



Original Research Article

Impact of Health Education on Complementary Feeding Practices in Ram Nagar Urban Health Centre, Belagavi, India: Interventional Study

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ABSTRACT

Introduction: Globally, 10.9 million under-five children dies every year of which 2.4 million deaths occur in India alone. Adequate nutrition is essential for achieving one of the Millennium Development Goals (MDG). Mothers is not conscious of appropriate complementary feeding practices. For better knowledge and practice health education is needed.

Objective: To study the impact of health education on knowledge and practices of complementary feeding practices in mothers.

Materials and Method: An interventional study was conducted among 60 mothers of Ram Nagar Urban Health Centre, Belagavi who had practiced exclusive breast feeding for 6 months. Baseline and end line survey was done from February to October 2014. Health education was given to all 60 mothers in six session including 10 mothers in each group. Ethical clearance and informed consent was obtained.

Results: Majority (71.7%) of mothers practiced complementary feeding at the appropriate age of 6 months. It was found that food diversity, food consistency, food Quantity, meal frequency and modes of feeding complementary food were improved in the post-test after following health education intervention.

Conclusion: The complementary feeding practices and its constituent variables significantly increased after health education intervention. There is need of proper health education intervention through health workers to mothers, for improvement regarding complementary feeding practices throughout the nation.

Key Words: Impact, Practice, Complementary feeding, Health education, Mother, Urban health center

INTRODUCTION

Adequate nutrition is essential for achieving one of the Millennium Development Goals (MDG) to eradicate extreme poverty and hunger. The National guidelines on Infant and Young Child Feeding IYCF in India recommended early initiation of breast feeding within one hour and exclusive breast feeding for the six months of life to achieve optimum growth, development and health. [1] World Health

Organization (WHO) recommends exclusive breast feeding (BF) for the first six months of age addition of complementary feeds at six months with continued BF till two years.

[2] Complementary foods are defined as any solid or liquid foods with nutritional value other than breast milk, offered to breastfed infants. [3] Complementary feeding is the process starting when breast milk alone or infant formula alone is no longer sufficient to meet the nutritional requirements of an

infants and when other foods and liquids alone with breast milk or breast milk substitute are needed. The age range for complementary feeding is generally 6-24 months. [4]

Globally, one third of under-five mortality is caused by malnutrition due to inadequate complementary feeding. [5] Under nutrition is more prevalent in low- and lower-middle-income countries. [6] More than 60% of children living in South Asia are malnourished. [7] In developing countries, 19.4% of under-five children are underweight, 29.9% are stunted. [8] In India, 67% of children death occurred due to potentiating effects of malnutrition. [9] According to NFHS-3, 46.3% of children were exclusively breastfed at the five months of age, 24.5% of children were initiated breastfeeds within one hour of birth. [10] According to NFHS-3, in Karnataka, only 36.15% of children were breastfed within one hour of birth under three years of age, 67% of children were exclusively breastfed at the months of six and according to NFHS-2, only 35% of children received complementary food along breastfeeds at the age 6-24 months. [11]

Appropriate child feeding has significant contribution on their growth and development. Evidence based feeding practices is crucial on child mortality reduction. India has been thriving to achieve the Millennium Development Goals. Therefore, determining the prevalence of complementary feeding practice and associating factors helps to show the progress of appropriate complementary feeding practices. The overall purpose of this study was to study the impact of health education on knowledge and practices of complementary feeding practices of mothers.

MATERIALS AND METHODS

This was an interventional study conducted at Ram Nagar Urban Health

Centre, Belagavi involving 60 mothers who had practice exclusive breast feeding for 6 months. Mothers who had not breastfed their infants and infants with health problem which could interfere with feeding such as cleft palate, CHDs, neurological illnesses, etc. were excluded from the study. Study subjects were selected by applying computer generated randomization list. Sample size was calculated by $n = 2(2 \alpha + 2 \beta)^2 pq / (p2 - p1)^2$. Baseline and end line survey was done in February 2014 to October 2014. Health education was given to all 60 mothers in six session, including groups of 10 mothers for each session. So, these mothers were included in the main study. The health education package was of 4-6 hours duration. The health education package included was Infant and Young Child Feeding practices guidelines.

Pilot study was conducted among 10 percent of mothers and there was no major correction in the questionnaire. Knowledge and practice regarding complementary feeding was obtained from the eligible mothers before the health education program by using a pre-designed questionnaire. Health education was provided by a Pediatrician to the mothers regarding complementary feeding practices. After that using same pre - training questionnaire, post - training impact on knowledge of complementary feeding practices was obtained after a period of three months from health education.

Ethical Clearance was obtained from Institutional Ethical and Research Committee, Jawaharlal Nehru Medical College, Belagavi. All individuals who participated in this study received verbal and written explanation of the procedures involved and the benefits expected from the study. All participants were informed that, they were able to withdraw at any time during the interview. Data were entered in SPSS software (SPSS 20.0 version). The results were analyzed by using mean,

proportions and percentages. McNemar test was used further to see statistical significance of pre and post-test variable.

