Performance Assessment of Nutrition Rehabilitation Centre in Narmada District of Gujarat (2017-18)

By

Gaurav Thukral

Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management

Academic year, 2016-2018

The IIHMR University, Jaipur

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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 **Dr. Gaurav Thukral** student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at **National Health Mission** ,Gujarat, from 5st Feb 2018 to 5th MAY, 2018.

The Candidate has successfully carried out the study designated to his during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish his all success in all his future endeavors.

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No.DPN/Health/NHM/ Certy/ 701 /2018
Office of the Chief District Health Officer
District Panchayat Narmada, Rajpipla.
Date:- 09/05/2018.

To Whomsoever It May Concern

The certificate is awarded to

Name Dr Gaurav Thukral

In recognition of having successfully completed his

Internship in the department of

Name of Department- Health and family welfare

and has successfully completed his Project on

Title of the Project -Performance Assessment of Nutrition Rehabilitation Centre in Narmada District of Gujarat (2017-18)

Duration of Study - 5th February to 04th May 2018

Organization- National Health Mission, Gujarat Dept.

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 endeavours

Chief District Health Officer
District Panchayat Narmada
Gujarat

Date:- 09/05/2018.
Place:- Rajpipla

THE IIHMR UNIVERSITY

CERTIFICATE BY SCHOLAR

This is to certify that all ethical issues have been considered while collecting data for my dissertation titled "Performance Assessment of Nutrition Rehabilitation Centre in Narmada Districtof Gujarat (2017-18)

Signature of student

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled "Performance Assessment of Nutrition Rehabilitation Centre in Narmada Districtof Gujarat (2017-18) and submitted by Dr Gaurav Thukral Enrollment No. 0414 under the supervision of Dr Sameer Phadnis for award of MBA in Hospital and Health Management of the University carried out during the period from 5th February, 2018 to 5th May, 2018 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. GauravThukral

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LIST OF ABBREVIATIONS

S no.	Abbreviation	Full form
1	ASHA	ACCREDITED SOCIAL HEALTH ACTIVIST
2	AWW	ANGANWADI WORKER
3	AWC	ANGANWADI CENTRE
4	ANM	AUXILLARY NURSE MIDWIFE
5	CHC	COMMUNITY HEALTH CENTRE
6	CMTC	CHILD MALNUTRITION CENTRE
7	DH	DISTRICT HOSPITAL
8	MO	MEDICAL HOSPITAL
9	MOHFW	MINISTRY OF HEALTH AND FAMILY WELFARE
10	NFHS	NATIONAL FAMILY HEALTH SURVEY
11	NHM	NATIONAL HEALTH MISSION
12	PHC	PRIMARY HEALTH CENTRE
13	SDH	SUB DISTRICT HOSPITAL
14	SAM	SEVERE ACUTE MALNOURISHMENT
15	UNICEF	UNITEDNATIONS CHILDREN‟S FUND
16	WHO	WORLD HEALTH ORGANIZATION

INTRODUCTION

Malnutrition is considered to be connected with high rates of mortality and morbidity and is also a prime cause in almost one-third to half of all children under five years, who die every year. Strong affirmation exists on synergism of under nutrition and child mortality due to common childhood illnesses including diarrhea, acute respiratory infections, malaria and measles. To prevent deaths due to severe acute malnutrition (SAM), specialized treatment and prevention interventions are required.

"WHO and UNICEF in their joint statement have recommended two major approaches to address children with SAM" [p5, 6]

"1. Facility/hospital-based care for children with SAM and medical complications."
"2. Home/community-based care for children with SAM but without medical complications."

"Gujarat State Nutrition Mission instigated preventive and curative strategy to enhance the current status of nutrition keeping in view the diverse stages of desirable interventions namely adolescence, 9 months of pregnancy to first 2 years of age (critical 1,000 days), children up to 6 years having Severe Acute Malnutrition to reduce child mortality. Curative Aspects of Gujarat State Nutrition Mission includes a 3-tier approach for integrated management of malnutrition across different levels by formation of three different levels of infrastructure.

1. The Intensive Nutrition Care Centre (INCC) as "Bal Shaktim Kendra" at Anganwadi centers for malnourished children without any medical needs.
2. The Child Malnutrition Treatment Centera "Bal Sewa Kendra" at PHC/CHC/ Sub District level for malnourished children.
3. Nutrition Rehabilitation Center as "Bal Sanjeevani Kendra" at District Hospital/ Medical College for malnourished children with significant medical care."

