

Impact of educational intervention on complementary feeding practices in rural areas of Ujjain district.

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Abstract

Background and method: The aim of this study is to study on impact of educational intervention on complementary feeding practices in rural areas of Ujjain district. Cases will be mothers having infants aging 6 months to 23 months living in rural areas of Ujjain district. Complementary feeding is defined as the process stating when breast milk alone is no longer sufficient to meet the nutritional requirements of infants and therefore other foods and liquids are needed along with breast milk.

Results: Knowledge about "At what age complementary food were given to your baby" increased before intervention 138 (63.6%) to 181 (83.4%) after intervention and about frequency of complementary food were given at 6-8 months increased from 92 (42.4%) to 168 (77.4%) after intervention and in 9-23 months increased from 112 (51.6%) to 198 (91.2%) which complementary feeding has improved 160 (73.7%) to 204 (94%) after intervention. Practice of consistency of feed increased 108 (49.8%) to 172 (79.3%) after intervention in 9-23 months.

Conclusion: In present study the complementary feeding practices and its constituent variables improved significantly after health education. There is significant impact of educational intervention on complementary feeding practices in rural areas. Health education has improved the knowledge and practice regarding complementary feeding practices in the form of mothers has improved the consistency, type, frequency and quantity.

Keywords: Educational intervention, Complementary feeding, Ujjain.

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Introduction

Globally 165 million under five years children are suffering from chronic under nutrition and 90% of them live in 36 countries. Complementary feeding should be given timely, appropriately and in sufficient in quantity. The period of complementary feeding (from 6 to 24 months) is one of the most critical times when maximum growth faltering happens and it is challenging to reverse the process specially stunting and some other functional deficits [1]. In 2015 approximately 6 million deaths under five old reported and more than 67% of these death were due to inappropriate child feeding practices [2].

Complementary feeding is defined as, "the process of starting when breast milk alone or infant formula alone is no longer sufficient to meet the nutritional requirements of infants, and therefore, other foods and liquids are needed, along with breast milk or a breast milk substitute" [3]. Prevalence of introduction of solid, semi-solid or soft foods (complementary foods) among infants aged 6-8 months in regional India; highest in the South (61%) and lowest in the central and Northern regions (38%). The exclusive breast feeding rates in India at 6 months is about 46%.

At 6-8 months only 54% of breast fed and 75% of non-breast fed infants are initiated into complimentary feeds.

Inappropriate complementary feeding practices during this period, such as early onset of complementary foods, inadequate nutritional content of complementary foods and poor hygiene behaviors, have been identified as the leading causes of under nutrition, growth faltering, and diarrhea, increased rate of infections, vitamin-mineral deficiency, poor cognitive development and increased mortality among children. Complementary feeding practices are influenced by food accessibility, including food availability, affordability and acceptability, and by the care and hygiene practices of caregivers [4]. These are in turn driven by caregivers' knowledge and time, house-hold dynamics and social norms, of which household gender norms and roles occupy a central position.

Aim

Impact of educational intervention on complementary feeding practices in rural areas of Ujjain district.

Objectives

- Assessment of mother's knowledge about complementary feeding practices.
- To study impact of educational intervention on complementary feeding practices.

Material and Methods

Study design

Prospective observational study.

Duration of the study: The desired study was completed after obtaining ethical approval from ethics committee for the duration of one year.

Case selection procedure

This is a prospective study and cases for this prospective study will be selected through selecting villages of rural areas of Ujjain district. and assessing the knowledge of mothers regarding feeding practices in use and educating them regarding proper feeding practices and follow up of the mother of children ageing 6 months to 23 months, after 3 months for study of impact of educational intervention on complementary feeding practices [5].

Inclusion criteria

- Mothers of infant aging 6 months to 23 months living in rural areas of Ujjain district.

Exclusion criteria

Parents not giving consent.

- **Children's having chronic illness:** Children are having chronic illness such as severe acute malnutrition.

Outcome variables

- Improvement in the quality and quantity of complementary feed (yes/no).
- Improvement in the increase proper initiation of complementary feed at 6th month of age through intervention *via* education (yes/no).