RESULTS

Out of 60 children, 24(40%) were male and 36(60%) were female. The mean age was 12.67 months with the standard deviation of 4.8 months with range of 6-21 months. Among 60 children, 43(71.7%) of children were initiated complementary feeding at the age of 6 months, followed by

8(13.3%) children at 7 months, 8(13.3%) children at 8 months and 1(1.7%) child at 9 months. The health education was effective in increasing the knowledge regarding the benefits of complementary feeding.

Although the mothers gave cereals, they didn't give vitamins, iron, and minerals enriched food. After giving health education on nutritive rich food, it was found that there were increase in the consumption of nutritive rich food and was statistically significant. ($p < 0.05$) (Table 1)

Table No. 1: Distribution of children according to complementary food (CF) before and after intervention.

Types of CF	6-8 months		P value	9-11 months		P value	12-21 months		P value
	Pre-test	Post-test		Pre-test	Post-test		Pre-test	Post-test	
	No. (%)	No. (%)		No. (%)	No. (%)		No. (%)	No. (%)	
Rice	2 (3.33)	6 (10)	0.289	11 (18.33)	12 (20)	1.000	31 (51.67)	32 (52.33)	NS
Dal	5 (8.33)	15 (25)	0.002*	8 (13.33)	11 (18.33)	0.250	29 (48.33)	32 (52.33)	NS
Ragi	0 (0)	8 (13.33)	NS	2 (3.33)	11.67	0.063	8 (13.33)	18 (30)	0.002*
Fruits	1 (1.67)	4 (6.67)	0.250	3 (5)	8 (13.33)	0.063	13 (21.67)	30 (50)	0.000*
Vegeta-bles	0 (0)	3 (5)	NS	2 (3.33)	8 (13.33)	0.032	14 (23.33)	26 (43.33)	0.000*
Non-vegetarian	0 (0)	6 (10)	NS	2 (3.33)	6 (10)	0.125	11 (18.33)	28 (46.67)	0.000*
Com-mercial food	12 (20)	10 (16.67)	0.625	4 (6.67)	5 (8.33)	1.000	16 (26.67)	11 (18.33)	0.332

*- significant at $p < 0.05$ NS- Not significant

Table No. 2: Distribution of children according to quantity, consistency and frequency of complementary feeding.

	Pre-test	Post-test	P- value
	No. (%)	No. (%)	
A. Quantity of CF			
1. Feeding 6-8 months: Starting with ½ cup which shows no change	16(26.67)	16 (26.67)	NS
2. Feeding 9-11 months: Starting with 1 cup which shows no change	1(1.67)	1 (1.67)	NS
3. Feeding 12-21 months : Starting with 1 & ½ cup and gradually increasing the quantity	2(3.33)	11 (18.33)	1.000
B. Consistency of CF (semi-solid)			
1. Feeding 9-11 months:	7(11.67)	8(13.33)	NS
2. Feeding 12-21 months :	12(20)	13(21.67)	0.186*
C. Frequency of CF			
1. Feeding 6-8 months: 2-3 times a day	0(0)	6(10)	NS
2. Feeding 9-11 months: 2-3 times a day	1(1.67)	9(15)	NS
3. Feeding 12-21 months : 4-5 times a day	13(21.67)	14(23.33)	NS

*- significant at $p < 0.05$ NS- Not significant

There was no change found in terms of quantity of complementary food per feed in 6-8 and 9-11 months children even after health education. But in 12-21 months children it was increased after health education. In 9-11 and 12-21 months children consistency of complementary feeding in semi-solid form increased after health education. In 6-8 and 9-11 months children the frequency of complementary feeding increased in 2-3 times per day after

health education. Similarly with 12-21 months of children it increased from to 4-5 times. The difference was not statistically significant. ($p > 0.05$) (Table 2)

DISCUSSION

The complementary feeding was initiated in 71.7% of children at the age of 6 months followed by 13.3% of children at 7 months, 13.3% of children at 8 months and only 1.7% of children at 9 months which is

similar to study conducted in Mangalore. [12] Whereas, the study conducted in Indore revealed only 10% of the mothers initiated complementary feeding before 6 months, 40% of mothers at 6 months, and 36% of mothers after 6 months. [1] Our study revealed that the health education was effective in increasing the knowledge regarding the benefit of complementary feeding. No other studies have mentioned the knowledge of benefits of complementary feeding.

