

To Study Knowledge, Attitude and Practices (KAP) of Mothers of Children (1-59 Months) Admitted with Severe Acute Malnutrition (SAM) Regarding Feeding and Prevention of Malnutrition

Research Article

Tahilramani G^{1*}, Meena RK² and Mathur A³

¹Nutritionist- National Health Mission, NRC - Department of Pediatrics, Hindu Rao Hospital, New Delhi, India

²Department of Pediatrics, University College of Medical Sciences & GTB, Dilshad Garden, New Delhi, India

³Department of Pediatrics, Hindu Rao Hospital, New Delhi, India

***Corresponding author:** Tahilramani G, Nutritionist- National Health Mission, NRC - Department of Pediatrics, Hindu Rao Hospital, New Delhi, India Email: geet.tahilramani@gmail.com

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Abstract

The first 1000 days of a child's life are considered to be the most vital (beginning from conception to 2nd birthday) for the health, happiness & survival of child. Knowledge of mothers has an important role in the maintenance of nutritional status of the children. Only knowledge is not sufficient but having attitude is also important to put it into practice.

Objective: To evaluate knowledge, attitude and practices (KAP) of mothers of under-five children having Severe Acute Malnutrition (SAM) regarding antenatal care, IYCF practices and associated preventive factors for malnutrition.

Materials and Methods: Type of study: Cross sectional descriptive study.

Study period: April 2018 to October 2018.

Study population-Mothers/primary caregiver of the children admitted at Nutrition Rehabilitation Centre (NRC) of Pediatrics department of a teaching hospital having SAM with medical complication / no medical complication that consented for participation.

Method: Mothers/primary caregiver were interviewed on various aspects of child care using a predesigned Performa KAP were assessed related to Antenatal care, IYCF practices, Malnutrition. These were analyzed on excel programme.

Results: Total 65 mothers/primary caregivers of children with average age 15 months and 41.5% female participated. Mothers had fair KAP about antenatal visits required, medication required in antenatal period and place of delivery. The same applies for growth monitoring and immunization.

Knowledge and attitude regarding breast feeding are fair but practices are still very low. For complementary feeding and underlying factors for malnutrition not only knowledge and practice is low but attitude is also poor.

Conclusion: Awareness of mothers regarding ANC, growth of child and immunization is fair and still needs to be improved to get desired levels of good practices.

We need to have a community based strong IYCF programme emphasizing on the knowledge of mothers on this important child care aspect and counselling of mothers to improve their knowledge and practices with change of attitude.

Their stay in NRC should also be used to improve their knowledge and attitude to have better practices. This will go in a long way to prevent and treat malnutrition which is a major threat country is facing.

Keywords: KAP; SAM; ANC; Maternal Knowledge; IYCF practices

Abbreviations

ANC: Antenatal Care; EBF: Exclusive Breast Feeding; HRH: Hindu Rao Hospital, IYCF: Infant & Young Child Feeding; KAP: Knowledge, Attitude & Practice; MUAC: Mid Upper Arm Circumference; NFHS: National Family & Health Survey; NRC: Nutrition Rehabilitation Centre; SAM: Severe Acute Malnutrition; SAMTU: Severe Acute Malnutrition Treatment Unit; LAMA: Left Against Medical Advice

Introduction

A Nation's health depends on the healthy citizen. A healthy adult emerges from a healthy child [1]. Appropriate nutrition during the 1,000-day window period, between the start of a woman's pregnancy and child's second birthday, is critical to the future health, wellbeing, and success of any child [2]. Although India has not yet overcome the problems of poverty, under nutrition and communicable diseases, it is increasingly facing additional challenges related to the affluence that results from industrialization, urbanization and economic betterment. Over the last two decades, over nutrition and obesity have emerged as public health problems. Therefore, India at present is facing challenge of double burden of malnutrition [3]. The effect of malnutrition on child's development is at multiple levels. Optimum nutritional status is every child's right.

Malnutrition refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients. The term malnutrition covers 2 broad groups of conditions. One is 'under nutrition' which includes stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies or insufficiencies (a lack of important vitamins and minerals). The other is overweight, obesity and diet-related non communicable diseases (such as heart disease, stroke, diabetes and cancer) [4]. Malnutrition is a very complex phenomenon with numerous causes, manifestations and is intergenerational. Like an iceberg, it affects the community both directly as nutritional deficiency diseases and indirectly by leading to high morbidity and mortality among young children [2].

