Curr Pediatr Res 2019; 23 (3): 122-129 *ISSN: 0971-9032*
www.currentpediatrics.com

Comparison of knowledge regarding complementary feeding practice between primigravida and multigravida females.

Shizma Junejo[1]*, Shazia Fakhir Musharraf[2], Atiya Fasih[3], Shakeel Ahmed[2], Giran Naz Jagirani[4], Sarah Rabbani[5], Alisha Afzal[6]

[1]Department of Community Health Sciences, Bahria University Medical & Dental College, Karachi, Pakistan

[2]Department of Paediatrics, Bahria University Medical & Dental College, Karachi, Pakistan

[3]Department of Obstetrics and Gynaecology, Bahria University Medical & Dental College, Karachi, Pakistan

[4]House Officer Civil Hospital Hyderabad, Pakistan

[5]House Officer Aga Khan University Hospital, Karachi, Pakistan

[6]Final Year MBBS student, Bahria University Medical & Dental College, Karachi, Pakistan

Abstract

Objective: The addition of solid food to the diet of infants, established as complementary feeding, is an important milestone which has nutritional, developmental and health ramifications. When human milk or infant formula solely is not any more adequate for nutritional motive, complementary food is required. An infant's diet should be remarkably enriched with right foods loaded with proteins and other nutrients. The study aimed to assess the difference in knowledge of multigravida and primigravida females regarding appropriate complementary feeding practice.

Methods: This cross sectional study was aimed at comparison of knowledge regarding complementary feeding practice between primigravida and multigravida females. The study duration was 6 months, from January to June 2017. A total of 377 participants were included in the study. Following the written informed consent, participants were required to fill a structured questionnaire. SPSS version 23 was used for statistical analysis.

Results: The multigravida females had more knowledge regarding complementary feeding practice compared to primigravida females (P<0.05). Educated females were found to be more familiar regarding complementary feeding practice (P<0.05). Awareness regarding correct age of complementary feeding was more accurate in multigravida females (P<0.05). Almost all participants chose pureed mashed food as the consistency to begin complementary feeding. The pattern of milk intake was predominantly exclusive breast feeding.

Conclusion: Multigravida females have more knowledge regarding appropriate complementary feeding practice compared to the primigravida females. Findings from this study emphasize the need for efforts to enhance awareness regarding complementary feeding practice amongst the primigravida females.

Keywords: Complementary feeding, Solid foods, Infant, Primigravida, Multigravida.

Accepted on August 12th, 2019

Introduction

Exclusive breastfeeding for 6 months supervened by complementary feeding such as offering solid foods beside breast milk is an optimum infant feeding practice, recommended since 2002 by the World Health Organization [1]. The introduction of solid food to diet of an infant, known as complementary feeding, is a significant milestone that has nutritional, developmental and health implications [2].

Providing a nutritious diet during the complementary feeding period is necessary to aggress growth faltering during this period as well as to safeguard, as a counter to future childhood malnutrition [3]. The 6-24 months ago period is significant due to the fact that as the child is introduced to foods other than breast milk and becomes increasingly more independent and mobile, the environmental factors that affect growth and development multiply [4]. Multiple biological pathways have an effect on early growth and development and are dependent on the appropriate intake and metabolism of essential nutrients during infancy and early childhood [5].

In UK it is advocated that commencement of solid food should begin essentially at six months, with the admonition that solid foods must, not in any way be given to babies under 17 weeks old [2]. In developing countries, over 200 million children under five years fail to reach their potential in cognitive and social development as a result of poverty, poor health, nutrition and diminished care [6]. Adequate energy intake assists child

growth, development and physical activity [7]. An infant's nutritional status is impacted by introduction of complementary feeding. Also it has short and lasting effects on health particularly pertaining to growth, obesity and allergies [8] According to a study in Africa children receiving trivial frequency of complementary feeding were to a greater degree inclined towards being severely wasted compared to children having most favorable frequency of complementary feeding [9]. This result is congruous with several studies conducted in Ethiopia, Africa and globally [9]. According to a study conducted in Lahore regarding infant feeding practices, majority of the mothers around sixty three percent commenced weaning of their babies at the age of six and four months [10].

