamand are characterised by a predominance of tribal groups and hence high levels of undernutrition among children in this region. Severe acute malnutrition is defined as very low weight for height (Z-score below -3SD), mid-upper arm circumference <115mm, or presence of bilateral oedema.

MTC is centre where SAM children are admitted and taken care of with the provision of following services:

- 24-hour care and monitoring of a child
- Treatment of complications
- Therapeutic feeding
- Counselling of parents regarding feeding practice and hygiene of child.
- Follow up of the children discharged from the MTC.

#### **Organogram of Malnutrition Treatment Centre**



## **LITERATURE REVIEW**

As it can be observed from the results that recovery rate of the children admitted to MTC is 42.4 percent and death rate is 0 percent so it can be inferred that MTC acts as a life saving tool for SAM children. Also it was noted that follow-up rate was poor and there is no relation between follow-up rate and weight gain after discharge from MTC, hence it can be inferred that MTC helps in immediate healing of SAM children but not helpful in long term cure of malnutrition.

From the nutritional rehabilitation centre in Uttar Pradesh , 53.2 percent children were discharged non-recovered( i.e. weight gain  $<15\%$  ) , 1.2 percent children died, 46.8 percent children were discharged after recovery and average length of stay is 13.2 days which is meeting the criteria i.e.  $> 7$  days, so it can be concluded that Nutrition Rehabilitation Centre plays an important role in saving the life SAM children however protocols and the therapeutic food currently used needs to be improved to reach the 100 percent recovery rate at discharge.

**Title:**

- To assess the performance of malnutrition treatment centre (MTC) of Rajsamand situated in DH of Rajsamand.

**Research question:**

- What is the effectiveness of Malnutrition Treatment Centre with respect to its output indicator?

**Rationale:**

- Prevalence of SAM in Rajsamand is high as it is evident from the data of NFHS-4 that is 11.8%.
- This assessment will help the cluster coordinator and block coordinator to focus on the gap due to which there is high prevalence of malnourishment.

**Objective:**

1.To assess the performance of MTC on the basis of:

- a. Length of stay at MTC.
- b. Percent weight gain.
- c. Outcome

2.To review the cases who are discharged from MTC in terms of MUAC, follow-ups after discharge and present feeding habits.

**Methodology:**

Study site- Rajsamand district

- Secondary data was collected from Malnutrition treatment centre of last two years ( 2016 to 2018) and consent was taken from the organisation.
- Data was entered in MS excel.

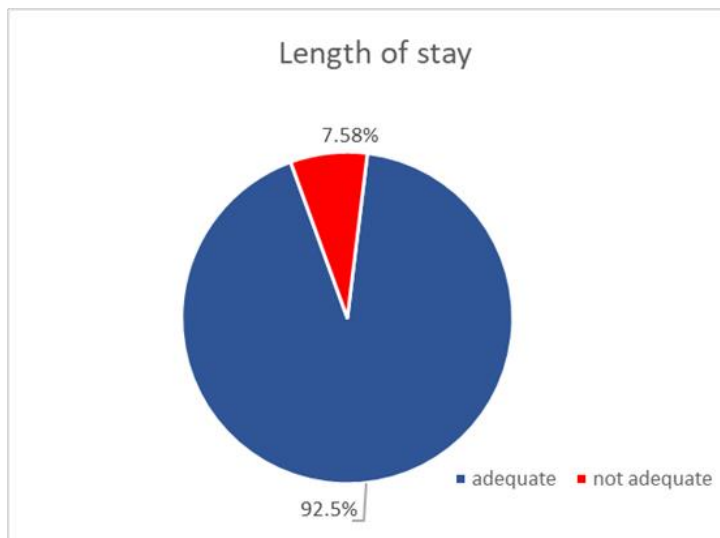
- Data analysis was done using SPSS.
- Following things were analysed accordingly with operational guidelines for facility based management of children with severe acute malnutrition(SAM), Ministry of health and family welfare, government of India, 2011.
  - a) Length of stay (adequate or not adequate)
  - b) Outcome(cured, defaulter, non-responders, referred to higher centres)
  - c) Average weight gain(8g/kg/day)
  - d) Referred by (ASHA, AWW, own, others)
  - e) Caste of the children(SC, ST, OBC , GEN)
  - f) Complication at time of admission (fever, anaemic, anorexia, vomiting)
  - g) Cases of Rajsamand block who were once admitted to MTC in last five months were reviewed (convenience sampling) with respect to their current nutritional status(measured using MUAC tape), follow-ups done and current feeding habit.
- Analysed data was interpreted and conclusions were drawn.

