Original article

A study on implementation of ‘Kuposhan Mukht Gujarat Maha-Abhiyan’ (KMGA) in Vadodara district, Gujarat

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ABSTRACT

Introduction: The world's one-third of children with severe acute malnutrition continue to live in India. This study focuses on the function and implementation of the ‘Kuposhan Mukht Gujarat Maha-Abhiyan’ (KMGA) program aimed at treating children with severe acute malnutrition (SAM) in Vadodara district.

Method: The present study aims to explore the healthcare provider's and beneficiary's opinions and perceptions about the execution of the program by adopting a cross-sectional study design with the help of the qualitative interview guide. The research was conducted from January to June 2019, in Vadodara district. In-depth, face to face interviews was performed for acquiring relevant information. Data analysis was done by using qualitative analysis software ATLAS.ti version 8.

Results: The results suggest programs' in-general acceptability, sustainability, and economical durability. The study results revealed several facilitators such as community involvement, appropriately given incentives, a child's proper response, doorstep services, and some challenges like cultural practices, limited awareness, and low income of the family. The study results also indicated the positive approach for hospital-based management, where primary importance is given to the empowering mothers, which can further lead to gradual behavioral change in the community.

Conclusion: The research highlights the importance of healthcare providers to work responsibly and unitedly and of more participation, acceptance, and contribution of the beneficiaries for the program's success.

1. Introduction

The child's nutrition has been a priority globally for more than a decade now, while most of the countries monitor constrained nutritional indicators on a routine basis and even less are concerned with the range of malnutrition manifestation. As a result, schemes and policies addressing any form of malnutrition are insufficiently tailored or designed too widely to provide any guidance.¹ Although treatment and management for severe acute malnutrition (SAM) have undergone an ascending shift in more than 60 countries.² UNICEF reports that almost half of all the deaths among the under-five population is attributed to malnutrition.³ This reflects the loss of approximately 3 million young children in a year.

Malnutrition in India still remains a significant public health concern. Although the drop in the percentage of the data of underweight children from 42.5% for NFHS-3 (2005–06) to 35.7% for NFHS-4 (2015–16), the severity of malnutrition is still high. On the contrary, the number of wasted children and severely wasted children under five

years of age has been increased to 21% and 7.5% from 19.8% to 6.4% as per the recent data.⁴ Currently, the government of India and various NGOs are pursuing different initiatives for addressing severe acute malnutrition throughout the nation. There is extending evidence in India that the community-based management of acute malnutrition (CMAM) is essential if the coverage for screening and treatment to all SAM children are to be generalized and practical.¹ India began management of acute malnutrition at the community level as an emergency response in Bihar during the Kosi floods in 2009. Médecins sans Frontières led this pilot with the help of the government of Bihar, with successfully achieving higher cure rates.⁵

The government of Gujarat has initiated ‘Kuposhan Mukht Gujarat Maha-Abhiyan’ (KMGA) as a CMAM program in the year of 2015 because of the increasing percentage of wasted children over the years.⁶ This program identifies SAM children and treats them both at the community level as well as the facility level. The program has been implemented with exclusive screening for two months every year, where the WHO certified ready to use therapeutic food packet (RUTF) is

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given to the SAM children at the community level. The objectives of this study were to assess the implementation of the program from beneficiaries and providers' perspective and to determine the achievement and perceived barriers in the utilization of the services provided, by the community. The current study will provide a deep insight into the implementation-related barriers of the KMG in Vadodara district.

2. Materials and methods

2.1. Study setting

The cross-sectional study using qualitative interviews was carried out in the Vadodara district, to explore the views of various level officers from the district, block, and PHC, Nutrition assistant from CMTC & NRC, and parents of the beneficiaries. The Vadodara district profile includes eight taluka, 42 Primary health centers (PHC), 7 Child malnutrition treatment centers (CMTCs), and 3 Nutrition rehabilitation centers (NRCs).

2.2. Study design

The participants in the study were recruited using purposive sampling following in-depth qualitative interviews. The healthcare providers involved in the program implementation and beneficiaries who have received the services under the program were included in the study.⁷ The interview guide was developed with the help of previous literature to collect the data from the healthcare providers and beneficiaries involved in the program. Four different sets of interview guides were prepared for higher authorities, ground-level officers, healthcare workers, and beneficiaries. It has included the basic demographic details and other domains like background, implementation process, training, and barriers faced in the implementation of the program. In total, 42 interviews were conducted, including 31 healthcare providers from various levels and 11 beneficiaries. Table 1 explains the list of study participants from a different level of healthcare. The study was conducted from January to June 2019.

