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RESEARCH ARTICLE

Complementary feeding among a sample of Iraqi women

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ABSTRACT

On asking the mothers from where they obtained their information about complementary feeding, the majority of them came from family 297 mothers, who represent 74.3%, while 70 mothers (17.5 %) obtained their information from the pediatrician, while the media share only 7.2% from the sample, and at least; from friends only 1%, while trying to compare these results with other studies we found that its compatible with the result of Seema Hasnain and his colleagues, in which they found 78% of mothers obtain advice regarding complementary feeding was given by family members while in 23% mothers by doctors(32)

While evaluating the types of food introduced to the infant, we classify our sample into three groups according to what they had been taken. The first group represents infants who took all the essentials ingredients, which represents the adequate feeding group which represents 81.8%; while infants who lack one essential ingredient represent the partially adequate feeding group which represents 17 %, while the non-adequate group represents only 1.2 %

Our results disagree with a study conducted in India that revealed that 32% of mothers were given an adequate quantity of complementary feeds; this might be due to the difference in cultural beliefs and sample size since they took 200 infants.33 We discovered that the introduction of food did not dramatically change with age related to the mother age P value 0.466; these results seem to be similar to the results obtained by S.Rao in which he and his colleagues found that there is no statistical relation between maternal age at the time when food was first introduced (p-value 0.218).[33]

The mothers` educational status highly statically influences the age of food introduction to the infants since the P value was 0.0001, and these results are compatible with S. Rao and his colleague's results. (33)

We found the mother's occupation influences the age of introduction of food since the P value is 0.003, and these results are compatible with the results of a study conducted in Pakistan by Razia Chaudry and Naheed Humayun 2007 which revealed that the mothers' occupation is highly related to the date of food's introduction (p-value 0.001.

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INTRODUCTION

The shift from family foods to exclusive breastfeeding, also known as supplementary feeding, usually takes place between the ages of 6 and 18 to 24 months. The high prevalence of malnutrition in children under the age of five around the world is mostly due to this period when malnutrition first manifests in many infants. According to that, low-income nations have 2 out of 5 children who are stunted.1

From the age of six months, all newborns should begin consuming solids in addition to breast milk. Foods should be prepared and administered in a safe manner, which entails taking precautions to reduce the possibility of pathogen contamination. They should have the proper texture and be fed promptly according to psychosocial care standards.2

More frequently than not, improper feeding practices are a more significant factor in low intakes than household food availability. The World Health Organization (WHO) has created a process for modifying feeding guidelines that enables program administrators to recognize regional feeding customs and frequent feeding-related issues. The procedure expands on the available information and suggests household experiments to evaluate improved feeding recommendations.3

Updating guidelines for appropriate feeding practices and providing program managers with instructions on how to implement them are the outcomes of the Global Consultation on Complementary Feeding, which the WHO organized from December 10–13, 2001. The background papers that influenced this consultation are updated versions of the WHO/UNICEF publication Complementary Feeding of young children in developing countries: a review of current scientific knowledge, WHO/NUT/98.1, which was first published in the Special Supplement of the Food and Nutrition Bulletin 2003; 24(1).

While the Guiding Principles for Feeding the Non-Breastfed Child 6-24 Months of Age (2005) offer advice for feeding children who are not receiving breast milk, the Guiding Principles for Complementary Feeding of the Breastfed Child (2003) developed by the Pan American Health Organization summarize the most recent scientific evidence for complementary feeding and are intended to guide policy and programmatic action at the global, national, and community levels.4

MATERIAL AND METHOD

400 moms were questioned using a questionnaire form created to collect comprehensive data on alternative feeding methods and assessed by a community medicine specialist.

Study Design

A cross-sectional study included 400 babies who attended PHCC centers.

Time of the study:

This study was conducted from February 1, 2014, till May 30, 2014, including 2 days a week and 4 hours a day (8:30 am -12:30 pm). Place of the study:

The study was conducted in two selected primary health care centers in Baghdad Alkarkh district; the selection of the centers was random.

