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Research Article

Impact of Nutritional Education on the Knowledge of Mothers Regarding Infant and Young Child Feeding Practices

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Abstract: Adequate nutrition in first 24 months through optimal infant and young child feeding (IYCF) is fundamental for the growth and development of a child. 60% of the under five deaths are directly or indirectly related to malnutrition. Lack of knowledge of caregivers, poverty and local cultural practices can lead to poor child feeding practices which can be improved by proper nutritional counselling. The objective of the study was to assess the knowledge of mothers on Infant and Young Child Feeding practices before and after nutrition education. Mothers of the children admitted to pediatric wards in Government General Hospital, Kakinada were interviewed using a predesigned questionnaire. Their knowledge scores before and after nutritional counselling were recorded. Out of 500 mothers enrolled in the study, 97.6% of the mothers had knowledge on feeding of colostrum, and 85% were aware of adequate night feeds. Knowledge on other aspects of breastfeeding like initiation of breastfeeds (60%), exclusive breastfeeds for 6 months (66.6%) and continuation of breastfeeds for 2 years (48.8%) was low. 62% of the mothers had knowledge on correct age of introduction of complementary feeds. There is statistically significant improvement in the knowledge of mothers after nutritional education. Nutritional education programmes can improve the knowledge of mothers on IYCF practices.
Keywords: IYCF practices, Nutritional education, Breast feeding, Complementary feeding, Knowledge of mothers, IYCF indicators.

INTRODUCTION

Adequate nutrition in first 24 months through optimal infant and young child feeding is fundamental for the growth and development of a child to its fullest potential. Globally, 162 million under-five children were stunted in 2012.

As per National Family Health Survey-3(NFHS) [1] 48% of under five children are stunted which indicates that, half of the country's children are chronically malnourished. 19.8% of under five children in the country are wasted which indicates that, one out of every five children in India is wasted. 43% of children under age five years are underweight for their age. About 60% of the under five deaths are directly or indirectly related to malnutrition. Undernutrition is responsible for more than one-third of child deaths globally, and it is more prevalent in low and lower-middle-income countries. Exclusive breast feeding upto 6 months can prevent upto 13% of the estimated under five deaths. Appropriate complementary feeding can prevent 6% of the estimated under five deaths.

Poor IYCF practices falter the physical growth and cognitive development of child as well. Poor child feeding practices are caused by myriad of factors. In India, varied local cultural and traditional beliefs create tendency towards selection of low quality complementary foods, food taboos and restrictions. Social factors like poverty and poor knowledge of caregivers on nutrition and food diversity also influence the feeding practices which can be improved by counselling the caregivers on correct feeding practices by knowledgeable health workers.

Our study was designed to assess the knowledge of mothers on IYCF practices and the level of improvement in their knowledge after nutritional education.

Aim and Objective

To assess the knowledge of mothers on Infant and Young Child Feeding practices before and after nutritional education.

METHODOLOGY

This study was a prospective interventional study conducted in the Department of Pediatrics, Government General Hospital, Kakinada, East Godavari district, Andhra Pradesh, India over a period

of 1 year i.e., from May 2013 to April 2014. The study was approved by the hospital ethics committee. A total of 500 mothers of those children who were stable and stayed for atleast 7 days in the hospital were included in the study. Mothers who failed to give consent for any reason were excluded from the study.

Predesigned proforma with questionnaire in local language (a set of 24 questions for breastfeeding and 27 questions for complementary feeding) was used to assess the knowledge of mothers on various aspects of Infant and Young Child Feeding (IYCF) practices. Those mothers who cannot read and write were asked questions in local language and the answers given were noted. Each correct response from the mother was given a score of 1 and the total score of the mother was calculated separately for breastfeeding and complementary feeding. Then a nutritional counselling imparts education to the mothers regarding Infant and Young Child Feeding (IYCF) practices. Knowledge of the mothers was again assessed using the same questionnaire at the time of discharge and the score of the mother noted.

Based on the scores, mothers were categorized as having poor knowledge (score of 0-12), fair knowledge (score of 13-18) and good knowledge (score of 19-24) on breastfeeding. Regarding complementary feeding, they were categorized as having poor knowledge (score of 0-9), fair knowledge (score of 10 - 18) and good knowledge (score of 19-27). Data was entered and analyzed using SPSS 16.0 software. P value < 0.05 was considered as significant.