2.3. Data analysis & ethical consideration

The data analysis was done using ATLAS.ti version 8 software for obtaining results and themes were identified based on the responses of the participants. The responses of the participants were noted down, and transcripts were prepared. Healthcare providers were categorized into respondent officers (RO) and peripheral health workers (PHW) for maintaining confidentiality.

The ethical approval was taken from the institutional ethics committee (IEC: 714/2018), MAHE and administrative permission was obtained from the chief district health officer (CDHO) of Vadodara district for conducting the study. The study objectives and freedom to participate or withdraw the study at any time were informed before the interviews and written informed consent was given to all the participants.

Table 1

List of study participants from a different level of healthcare.

District Level	Block-level/Facility level (CMTC or NRC)	PHC/Village level
1. Chief district health officer (CDHO)	1. Taluka health officer (THO)	1. Medical officer (MO)
2. District program coordinator (DPC)	2. Program Assistant (PA)	2. Data entry operator
3. Nutrition program associate (PA NA)	3. RBSK Doctor	3. Female health worker (FHW)
	4. Nutrition assistant	4. Accredited social health activist (ASHA)
	5. Beneficiaries of CMTC & NRC	5. Anganwadi worker (AWW)
		6. Multi-purpose health worker
		7. Beneficiaries at the village level

3. Results

The study assessed the Implementation of the Kuposhan Mukta Gujarat Maha-Abhiyan (KMG) program in Vadodara district. The healthcare providers from district to ground level and beneficiaries involved in the implementation of the KMG program were interviewed by using qualitative interview guide. The general characteristics of the respondent healthcare providers and beneficiaries are as shown in Table 2.

Fig. 1 shows the major themes of the program implementation according to participants' responses which has been described in details as below.

3.1. Program details

- A modified approach for addressing malnutrition

The present study aimed to assess the implementation of the KMG program. The responses of the participants have revealed the purpose of implementing the program. The existing burden of malnutrition has come up as an appropriate reason for implementing the program as per the responses. The program introduces newer strategies by addressing malnutrition among the vulnerable population that is under 5-year children. The result suggests the program involves a scientific approach for segregating and treating SAM children at the community level and creating awareness by educating mothers. The initiation of the program by the health department has proved to be an effective implementation strategy for community-based management and community engagement appropriate according to the officers interviewed.

"It is a scientific approach to addressing malnutrition. This program includes wasting that is weight per height to address acute malnutrition to prevent it from becoming chronic and other than that, wasting itself can prove fatal." (RO 1)

- Program Planning

The program planning involves planning at the primary and secondary levels according to responses of the participants, where initial planning was done at the administrative level and secondary planning at a primary health center (PHC) level. The officers have stated that the planning at primary level involves various training workshops and logistics management. Also, they have mentioned about taking feedback from the ground level healthcare providers before the program initiation followed by providing guidance to the medical officers for preparing the action plan and implementing the program. At PHC level medical officers prepares an action plan for each screening center (i.e., Anganwadi centers-AWCs, Sub centers- SC) with the help of population data as stated by most of the respondents.

"It starts with prior planning. So Medical officer at PHC prepares micro-planning for finalizing screening day in all the AWC which comes under PHC's premises. Then 1–2 days before screening ASHA and AWW workers go to the community and inform parents of under-five about it ask them to come to AWC." (RO 8)

Table 2
Characteristics of the participants.

Respondents (n = 41)	Demographic variable	category	Frequency	Percentage	Range	Mean
Healthcare providers (n = 31)	Age(In years)	less than 30	3	9.7	28 to 58	40.3
		30–40	12	38.7		
		41–50	11	35.5		
		more than 50	5	16.1		
	Gender	Male	10	32.3	–	
		Female	21	67.7		
	Experience (In years)	Less than 2	1	3.2	2 to 32	8.4
		2 to 4	11	35.5		
		more than 4	19	61.3		
	Level of work	Officer level and above	15	48.2	–	
		Peripheral health worker	16	51.8		
Beneficiaries (n = 11)	Age (In years)	less than 30	5	45.4	23–38	25.7
		More than 30	6	54.6		
	Gender	Male	3	27.3	–	
		Female	8	72.7

Fig. 1. Thematic representation.
(Source: Author's creation).