More than one third of under-five mortality is caused by malnutrition linked to inadequate complementary feeding [11]. A study conducted in Nigeria revealed that around 7 out of 10 mothers acknowledged that complementary feeding should be commenced at sixth month. Furthermore they were also of view that local food should be utilized as the major provision of complementary foods for the infants [12]. Another study in Nigeria revealed that starch based foods were the maximally consumed food among the children being 91.0% and most consumption of starchy foods was observed in children aged 9-11 months 95.3% as well as 89.1% amongst infants 6-8 months [13]. A study done in Ethiopia revealed that, in contrast to mothers lacking formal education, mothers having attended primary school were relatively two times highly likely to commence complementary feeding at 6 months of age [14].

In many developing countries, the incidence of under nutrition for the most part upsurges during the period of complementary feeding from the age of 6 to 18 months [15]. There is strong documentation regarding promotion of appropriate complementary feeding practices lowering the degree of stunting as well as culminating in improved health and growth outcome [16].

Commencing complementary feeding very early and delaying for very long is also not appropriate [17]. Similarly, the influence that the age at which solid food is introduced has on future weight status has been investigated primarily in prospective cohort studies [18]. Inspite of knowledge of infant feeding guidelines, female caregivers usually initiate solids at less than 4 months of age [19]. Early complementary feeding can be one risk factor for childhood obesity [20]. Studies have demonstrated that early complementary feeding augments the risk of overweight and obesity during childhood as well as adulthood [21]. Delayed initiation of solid foods was correlated to elevated risk of allergic sensitization to food and inhalant allergens [22]. Inappropriate feeding practices like delayed introduction of complementary foods, low energy and nutrient density of foods offered, feeding in small amount at meals and food restrictions due to cultural beliefs are common in Asia [23]. Growth halting becomes the most noticeable during the complementary feeding period [24].

As a rule smooth foods are given at the beginning, this is followed by lumpy as well as finger foods [25]. Interventions that offer parents guidance on healthy infant feeding practices can prove to be significant strategy to promote healthy weight status of children [26].

Complementary feeding practice is an area that has a significant link to malnutrition. Studies emphasizing on knowledge of females regarding appropriate complementary feeding practice are imperative and immensely necessary in Pakistan due to malnutrition contributing significantly to mortality in children under five years of age. Hence the study aims to elucidate thoroughly into the difference in awareness amongst primigravida and multigravida females regarding complementary feeding practice.

Materials and Methods

Study design

This study was designed as a descriptive cross-sectional study

Study population

The study only included females as participants. The participants for this study belonged to the age group 18 to 60 years. Participants without children and pregnant for the first time were in the primigravida group. Participants having been pregnant more than once were in the multigravida group. Participant selection criteria did not include socio-economic status, income level and education level of participants. All the participants who took part in this research project were mentally and physically in a healthy condition. A sample size of 377 was calculated for this study, using the sampling strategy as non-probability convenience sampling. Only primigravida females and multigravida females were allowed to take part in this study. Exclusion criteria consisted of unmarried females, married females who had never become pregnant after marriage and married females being primigravida and multigravida but suffering from cardiovascular diseases, longstanding chronic diseases and cancer as well as receiving chemotherapy for cancer.

Research setting

The recruitment of participants was done from Paediatrics outpatient department at PNS Shifa hospital Karachi as well as Gynaecology and Obstetrics outpatient department at PNS Shifa hospital Karachi. The recruitment from each setting was highly specific. The multigravida participants were recruited from Paediatrics department outpatient clinics at PNS shifa hospital Karachi whereas the primigravida participants were recruited from Gynaecology and Obstetrics department outpatient clinics at PNS Shifa hospital Karachi.

Ethics approval

The study was initiated following approval from Ethical Review Committee of Bahria University Medical and Dental College. Prior to taking part in the study, participants were asked to sign the participant consent form. It was made clear to the participants that their participation is voluntary and they can withdraw at any point in time. Participants were given surety that their anonymity will be retained and the information they provide will be kept confidential.

