

Knowledge and Practice of Mothers, Regarding the Supplementary Nutrition of Breast-fed Infants, Yasuj, Iran

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ABSTRACT

Introduction: Optimal growth and development of infants requires correct nutrition, and suitable alimentary habits. Mothers' wrong use of supplementary nutrition and their lack of knowledge is one of the most important causes of malnutrition. This study was conducted in order to determine the knowledge and practice of supplementary nutrition among mothers with 6 -12 months old infants.

Methods: In this cross-sectional descriptive study, 180 mothers with 6 -12 month old infants, who were referring to health centers of Yasuj University and Medical Sciences, were selected by randomly sampling in 2008. Researchers attended different clinics in the morning shifts, and the questionnaires, which were used as data collecting tools, were completed by conducting interview with mothers. Afterwards, the collected data was analyzed by SPSS 17 software, using descriptive statistics, and Chi-square.

Results: As the results show, the majority of mothers (78.3%) had sufficient knowledge of supplementary nutrition. Also, there were no significant differences in mother's knowledge based on their age, occupation, educational level and birth order. Other results show that the majority of mothers (62.8%) had good practice regarding the nutrition of their infants ($P = 0.03$). Also, there was a positive relationship between mother's knowledge and practice of supplementary nutrition ($P = 0.04$).

Conclusion: According to this study, it can be concluded that the knowledge and practice of majority of mothers about supplementary nutrition is sufficient. Moreover, in order to broaden the knowledge of the personnel in health centers, mass media must be used to find the important related issues.

Keywords: Complementary, Infant, Knowledge, Mother, Nutrition, Practice

Introduction

Desirable growth and development of breast-fed infants necessitates correct nutrition and proper dietary habits. Unawareness of mothers in this regard is among the most important reason of malnutrition in breast-fed infants. Appropriate nutrition has an essential role in the child's normal growth and development. In the 6th month of the infant's life, the chewing skill is developed, and since Fe reserves in the body reduce, breast milk is not sufficient to meet the needs of the infants (1). Without adding any alimentary only breast milk is sufficient for normal growth of the breast-fed infants, until the end of the sixth month. A share of energetic needs of the child, which must be provided by food, depends on the quantity of mother's (2). If complementary nutrition begins before the age of six months, due

to the unpreparedness of the digestive system allergy and infection occur, which cause a delay in the child's growth. If suckling is reduced, the secretion and production of breast milk will reduce too, and the successful continuation of lactation faces difficulties (3). Exclusive feeding with breast milk during the first six months of life which is the best type of infant feeding all over the world and the continuation of lactation, could prevent different diseases such as pneumonia, urinary tract infection, otitis media, diarrhea and bacterial meningitis. Also it would reduce the risk of childhood asthma development by 50%, in susceptible families (4). Evaluation of the growth pattern of infants during the first year of life by using body assessment method could provide useful information about the nutritional status

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and the health of the whole community. Measurement of weight, stature, head perimeter, arm perimeter and chest perimeter are among the crucial sources of information which are used to indicate nutritional status of children, adolescent and the youth. Numerous studies have shown that major nutritional problems occur during the first year of life. The factors which affect the nutritional status especially in the first year of life vary in different communities, but the most important of them are the mothers' nutritional status, age, the number of pregnancies, interval between pregnancies, type of milk consumption, period of breastfeeding, time of beginning the supplementary food, type of the food, infant's disease, economic status, and mothers' belief in health and nutritional problems. Mild and moderate forms of malnutrition have affected the physical and physiological activities of millions of adult human beings (5). Growth disorders are one of the subsequent diseases, and an indicator of insufficient daily food intake; Although many other factors, such as social, economical and cultural status are involved in the process (6). In developing countries, growth disorder affects the health and activities of children. Malnutrition is responsible for more than 50% of mortality rate (cases) in the children which is often accompanied by new infections (7). In spite of the presence of health care centers, thinness is still common among children younger than 5 years old (8). Moreover the most prevailing age of growth disorder in our country, is the age of 6-12 months, which is concurrent with start of supplementary nutrition and the highest rate of short stature is in the age of 12-24 months. Studies have shown that 46% of growth-disorder cases arise from non-organic causes and 26% happens for various reasons. An important non-organic reason of growth disorder is nutritional problems which is related to unawareness of the families about the right methods of infant feeding (9). With respect to the fact that there is a correlation between the nutritional awareness of mothers and feeding (nutritional) status of their children and also the important role of parents in feeding their children, special attention must be paid to mothers' training (10). The data collected in Yasuj, Iran, based on the national DHS design (2000) showed that supplementary feeding had not been started for 39% of month old children, and 165% of 7 month-old children. Also the majority of people were from the middle economical class, with a low chance of mother's marriage in a younger age. They were usually housewives with high school diplomas. Younger mothers usually spend less