• Community-based management of SAM

All the interviews of the Healthcare providers from the implementation level suggest many inter-related components involved in the management of SAM. It includes community mobilization, screening procedures, identification & confirmation of SAM children, enrollment of SAM children under the program according to the results of the appetite tests, referral services, provision of supplementary food packets, and follow-ups. The findings showed that the program runs for eight weeks including screening phase and management phase according to all the officers. It has been found that the health staff is involved in the screening procedures, ASHA/FHW have to take the anthropometric measurement of the child along with the MUAC measurement and observation for the presence of pedal edema. Most of the officers have mentioned about the critical factor in successful community-based management of SAM is WHO accepted RUFT food packets which have been provided to the beneficiaries either at home and AWC/SC/PHCs by the government of Gujarat.

“The first phase which is a screening of all the children of under-five age group. Then next segregation of children under SAM or MAM on the bases of 3 criteria. Then comes community-based management by giving them WHO certified RUFT which we call as Bal-Amarutum and appetite test has also been done for SAM & MAM child.” (RO 8)

After interviews conducted at different levels, it has been found that some of the health staff were uncertain about the standard criteria of

SAM identification, although most of them have agreed on received training under the program. Other than that health staff has said that they give only 1 or 2 food packets per day because they think the packet intake is too heavy for the child, while according to the guidelines it should be given considering the child's health.

“We give 1 packet because the packet is made up of groundnut and other nutrients which is heavy for the child.” (PHW 15)

• Facility-based management of SAM

The management of SAM at the facility involves different criteria for enrolling the SAM child under CMTC or NRC according to the officers and health workers. Most of the officers stated that if the SAM children are having any medical complication or have failed in the appetite test are referred to the CMTC or NRC with a referral card. Additionally, some other officers have mentioned that at NRC, Children come from the periphery as well as different districts and different states as the SAM children are also referred from the district hospital OPD.

“So if the SAM or MAM child is failed in appetite test and having any medical complications like fever, diarrhea or vomiting child has to be referred CMTC.” (RO 8)

The initial treatment is given to the SAM children is different at NRC and CMTC, according to the officers who are involved in facility-based management. They have mentioned that foremost the treatment for dehydration is done by either giving pint or bolus water followed by

conventional treatment as per the guidelines. Most of the officers have stated about the 15 days stay at the facility for treatment where mothers are given wage loss as incentives.

“For daily wage loss, 100 rupees per day is given to the mother for 14 days of stay and for transportation charge 200 is given, and for follow up visits 300 is given.” (RO 14)

- Barriers faced in implementing and utilizing the services provided

After interviewing various levels of officers and health staff, some of the factors emerged as a barrier to implementing the services. According to some of the higher-level officers, the program is very systematic but having some issues in the quality of screening and monitoring the activities. The other component which acts as one of the significant barriers in the successful implementation of the program is the perceptive and biased behavior of the stakeholders who are involved under the program. Some of the officers interviewed have stated that nutrition is given less priority and neglected by some of the health staff and a few of the officers as well. Some of the ground level healthcare workers had different views on the unawareness and ignorant behavior of the community, according to them faulty dietary habits and inadequate dietary intake is one of the significant associating factors which hindered the implementation process.

“I think prioritization is the major barrier not only from the community but from other stakeholders as well. So both community, as well as another sector, also are not understanding the importance. Moreover, this lead lack of community engagement which is the major barrier in implementation.” (RO 2)

“I think parents are not understanding the importance of nutritional and taking healthy diet. Nowadays even the pregnant lady eats packed snacks like Kurkure and other Namkin as lunch and dinner” (PHW 2)

Some of the officers and few beneficiaries have mentioned about the shift in the child's preference for food intake is another challenge. According to the officer, the RUTF food packets should be given every day for eight weeks until the child recovers. So after some time as per the beneficiaries, the child does not like eating the same thing with the same taste. Apart from this, another challenge faced in utilizing the services was the 14 days stay at facility although the admission rates have increased, according to many of the officers. The reason behind this was most of the mothers had other children and family members to take care of, because of which she cannot stay as per most of the healthcare providers. The overall enablers and barriers identified are described in Table 3 with the recommendations given by the participants.

