Original Research Article

Frequency of complementary feeding, top feeding and exclusive breast feeding among infants at tertiary care unit: A retrospective cross sectional study

Abstract

Aim: To determine the frequency of complementary feeding, top feeding and exclusive breast feeding among infants at tertiary care unit

Study Design: Retrospective cross sectional study

Place and duration: Pediatric Out Patient Department (OPD) of Sheikh Zayed Hospital, Lahore from November 2017 to May 2018

Methodology: Three hundred children were enrolled. The mothers of the children were asked about the feeding practices (i.e. exclusive breast feeding, top feeding, complementary feeding) which were described as frequency distribution table

Results: Exclusive breast feeding was found in 54 (18%) children, complementary feeding started at 6 months of age in 102 (34%) children, while the top feeding was given in 144 (48%) children.

Conclusion: At the age of 6 months, complimentary feeding was practiced most frequently. Exclusive breast feeding was not very common. So, mothers should be encouraged to promote breast feeding among their children.

Keywords: Exclusive breast feeding; complementary feeding; feeding practices, infants

Introduction:

Feeding of infants in the first year of life determines the nutritional status of whole life. Breast feeding is the only and best feeding for the initial six months of life. After initial six months of life complementary feeding should be initiated. It is essential for the prevention of childhood morbidity and mortality. [1] In case of malnutrition in the first two years of life, irreversible linear growth retardation occurs. [2]

Breast feeding is one of oldest practices recommended in holy Quran. Breast feeding should be initiated within the first hour of birth and it alone is enough to meet all the nutritional needs of infants for the first six months of life.

According to our traditional practices sugar water and honey is given to young infants that hinders the exclusive breast feeding. Pakistan is facing the burden of westernized lifestyle, that's why traditional breast feeding practices are being abandoned. [3] There is marketing of breast milk substitutes on media that should be discouraged.

When solid foods are introduced, single ingredient foods should be chosen and started one at a time at weekly intervals to permit the identification of food intolerance.[4] At one year child requires 3 meals/day and two snacks in between.[5] Solid foods should be started at the age of six months, early complementary feeding can cause renal, allergic and infectious problems. [6] If complementary feeding is started too late, it can cause growth impairment due to insufficient milk nutrients. Complementary feeding should contain calories of about 100 Kcal/kg/day. There are varieties of food that can complete this requirement. [7]

A study conducted in Pakistan shows that rate of exclusive breastfeeding was given only in 23% of cases, of complementary feed is before 6 months is 51%. [8] These practices are causing malnutrition in children. The expert recommendations are not adhered by lot of mothers, although they start breast feeding but don't continue it due to some personal goals.

The aim of this study is to assess level of exclusive breast feeding and burden of lack of adequate feeding practices in our community, thus by applying these results further work up is needed to enable environment for exclusive breast feeding by ensuring the mother education support, inspiration and ultimately improve child survival and decrease mortality rate.

Methodology

This retrospective cross sectional study was conducted at Pediatric OPD of Sheikh Zayed Hospital Lahore from November 2017 to May 2018. Non Probability consecutive sampling technique was used. The calculated sample size was 300 cases with 95% confidence interval, 5% margin of error, taking and expected percentage of exclusive breast feeding as 23%.

Exclusive breast feeding was assessed at 6 months of life. It meant that the infant receives only breast milk. Top feeding: It meant that the infant received Top feed (fresh or formula milk) only or along with breast feeding in the first 6 months of life. Complementary Feeding: It meant the introduction of solid or semi solid food in infants feeding at the 6 months of life.

Children of either gender of 6 – 9 months age attending outpatient department of Sheikh Zayed Hospital Lahore for vaccination or routine checkup were enrolled. Children not accompanied by mothers, Children of mothers with language difficulty were excluded from the study.

After the clearance of Ethical Review Board of SZPGMI, the study was conducted in OPD of department of Pediatrics, Sheikh Zayed Hospital, Lahore. Informed consent was obtained verbally from each participant. Those who fulfilled the inclusion criteria were selected and enrolled in study. Data was collected retrospectively through face to face interviews of mothers. The Performa was filled accordingly by researcher herself. Exclusive breast feeding, complementary feeding and top feeding were recorded as per operational definition.

After collection of data, the analysis was conducted by using statistical package for social sciences (SSPE) software, Version 22. Standard deviation was calculated for quantitative variables such as age, weight and height of child. Frequency and percentage were calculated for qualitative data such as exclusive breast feed, complementary feed and weaning, gender of child. Data was stratified for age, gender of child, urban of rural area of child, education of mother, socioeconomic class and family structure. Post stratification chi-square test was applied. P-value of < 0.05 was taken as significant.

Results:

Three hundred children were included in the study. The mean age of the children was 7.22 ± 0.66 months [range 3 – 6 months]. There were 187 (62.3%) patients of age range of 6 – 7 months and 113 (37.7%) patients of age range of 8 – 9 months. (As shown in Table 1)

There were 174 (58%) male patients and 126 (42%) patients were female. The female to male ratio was 1:1.28. (As shown in Table 1) The mean weight of the children was 7.45+2.01kg and mean height of the children was 65.12+5.23 centimeters. (As shown in Table 1)

Distribution of children by residence, education, socioeconomic status, working out status and family structure of mothers is shown in Table 2. Exclusive breast feeding was found in 54 (18%)

children, while complementary feeding in 102 (34%) children and top feeding was practiced in 144 (48%) children (As shown in Table 1).

Stratification of effect modifier like age group, sex, residence of mothers, education of mothers, mothers working out, family structure, and socioeconomic status of mothers with feeding practice is presented in Table 3-5.