|                                                   |
|---------------------------------------------------|
| ACCEPTABLE LEVEL OF PERFORMANCE INDICATORS OF MTC |
|---------------------------------------------------|

| S.No | Elements                     | Standard                                                         | Remarks                                                                                                                      |
|------|------------------------------|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 1    | Recovery Rate (at follow up) | > 75% beneficiaries recovered                                    | Percentage of beneficiaries that have reached the discharge criteria (target weight gain of 15%) within the follow up period |
| 2    | Death Rate                   | < 5% beneficiaries died                                          | Percentage of children who died within the reporting period                                                                  |
| 3    | Defaulter Rate               | < 15% beneficiaries have defaulted                               | Percentage of children that have not attended the CMTC for 3 consecutive days                                                |
| 4    | Average Weight Gain          | ≥ 8gm is the average weight gain of all the beneficiaries        | Sum of weight gains (g/kg/day) of all the children discharge during the month                                                |
| 5    | Non Respondent Rate          | < 10 % beneficiaries failed to respond to treatment              | Percentage of patient who fails to respond to treatment                                                                      |
| 6    | Length of Stay               | 1-4 week is the average length of stay for all the beneficiaries | Total inpatient day of care i.e. sum of each daily inpatient census for the time period examined.                            |

## Findings:

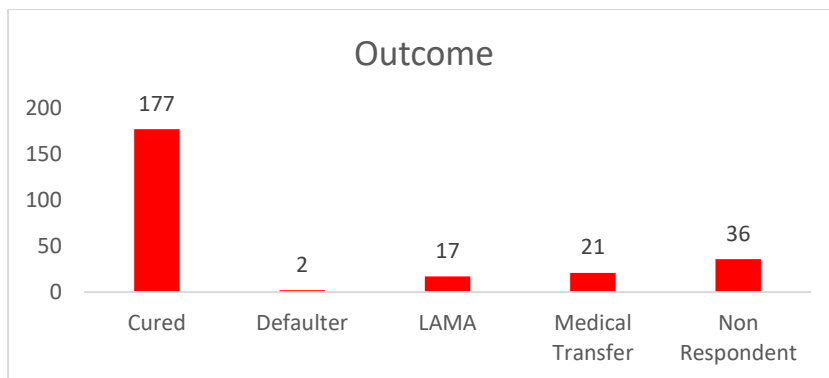
### a. Length of stay at MTC:



As length of stay at MTC 1-4 weeks is adequate, <1 and >6 weeks is not adequate hence performance of MTC will depend on the length of stay of children and as seen from the above data length of stay of 92.5 percent children is adequate.

| Length of stay | Frequency | Percentage |
|----------------|-----------|------------|
| Adequate       | 234       | 92.5       |
| Not adequate   | 19        | 7.5        |
| Total          | 253       | 100        |

## b. Outcome:



As it can be observed from the results that 177 out of 253 i.e. 70 percent were discharged after recovery hence not meeting the standards which is more than 75 percent therefore check required on factors affecting it.

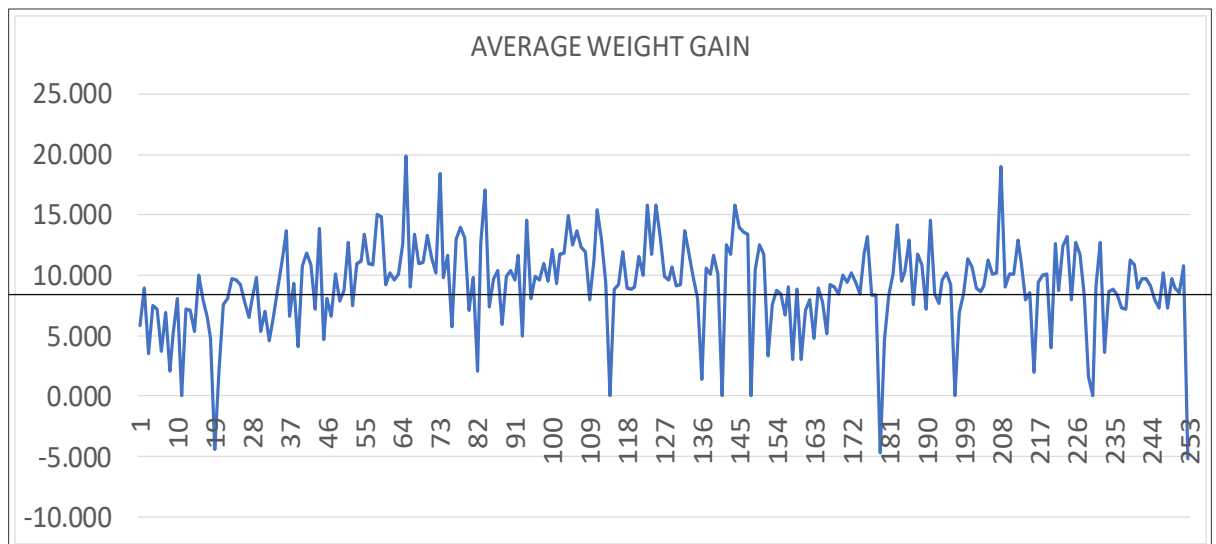
### Correlation between length of stay and outcome:

| Outcome          | Frequency | Percentage |
|------------------|-----------|------------|
| Cured            | 177       | 70         |
| Defaulter        | 2         | 0.8        |
| LAMA             | 17        | 6.7        |
| Medical transfer | 21        | 8.3        |
| Non-respondent   | 36        | 14.2       |

Chi-squared test was applied for testing the null hypothesis which states that there is no relationship between length of stay at MTC and outcome.

After applying the Chi-squared test it was found that p value  $< 0.05$  which indicate that we cannot accept null hypothesis and hence there is a relationship between length of stay at MTC and outcome. The children who stays for longer time has more chances of getting cured of malnourishment than the children who stayed for non-adequate length of stay.

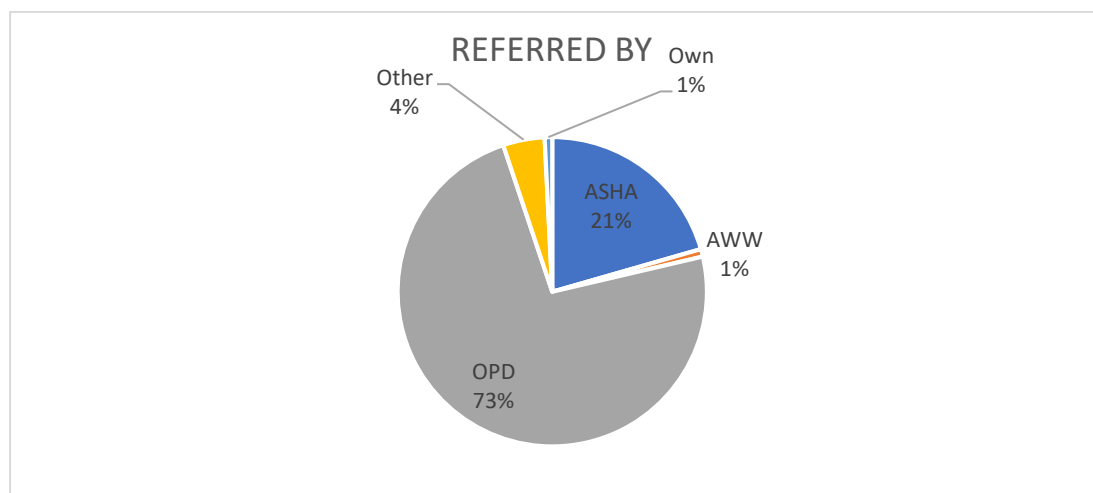
### C. Average weight gain-



Average weight gain at MTC is 9.20 g/kg/day which is meeting the standards that is 8g/k/day and hence this factor is appropriate.

### Other findings:

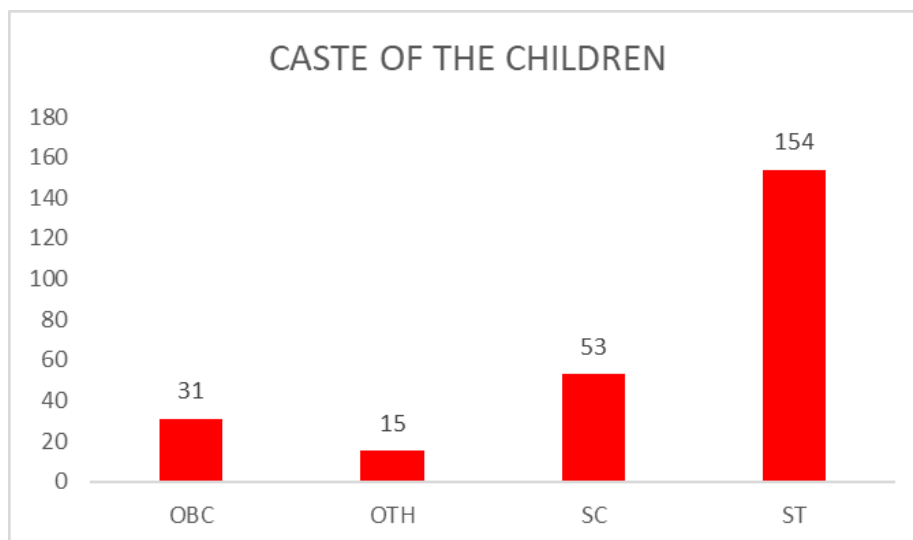
#### d. Referred by:



From the above figure it can be noted that 73 percent of the children were referred from OPD and only 21 percent were referred by AWW and ASHA. So AWW and ASHA needs to be more aware about SAM children in the community so that they can make parents warn about the condition of their child before any severe complication arises.

| Referred by | frequency | percentage |
|-------------|-----------|------------|
| OPD         | 186       | 73         |
| ASHA        | 52        | 21         |
| AWW         | 2         | 1          |
| OWN         | 2         | 1          |
| OTHERS      | 11        | 4          |
|             | 253       | 100        |

#### **e. Caste of the children:**



As it can be seen from the above data that 60.9 percent of the SAM children are from ST caste and only 5.9 percent of children are from general category, so more awareness needs to be created in ST and SC community.

| Caste   | Frequency | Percentage |
|---------|-----------|------------|
| OBC     | 31        | 12.3       |
| ST      | 154       | 60.9       |
| SC      | 53        | 20.9       |
| GENERAL | 15        | 5.9        |

**f.    Complication at the time of admission:**

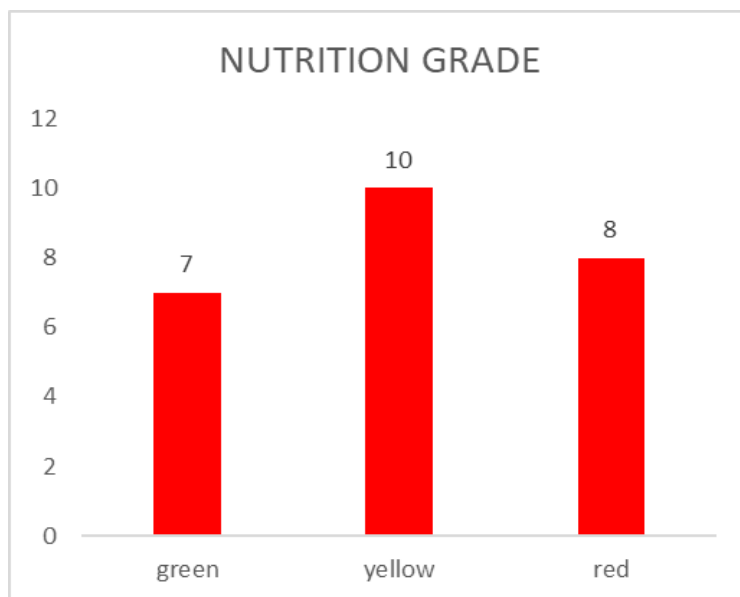
| Complications         | Frequency | Percentage |
|-----------------------|-----------|------------|
| Anaemia               | 104       | 41.1       |
| Cough                 | 32        | 12.6       |
| Dehydration           | 11        | 4.3        |
| Diarrhoea             | 22        | 8.7        |
| Fever                 | 1         | 0.4        |
| Heart disease         | 1         | 0.4        |
| No complication       | 35        | 13.8       |
| Pyrexia               | 2         | 0.8        |
| Respiratory infection | 22        | 8.7        |
| vomiting              | 15        | 5.9        |
|                       | 253       | 100        |

As it can be seen from the above data that 41.1 percent children were anaemic, 12.6 percent had cough , 8.7 percent had diarrhoea at the time of admission so more attention needs to be paid on above symptoms on the children of the community by AWW'S

**g.    CASE REVIEWED**

Last five months cases were reviewed (25) (September 2017- January 2018) of Rajsamand block in accordance with convenience sampling with respect to their MUAC measurements, follow-ups done and care taken by mothers about their feeding habits.