Data collection tool and procedure

The study was conducted from January 2017 to June 2017. It was done in the outpatient clinics of Paediatrics as well as Gynaecology and Obstetrics departments at PNS Shifa hospital Karachi, Pakistan. Only female individuals who conformed to the inclusion criteria for the study were included as participants in this study. In the first place participants were briefly guided about the research project, their role as a participant and the benefits of participation in the study in the shape of assessment of their own level of knowledge regarding adequate nutrition of their children. Participants were assured of confidentiality and their participation in the study was strictly based on attainment of voluntary informed consent from the participants. The questionnaires were distributed to the participants, after obtaining informed consent from every participant. The questionnaire included questions pertaining to a broad range of knowledge regarding complementary feeding practice, prompting responses from the participants.

The initial part of the questionnaire contained questions about demographic details including age, city belonging to originally, having children or not having children and number of children. This was followed by questions being arranged such that some of them were common to both primigravida and multigravida females and some were specific to multigravida females only. The questions common to both primigravida and multigravida females included familiarity level, assessment of necessity of complementary feeding, knowing correct age to start complementary feeding, assessment of necessity to start weaning at correct age, inquiring about how frequently in a day food should be given to a child once weaning is started, assessing knowledge about the consistency of solid food to be given to start complementary feeding, importance of weaning in relation to proper growth, awareness of allergic symptoms to watch out for once complementary feeding is started and knowledge about food items introduced slowly due to their tendency to cause allergic symptoms.

The questions specific to multigravida females included inquiring about age at which solid foods were introduced, frequency with which solid food was given, the food with which weaning was started for each child, quantity of food given to each child when weaning was started, the pattern of milk intake of each child while under two years and the milk introduced other than breastmilk as topfeed. If the multigravida females responded as having introduced milk other than breastmilk as top feed then some more relevant questions were asked. These included inquiring about age at which top feed was introduced and reasons for introducing top feed. For the question reasons for introducing topfeed the choice of responses included milk insufficient, pressure of family, baby failing to gain weight, working mothers, second pregnancy and others. Participants were given 15-20 minutes to answer the questionnaire. A translated in native language questionnaire was also provided, whenever it was required by the participants.

Data management and statistical analysis

All the statistical analyses were performed using SPSS version 23. The entire collated data was entered on SPSS. The responses, on which the data was based, were coded. Descriptive statistics included frequencies and percentages. Differences in variables were compared using the Chi-Square test in order to check significant difference among the responses given by primigravida and multigravida females. Statistical significance was defined as $P<0.05$.

Results

Amongst the 377 participants in this study, mean age of participants was 27.50 ± 5.875. Most of the participants in this study were educated 332 (73%). In this study reason for large number of educated females was that the study was done in a tertiary care hospital of Karachi where mostly literate mothers visited. Out of the educated females the maximum number of females had Fsc level education 90 (23.9%). Next to FSc level of education, participants were graduates 86 (22.8%). Participants having level of education as matric were 83 (22.0%) and participants having high school level education were 59 (15.6%). The education level that least number of educated participants had was postgraduate being around 14 (3.7%). Uneducated females as participants in this study were 45 (11.9%). The maximum number of children that the participants had was three and this was observed amongst 79 (21%) participants.

Regarding familiarity with weaning educated females were more familiar compared to uneducated females. This was an area where irrespective of being multigravida or primigravida there was generally a pattern evident based on difference in education level of participants, P-value was highly significant 0.000. It was observed that awareness regarding correct age of complementary feeding, consideration of significance of weaning in relation to proper growth, significance of necessity to commence complementary feeding at correct age and the necessity of complementary feeding, were more in multigravida as opposed to primigravida females as shown in Table 1. Results in Table 1 reveal significant difference in knowledge regarding complementary feeding practice between primigravida and multigravida females, P-value was highly significant 0.000.