amount of time for preparing supplementary food and do not have enough experience. Since the supplementary nutritional pattern of breast-fed infants is affected by the family's social, economical and cultural status of the family and mothers constantly inquire about it in the clinics, therefore the need for training them seems crucial in various situations. Since no study has been carried out in Yasuj on the awareness and performance of mothers regarding the supplementary nutrition of breast-fed infants under the age of one year the present research was carried out in clinics of Yasuj, Iran. The main objective of the study was determining the level of awareness and performance of mothers regarding supplementary nutrition of 6-12 month old infants. It is hoped that the results of this research to improve the performance of supplementary feeding mothers fruitful.

Material and Method

This was a descriptive study which had been carried out using sectional method. The community of the study was all the mothers with 6-12 month old breast-fed infants referring to health and medical centers of Yasuj, Iran, in the span of one year. Sampling was done using simple method and among the mothers with 6-12 month old infants referring to health and medical centers of Yasuj city. The sample size was determined to be (180) with respect to monthly referrals of mothers to different clinic and estimation formula with ($P = 50$). The criteria to enter the study included: mothers with 6-12 month old breast-fed infants being inhabitants of Yasuj city, and mothers' consent to participate in the study. The exclusion criteria were: children with congenital abnormalities, chronic diseases and low birth weight. The data collecting instrument was a questionnaire with three sections including the demographic information of the subjects 15 questions regarding their awareness. (age of starting supplementary nutrition, risks of early start of supplementary nutrition and etc.) and 15 questions regarding their performance, (method of preparing supplementary food, period of storage and etc.). The questionnaire was designed by the researchers using library resources and online content.

Validity was formulated after sufficient research was done regarding the breast-fed infants' supplementary nutrition from various sources including books, research articles, and by retrieving phrases related to awareness and performance of the mothers. After wards, content validity was obtained through seeking opinions of

Table 1. Frequency and distribution of mothers referring to healthcare centers in Yasuj, 2008 with 6-12month old children, according to their age, occupation, education, and child number

	Variable	Number	Percent
Age (years)	25<	72	40
	35 -26	91	7.50
	>36	17	9.3
Occupation	Housekeeper	156	86.7
	Employed	24	3.13
	Illiterate	6	3.3
Education	Elementary and Middle School	57	31.7
	High school diploma	113	62.8
	Academic and theological education	4	2.2
Rating child	Rating1	5	2.9
	Rating1	55	2.32
	Rating1	107	6.62
	≥4	4	3.2

faculty members (10 individuals) and experts with at least five years of experience in the field of children’s supplementary nutrition. The external validity of the questionnaire was also obtained through seeking opinions of 10 faculty members. Reliability of the questionnaire was measured 0.86 by Cronbach’s alpha in repeated tests. When the questionnaires were completed (filled) by mothers, the scores were placed in weak, moderate and good categories by adding or reducing standard deviation to the average scores to determine awareness and performance. The data and questionnaires were collected by the (corresponding) author of the article. Information on stature and weight was gathered, based on the data recorded on the health cards of the infants. Data analysis was performed using SPSS 17 software, and descriptive and inferential statistics were analyzed after assessing the normal score distribution of awareness and performance among mothers. Non-parametric tests were used for comparison of averages (Kruskal-Wallis test & Mann-Whitney test), and χ^2 test was used for finding the correlation between nominal variables.