Severe acute malnutrition is defined by very low weight-for-height/length (Z- score below -3 SD of the median WHO child growth standards), and / or a mid-upper arm circumference < 115 mm, and / or by the presence of nutritional edema (B/L pitting oedema ruling out other causes of (oedema). Prevalence of SAM in India is 7.5% as per NFHS-4 and in Delhi it is reported to be 5% [5]. The prevalence of SAM among the admitted cases is as high as 18.5% as was reported by Mathur et, al. [6].

Causes of acute malnutrition include inadequate food intake, incorrect feeding practices, disease and infection or more frequently, a combination of these factors [7]. It is not only the food insecurity but the knowledge of mother regarding various aspects of child care like taking care of herself during antenatal period, IYCF practices, Family planning and immunization are very important along with her attitude towards these and her ultimately practices.

There is a dearth of studies to assess the KAP of mothers/ caregivers of SAM children, relating to the above subjects. This study deals with mothers of medically complicated cases which were admitted in ward & treated in NRC of the study site.

Material and Methods

Site of Study: The present study was conducted in the Department of Pediatrics, Hindu Rao Hospital and North DMC Medical college of Delhi.

Study Design: Hospital based Cross Sectional study.

Duration of study: 22 April 2018 to 15 October 2018. (6-month period).

Sample Size: The study was conducted on a sample size of 65 mothers/caregivers of children admitted with Severe Acute Malnutrition. It was conducted in a face-to-face interview style, which took about 20-25 minutes to complete. It included a written consent signed by the mother / caregiver in the language understood by them.

Inclusion criteria

Mothers/ caregiver of any child (aged 6 months to 5year) admitted and diagnosed with SAM as co-morbidity by any of following criteria as per WHO and GOI guidelines [8].

- Weight for Height < - 3SD
- Mid Upper Arm Circumference (MUAC) <11.5cm.
- B/L pitting pedal edema

Exclusion criteria

1. Parents/caretaker who refused for consent.
2. LAMA before 24 hours of admission before study could be done.
3. Mothers /caregiver (2) with huge language barrier.

A predesigned and pretested Performa was used and information was collected from the participants *i.e.* mothers / primary care givers of the admitted children with SAM. The questionnaire was designed to assess the Knowledge, Attitude & Practices of participants (mothers/ caregivers) of admitted SAM cases on following subjects as according to the literature available these points are the most vital ones for the optimum growth & development of the child:

- Antenatal Care
- IYCF practices
- Immunization
- Malnutrition and its prevention (Table 1).

Each section had three to four questions related to the topic. Each question was framed in three different ways to get the information about their knowledge, attitude and what they have practiced and /or practicing. For all the respondents not doing appropriate practice, we tried to find reason as well.

All the data was stored & analyzed in Microsoft excel; Summations & percentages used for descriptive analysis & interpretation of the collected data. For categorization of scores to assess the KAP, out of the entire mother's cohort (Table 2):

Table 1: Knowledge Questionnaire.

ANC	IYCF	Immunization	Malnutrition
1 How many times at least one should visit doctor during pregnancy?	1. When should we initiate breast feeding?	1. Why child needs to be given injections?	1. If a child is malnourished what is to be done?
	2. Which feed should be given to newborn baby?	2. How many injections has child received till now?	2. What are the options to take a sick child?
2. Medication to be taken during pregnancy?			
3. Best place to have delivery?	3. For how long exclusive breast feeding should be practiced?		
	4. Best age to start complimentary feeding?		
	5. What should be the consistency of food when it is introduced?		

Table 2: Scoring Criterion.

Less than 50% of mothers /caregiver chose best option	Poor
Between 51-75% of mothers /caregiver chose best option best option.	Fair
More than 75 % mothers /caregiver chose best option.	Good

Results

Total 65 mothers / caregivers agreed to participate in the study. 97% (n=63) of respondents were mothers while 3% (n=2) participants were primary caregiver. The average age of child in the group was 15 months with 41.5% (n=27) were females.

In the cohort 41.5% had monthly income Rs 6431 to 10718 and 36.8% had above 10718. 4 had above Rs 21438.

In 95.4% (n=62) cases had toilet facilities whereas 4.6% (n =3) responders had to defecate in open areas (Table 3 and Table 4).