Operational Definition

"Nutrition Rehabilitation Center (NRC) is a unit in a health facility where children with Severe Acute Malnutrition (SAM) are admitted and managed. Children are admitted as per the defined admission criteria and provided with medical and nutritional therapeutic care. Once discharged from the NRC, the child continues to be in the Nutrition Rehabilitation program till she/he attains the defined discharge criteria from the Program (described in technical guidelines). In addition to curative care, special focus is given on timely, adequate and appropriate feeding for children; and on improving the skills of mothers and caregivers on complete age appropriate caring and feeding practices. In addition, efforts are made to build the capacity of mothers/ caregivers through counseling and support to identify the nutrition and health problems in their child."

1. **District Profile of Narmada**

"Narmada district is one of the 33 administrative districts in the state of Gujarat in western India. It's headquarter is located at Rajpipla. The district occupies an area of 6,760 km² and has a population of 5, 90,000 of which 22.45 percent were urban. The district comprises of 5 talukas. The total no of children under 5 years of age is 57,784 that constitutes about ten percent of the total population."

"According to National Family Health Survey (2015-2016), the district fact sheet of Narmada highlights the following indicators with respect to Malnutrition. :[2] :[P.88]

- 47.4 percent of children under 5 years of age are stunted (height-for-age)
- 35.8 percent of children under 5 years of age are wasted (Weight-for-height)
- 12.7 percent of children under 5 years of age are severely wasted (Weight-for- height)
- 53.6 percent of children under 5 years of age are underweight (Weight-for-age)."

Structure of NRC Narmada

"NRC is a special unit, located in the District Hospital of Narmada and dedicated to the initial management and nutrition rehabilitation of children with severe acute malnutrition. At a district hospital, NRC has 10 beds. The NRC unit is a distinct area within the health facility and is in proximity to the pediatric ward/in-patient facility."

The NRC has following facilities-

- Patient area to house the beds; (adult beds are kept so that the mother can remain with the child.)
)
- Playing and counseling area with toys; audiovisual equipment like TV, DVD player and IEC material
- Nursingstation
- Kitchen and food storage area attached to ward, with enough space for cooking, feeding and demonstration
- Attached toilet and bathroom facility for mothers and children along with two separate hand washing areas.
- The approximate covered area of the NRC is about 150 square feet per bed, plus 30% for ancillary area.
- NRC has a cheerful, stimulating environment and is child friendly. Walls are brightly painted and decorated. Ward has sufficient space for all mothers /caregivers staying with the children to sit together and provided cooking and feeding demonstration.

LITERATURE REVIEW

"The Nutrition Rehabilitation Centre at Narmada was conceptualized and brought into function in June 2013.

The following have been the total no of admissions in the NRC in the past four years:
Source of data: NRC register"

Table 1

Year	Admission
2014	134
2015	77
2016	87
2017	132

"According to the operational guidelines of NRC issued by NRHM, the performance of NRCs may be assessed based on the criteria described below. The overall functioning of the NRCs can be monitored against the sphere standards."
"TABLE 2

Indicators	Acceptable	Not Acceptable
Recovery rate	>75%	<50%
Death rate	<5%	>15%
Defaulter rate	<15%	>25%
Weight gain	≥8g	<8g
Length of stay (weeks)	1-4	<1 and >6
Relapse rate	<10%	>15%
Bed occupancy rate	-	-

SOURCE: NRC GUIDELINES 2013"

With the aid of these prevailing indicators, various researchers have conducted diverse studies to assess qualitative and quantitative parameters of Nutrition Rehabilitation Centre.

"In a study conducted in Madhya Pradesh, 100 children admitted to seven different NRCs in Indore and Ujjain divisions were observed during their stay at NRCs and the follow-up period to analyze the effect of interventional measures on select anthropometric indicators. 93 children were analyzed for anthropometric indicators following a dropout rate of 7%. A statistically significant difference was obtained between the weight of children at admission and discharge ($t=14.552$, $P<0.001$); difference of mid upper arm circumference (MUAC) at admission and discharge was statistically significant ($t=9.548$, $P<0.001$). The average weight gain during the stay at the centers was 9.25 ± 5.89 g/kg/day. :[3] :[P]"

"Weight has been taken as the main anthropometric measure as an improvement in weight of severe malnourished children has the most significant effect in reducing the mortality among them. Colecraft *et al*. in a study at four day care NRCs also reported a significant increase in weight for age for the admitted children."[4]

"A qualitative study conducted by Collins et.al demonstrated that NRCs cannot be theonly tool to combat malnutrition; the study results showed that the NRCs have had a positive impact on the selected anthropometric indicators of severe malnourished children but lag behind in the educational aspect and ensuring proper follow-up visits. Linking of NRCs with the community-based Core Model of Management of severe malnourished children needs to be put into place as soon as possible."[5]

"The duration of stay at NRC is also one of the critical indicators for performance assessment."