Table 1. *Associations pertinent to evaluation of difference in knowledge regarding complementary feeding practice between primigravida and multigravida females.*

Evaluation of difference in knowledge regarding complementary feeding practice between primigravida and multigravida females	Primigravida (n=188)	Multigravida (n=189)	P-Value
Awareness regarding correct age of complementary feeding	13	136	0.000
	6.90%	72%	

	36	176	0.000
Significance of weaning in relation to proper growth	19%	93.60%	
	50	173	0.000
Necessity to commence complementary feeding at correct age	26.50%	92%	
Necessity of complementary feeding	53	174	0.000

When inquired about necessity to start complementary feeding at correct age majority of multigravida females chose the response highly necessary whereas majority of primigravida females responded with the option not necessary. Knowledge of all the participants primigravida as well as multigravida was evaluated regarding frequency with which solid foods should be given in a day to a child and the response is shown in Figure 1.

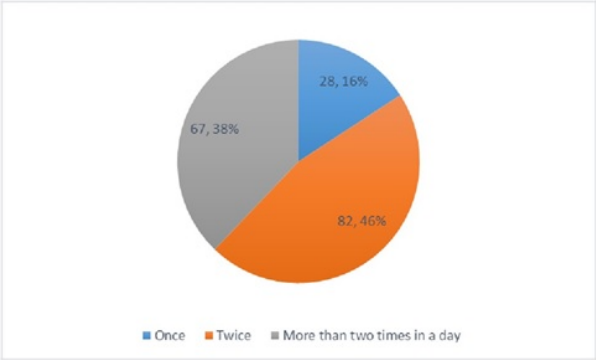

Figure 1. *Knowledge regarding frequency of solid foods*
All the participants primigravida as well as multigravida were inquired about knowledge regarding frequency of solid foods. As a response 82 (46%) chose the response twice a day, 67 (38%) chose the response more than two times in a day and 28 (16%) chose the response once a day.

Response about the consistency of solid food in order to be introduced as complementary feeding was a uniformly appropriate one by majority of participants, being pureed mashed food. This was irrespective of the participants being primigravida and multigravida. This is shown in Figure 2. Responses of multigravida females only regarding age of commencing solid foods, frequency with which solid foods were commenced, type of food with which weaning was commenced and the quantity with which weaning was started, are shown in Table 2.

Table 2. *Pattern of complementary feeding practice exhibited by multigravida participants.*

Age Start Solids	**Frequency**	**Percent**
4 Months	33	17.6
6 Months	144	76.6
8 Months	8	4.3
12 Months	3	1.6
Total	188	100
Frequency of each child	**Frequency**	**Percent**
Once	17	9
Twice	86	45.7
More than twice	77	41
More than three times	8	4.3
Total	188	100
What food start weaning	**Frequency**	**Percent**
Cereal	13	6.8
Tea	5	2.6
Biscuit	2	1.1
Yogurt	6	3.2
Mashed Potato	16	8.4
Vegetable Puree	1	0.5
Rusk	1	0.5
Cerelac	134	70.5
Banana	12	6.3
Total	188	100
Quantity Start Weaning	**Frequency**	**Percent**
1 tbsp	30	16
½ a bowl	66	35.1
Quarter bowl	91	48.4
Full bowl	1	0.5
Total	188	100

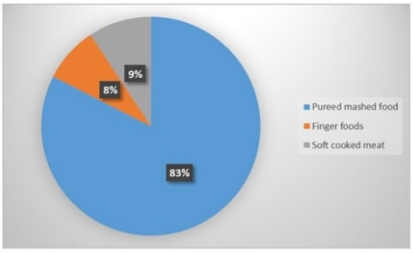

Figure 2. *Consistency of food to begin weaning*
All the participants inclusive of primigravida and multigravida were asked regarding consistency of food to begin weaning. Around 83% participants gave expected accurate response as pureed mashed food. Soft cooked meat was response by 9% and finger foods was response by 8%.

Contrary to expected, banana was chosen by only small number of participants 12 (6.3%) as the food with which multigravida females began commencing complementary feeding for their children. In this study 134 (70.5%) mothers had preference for cerelac a commercial weaning food because they felt that this type of solid food was easy to prepare, time saving and tasty for their children. Association of pattern of milk intake provided to children with education levels of multigravida females is shown in Table 3. Consideration of

weaning as significant, in relation to growth was assessed amongst the participants as exhibited in Figure 3.