RESULTS

Out of 500 mothers enrolled in this study, 97.6% mothers had knowledge on feeding of colostrum and 85% were aware of giving adequate night feeds. Correct knowledge on other aspects of breastfeeding like initiation of breastfeeds within one hour of birth (60%), avoidance of prelacteal feeds (76.8%), exclusive breastfeeds for first six months (66.6%), continuation of breastfeeds for 2 years (48.8%) and breastfeeding on demand (74%) was low among the mothers. After nutritional education, there was improvement in their knowledge in all the above aspects which is statistically significant with p value of < 0.05.

There were several misconceptions regarding breastfeeding among the mothers. Only 55.8% knew that breastfeeding can be continued during breast engorgement and 54.8% knew that it can be continued during maternal fever and other illnesses. 79.6% mothers felt that breastfeeding can be continued during diarrhoeal episodes of the child and only 12.2% of the mothers felt that babies with neonatal jaundice can be breastfed. After nutrition education, most of the mothers in the study group had correct knowledge on continuation of breast feeds during illness of mother or child which was statistically significant (p value < 0.05). In the present study, 71.6% of mothers had knowledge on correct position of breastfeeding. This increased to 97.2% after nutritional education. Only 21.8% of mothers had knowledge on correct attachment during breastfeeding and this improved to 64.2% after nutritional education. 24% of mothers had knowledge on avoidance of bottle feeds. This improved to 64% after education (Table 1).

Only 62% of the mothers had knowledge on the correct age of introduction of complementary feeds. Knowledge of mothers on the frequency of feeds and quantity of food to be given at each feed is low (Table 2). Very few mothers had correct knowledge regarding the age of introduction of commonly used foods like vegetables, fruits, ghee, meat and dal before nutrition education. Knowledge of mothers in all these aspects increased after nutritional education which is statistically significant.

Educational status of mothers did not show significant differences in the knowledge of the mothers on IYCF practices.

Before nutrition education, 30.8%, 57.2% and 12% of mothers had poor, fair and good knowledge on breastfeeding respectively. After nutrition education, 94% of the mothers had good knowledge. Average pre test score of mothers on breastfeeding practices was 14.2 and the post test score was 22.3 which is statistically significant. Before nutrition education, 34.6%, 61.4% and 5% of mothers had poor, fair and good knowledge on complementary feeding respectively. After nutrition education, 87% of the mothers had good knowledge. Average pre test score of mothers on complementary feeding practices was 11.3 and the post test score was 22.4 which is statistically significant.

Table 1: Knowledge on breastfeeding

Knowledge of mother on breast feeding practices	Mothers having correct knowledge				p value
	Before nutrition education		After nutrition education		
	Number	%	Number	%	
Feeding of colostrum	488	97.6	500	100	0.0005
Exclusive BF for 6 months	333	66.6	461	92.2	< 0.0001
BF for 2 years	244	48.8	461	92.2	< 0.0001
Feeds on demand	370	74	466	93.2	< 0.0001
Night feeds	425	85	453	90.6	0.0089
BF during breast engorgement	279	55.8	472	94.4	< 0.0001
BF during maternal fever	274	54.8	455	91	< 0.0001
BF during diarrhoeal episodes of baby	398	79.6	495	99	< 0.0001
BF of baby with neonatal jaundice	61	12.2	289	57.6	< 0.0001
Avoidance of bottle feeds	118	23.6	323	64.6	< 0.0001
Position of BF	358	71.6	486	97.2	< 0.0001
Attachment during BF	109	21.8	321	64.2	< 0.0001

Table 2: Knowledge on complementary feeding

Knowledge on complementary feeding practices	Mothers having correct knowledge				p value
	Before nutrition education		After nutrition education		
	Number	%	Number	%	
Introduction of CF at 6 months	310	62	476	95.2	<0.0001
Frequency of complementary feeds per day					
6-12 months babies if BF	269	53.8	467	93.4	<0.0001
6-12 months babies if not BF	131	26.2	324	64.8	<0.0001
1-2 years	130	26	331	66.2	<0.0001
3-5 years	359	71.8	451	90.2	<0.0001
Quantity of feed					
6 – 12 months	50	10	230	46	<0.0001
1-2 years	89	17.8	334	66.8	<0.0001
3-5 years	181	36.2	402	80.4	<0.0001