"In a study conducted by Kadam et.al on Socio-Economic profile of children referred to NRC, the median duration of stay at the centers was 14 days, which is much less than earlier programmes for children with severe Protein Energy Malnutrition (range from 6 weeks to 8 months). The study showed that short duration of stay not only decreases costs but also minimizes the absence of mothers from their homes which has important implications at the society level. Effectively, the duration of stay needs to be balanced between the chances of cross exposure to infection and the readiness of the mothers to effectively manage their children at home." [6] [7]

"Lastly, in addition to these performance indicators, the social status and economic profile of children admitted to NRC have also been analyzed by many researchers. A study conducted by IIPS, Mumbai showed that a major proportion of the admitted children belonged to the marginalized population groups. The findings are in accordance with that of NFHS-III, which states that children belonging to the SC, ST, and OBC and that those with illiterate mothers have the highest rates of Malnutrition. [8] A study done by Rakesh Kumar et al among 104 malnourished children admitted in a hospital in Rewa district showed that around 75% families belonged to lower socio-economic status." [9]

PROBLEM STATEMENT

A gap in referral rate by medical officer in admission rate at Nutrition rehabilitation centre.

RATIONALE OF THE STUDY

"According to data shown in National Family Health Survey (2015-2016) of Narmada District of Gujarat, it is clear that even with the establishment of a 3-tier approach for integrated management of malnutrition, Severe Acute Malnutrition is still prevalent in the community. A plausible explanation for this could be the ineffective implementation and monitoring of the program at NRC

Since its inception in 2013, supportive supervision and monitoring of NRC at Narmada has been executed only through monthly and quarterly reports comprising of line listed beneficiaries showing clinical improvement of individual cases

A performance assessment of all the key indicators (as per NRHM guidelines) will enable an effective and comprehensive evaluation of the facility. At the same time, it will help thee program officers to address the technical gaps in a better way."

RESEARCH QUESTION

1. What is the actual performance of Nutrition Rehabilitation Centre in reference to referral rate by medical officer and other key output indicators in Narmada district of Gujarat in the year 2017-18?

OBJECTIVES

1. To evaluate the effect of nutritional interventional measures undertaken at NRC in improving the nutritional status of admitted children by analyzing selected anthropometric indicators at time of admission and referral rate by medical officer and investigate the Referral rate by Medical officer and during their stay at the centre.

REASEARCH METHODOLOGY

Study Design

Cross-sectional Descriptive Study.

A mixed method research design which included mixing of both qualitative and quantitative data and methods in congruence with the research question asked

Quantitative – Performance Assessment using key output indicators

Study Location and Duration

Nutrition Rehabilitation Centre of District Narmada of Gujarat for a period of three months from February 2018 to May 2018.

QUANTITATIVE STUDY

Study Subjects

"Health Records of all the Children with Severe Acute Malnutrition admitted to the NRC. (In the reporting period)"

Inclusion criteria: Children aged 6-59 months having SAM fulfilling the criteria: (a) bilateral pitting edema and/or (b) weight-for-height <–3 SD and/or (c) mid-Upper-arm circumference <115 mm

Exclusion criteria: Patients discharged on request for personal and social reasons were excluded from the study.

Sample Size:

n=84

Sampling Technique

Total Population Sampling technique was observed as all the children admitted to NRC in the financial year 2017-2018 were included in the study

Data Collection Tools & Techniques;

"The data of all the children with SAM admitted in the NRC was analyzed retrospectively through review of records of key elements forming performance output indicators that are to be assessed. (For Template, refer Annexure "A")
Unit of observation: Health Records of all the children having SAM (in the reporting period)"

Data collection sources"