Method of collecting data

- The ten villages of rural areas of Ujjain district selected on random basis. Aganwadi centers of these rural areas were notified and visited.
- Infants of rural areas and having age groups 6 months to 23 months attending the outdoor patient department of department of pediatrics. CRG Hospital and RD Gardi medical college Ujjain
- Mothers of infant of 6 months to 23 months were included and with proper written and informed consent they were included under the study.
- The knowledge of mothers regarding feeding practices in use, along with the feeding practices they have applied, was assessed with the help of questionnaires.
- Enriching their knowledge and educating them regarding proper feeding practices *via* pictorial chart, nutritional counseling session in an individual to mothers attending to opd and in groups at the Aganwadi centers.

Results

Present study mean age of the mothers was 24.38 ± 3.87 years, median age 23 years, minimum age 19 years and maximum age was 40 years (Tables 1-5).

Age groups	Frequency	Percent
≤ 20 years	22	10.1
21-25 years	137	63.1
26-30 years	47	21.7
>30 years	11	5.1
Total	217	100

Table 1. Distribution of the mother's age.

Out of 217 mother's majority 137 (63.1%) mothers were of belonging in 21-25 years age groups, 47 (21.7%) in 26-30 years age groups, 22 (10.1%) in less than 20 years age groups and 11 (5.1%) in more than 30 years age groups.

Mother's education	Frequency	Percent
Illiterate	103	47.5
Primary	111	51.2
High school	1	0.5
Higher secondary and above	2	0.9
Total	217	100

Table 2. Distribution of mother's education.

Out of 217 mother's 103 (47.5%) were illiterate, 111 (51.2%) had primary education level, 1 (0.5%) up to high school level, 2 (0.9%) up to higher secondary and graduate level.

Type of family	Frequency	Percent
Nuclear family	83	38.2
Joint family	134	61.8
Total	217	100

Table 3. Distribution of type of family of the cases.

Out of 217 mother 134 (61.8%) were belonging to joint family and 83 (38.2%) from nuclear family.

Mother's occupation	Frequency	Percent
House wife	36	16.6
Farmer	143	65.9
Shop	29	13.4
Teacher	9	4.1
Total	217	100

Table 4. Distribution of mother occupation.

Out of 217 mother 143 (65.9%) were farmer, 36 (16.6%) were house wife, 29 (13.4%) had shop, 9 (4.1%) were teacher.

Knowledge and feeding practices		Before intervention		After intervention		p
		N	%	N	%	
At what age complementary food (Solid, semisolid or soft food) should be given to your baby?	Less than 6 months	73	33.6	24	11.1	0
	6 Months	116	53.5	38	17.5	
	More than 6 months	28	12.9	155	71.4	
How many times a day solid/semi-solid food should be given to 6-8 months of baby?	1-3 times	49	0	26	12	0
	4-7 times	92	42.4	168	77.4	
	don't know	76	35	23	10.6	
How many times a day, complementary food should be given to 9-23 months of baby?	2-4 times	56	25.8	11	5.1	0
	4-7 times	112	51.6	198	91.2	
	don't know	49	22.6	8	3.7	
What should be the consistency of feed given to baby as a complementary feeding?	Semi solid	81	37.3	178	82	0
	Thin	89	41	23	10.6	
	Watery	47	21.7	16	7.4	
From whom you got the information regarding complementary feeding?	Aganwadi worker	115	53	51	23.5	0
	Husband	41	18.9	11	5.1	
	Mother	15	6.9	5	2.3	
	Intervention	46	21.2	150	69.1	
Which complementary feed are feeding to your baby?	Homemade food	160	73.70%	204	94	0
	Commercial food	30	13.80%	6	2.8	
	Both of the above	27	12.40%	7	3.2	
When should you have to start complementary feeding of your baby?	Before 6 months	89	23.1	30	13.8	0
	At 6 months	70	28.5	171	78.8	
	Between 6-12 months	58	48.4	16	7.4	
Which consistency of complementary food you have given to your child up to 9 to 23 months?	Solid	81	37.30%	172	79.3	0
	Semisolid	108	49.80%	31	14.3	
	Watery	28	12.90%	14	6.5	

Table 5. Before and after knowledge of feeding practices.