Table 3. *Association of education level of mothers with pattern of milk intake in children.*

Education	Pattern of milk intake			Total	P-value
	Exclusive breastfeeding	Breastfeeding coupled to top feed	Top feed only		
Uneducated	16	7	0	23	0.086
	69.60%	30.40%	0.00%	100.00%	
High School	21	16	3	40	
	52.50%	40.00%	7.50%	100.00%	
Matric	29	14	3	46	
	63.00%	30.40%	6.50%	100.00%	
FSc	14	15	3	32	
	43.80%	46.90%	9.40%	100.00%	
Graduate	10	22	1	33	
	30.30%	66.70%	3.00%	100.00%	
Postgraduate	1	2	0	3	
	33.30%	66.70%	0.00%	100.00%	
Total	91	76	10	177	
	51.40%	42.90%	5.60%	100.00%	

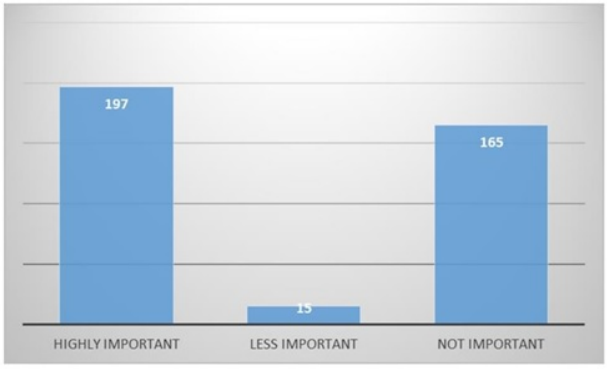

Figure 3. *Weaning in relation to growth*
Participants were asked about importance of weaning in relation to growth. Highly important was the response chosen by 197 individuals. Not important was the response chosen by 165 individuals. Less important was the response chosen by 15 individuals.

Regarding the pattern of milk intake exclusive breast feeding was the response by majority of multigravida females 102 (54.3%). Around 76 (40.4) participants were giving breastfeeding coupled to top feed. Topfeed only was given by 10 (5.3%) participants. The type of top feed predominantly given by multigravida females was buffalo milk 34 (37.8%). Formula milk was the response by around 29 (32.2%) females, cow's milk was given by around 17 females (18.9%), goat milk was given by around 8 females (8.9%) and the lowest response was fresh milk given by around 2 (2.2%) females. The multigravida female participants in this study who gave topfeed to their children, mostly commenced giving topfeed at three to five months 36 (9.5%). Furthermore majority of multigravida females who were giving topfeed responded with milk insufficiency as the cause for giving topfeed to their children 35 (39.3%). The other reasons to give top feed included baby not gaining weight 22 (24.7%), second pregnancy in around 18 (20.2%) females, pressure of family 7 (7.9%) and working mothers as being a potential reason in around 3 (3.4%) females. Awareness of all the participants regarding allergic symptoms was assessed. Around 112 (29.7%) were aware of allergic symptoms and 262 (69.5%) were unaware of allergic symptoms.

Discussion

In this study we compared difference in knowledge regarding complementary feeding practice between primigravida and multigravida females as well as assessed the extent of adequacy of complementary feeding practice exhibited by multigravida females. Furthermore link of educational level of females to knowledge of appropriate complementary feeding was evaluated.

Under nutrition related problems like stunting, underweight and wasting are more frequent nutritional problem among subSaharan Africa and Asia countries [26]. A study in rural Bangladesh revealed that, children who were fed a minimal tolerable diet at 9 months had improved height for age outcomes and stunting was less likely amongst them at age 24 months [27]. Negative impact on a child's physical and emotional development may emanate as a result of poor early childhood nutrition, in both the short as well as long-term. This may also diminish adult achievement as well as productivity [28]. Complementary feeding is the period during which a young child's diet is augmented and dependence on milk as the exclusive source of nutrition is concluded. It is essential to start solid foods at the age of six months [29]. According to National Nutrition Survey Pakistan 2018, prevalence of malnutrition in children under five in Pakistan is stunted 40.2%, wasted 17.7%, underweight 28.9% and overweight

9.5%. Stunting in urban areas is 34.8% and in rural areas is 43.2% [30].