The first segment of the questionnaire dealt with the Antenatal care.

72.3% had knowledge that there should be 4 or more visits and 73.8% actually did so many visits. Attitude was even in higher percentage of mothers (84.6%) for antenatal visits so if knowledge is improved by group and one to one counselling ANC visits can be improved.

Reasons for having less than 4 visits in those 17 cases on top were, they did not get enough time 4 cases, with other reasons family pressure (3) & facility far off in 2 cases. 7 cases did not have any specific reason.

There were approximately 83.1% felt that there should be need for taking medications during pregnancy understanding that there must be need to take them but only 60.0% had requisite knowledge and 69.2% completed the medications. Rest did not take medications as recommended as they or family was not convinced topped the reason in 20 defaulters and 6 could not specify the reasons.

Institutional deliveries were in 81.5% cases only though 93.8% were convinced that it should be in health facility. Among those who had home deliveries 66.8% could not reach hospital on time.

In the second set of questions information was gathered on IYCF practices. The data showed that timely initiation of breast feeding is only in 38.5% cases despite 60% had the knowledge that initiation should be done within one hour and very high percentage convinced and have attitude for early initiation.

In this cohort of 40 mothers who could not initiate breast feeding within one hour 37.5% reason was that baby was not with mother and 47.5% could not respond /specify any reason for delayed initiation.

A mother have the knowledge that breast feeding is best for the babies and wants to do that also still only 53.8% could breast feed the babies exclusively for required period. Top most reason for switching to mixed feed was not enough breast milk.

63.3% mothers had introduced top milk for this reason. Very high percentage 23.3% could not give any specific reason.

78.5% had good knowledge of duration for which exclusive breast feeding is to be given, 73.8% had attitude for it as well but only 40% practiced it. The reason for knowledge and attitude not converting into practice was not enough milk in 48.7% and very high percentage out of these 39 cases 41% there could not attribute to any specific reason.

Questions related to the best way to increase breast milk were asked too but only one responded that it can be increased by only two gave importance to sucking by the baby to increase milk supply. 29.2% had no idea and 55.4% feels only mothers' diet helpful. 67.7% feels that breast milk supply can be increased. Only 5 mothers consulted the doctors to increase for not enough milk (Table 5).

The next segment of the questionnaire dealt with the complementary feeding. The data shows that only 81.5% had the knowledge regarding the age of starting complementary feeding & 67.7% had the attitude for the same. But only 47.7% practiced it. 41.1% had no specific reason for not starting.

Only 44.6% have knowledge that consistency of food is important and still lower 38.8% gives food of right consistency. 35.4 have given thin food most of the time and rest have not taken care of consistency any time. Mostly (30 out of 43) had no specific reason for giving food of not right consistency (Table 6 and Table 7).

Knowledge regarding amount to be given and how frequently is very poor. Only 21.5% had knowledge about the quantity and only 26.2% about how frequently child needs to be feed. There is lack of attitude also. Only 38.5% responded that they will try or were confident that child will take. Only 23.1% were giving as frequently as required. Main reasons specified were that they were not aware that child needs to be given so much in 26% cases and equally felt that child will not be able take this much. A big percentage of them 42% could not specify any reason. None of the mother said that they

Table 3: Demographic Profile of Cohort.

Age of mothers/Caregivers		
Age(Years)	Number	Percentage
<19	3	4.6 %
20-24	28	43 %
25-29	25	38.5 %
30-34	7	10.8 %
>35	2	3.1 %
Education of Mothers/Caregivers		
Illiterate	22	33.8%
Primary	13	20
Middle	25	38.5 %
Secondary	2	3.1 %
Graduate	2	3.1 %
Post graduate	1	1.5%
Occupation of Mothers		
House wife	62	95.4 %
Working	3	4.6%
Type of Family		
Nuclear	35	53.8%
Three Generation Family	7	12.3 %
Joint Family	22	33.8 %
Number of Children		
1	22	33.8%
2	23	35.4%
3	10	15.4 %
4	6	9.2 %
4+	4	6.2 %

Table 4: KAP ANC Scores.

	ANC visits	Medications taken	Place of deliveries
Knowledge	72.30%	60.00%	95.40%
Attitude	84.60%	83.10%	93.80%
Practice	73.80%	69.20%	81.50%

Table 5: KAP Breast feeding practices.