“He does not eat anything, he barely eats that packet and that too because of its sweet taste, but after some time he was not eating that too.” (Beneficiary 11)

4. Discussion

Malnutrition of the under 5-year children is one of the public health concern in India. Management of severe acute malnutrition requires appropriate measures to improve the quality as well as quantity of the dietary practice. The study objective was to assess the implementation of the program in the Vadodara district of Gujarat. The assessment of the program indicates that the findings were according to the desired objectives. The results show that the community-based management (CMAM) for SAM was acceptable and substantial approach as per the involved beneficiaries and healthcare providers. The assessment of achievements and barriers provide vital information on the district's preparedness for implementing a CMAM program. Furthermore, the information received about the existing strength of the program and the recommendations obtained during the study period is equally

Table 3
List of perceived barriers and enablers.

	Barriers	Enablers
Administrative level	Communication gaps	Information received from the doctor
	Prioritization by the stakeholder	Received information about food intake
	Inadequate monitoring	Trust on ASHA
Community-level	Low-quality screening	
	Unawareness of health importance	Received food packets
	Ignorant behavior of the community	Weight gain after taking food packets
	Less demand for services at community	Services at doorsteps
	Overnight stay at the facility	Received incentives
	Lower educational status	Provision of food to mother at the facility
Recommendations	Lower socio-economic status	
	Faulty dietary habits	
	Assurance for high-quality screening	
	Implement program as a routine	
	Involvement of all related sectors	
	Collaborative approach	
	Strong reference network	
	More types of RUTF	
	Appreciation of the ASHA	
	IEC activities for community engagement	

important for the future direction of the program. This suggestion not only unable the evaluation of ground-level obstacles and limitations but also helps in identifying factors that need to be improved in order for the program to be implemented in a capable context.

A study of a multi-stakeholder perspective on CMAM in conducted in Odisha has previously identified similar kind of challenges. The effectiveness of the CMAM is mostly observed in African countries, including Malawi, Ghana, Ethiopia, Sudan, Kenya, and Zambia.^{8,9} Apart from that some of the Asian countries like Sri Lanka and Bangladesh have also explored the same.¹⁰ More evidence and case studies are needed in the Indian setting. In 2009, India's first commercial CMAM program was implemented in Bihar which has achieved higher cure rates and lower rates of mortality among the non-defaulters.⁵

The findings of the assessment show the program has formulated guidelines including preventive as well as curative aspects, which also includes cost-effective community-based management of the severe acute malnutrition. The review article of the pilot CMAM project indicates the requirement of the scaling up of the program in both emergency and development setting with the convergence approach of ICDS and Health department.² The present study adds to the increasing evidence that the community-based management programs are effective in India with the more emphasis given on community mobilization. Additionally, the program has been implemented on a campaign mode in the context of primary healthcare integration, enabling children to receive care through already existing healthcare mechanisms.

In terms of hospitalised therapy and treatment setting, a CMAM model has several advantages. It provides a framework for integrating responses to public health and designing other interventions aiming to reduce the incidence of malnutrition. The decentralization of the program increases the involvement of the community and contributes to the upsurge of availing services.

In this study, parents who have accessed SAM treatment through CMAM by receiving RUTF responded significantly lower expenses with better recovery. Despite many program-related benefits, gaps in referral services and refusal of parents for an extended stay at the facility makes it difficult to scale up SAM treatment and linkage between CMAM and IMSAM. Implementation of an effective monitoring and supervision strategy can reinforce the current approaches in addressing SAM. It is essential to understand the program at the periphery and the associated

barriers with its implementation. The previous studies which were done on community-based management of acute malnutrition have not addressed the decentralization aspect of the program. The current study has explored the program related barriers at the peripheral level and thereby it adds to the presently available literature.

The study has certain limitations, where study participants supposed to be enrolled during the screening procedure, which was not obtained as the screening procedure has been already completed by the time of data collection. Other than that for some of the interviews, maintaining one to one privacy was difficult during data collection and the sample size might not represent the whole population as purposive sampling was used.

5. Conclusion

Severe acute malnutrition requires immediate treatment, such as other life-threatening and fatal conditions. However, not even 1% of children with SAM receive any kind of treatment they need to recover. The study involved the implementation of KMG from healthcare provider's and beneficiaries' perspective, which includes both the preventive and curative aspects in the management of SAM. The results summoned, RUTF is economically effective treatment for uncomplicated severe acute malnourished children, but not a cure for all kinds of malnutrition. According to the respondents, the KMG has reached its one of the goals of higher coverage for screening and high cure rates among the non-defaulting SAM children. The study results indicated the importance of community mobilization as the critical factor in the better implementation of CMAM program. Therefore, community-based management collaborated with institutional management appears to be suitable convergence into a mainline healthcare system provided at the community level.

Declaration of competing interest

Authors declare no funding and no conflicts of interest.

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