These PHCCs were Aldakhelia primary health center and Alaamreyia primary health center.

Sampling Design

A convenient sample included 400 infants aged 9-12 months who attended PHCC for vaccination or seeking medical help.

Inclusion Criteria:

Infants at age 9-12 months who attended with their mothers were without any gross congenital abnormalities or growth retardation, and their mothers were from different age groups, educational statuses, and occupations.

Exclusion Criteria

Infants attend with another family member rather than their mothers or incompliant mothers who refuse to answer our questionnaire.

Data Collection

The data was collected by direct exit interviews with mothers who agreed to participate after the researcher explained to them the aim of the study by using a special questionnaire form (Appendix), which was designed for the purpose of the study repaired by the researcher and supervisor approved by a community medicine senior specialist.

Ethical Consideration

We got approval from the PHCC to interview the mothers and asked for their permission before asking them the questions in our questionnaire.

Limitation of the Study

Small sample size due to short time; in addition to that, not all mothers agreed to participate in the survey.

Statistical analysis

Data analysis was done with the accessible statistical program SPSS-22 (Statistical Packages for Social Sciences- version 22).

Data were displayed using straightforward frequency, percentage, mean, standard deviation, and range measurements (minimum-maximum values).

The Pearson Chi-square test (χ^2-test) with the application of Yate's correction or Fisher Exact test, if appropriate, was used to determine the significance of the differences between various percentages (qualitative data). Every time the P value was equal to or less than 0.05, statistical significance was taken into account.

RESULTS

In our study, the median age of the mothers was 27.7 years, with a range from 16 years to 46 years.

The proportion of mothers with 2 children was the highest in our sample since this group represents 35.8% of the sample.

In contrast, mothers with one baby represent 26.5%, three children mothers represent 21.3%, four children mothers represent 10%, and 3.3% for mothers with 5 and 6 children, as shown in Figure 1.

Figure 2 shows that the majority of mothers were educated in our sample, while the majority of them were housewives, 72.3 %.

Regarding the fathers' educational status and occupation, we found most of them were educated, as shown in Figure 2.

Figure 3 demonstrates how the study sample was distributed based on how they were housed, regarding the number of family members, number of rooms, and the presence of an older woman in the house.

Figure 3: shows that about a quarter of the sample, 26 % live in a crowding index of 3-5, and one-half of the sample lived with an old mother.

The babies in our sample were 9 to 12 months, which more than one-half of the sample were aged 12 months, and more than one-half were males.

Regarding the order of the infants in the family, we found that the second baby order represents the highest frequency, 34.3% (n = 137).

The infants were selected randomly regarding their type of feeding; only 36.5 % were breastfed infants, six were weaned from the breast, two of them due to mothers` work, and four were without apparent cause (Figure 4).

The ideal age for introducing complementary therapies is six months of food [19]; Figure 5 shows 184 infants (46 %) and found 166 infants (41.5%) who received complementary feeding at the age of less than 6 months, and 50 infants (12.5%) received complementary feeding at age more than 6 months, as Figure (5) shows.

Figure 6 reveals the number of daily meals and snacks; we found that about 54% received 3 meals/day and 33% received 2 meals/day. Also, we found that the majority of women never give their infants any snacks, 63%, and 29.3% received only one snack per day.

We also noticed that the majority of the babies were fed by their mothers, who represent 90.8 % of the collected sample.

On evaluating unfavorable practices, we found that 4.8% of the sample size shared family dishes, and 87.5% of mothers introduced new food items without enough period between them, as shown in Figure 7.

Herbal additives are introduced to the babies in 33.5 % of the sample.