Educated females in this study had better awareness of complementary feeding practice. In this study reason for large number of educated females was that the study was done in a tertiary care hospital of Karachi where mostly literate females visited. The results of our study are similar to a study by Neme et al. which revealed that educational status of mothers or caregivers was statistically associated with complementary feeding practice [31].

Education level of mothers has been linked to appropriate complementary feeding practice by other studies as well. A study by Khokhar et al. revealed lack of education in mothers being correlated to worst complementary feeding practices [32]. The study by Khokhar et al. also revealed that educated mothers in the study had 2.91 times higher likelihood of providing solid foods to their children excellently. Shirley et al. established that educated mothers had higher knowledge about significance of complementary food and had more appropriate weaning practices compared to uneducated mothers [33].

Our study had majority of educated females having education above secondary school level. The results in this regard coincide with studies by Yohannes et al., Shumey et al. and Joshi et al. Study by Yohannes et al. in Southwest Ethiopia, revealed that mothers having education of secondary and above levels had over two folds likelihood to timely begin complementary feeding as opposed to those who had not attended any school level [34]. It was also revealed in a study by Dallazen et al. that the introduction of inappropriate complementary feeding in the first year of life was linked to low maternal schooling [35]. Two more studies had very much alike findings. These included one from Mekelle town in North Ethiopia, conducted by Shumey et al. and one from Nepal conducted by Joshi et al [34]. According to these studies, mothers with higher quality education have acceptable knowledge regarding the importance of complementary feeding practice [35]. Furthermore they have enhanced understanding of the message and an augmented connection to nutrition information sources.

The results of our study are comparable to study by Mihretie as the participants exhibiting provision of diverse diet to their children [36]. In our study the kind of food given to children to begin weaning included a variety of foods.

The are several limitations of the study. The study was about an issue of population interest but conducted at a single centre only. The study should have been multicentered. Study did not include assessment of comparison of knowledge regarding appropriate complementary feeding practice between primigravida and multigravida females in under developed slum areas of big cities and the rural areas. Such an insight might have yielded a broadened perspective as well as enhanced results. One week dietary recall should have been included for multigravida females where they should have provided a complete record of food given to their children over the week, which was not done in this study. Participants should have been inquired about monthly income of the household. Multigravida females should have been asked about any past history of major operations including caesarean section. Furthermore as a limitation of this study, majority of study population included educated women and therefore findings cannot be generalized as reflecting knowledge regarding appropriate complementary feeding practice in a sizable female population of Pakistan.

Conclusion

The study revealed that multigravida females were more aware of complementary feeding practice as compared to primigravida females. Multigravida females were observed in this study as practicing appropriate complementary feeding practices such as timely introduction of complementary feeding, correct type of food to begin complementary feeding, appropriate frequency of food to begin complementary feeding and the correct quantity of food to begin complementary feeding. Overall the study revealed that multigravida females know the importance of appropriate complementary feeding for the growth and development of children. Accurate guidance and high quality orientation of primigravida females regarding correct complementary feeding practice is immensely recommended as a result of this study.

Author's Contributions

The contributions of the authors were as follows:

Junejo S: Study conception, design, acquisition of data, analysis of data, interpretation of data, drafting of the manuscript, substantial critical revision of the manuscript, approval of the submitted version.

Musharraf SF: Acquisition of data, interpretation of the data, substantial revision of manuscript and approval of the submitted version.

Fasih A: Interpretation of the data, substantial revision of manuscript and approval of the submitted version.

Ahmed S.: Study conception, design and approval of the submitted version.

Jagirani GN: Acquisition of data and interpretation of data and approval of the submitted version

Rabbani S: Acquisition of data and interpretation of data and approval of the submitted version.

Afzal A: Acquisition of data and approval of the submitted version.

All authors read and approved the final manuscript.