Table 3: Knowledge on key IYCF indicators in different studies

Study	Initiation of Breastfeeds within 1 hour of birth	Exclusive Breastfeeds for 6 months	Complementary feeds from 6 months
Present	60	66.6	62
Chaudary *et al*. [2]	10	15	20
Sriram *et al.* [3]	70.6	96	74.6
Meshram *et al.* [4]	22	41.4	59
Shafee *et al*. [5]	47	29	
Mukhopadhyay *et al.* [6]	39.6	52.1	
Qiong *et al*. [7]	33	36.6	

DISCUSSION

Optimal IYCF practices are the corner stones of child care and development. The medical personnel have a key role in influencing child care behaviors and practices of the mothers. Women need information about the correct feeding practices. The knowledge of mothers on key IYCF indicators in different studies was given in Table 3.

The first key IYCF indicator i.e., initiation of breast feeds within one hour of birth is the key for successful breast feeding. In the present study 60% of the mothers had knowledge on the first key IYCF indicator. Sangole [8] found that mothers who received breast feeding counselling during antenatal checkups were less likely to cause delay in initiation of breast feeding. Only 24.5 % and 40.5% of the mothers practiced initiation of breast feeding within one hour of birth according to data from NFHS-3 [1] and DLHS-3 [9] respectively. This shows that there is a gap between knowledge and practice of the mothers which needs to be addressed.

The second key IYCF indicator that is exclusive breast feeding for 6 months protects the child from malnutrition and infections and ensures overall

development. In the present study, 66.6% mothers had knowledge on exclusive breastfeeding for first 6 months which was coinciding with other studies.

Feeding colostrum to the baby helps in building stores of nutrients and anti infective substances in the baby's body. Colostrum is basically the first immunization a child receives from the mother. In the present study, knowledge of mothers on colostrum feeding was high.

In the present study, knowledge on avoiding pre lacteals was low. 24% of mothers still felt that pre lacteals are required. Pre lacteal feeding of honey, sugar water, water etc. to the new born is a popular custom in the society which increases the chances of infection to the infant and decreases the rate of exclusive breast feeding. In the present study, knowledge of mothers on proper position and attachment during breast feeding is low. Even after nutritional education, knowledge on attachment did not improve. Proper position and attachment are key for successful breast feeding. Improper attachment can lead to sore and cracked nipple and lactation failure. Video demonstrations and posters on correct attachment can help to improve this knowledge.

In the present study, knowledge of mothers on continuation of breast feeding during illness of mother and child was low. Temporary cessation of breast feeding during illness can lead to lactation failure.

Feeding with bottle is hazardous to the infant increasing the risk of diarrhea and otitis media. In the present study, knowledge of mothers on avoidance of bottle feeds is low i.e., 24%. Even after nutritional education, only 64% mothers had correct knowledge in this aspect. Repeated reinforcement by health care personnel helps to improve their knowledge.

The third key IYCF indicator is the initiation of complementary feeding after 6 months. After 6 months of age, breast milk alone is not enough to sustain the growth and development of infant. During the period of complementary feeding, children are at high risk of under nutrition. Complimentary foods are often of poor quality, introduced too early or too late, in too small quantity and not frequent enough. In the present study 62% of mothers were aware of correct age of introduction of complementary feeds but knowledge of mothers on frequency and quantity of complementary feeds was low. Hence it is necessary to improve awareness among mothers in these aspects.

The fourth key IYCF indicator- continuation of breast feeding up to the age of 2 years or beyond is important as it provides useful amounts of energy, good quality protein and other nutrients essential for brain development. In the present study, only 48.8% of mothers knew that breast feeding is to be continued for 2 years. Premature cessation of breast feeding contributes to malnutrition.

After nutritional education, there was significant improvement of the knowledge of mothers in various aspects of breast feeding and complementary feeding. Studies done by Vani *et al.* [10] and Galhotra *et al*. [11] showed similar results.