	Initiation of Breast Feeding within one hour	Best way to feed baby	Duration of breast feeding	Best way to increase breast milk
Knowledge	60%	93.80%	78.50%	3.10%
Attitude	93.80%	93.80%	73.80%	67.70%
Practiced	38.50%	53.80%	40.00%	7.70%

Table 6: KAP Complementary Feeding.

	Age of starting complimentary feeding	Consistency of food
Knowledge	81.5 %	44.6%
Attitude	67.7%	63.1%
Practiced	47.7 %	38.8%

Table 7: KAP Amount and Frequency.

	Amount	Frequency
Knowledge	21.5 %	26.2 %
Attitude		38.5 %
Practiced frequency as recommended		23.1 %

are not giving this much amount and frequently due to financial constraint and except one none gave the reason as constraint of time.

Malnutrition

Mother's have very poor knowledge regarding the causes associated with malnutrition & they do not do anything special to prevent malnutrition in the child without having any specific reason for this. A big number had no idea about the causes of malnutrition that 20 out of 65 *i.e.* 30.7%. 23% of the respondents know that both feeding and underlying disease /repeated infections are the causes of malnutrition. Feeding alone was felt as a cause of malnutrition by 29.2% and 15.3% attributed it only to infections. The mothers admit in 37% cases that they did not do anything to prevent malnutrition in this child. 63.1% had no reason for not taking special efforts to prevent malnutrition.

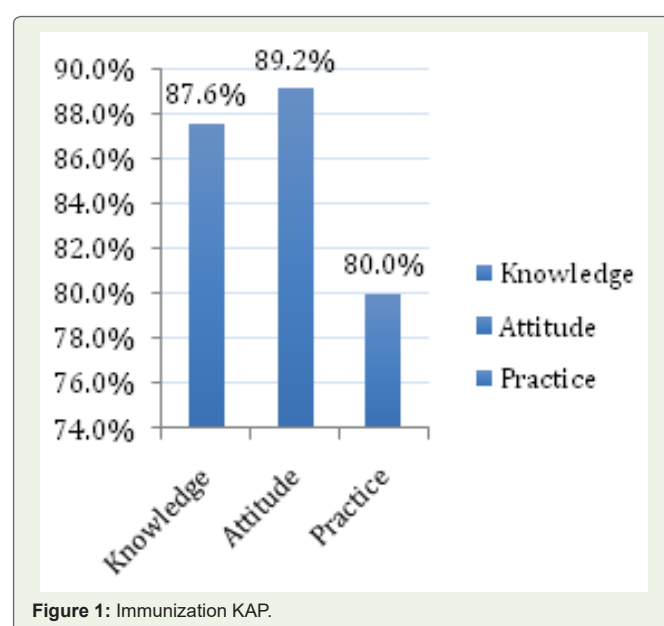
Immunization

Results of immunization were quite positive with 87.6% having knowledge about importance of immunization & 80% immunization is updated and another 14% had partially immunized this child (Figure 1).

Discussion

In the current study we found that the knowledge of the mothers / primary caregiver for antenatal care including visits and place of delivery is fair. Out of 65 participants 73.8% had 4 or more antenatal visits which are much more than the national average of 51.2% as per NFHS- 4 data. Similar findings are there about the rate of institutional deliveries, which is 81.5% compared to the 84.4% and 78.9% for Delhi and national average respectively as per NFHS -4 [5].

In a recently published study from Ethiopia including 350 participants, the rates of antenatal visits and institutional deliveries were 85.5% and 72.6% respectively [9].

**Figure 1:** Immunization KAP.

During the period of pregnancy, a healthy and balanced diet with an adequate intake of essential nutrients is important not only for foetal development and birth outcome, but also for the mother's health.

Adequate calcium intake during pregnancy is of major importance for the health of both mother and fetus. It was reported by Willemse et, al. that calcium supplements were used by 64.8% of women [10]. Along with calcium supplements, Iron supplements are particularly important for pregnant women who have anaemia. Demuth et, al. reported that 65% of pregnant ladies consumed recommended iron supplements [11].

In our study it was reported that only 50% were taking Iron Folic Acid and Calcium tablets while 7.6% (n=5) consumed only iron. According to NFHS-4, 49.9% of pregnant females in Delhi consume Iron & FA supplements while only 8.7% at the national level [5].

In this study 68.7% of respondents had completed the medication course. Our data shows that if counselling is done to increase the knowledge it will convert to practices as their attitude is positive in much higher percentages.