Statement of Financial Support

The study was devoid of any financial support

Disclosure

The authors declare no conflict of interest. Abstract was published as part of conference proceedings in the Journal of Community Medicine and Health Education 2018, Volume 8.

References

1. Cattaneo A, Williams C, Alonso CRP, et al. ESPGHAN's 2008 recommendation for early introduction of complementary foods: How good is the evidence? Maternal and Child Nutrition. 2011; 7: 335-343.
2. Maslin K, Galvin AD, Shepherd S, et al. A qualitative study of mothers' perceptions of weaning and the use of commercial infant food in the United Kingdom. Maternal and Paediatric Nutrition Journal. 2015; 1: 103.
3. Pries AM, Huffman S, Champeny M, et al. Consumption of commercially produced snack foods and sugar-sweetened beverages during the complementary feeding period in four African and Asian urban contexts. Maternal and Child Nutrition. 2016; 13: 1-12.
4. Stewart CP, Iannotti L, Dewey KG, et al. Contextualising complementary feeding in a broader framework for stunting prevention. Maternal and Child Nutrition. 2013; 9: 27-45.
5. Iannotti LL, Lutter CK, Waters WF, et al. Eggs early in complementary feeding increase choline pathway biomarkers and DHA: A randomized controlled trial in Ecuador. 2017; Am J Clin Nutr. 2017; 106: 1482-1489.
6. Pem D. Factors affecting early childhood growth and development: Golden 1000 days. Journal of Advanced Practices in Nursing. 2015; 1: 1.
7. Na M, Aguayo VM, Arimond M, et al. Risk factors of poor complementary feeding practices in Pakistani children aged 6-23 months: A multilevel analysis of the Demographic and Health Survey 2012-2013. Maternal and Child Nutrition. 2017; 13: 1-12.
8. Bournez M, Ksiazek E, Wagner S, et al. Factors associated with the introduction of complementary feeding in the French ELFE cohort study. Maternal and Child Nutrition. 2018; 14: 1-15.
9. Dereje N. Determinants of severe acute malnutrition among under five children in Shashogo Woreda, southern Ethiopia: A community based matched case control study. J Nutr Food Sci. 2014; 4: 1-8.
10. Ijaz S, Ijaz T, Afzal RK, et al. Infants-feeding practices and their relationship with socio-economic and health conditions in Lahore, Pakistan. Adv Life Sci. 2015; 2: 158-164.
11. Semahegn A, Tesfaye G, Bogale A. Complementary feeding practice of mothers and associated factors in Hiwot-Fana Specialized Hospital, Eastern Ethiopia. Pan African Medical Journal. 2014; 18: 143.
12. Sanusi RA, Leshi OO, Agada UN. Mother's knowledge and practice of breastfeeding and complementary feeding in Enugu State, Nigeria. Journal of Research in Nursing and Midwifery. 2016; 5: 21-29.
13. Udoh EE, Amodu OK. Complementary feeding practices among mothers and nutritional status of infants in Akpabuyo Area, Cross River State Nigeria. Springer Plus. 2016; 5: 2073.
14. Mohammed S, Getinet T, Solomon S, et al. Prevalence of initiation of complementary feeding at 6 months of age and associated factors among mothers of children aged 6 to 24 months in Addis Ababa, Ethiopia. BMC Nutrition. 2018; 4: 54.
15. Olatona FA, Adenihun JO, Aderibigbe SA, et al. Complementary feeding knowledge, practices, and dietary diversity among mothers of under-five children in an urban community. International Journal of MCH and AIDS. 2017; 6: 46-59.
16. KassaT, Meshesha B, Haji Y, et al. Appropriate complementary feeding practices and associated factors among mothers of children age 6-23 months in Southern Ethiopia, 2015. BMC Pediatrics. 2016; 16: 131.
17. Epheson EB, Birhanu, Tamiru D, et al. Complementary feeding practices and associated factors in Damot Weydie District, Welayta zone, South Ethiopia. BMC Public Health. 2018; 18: 419.
18. Bell S, Yew SSY, Devenish G, et al. Duration of breastfeeding, but not timing of solid food, reduces the risk of overweight and obesity in children aged 24 to 36 months: findings from an Australian cohort study. International Journal of Environmental Research and Public Health. 2018; 15: 1-14.
19. Crocetti M, Dudas R, Krugman S. Parental beliefs and practices regarding early introduction of solid foods to their children. Clin Pediatr. 2004; 43: 541-547.
20. Pearce J, Taylor MA, Evans SCL. Timing of the introduction of complementary feeding and risk of childhood obesity: A systematic review. International Journal of Obesity. 2013; 37: 1295-1306.
21. Castro PD, Layte R, Kearney J. Ethnic variation in breastfeeding and complimentary feeding in the republic of Ireland. Nutrients. 2014; 6: 1832-1849.
22. Nwaru BI, Erkkola M, Ahonen S, et al. Age at the introduction of solid foods during the first year and allergic sensitization at age 5 years. Pediatrics. 2010; 125: 50-59.
23. Imran M, Jabeen N, Khatoon S. Feeding practices of infants and young children according to whom indicators at children hospital, Islamabad. PJMHS. 2017; 11: 215-219.
24. Duan Y, Yang Z, Lai J, et al. Exclusive breastfeeding rate and complementary feeding indicators in china: A national representative survey in 2013. Nutrients. 2018; 10: 249.
25. Vail B, Prentice P, Dunger DB, et al. Age at weaning and infant growth: primary analysis and systematic review. J Pediatr. 2015; 167: 317-24.
26. Lindsay AC, Le Q, Greaney ML. Infant feeding beliefs, attitudes, knowledge and practices of chinese immigrant mothers: An integrative review of the literature. Int J Environ Res Public Health. 2018; 15: 21.
27. Tafesse T, Badacho AS, Kuma DM. Timely introduction of complementary feeding among caregivers of children 6-12 month Sodo town, Ethiopia. Health Sci J. 2018; 12: 543.
28. Owais A, Schwartz B, Kleinbaum DG, et al. Minimum acceptable diet at 9 months but not exclusive breastfeeding at 3 months or timely complementary feeding initiation is predictive of infant growth in rural Bangladesh. PLoS One. 2016; 11: 1-10.