SAM register
NRC register
Admission and Discharge Register

Data analysis procedure

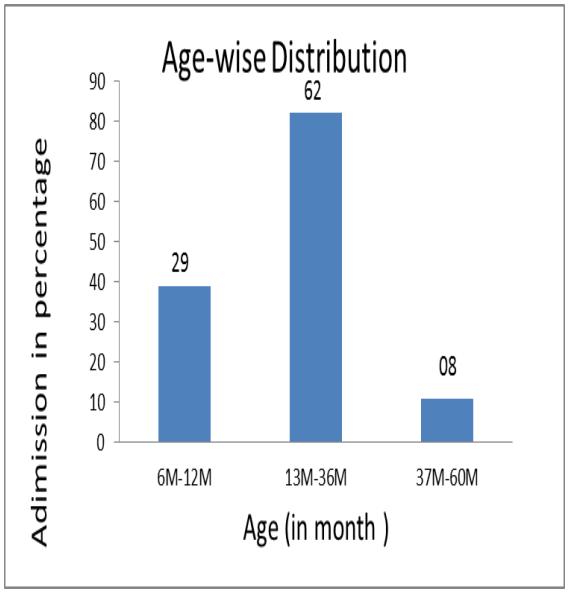
Microsoft Excel 2013- as an analytical tool for the assessment of collected data. (Refer Annexure)

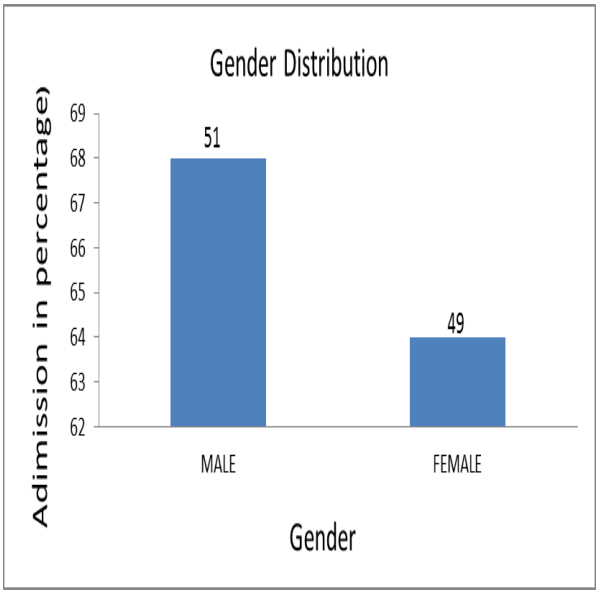
	Element	**Definition**	**Established Standard**	**Indicator**
1	Recovery Rate (at discharge)	Number of beneficiaries that have reached the discharged criteria within the reporting period divided by the total that exist.	> 50% beneficiaries have recovered	discharge criteria (target weight gain of 15%)within Recovery Rate the discharge period
2	Recovery Rate (at follow-up)	Number of beneficiaries that have reached the discharged criteria within the reporting period divided by the total exist.	> 75% beneficiaries have recovered	Percentage of beneficiaries that have reached discharge criteria (target weight gain of 15%) within the follow-up period
3	Death rate/ Case Fatality rate	Any death takes place in facility	<5% beneficiaries have died	Percentage of children who died within the reporting Period
4	Defaulter rate	Number of beneficiaries that defaulted during the reporting period divided by total exit)	< 15% beneficiaries have defaulted	Percentage of beneficiaries that have not attended the NRC for 3 consecutive days
5	Average Weight gain	Sum of weight gains (g/kg/d) of all the children discharged during the month	≥ 8g is the average weight gain of all the beneficiaries	Sum of weight gains (g/kg/d) of all the children discharged during the month
6	Length of stay	The duration of beneficiary stayed in a facility	1-4 weeks is the average length of stay for all beneficiaries	Total inpatient days of care i.e. Sum of each daily inpatient census for the time period examined
7	Relapse rate	A patient who has been discharged as cured from the programme within the last 2 months	< 10% beneficiaries have shown relapse	Percentage of patients who have been discharged as cured from

		but is again eligible for NRC.		the programme 7within the last 2 months but is again eligible for NRC.
8	Bed occupancy rate	Average length of stay, weight gain(gm/kg/day) and average weight gain(for the nrc)	No standard given in the guidelines	(Inpatient Days of Care / Bed Days Available) x 100
9	Medical Transfer Rate	The beneficiary is categorized as a transfer when he/she is transferred to health structure outside the feeding programme (hospital, health centre) regardless the level of facility he/she is referred.	< 15% beneficiaries have been transferred due to medical complications	Percentage of patients transferred to a health structure outside the feeding programme (hospital, health centre etc.) regardless of the level of the health facility s/he is referred to.
10	Non-Respondent Rate	Those Beneficiary who fail to respond the treatment.	10% beneficiaries fail to respond to the treatment e.g. the patient remains for a long period of time under the target weight (target weight take as 5 %)"	Percentage of patients who fail to respond to the treatment