The early initiation of breast feeding is the key factor for the successful exclusive breast feeding. It plays a very vital role in continuation & sustenance of breast feeding & practicing EBF for 6 months, which forms the basis of healthy development of the baby by providing adequate amount of required nutrition, prevention of the malnutrition state and development of bonding between mother & baby.

Age appropriate and adequate feeding practices are the main contributors to reducing morbidities and mortalities in under-five children [12]. According to the WHO rating on early initiation of breastfeeding; 0–29% is considered poor, 30–49% as fair, 50–89% as good and 90–100% as very good [13].

In our study only 38.5% respondents practiced timely initiation of breast feeding even though 50.7% had knowledge of it and 78.4% had attitude. This shows that Knowledge and attitude both are there but still practices are very low. According to NFHS- 4 the timely initiation of breast-feeding rate is 29.1% in Delhi, whereas the national figures are 41.6%. The study done by Manohar et, al. in Tirupati in India about the factors responsible for delayed breastfeeding [14], They had found that 60% of mothers knew that breastfeeding should be initiated as early as possible after birth and increasing the knowledge of patients will be beneficial for increasing breastfeeding rate further along with change in health facility policies as they had found the separation of mother and baby as the commonest reason for delayed initiation.

In a study done by Fadare et, al. in Nigeria 76.1% respondents practiced exclusive breast feeding [15]. Whereas, in a study done by Dukuzumuremyi et, al. in East Africa only 55.9% respondents actually practiced EBF in spite of the fact that 84.4% were aware of EBF and its importance [16]. While the rates for India are 54.9% as reported in NFHS-4.

This points to the fact that for improving breast feeding practices not only improving knowledge will be helpful but supporting the mother in other ways also.

Above 93% had knowledge & attitude for breastfeeding but only 53% were practicing exclusive breastfeeding. Not enough milk tops the list of reasons for not practicing exclusive breastfeeding, found in 67.1% of the mothers. Practically mothers do not have knowledge that milk can be increased by correct positioning and attachment. Practices of exclusive breast feeding and duration of breast feeding is low despite knowledge and attitude in higher percentage.

Mothers have poor knowledge and practices about age of starting and consistency of complementary feeding. The data for India by NFHS suggests that only 8.7% children get age appropriate complementary feeds while it was 34.3% in a study done by Zeleke et, al. in Ethiopia [9]. Practically they have no idea about quantity and frequency of feeding and leading to poor practices. As per national data on complementary feeding complementary is started for 42.7% at age of 6 months along with mothers giving breast milk.

Globally immunization of infants and young children against various kinds of serious infectious diseases is among the most successful and cost-effective interventions in preventative health care [17].

Results of immunization in our study were very encouraging, 87.6% respondents had knowledge about it and 80% actually practiced it. In a study done by Verulava et, al. 97% respondents had a positive attitude towards immunization, whereas in our study 89.2% respondents were quite positive with regards to vaccination. As per NFHS 4 [18], 62% of children below 2 years receive age appropriate vaccinations while a study done in Bijapur by Angadi et, al. reported the immunization rates to be 34.8% [19]. A study by Thiru kumar & Kavin prasad in Chennai reported about 90% of parents have the positive attitude towards immunization and 73% of parents have good knowledge about Immunization [20].

Conclusion

Knowledge of mothers/ caregivers is better regarding antenatal care and immunization than feeding of infant and malnutrition causes and prevention. Their knowledge regarding the infant feeding is poor especially regarding the components of complementary feeding when to start, quality and quantity and thickness of food. Knowledge and attitude of mothers need to improve by group and /or individual counselling. Stay in the NRC should be utilized to improve their knowledge and attitude on infant feeding. IYCF Centre facilities need improve to support, mothers having Breast-feeding difficulties.

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Contributors:

- Dr Alka Mathur, In charge NRC & Dr Rajesh Kumar Meena contributed to conceptualizing the study and patient care.
- Dr Alka Mathur and Ms Geetanjali Tahilramani contributed

to programme implementation.

- Dr Alka Mathur and Ms Geetanjali Tahilramani led data analysis, interpretation and wrote manuscript.

All the authors reviewed and approved the final manuscript.

Disclaimer

The views expressed in this paper are those of the authors and do not necessarily reflect the official position of the institutions they are affiliated with.

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