29. Cascone D, Tomassoni D, Napolitano F, et al. Evaluation of knowledge, attitudes, and practices about exclusive breastfeeding among women in Italy. Int J Environ Res Public Health. 2019; 16: 2118.
30. Unicef. National Nutrition Survey 2018: Key Findings Report. Available From: http://www.unicef.org/pakistan/reports/national-nutrition-survey-2018-key-findings-report. [Accessed 27th July 2019].
31. Neme K, Olika E. Knowledge and practices of complementary feeding among mothers/caregivers of children age 6 to 23 months in Horo Woreda, Horo Guduru Wollega zone, oromia region, Ethiopia. J Biomed Res Revs. 2017; 1: 1.
32. Khokhar S, Jatoi HA, Lassi ZS. Prevalence of timely introduction of complementary feeding and its related factors in children 6-24 months of age in Hyderabad, Pakistan. Nursing and Midwifery Studies. 2017; 6: 3.
33. Ahmad MS, Zaidi SAH, Medhat N, et al. Frequency of underweight and stunting among children entering school in a small urban locality and their association with academic performance. J Pak Med Assoc. 2018; 68: 28-32.
34. Yohannes B, Joshi K, Thangavel T, et al. Timely initiation of complementary feeding to children aged 6-23 months in rural Soro district of Southwest Ethiopia: A cross-sectional study. BMC Pediatrics. 2018; 18: 1-7.
35. Dallazen C, Silva SAD, Gonçalves VSS, et al. Introduction of inappropriate complementary feeding in the first year of life and associated factors in children with low socioeconomic status. Cad Saude Publica. 2018; 34: 2.
36. Mihretie Y. Maternal knowledge on complementary feeding practice and nutritional status of children 6-23 month in Jigjiga town. Global Journal of Nutrition and Food Science. 2018; 1: 1.

Correspondence to:

Shizma Junejo
Karachi, Pakistan
Tel: 0092 3330240257
E-mail: shizjunejo@hotmail.com