Results

A Gender of the beneficiaries
1 Graph indicates the Age and Gender distribution of the children admitted into nutrition rehabilitation centre at Rajpipla district hospital

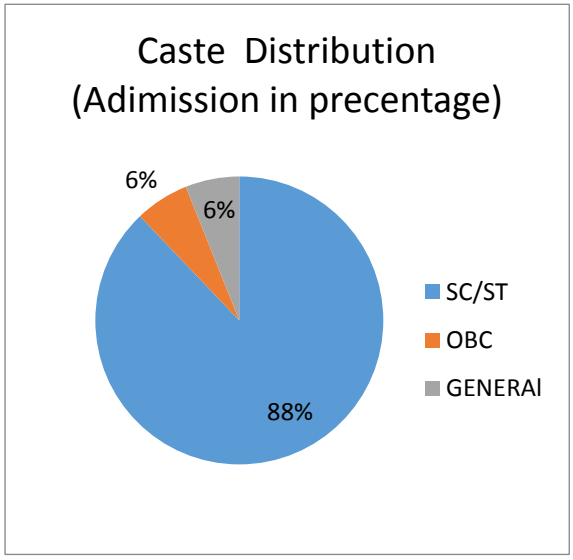


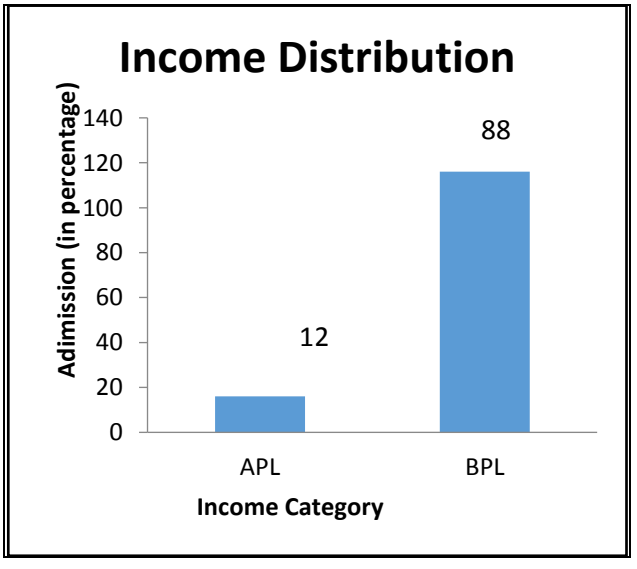


62 percent of the beneficiaries admitted belonged to the age group of 13-36 months, 29 percent and 8 percent beneficiaries belonged to the age group of 6-12 months and 37-60 months respectively.

Of the total no of beneficiaries, 51 percent were Males and 48 percent were females.