| NUTRITION GRADE | Frequency | Percentage |
|-----------------|-----------|------------|
| 1. GREEN        | 7         | 28         |
| 2. YELLOW       | 10        | 40         |
| 3. RED          | 8         | 32         |
| TOTAL           | 25        | 100        |

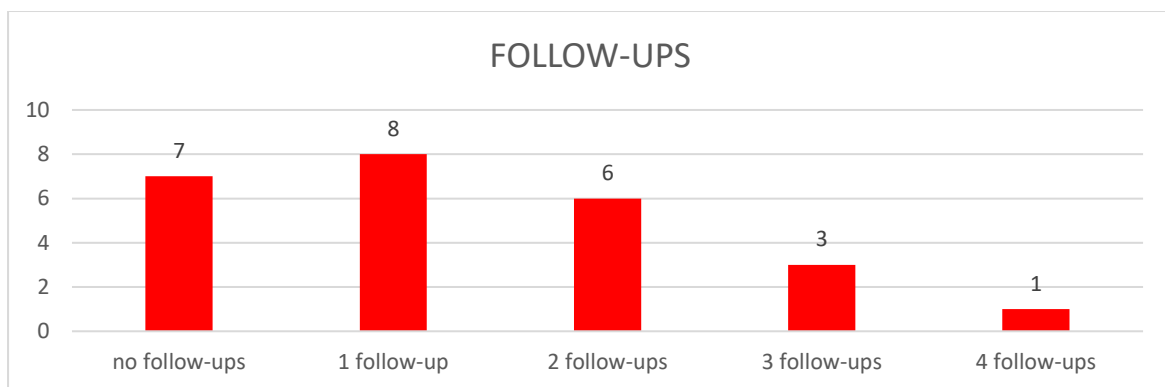


As we can see from the above primary data collected that only 28 percent of the children are green nutrition grade on the other hand 40 percent are undernourished that is in yellow nutrition grade and 32 percent are severely acute malnourished that is in red nutrition grade.

Reasons for above SAM(Severely acute malnourished) children for not going to MTC again:

- Lack of awareness of anganwadi workers about SAM children in the village.
- Distant location of district hospital from the village.
- Lack of education of parents.
- Not recovered in MTC when admitted.

| <b>FOLLOW-UPS</b> | <b>Frequency</b> | <b>Percentage</b> |
|-------------------|------------------|-------------------|
| 1. No follow-up   | 7                | 28                |
| 2. 1 follow-up    | 8                | 32                |
| 3. 2 follow-ups   | 6                | 24                |
| 4. 3 follow-ups   | 3                | 12                |
| 5. 4 follow-ups   | 1                | 04                |
|                   | 25               | 100               |



As it can be observed from the above table that only 4 percent have gone for all the follow-ups and remaining 96 percent has not gone for all the follow-ups so there is a discrepancy in follow-ups to be done and what are being done by the patients.

**Feeding habits:** As suggested by MTC that children should consume wheat porridge, khichri and vegetables but as observed and responses about the feeding of their child they generally said that nothing specific is made for the child and generally child consumes biscuits, Kurkure, chips and milk.

Hence there should be regular counselling required for the parents to remind about the dietary practices of their children as suggested in MTC.

## **Conclusions:**

According to above findings it can be concluded that the output indicators of MTC that is length of stay at MTC is adequate but the outcome of cured is 70 percent which is not complying with the standards that is 75 percent, also there is an association between stay at MTC and outcome hence factors affecting the children staying at MTC needed to be monitored.

Also it can be seen that highest number of patients are from ST category so more attention needs to be paid to this community by AWW's.

As we can see from the data of the cases reviewed that 32 percent has again dropped to SAM children so it can be concluded that there is lack of awareness among field workers as well as in the community about the malnutrition of the children and proper care is not given to them after discharge.

There are no proper follow-ups done after discharging the patients from MTC as the reasons given by mothers were-

- poverty in ST and SC families.
- distant location of MTC and unavailability of transportation
- lack of education
- not able understand doctor's advice and poor communication
- lack of awareness about follow-ups and believe in local quacks.

Also proper periodic counselling of the parents is not done regarding the feeding of their child and hence there is no proper feeding of the children is done as suggested by MTC.

## **Recommendations:**

- Guidelines needed to be followed rigorously at MTC.
- An nutritionist must be appointed at block level to counsel the parents.
- Communication material needed to be developed creating awareness regarding malnutrition at village level.
- ASHA is overburdened with work so AWW should take proper follow-up of the children.
- Awareness programs needs to conducted among ST and SC community.

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