Discussion

Present study mean age of the mothers was 24.38 ± 3.87 years, median age 23 years, minimum age 19 years and maximum age was 40 years. In our study out of 217 mother's majority 137 (63.1%) mothers were of belonging in 21-25 years age groups, 47 (21.7%) in 26-30 years age groups, 22 (10.1%) in less than 20 years age groups and 11 (5.1%) in more than 30 years age groups present study out of 217 mother's 103 (47.5%) were illiterate, 111 (51.2%) had primary education level, 1 (0.5%) up to high school level, 2 (0.9%) up to higher secondary and graduate level Out of 217 mother 134 (61.8%) were belonging to joint family and 83 (38.2%) from nuclear family. Out of 217 mother 143 (65.9%) were farmer, 36 (16.6%) were house wife, 29 (13.4%) had shop, 9 (4.1%) were teacher.

Present study out of 217 children mean age was 8.85 ± 2.66 months, median age 8 months, minimum 6 months and maximum age 23 months. Majority of children were belonging in 6-9 months age groups, 44 (20.3%) in 9-12 months and 17 (7.8%) in 12-23 months age groups. Percentage of practices about "At what age complementary food should be given to the baby?" increased before intervention 28 (12.9%) to 155 (71.4%) after intervention. The difference was statistically significant ($p < 0.05$).

Which is similar to study conducted in Choudhary, et al. [6] revealed that 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 Rao, et al. [7] 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. Our study revealed that the health education was effective in increasing the knowledge regarding the benefit of complementary feeding. Bipul, et al. [8] showed that in this study 130 (90.3%) mother knew about complementary feeding and majority 110(76.4%) knew about the type of food that can be given to the infant. Berisha, et al. [9] in their study concluded that 88.4% of mothers had knowledge of complementary feeding. Similarly, Jain, et al. [10] found that more than 83.75% of mother studied had knowledge about complementary feeding.

The knowledge regarding suitable age for starting complementary feed 131(91%) mothers said it should be after 6 months. These were similar to those reported by Ketbi, et al. [11] who found 86.1% mother reported that complementary feed should be introduced at 6 months of age. Rahalkar, et al. [12] reported that in 84% babies complementary feeding was started after 6 months. Meshram, et al. [13] in their study found 58% of infants (6-11 months) received complementary feeding at 6-9 months of age. Berisha, et al. [9] found in their study that 61.9% mother had the knowledge that complementary food should be given to the infants after 6 months. In our study percentage of knowledge about "What should be the consistency of feed given to baby as a complementary feeding?" increased before intervention 81 (37.3%) to 178 (82.0%) after intervention.

The difference was statistically significant ($p < 0.05$). Choudhary, et al. [6] showed that 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, Sethi, et al. [14] found the rice, vegetable and fruits consumption increased from 33.3% to 86.6%, 16.6% to 76.6% and 30% discussion page 70 to 86.6% from pre-test to post-test respectively. Percentage of knowledge about "frequency complementary food should be given to 6-8 months of baby" increased before intervention 92 (42.4%) to 168 (77.4%) after intervention.

The difference was statistically significant ($p < 0.05$). Chaudhary, et al. [16] 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 to 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 posttest. Sethi, et al. [14] 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 1½ cup respectively before health education which later increased to 18 (30%), 11 (18.33%) and 3 (5%) of children were fed 1 cup, 1½ 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 discussion page 72 groups of 6-9 months and up to 10% in the age group of 9-12 months. Sethi, et al. [14].

Similarly in Rao, et al. [9] 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 [15]. 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 [16]. Percentage of knowledge about "frequency complementary food should be given to 6-8 months of baby" increased before intervention 90 (41.5%) to 199 (91.7%) after intervention. The difference was statistically significant ($p < 0.05$). Roy, et al. [17] showed that 210 (84%) mothers were giving complementary food thrice a day, but a thin consistency complementary food was prepared by 113(45.2%) mothers. Another study Aggarwal, et al. [18] revealed that 25.5% to 30% of mothers knew and practiced the proper consistency of complementary feeding.

Conclusion

In present study the complementary feeding practices and its constituent variables improved significantly after health education. There is significant impact of educational intervention on complementary feeding practices in rural areas. Health education has improved the knowledge and practice regarding complementary feeding practices in the form of mothers has improved the consistency, type, frequency and quantity. In 9-11 months children consistency of complementary feeding in semi-solid form increased from 11.67% to 13.33% after health education.

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Conflict of Interest

None declared.

Ethical Approval

The study was approved by the Institutional Ethics Committee of RD Gardi Medical College, Ujjain (MP).

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