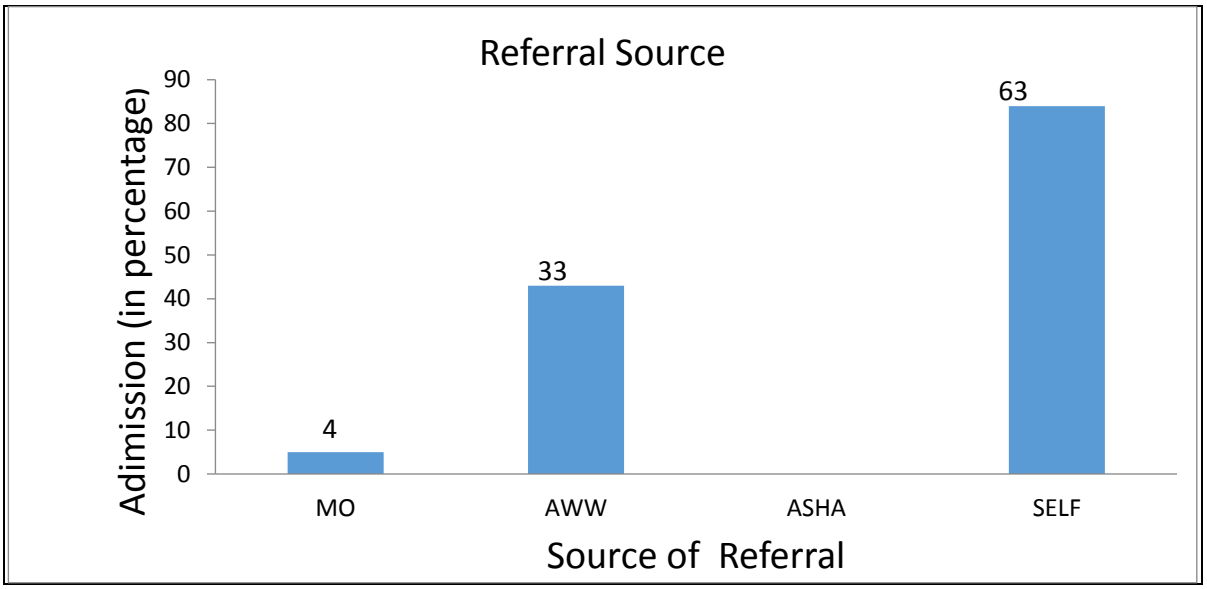
2. Caste and Income distribution





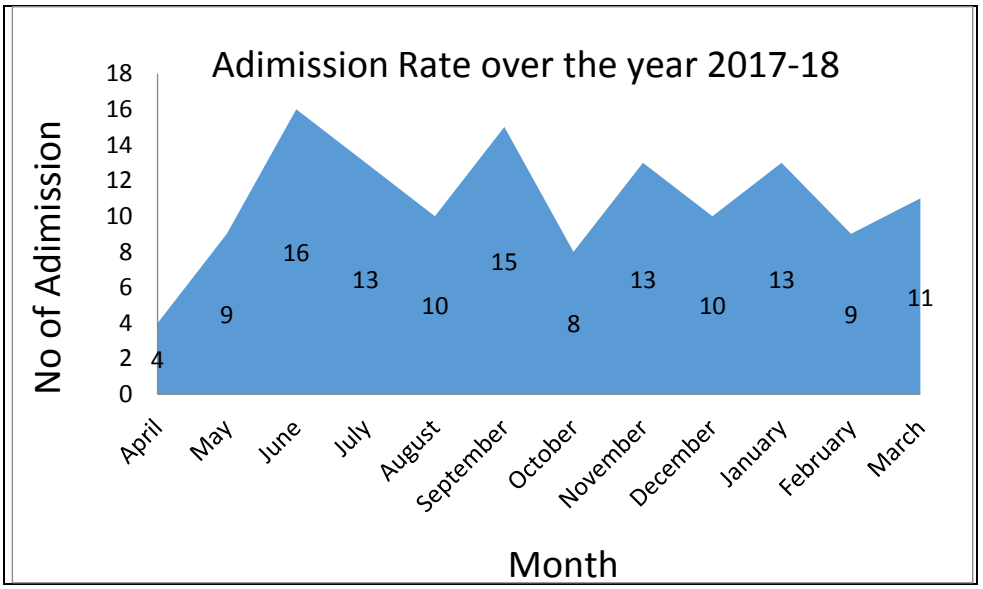
88 percent belonged to SC/ST, 6 percent belonged to OBC, and 6 percent belonged to general category. Also, a majority of 88 percent beneficiaries were below poverty line and 12 percent were above poverty line.

3.Referral Source



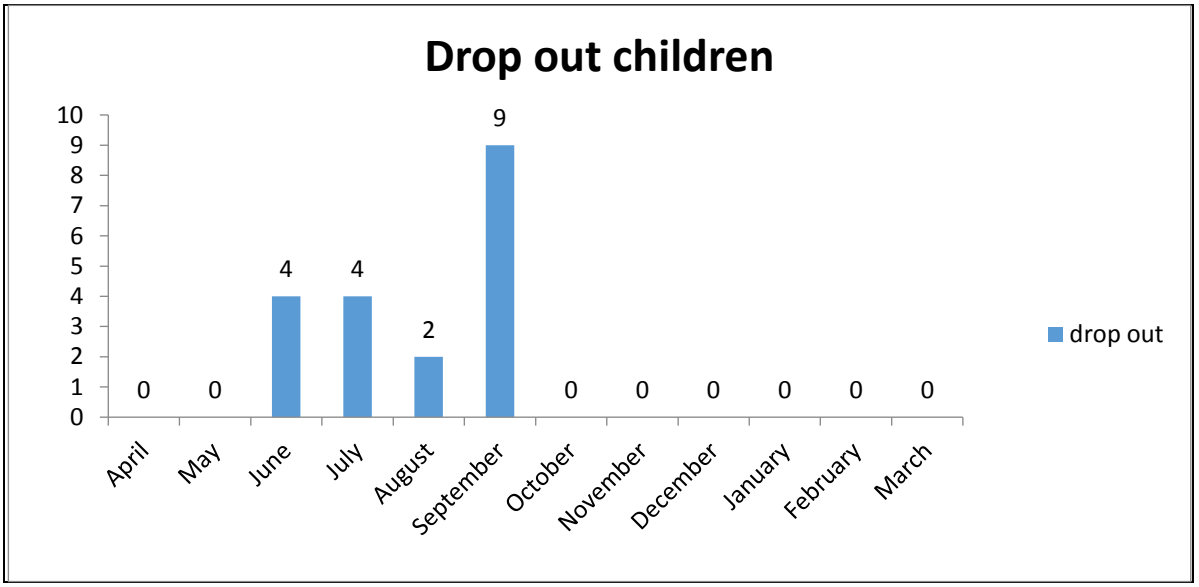
While a vast majority, 63 percent of referrals were received from Nandod Taluka, a fair proportion of them was referred by AWW and MO (33 and 4 percent respectively).