In our study in 6-8 months children the percentage of consumption of rice, dal, ragi increased from 3.33%, 8.33%, 0% and 1.67% to 10%, 25%, 13.33% and 6.67% respectively after health education. Similarly in the age group 9-11 months children, the percentage of consumption of rice, dal, and fruits increased from 18%, 13.33% and 5% to 20%, 18.33% and 13.33% respectively. In 12-21 months children the food consumption of fruits, non-vegetarian and vegetables was increased from 21.67%, 18.33% and 23.33% to 50%, 46.67% and 43.33% respectively after health education. A similar study conducted in New Delhi, found the rice, vegetable and fruits consumption increased from 33.3% to 86.6%, 16.6% to 76.6% and 30% to 86.6% from pre- test to post-test respectively. [13]

In this study, 6-8 months children the frequency of complementary feeding increased from 1-2 times to only 2-3 times after health education. Similarly with 9-11 and 12-21 months of children it increased from 4-5 times and also above 5 times. Our findings were similar to a study conducted in New Delhi showed that the frequency of complementary feeding per day was increased from 6.6% in pre-test to 63.3% in post test. [13] There was no change found in the terms of quantity of complementary food per feed in 6-8 and 9-11 months children even after health education. But in 12-21 months children it was observed that 15(25%), 15(25%) and

2(3.33%) were fed ½ cup, 1 cup and 1 & ½ cup respectively before health education which later increased to 18(30%), 11(18.33%) and 3(5%) of children were fed 1 cup, 1 & ½ cup and 2 cup respectively. While a study conducted in New Delhi, showed that the quantity of complementary feeding gradually increased up to 16% in the age group of 6-9 months and up to 10% in the age group of 9-12 months. [13] In 9-11 months children consistency of complementary feeding in semi-solid form increased from 11.67% to 13.33% after health education. Similarly in 12-21 months the consistency of complementary feeding in terms of pasty enough to touch the spoon, semi-solid and solid form increased from 16(26.67%), 12(20%) and 2(3.33%) to 17(28.22%), 13(21.67%) and 3(5%) respectively after health education. A study conducted in rural area of Belagavi from May-August 2011, showed that 72.5% of the mothers had given solid food as complementary feeding. [12]

CONCLUSION

The complementary feeding practices and its constituent variables increased significantly after health education. Health education has improved the knowledge and practice regarding complementary feeding. It has led to increase in not only in knowledge but the mothers increased the frequency, quantity, type and its consistency. There is need of proper health education intervention through health workers to mothers, for improvement regarding complementary feeding practices throughout the nation.

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REFERENCES

1. Lodha S, Bharti V. Assessment of complementary feeding practices and misconceptions regarding foods in young mothers. *International Journal of Food and Nutritional Sciences*. 2013 Sep; 2(3): 85-90.
2. Chapagain RH. Complementary feeding practices of Nepali mothers for 6 months to 24 months children. *J Nepal Med Asso* 2013; 52(19):443-8.
3. Giugliani ERJ, Victora CG. Complementary feeding. *J pediatr (Rio J)*. 2000; 76(Supl 3):S253-262. Available on <http://www.jped.com.br/conteudo/00-76-S253/ing.pdf>. Accessed on 30th October, 2014.
4. Complementary feeding practices Alive and Thrive. Available from. <http://aliveandthrive.org/technical-focus/complementary-feeding>. Accessed on 30th October, 2014.
5. Semahegn A, Tesfaye G, Bogale A. Complementary feeding practice of mothers and associated factors in HiwatFanaspecialized hospital, Eastern Ethiopia. *Pan African Medical Journal*. 2014; ISSN: 1937-8688.
6. Sunguya Bf, Poudel KC, Mlunde LB, shakya P, Urassa DP, Masamine J and et al. Effectiveness of nutrition training of health workers toward improving caregivers' feeding practices for children aged six months to two years: a systematic review. *Nutrition Journal*. 2013; 12:66.
7. Bhandari N, Mazumder S, Bahl R, Martinez J, Black ER, Bhan KM and et al. An educational interventional to promote appropriate complementary feeding practices and physical growth in infants and young children in rural Haryana India. *The Journal of Nutrition*. Available from <http://www.nipccd.nic.in/mch/fr/cf/er/1.pdf>. Accessed on 2nd November, 2014.
8. Lassi ZS, Das JK, Zahid G, Imdad A, Bhutta ZA. Impact of education and provision of complementary feeding on growth and morbidity in children less than 2 years of age in developing countries: a systematic review. *BMC Public Health*. 2013; 13(Suppl 3):S13.
9. Khan AM, Kayina P, Agrawal P, Gupta A, Kannan AT. A study on infant and young child feeding practices among mothers attending an urban health center in East Delhi. *Indian Journal of Public Health*. 2012; 56(4):301-4.
10. Khanna A, Kadeangadi DM, Mallapur MD. Infant and young child feeding practices in rural Belagavi: a descriptive study. *Global Journal of Medicine and Public Health*. 1014; 2 (6). Available on <http://www.gjmedph.org/uploads/O2-Vo3No2.pdf>. Accessed on 2nd November 2014.
11. Gunagi PR, Nayak VA, Mallapur MD. Effect of peer counselors on exclusive breast feeding and complementary feeding practices in PHC Vantamuri-A Non-randomized controlled trail. *Al Ameen J Med Sci*. 2013; 6(4): 381-83.
12. Rao S, Swathi PM, Unnikrishnan B, Hegde A. Study of complementary feeding practices among mothers of children aged six months to two years- a study from costal south India. *Australasian Medical Journal*. 2011; 4(5):252-25.
13. Sethi V, Kashayap S and Seth V. Effect of nutrition education of mothers on infant feeding practices. *Indian Journal of Pediatrics*. 2003; 70(6): 463-66.

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