Table 1: Characteristics of study participants (n = 300)

Characteristics	**Number**	**Percentage**
Age (Months)		
6-7	187	62.3
8-9	113	37.7
Gender		
Male	174	58
Female	126	42
Residence		
Urban	164	54.7
Rural	136	45.3
Feeding Practice		
Exclusive Breast Feeding	54	18
Complementary Feeding	102	48
Top Feeding	144	34

Mean + SD	
Age (Months)	7.22 + 0.66
Weight (Kg)	7.45+2.01
Height (cm)	65.12+5.23

Table 2: Characteristics of mothers of children (n = 300)

Education of mothers	**Number**	**Percentage**
None	114	38
Primary	85	28.3
Middle	51	17
Secondary	35	11.7
Higher	15	5
Mother Working out of home		
Yes	185	61.7
No	115	38.3
Socio-economic status		
Lower class	180	60
Middle Class	111	37

Upper Class	09	03

Table 3: Stratification of feeding practice with respect to age (n = 300)

Feeding Practice		Age Group (months)			
		6 – 7 (n=187)	8 – 9 (n=113)	Total	P Value
Exclusive breast feeding	Yes	34	20	54	0.523
	No	153	93	246	
Complementary Feeding	Yes	74	70	144	0.000
	No	113	43	156	
Top Feeding started	Yes	79	23	102	0.001
	No	108	90	198	

Table 4: Stratification of feeding practice with respect to residence of mother (n = 300)

Feeding Practice		Residence of mother Group			
		Rural (n=136)	Urban (n=164)	Total	P Value
Exclusive breast feeding	Yes	24	30	54	0.504
	No	112	134	246	
Complementary Feeding	Yes	60	84	144	0.134
	No	76	80	156	
Top Feeding started	Yes	52	50	102	0.099
	No	84	114	198	

Table 5: Stratification of effect modifier (mother working out group) with feeding practice (n = 300)

Feeding Practice		Mother working out of home group			
		Yes (n=185)	No (n=115)	Total	P Value
Exclusive breast feeding	Yes	34	20	54	0.478
	No	151	95	246	
Complementary Feeding	Yes	72	72	144	0.001
	No	113	43	156	
Top Feeding started	Yes	79	23	102	0.001
	No	106	92	198	

Discussion:

During the first few months of life of a child, breast feeding is the most vital component of nutrition. Complimentary feeding and top feeding is also practiced but at variable frequencies. In this study, we described the frequencies of feeding practices observed in a tertiary care unit of Pakistan. We observed that most common practice was complementary feeding which was observed in 48% population of the study, followed by top feeding observed in 34% and exclusive breast feeding the least frequently observed practice. In a local study complementary feeding was achieved in 67% infants aged 6–8 months. [9]

In our study, 58% children were male while 42% were female. The female to male ratio in our study was 1:1.08. The mothers of 45.3% children belong to rural population. Ours is a tertiary care center, situated in an urban area. So, urban population dominated in our study. The mothers of 54.7% children belong to urban area.

According to the results of our study, majority of the mothers were illiterate i.e. 38%, followed by primary education i.e. 28.3% and only 5% mothers presenting to our center had higher education. Majority of the mothers i.e. 61.7% were working women. Ours is a developing country and poverty is a common problem. So, women may have to work along with men to run the expanses of living. Majority of the mothers i.e. 60% belonged to lower socioeconomic group, while 37% patients were middle class and only 3% patients belonged to upper class.

In our study, exclusive breast feeding practice was observed in 18% patients, which is quite a low rate. In a local study results were different from our study, the results showed that 67% of the mothers exclusively breastfed their babies.[10] This difference is due to majority of mothers were well counselled for breast feeding. While a similar local study showed that only 34.3 percent mothers were found to practice exclusive breast feed till 6 months of infant age. [11]

In a local survey exclusively breastfed was given to 22.8% infants in 1990-91 which had increased to 37.1% by 2006-07. [12] In an Iranian study the overall prevalence of exclusive breast feeding was 53%. [13]

In our study, complimentary feeding at the age of 6 months was observed in 48% children. Top feeding was given in 34% children. In a similar international study 41.6% infants received only

infant formula for milk feeds. [14] While in another study mothers gave cow milk to their children for the first time at 10.1 ± 1.7 months and honey at 11.8 ± 2.3 months. [15]

We also did stratification of effect modifiers (age, sex, residence of mothers, education status of mothers, mother working out or not, socioeconomic status of mothers and family structure) with feeding practices. No statistically significant difference was found among these groups, except socioeconomic status of mothers and family structure, which were found to have effect the feeding practices. In a local study factors such as mothers' education, living in cemented house, and watching television were significantly associated with their children given complementary feeding at the age of 6 months. [16] In an unsimilar local study, there is a statistically significant difference in feeding practices of educated versus uneducated and poor versus middle class mothers (P <0.0003). [17]

Conclusion:

The results of this study conclude that complementary feeding (started at 6 months of age) was most frequently practiced among women presenting to our setup, followed by top feeding. The practice of exclusive breast feeding till the age of 6 months was not very common. So, it is suggested that steps should be taken to improve the awareness of mothers to encourage the breast feeding in our population.

Limitations:

The study had certain limitations. This was a single center study conducted in a small population size.

Recommendations:

In the future, nutrigenomics (or nutrigenomics) based research will provide opportunities towards personalized modification of breast milk for optimum health of infants.

Approval:

Permission was taken from the ethical review committee of institute.

Consent:

Written and verbal informed consent was taken from the parents of children

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