Advice regarding infant and young child feeding practices should be started at community level right from teenage at Anganwadi centers and stress should be on mother's health during pregnancy. Actions to promote IYCF can be at health facilities, during community outreach activites and during community and home based care. Inspite of good knowledge, there may be lacunae in the IYCF practices. Hence, it is important to utilize every opportunity of contact with mothers to counsel those regarding correct IYCF practices. More emphasis should be given on certain aspects like proper position and attachment of breast feeding avoidance of bottle feeds, continuation of breast feeding during illness of mother and child and the quality, quantity and frequency of complementary feeds. Videos, live demonstrations, posters, group discussions and role plays at antenatal care centers, postnatal wards and anganwadi centers should be made use of to impart knowledge on correct IYCF practices. In high case load areas like district hospitals, nutritional counsellings trained in IYCF counselling and lactation management may be employed. When nutritional counselling is associated with Nutritional Rehabilitation Centre, their services should be utilized as it was done in the present study. Establishment of IYCF counselling centres in the outpatient area in high case load facilities can help in monitoring growth of children and IYCF counselling. It is the responsibility of all health care personnel to pass on the correct information with the aim of promoting optimal growth and development of children.

CONCLUSION

In the present study, mothers had good knowledge in certain aspects of breast feeding like initiation of breast feeding with in 1 hour, colostrum feeding, avoidance of pre lacteals and feeding on demand but the knowledge on certain aspects like position and attachment during feeding, avoidance of bottle feeds and continuation of breast feeding during illness of mother and child was low. Knowledge on age of introduction, quantity and frequency of complementary feeds was also low. There was statistically significant improvement in the knowledge of mothers after nutritional education. Inspite of good knowledge, there may be lacunae in the IYCF practices due to social and economic reasons and local cultural practices. Hence, repeated re-inforcement of correct knowledge on IYCF practices by health care personnel at every contact of mothers can help in filling up of this gap and promote good feeding practices.

Strengths of the study

The hospitalization period was taken as an opportunity to educate the mothers as they will be more receptive in the hospital than in the community.

The services of the nutritional counsellings were well utilized in the present study to educate mothers regarding IYCF practices.

Limitation of the study

Limitation of this study was the time interval between pre and post test which was too short, hence recall bias was less.

REFERENCES

1. NFHS-3; National Family Health Survey-3. International Institute Population of Science, Mumbai 2005-06. Available from http://www.rchiips.org/nfhs/nutrition_report_for_website_18sep09.pdf
2. Chaudhary RN, Shah T, Raja S; Knowledge and practice of mothers regarding breast feeding: a hospital based study. Nepal Journals Online, 2011; 9 (3): 194-200.
3. Sriram S, Soni P, Thanvi R, Prajapati N, Mehariya KM; Knowledge, attitude and practices of mothers regarding infant feeding practices. National Journal of Medical Research, 2013; 3(2): 147-150.
4. Meshram II, Laxmaiah A, Venkaiah K, Brahmam GNV; Impact of feeding and breastfeeding practices on the nutritional status of infants in a district of Andhra Pradesh, India. The National Medical Journal of India, 2012; 25(4): 201-206.
5. Shafee M, Leena MS, Firdous R, Jogdand GS; Knowledge, Attitude and Practices (KAP) of mothers regarding breast feeding in South India. Indian Journal of Maternal and Child Health, 2011; 13(2): 1-8.
6. Mukhopadhyay DK, Sinhababu A, Saren AB, Biswas AB; Association of child feeding practices with nutritional status of under-two slum dwelling children: A community-based study from West Bengal, India. Indian J Public Health, 2013; 57(3): 169-172.
7. Wu Q, Scherpbier RW, van Velthoven MH, Chen L, Wang W, Li Y, Zhang Y *et al*.; Poor infant and young child feeding practices and sources of caregivers' feeding knowledge in rural Hebei Province, China: findings from a cross-sectional survey. BMJ Open, 2014; 4(7): e005108.
8. Sangole SS, Durge PM; Breast feeding practices of mothers in urban slum, Nagpur. Indian J Preventive & Social Medicine, 2002; 28(1&2): 26-28.
9. DLHS-3; District Level Household and Facility Survey 2007-08. International Institute Population of Science, Mumbai, 2010. Available from www.rchiips.org .
10. Sethi V, Kashyap S, Seth V; Effect of nutrition education of mothers on infant feeding practices. Indian J Pediatric., 2003; 70(6): 463-466.
11. Galhotra A, Abrol A, Agarwal N, Goel N, Swami H; Impact of community based awareness campaign on breast -feeding among lactating women in Chandigarh. The Internet Journal of Health, 2007; 7(1). Available from https://ispub.com/IJH/7/1/12581