Results

The results showed that 50.7% of mothers were in the age range of 26-35 years old and the majority of them (86.7%) were housewives. The highest level of education of mothers was high school diploma with frequency of 62.8% and the maximum number. The study showed that the awareness level of the majority of mothers (58.3%) was moderate. The awareness of mothers was evaluated based on demographic variables and the results showed that awareness of mothers based on their age ($P = 0.4$), occupation ($P = 0.9$) level of education ($P = 0.2$) and number of children ($P = 0.1$) was not different at a statistically significant level. In relation to the performance of mothers with breast-fed children the findings of the study indicated that the performance of

majority of mothers (60%) was moderate regarding supplementary nutrition of 1-6-month old infants. The performance status was evaluated based on variables such as mother’s age, level of education, occupation. The findings of this study demonstrated that there was a significant correlation between the mother’s performance and her age, although no such correlation was observed between other variables. The performance of mothers was different at a statistically significant level based on their occupation $P = 0.13$ level of education ($P = 0.2$) and number of children ($P = 0.8$). There was a positive and significant correlation between the awareness and performance of mothers regarding supplementary nutrition ($P < 0.05$).

Table 2. The frequency of supplementary feeding in (6-12-month-old) infants, based on mothers' knowledge score

	Score	Number	Percent
Weak	0-25	3	1.7
Medium	26-50	31	17.2
Well	51-75	141	78.3
High	76-100	5	2.8
Total		180	100

Table 3. The frequency of supplementary feeding in (6-12-month-old) infants, based on mothers' performance score

	Score	Number	Percent
Weak	0-25	6	3.3
Medium	26-50	57	31.7
Well	51-75	113	62.8
high	76-100	4	2.2
Total		180	100

Discussion and Conclusion

Appropriate nutrition along with breast feeding, mother’s awareness and correct intake of supplementary nutrition have major effects on the health of infants. The results obtained from the present study revealed that in the majority of mothers (58.3%) awareness of supplementary nutrition was moderate. The results of a research by Sharifi also showed that awareness of a majority of mothers was at a desirable level. Also

the results of a study by Rashadat in city of Kermanshah, Iran, showed that 10% of mothers were aware of a correct nutrition pattern for breast-fed infants, although half of them had insufficient awareness (11).

On the other hand the results obtained by kahbazi and Farahani showed that 55.3% of mothers had poor awareness before training (12). So it could be said that the mothers' awareness varies in different regions. In regards with another objective of the current study, the results revealed that the awareness of mothers about supplementary nutrition of children was not significantly different, based on age, occupation, level of education and number of children, which is in consistency with the following studies. The majority of mothers in the age group of 26-35 years had moderate awareness but here no significant correlation is found between the mothers' level of awareness and their age. The result of the study by karimi *et al* in city of Yazd, Iran, showed that the highest level of mothers' knowledge about the nutrition of children during the two years after birth, was in the age group of 25-34 years, but there was no significant correlation between the mothers' level of awareness on supplementary nutrition and mothers' age (13). Also, the results of Sharifi's study showed that the highest level of awareness was in the age group of 35-21 years, and the highest percentage of mothers was in the group with moderate awareness. There was also no significant correlation between the mothers' level of awareness and their age. It could be said that the reason why this age group (26-35 years) better aware is that the majority of these mothers' are in the ages that are referred more to health centers for surveillance and vaccination and therefore their parents receive more training. Also this group is relatively younger and has a higher level of education in comparison with the age group of over 35 year-old mothers. Meanwhile they have sufficient experience in comparison with the mothers aging than 25 years. The awareness of the majority of employed mothers was moderate but there was no significant correlation between the awareness and mother's occupation. These results are in consistency with the findings of Karimi *et al*, in which it was reported that the highest rate was also in the employed group (13). Although the findings by Rashadat showed that a majority of employed mothers had undesirable awareness and only 13% of employed mothers had desirable awareness. The reason why employed mothers are more aware than housewives is their higher level of education and their information gathering