4. Month wise Distribution



The trends in the month wise distribution depict that the admission rate was fluctuating in the month of April, May, October and February having number of admission less than 10 respectively.

5.Drop out



- The trend in the drop out shows that from the month of June to September drop out of children seen

B Performance Output (with respect to key indicators)

s.no	Element	Indicator value	Remarks (as per standard)
1	Recovery rate (at discharge)	27%	The recovery rate is very poor as it is far below the standard criteria. Only one – fourth of the beneficiaries have met the "target weight gain" criteria.
2	Recovery rate (at last follow up)	31%	The recovery rate is very poor as it is far below the standard criteria. Only one – fourth of the beneficiaries have met the "target weight gain" criteria even at the last follow up
3	Death Rate/ case fatality rate	NIL	The NRC has shown a remarkable performance to avert deaths within the facility.
4	Defaulter rate	14%	The defaulter rate is less as it meets the standard criteria
5	Average weight gain	6.0g/kg/day	Average weight gain is poor. It reflects the inadequacy of the facility to fulfill standard treatment protocols
6	Bed occupancy rate	45%	The bed occupancy rate is very poor. At any point of time7 beds a. Only 3 are occupied.

7	Relapse rate	1%	The relapse rate is excellent as it fulfill criteria. However, the tracking of beneficiaries post discharge and follow_ up requires further exploration
8	Medical transfer rate	NIL	The medical transfer rate is good as it meets the standard criteria
9	SAM Criteria at Admission (Atleast 2 out of the 3) (MUAC,Z score & illness)	100%	All the beneficiaries fulfill the criteria of Z- score <3SD and having illness
10	SAM Criteria at Admission (All the three) (MUAC,Z score & illness)	50.58%	Almost half of the respondent do not fulfill the criteria for MUAC >11.5 cm
11	SAM Criteria at discharge (All the three) (MUAC,Z score & illness)	NIL	None of the beneficiaries fulfill all the SAM criteria (of admission) at the time of discharge. This means that all the beneficiary have shown atleast an optimal level of improvement during the stay
12	SAM Criteria at discharge (All the three) (MUAC,Z score & illness)	9.33%	Almost one –tenth of the beneficiary fulfill (atleast 2 out of the 3) SAM Criteria (of admission) at the time of discharge. This means that almost 90 percent of the beneficiary have shown a satisfying level of improvement during the stay
13	Follow –up rate	100%	The follow up rate is excellent

Good practices of NRC

1 Despite being a tribal district with remote and hard to reach areas, all the facilities are functional and performing well

2 The hygiene practices at all facilities is well maintained according to the indicators provided by the guidelines provided by Govt. of India.

3. Staff members available in NRC have been trained and have the appropriate knowledge of the SAM protocols and correct method of anthropometric measurements

4. Behavior of staff members towards their respective work is appreciable, as staff is motivated and wants to improve further

GAPS IN THE PROGRAMME

- Monitoring of the children under treatment by the medical officer is not being done on a daily basis in the NRC
- Inadequate and improperly monitored referral mechanism of children from PHC
- To NRC especially for the non-responders who need specialized care

SUMMARY:

"A study was conducted on Performance Assessment of Nutrition Rehabilitation Centre in Narmada District of Gujarat 2017 -18. Study find that around 62% of the children admitted to the NRC was in age group of 13 to 36 months and 8 percent belonged to the age group 37- 60 months. Less number of child are malnourished in the age group of 37-60 months. Males are more than females around 51 percent of male and 48 percent females were admitted in the NRC .Majority of the beneficiary are belong to SC/ST i.e. 88 percent. Moreover around 88 percent of the beneficiary belong to BPL family. The trends shows in month wise distribution of the beneficiary was fluctuating in the month February, April and October it was less than 10 number of admission. Around 68 percent beneficiary are admitted by self-referral and only 4 percent refer by medical officer which is very less need to be focus on this area. The recovery rate is very poor as it is far below the standard criteria. Only one – fourth of the beneficiaries have met the "target weight gain" criteria. The bed occupancy rate is very poor at any point of time6 beds are unoccupied. Only 4 are occupied. SAM Criteria at Admission(All the three)(MUAC,Z score & illness) almost half of the respondent do not fulfill the criteria for MUAC >11.5 cm .Government is also providing financial assistance to the beneficiary family the opportunity cost for the stay of 14 days around Rs 1400 is given to family and 300 Rs for every follow up. It encourages beneficiary family to bring their child to NRC. They can improve by increasing referral rate by medical officer."

CONCLUSION

There is no doubt to the fact that Nutrition Rehabilitation Centre can play a key role in diminishing the burden of morbidity and mortality linked with Malnutrition on the community, provided active screening and prompt treatment is done properly. For this to happen, it becomes important to strengthen our screening procedures, both at the community and facility level. This study makes us realize the importance of engagement of field level staff in active screening of SAM cases. The field level staff should be periodically sensitized regarding the program and its associated benefits.

Once the screening and referral procedures are taken care of, it becomes necessary to develop effective strategies for supportive supervision and monitoring at the facility level. The "low" Indicator values of Recovery Rates and Average Weight Gain reflects the inadequacy of the treatment methods being offered at the facility. To address this issue, the operational guidelines given by NRHM should be religiously followed to ensure correct formulation and timely administration of feeds. Also, the staff at the facility should properly counsel the parent on how to prepare feeds and monitor the health of the child during the "Follow-up "phase.

The authorities that have the power to bring transformation as well as the key policy makers should take keen interest in developing innovative approaches to address various barriers and challenges affecting successful implementation of the program at NRC. At the same time, they should be actively involved in solving various managerial issues related to finance and Human Resources that often go unnoticed and neglected. The budget allocated to NRC under NRHM should be conserved and used rationally.

Thus, in conclusion, we can say that, with consolidated efforts from all the key stakeholders at various levels of healthcare system, Nutrition Rehabilitation Centres be established as an effective intervention to curb the menace of Malnutrition and its associated complications and render good health and well-being to all its beneficiaries.

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ANNEXURE A (guidelines for calculations)

Case Fatality Rate

To calculate the case-fatality rate:

- Determine the number of children (patients) admitted to the ward in the past month(s).
- Determine the number of those children (patients) who died. (Wait to count deaths until the outcomes for the patients are known.)
- Divide the number of deaths by the number of children admitted and express the result as a percentage.

The objective of a NRC should be to achieve a case-fatality rate of less than 5%. A case fatality of >20% is unacceptable and causes of death should be reviewed.

Bed Occupancy Rate

To calculate the average bed occupancy rate for a reporting period, two data item are needed.

(Inpatient Days of Care / Bed Days Available) x 100

Definitions of these two items are as follows:
Inpatient Days of Care: Total Inpatient Days is the sum of each daily inpatient census for the time period examined. For e.g., if the time period examined is taken as a week, and the daily inpatient census was as follows: Day 1 = 7, Day 2 = 8, Day 3 = 6, Day 4 = 10, Day 5 = 10 Day 6 = 9, Day 7 = 8, Then the Total Inpatient Days of care for one week would be 7+8+6+10+10+9+8.

Bed Days available: The maximum number of inpatient days of care that would have been provided if all beds were filled during the year. If 10 beds were available for use each day during the year, bed days available would be 10 x 365 = 3650.

Average Length of Stay

(Total inpatient days of care / Total admissions) = Average length of stay (in days)

Total Inpatient Days of Care - Sum of each daily inpatient census for the time period examined. For instance, if the time period examined is a week, and the daily inpatient census was as follows: Day 1 = 7, Day 2 = 8, Day 3 = 6, Day 4 = 10, Day 5 = 10 Day 6 = 9, Day 7 = 8, Then the Total Inpatient Days of care for one week would be 7+8+6+10+10+9+8 or 58 total inpatient days.or 204 total inpatient days.

Total Admissions - The total number of individuals formally accepted into inpatient units of the hospital during the time period examined.

Weight Gain (g/kg/d)

Weight gain = (discharge weight in gms – minimum weight in gms) / (minimum weight in kg x number of days between date of minimum weight and discharge day)

ANNEXURE B