in the workplace, which doesn't apply in the case study by Rashadat. The majority of mothers with high school diploma had a moderate level of education but the mothers' awareness was not significantly different, based on the level of education (14). The result of a study by Rashadat also showed that undesirable awareness is significantly observed in those with low literacy. The result of study by Karimi also showed that awareness increases with raising the level of literacy in mothers and that also there is a significant correlation between the mothers' level of education and their awareness; the higher mothers' level of education led to higher level of awareness supplementary nutrition compared with the mothers with low literacy (13). Therefore need for more training with different educational methods is felt in the regions where the mothers' level of literacy is low. The majority of mothers with one child had a good awareness on supplementary nutrition but this correlation was not significant. The result of study by Kahbazi and Farahani are in consistency with the above-mentioned study. It could be due to the fact that young mothers pay more attention to having fewer children, so they can provide better and more appropriate care; also the training available in the mass media is of importance. The higher number of children and lack of interval between births cause mothers to have in sufficient amount of time to pay attention to the importance of supplementary nutrition. Our results have shown that 60% of mothers had a moderate performance about supplementary nutrition, but performance of majority of mothers in this field has not been significantly different, based on occupation, level of education and number of children; though it was significantly different regarding their age. The performance of majority of mothers in the age group of 26-35 years had good satisfactory. The result of study by Al Bustan and kohli on Kuwaiti women showed that there is a significant correlation between mother's level of education and age at the time of marriage, with their performance regarding supplementary nutrition. So it seems that as mothers grow older, their experience increases, and subsequently it improves their performances in the current research, the score of performance in the mothers under 25 years of age was 75 %, while in the mothers with the age between 26-35 years, it was 96.7% and in the mothers over 36 years it was 97.2%. The performance of majority of employed mothers was good but no significant difference was observed between the performance of employed mothers and housewives. In a study

carried out by Amani and Afzali in city of Ahwaz, Iran, the results showed that a half of employed mothers had mentioned that lack of enough time is their major problem (16). This could be because of the great engagement of employed mothers and thus their taking the infants to crèches or employing baby-sisters. No clear difference had been observed between the performance of employed mothers and housewives. The performance of the majority of mothers with high school diploma was moderate but no significant correlation was observed between the performance of mothers and level of education. Although the study by Liaqat *et al* in Islamabad (Pakistan) showed that there is a significant correlation between the education and performance of mothers, and also the increase in mothers awareness had also affected their performance (17). The lack of significant difference between the performance of mothers with high school diploma education could be correlated to the training they have received from health and medical centers. The performance of majority of mothers with one child was satisfactory, but no significant association was observed between the performance of mothers and number of their children. Also the result of study by Kahbazi and Farahani is in consistency with the result of the present study. As it seems the less the number of children is, the longer time the mothers have to provide for their infant's supplementary nutrition. Based on the results obtained from the present research, it could be inferred that awareness and performance of the majority of mothers on supplementary nutrition is in intermediate level. By upgrading awareness and updating information of the staff of health centers and involving medical and paramedical students, it is possible to upgrade this awareness to a good and appropriate level. No specific restriction was observed in the present study. The awareness of mothers plays an important role in exclusive nutrition of infants with breast milk during the first six months after birth. Also the time of beginning the supplementary nutrition at the end of six months is of high importance, since it is concerned with care and protection of infants' health, especially during the very sensitive limited age of under one year old. Therefore, we propose and hope that health and medical centers make more attempts in transferring information and providing more training to mothers. They also have to prepare the context for upgrading the knowledge of mothers and providing them with practical guidelines as a result of which mothers will have better and more appropriate performances.

Acknowledgement

The authors would like to thank the mothers who participated in this study with generosity and patience. Our gratitude also extends to the staff of health and medical centers who assisted us in carrying out this project. Since the present article has been derived from a research proposal approved by the vice chancellery for Education, Research and Technology of Yasuj University of Medical Sciences, reference number 7126, The support is appreciated.

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