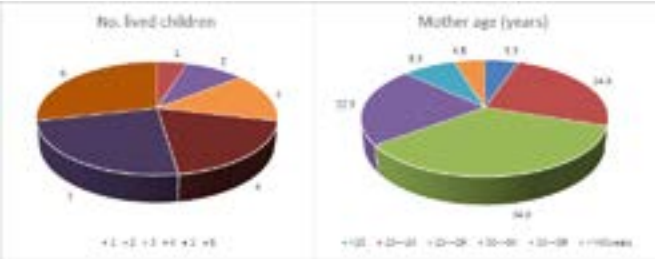


Figure 1: Age distribution of Mothers, No. of Lived Children in the Studied Group

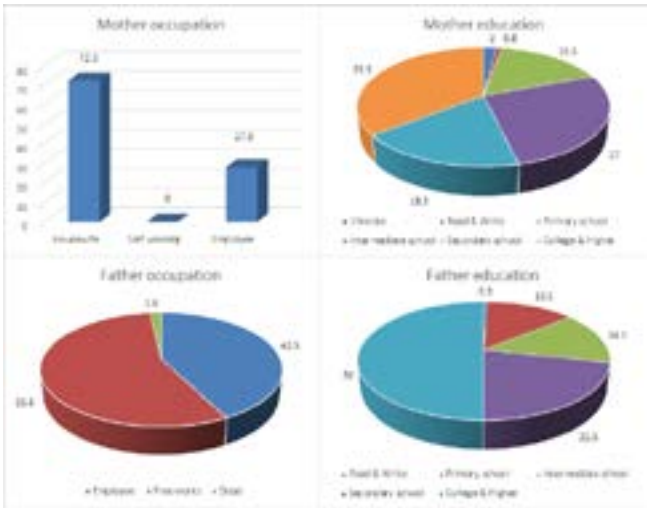


Figure 2: Educational Status and Occupation of Parents in the Studied Group

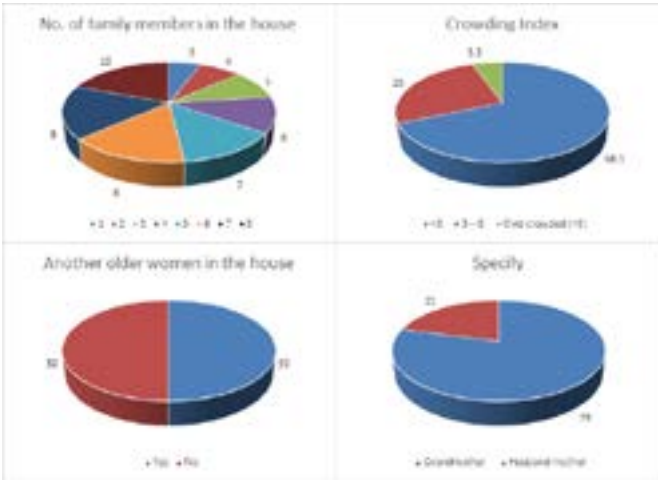


Figure 3: Accommodation Circumstances of Families in the Studied Group

Most infants achieved a weight gain of 89.3%, as Table 1 shows.

Figure 8 shows that 4.8% of the infants developed allergic reactions to complementary foods.

Adequate food means that food provides sufficient energy, proteins, and micronutrient to meet a growing child's nutritional needs (Figures 9 and 10).[15]

So on evaluation of the food introduced to the babies, we found that 81.8 % had received an adequate diet, as Figure 11 shows.

We sought for the association between the variables observed, so we found that the age of food introduction was greatly impacted by No. of lived children, mother education, mother occupation, father education, crowding index, and baby order in the family, in which P values were 0.001, 0.0001, 0.003, 0.0001, 0.011, and 0.001 respectively as shown in Figure 12.

As we divide our sample into 3 groups according to the adequacy of intake of complementary feeding, as shown in Figure 11, we evaluate the association of adequacy of food with other variables. We found it statistically significant associated with the number of lived children, education of the mother,

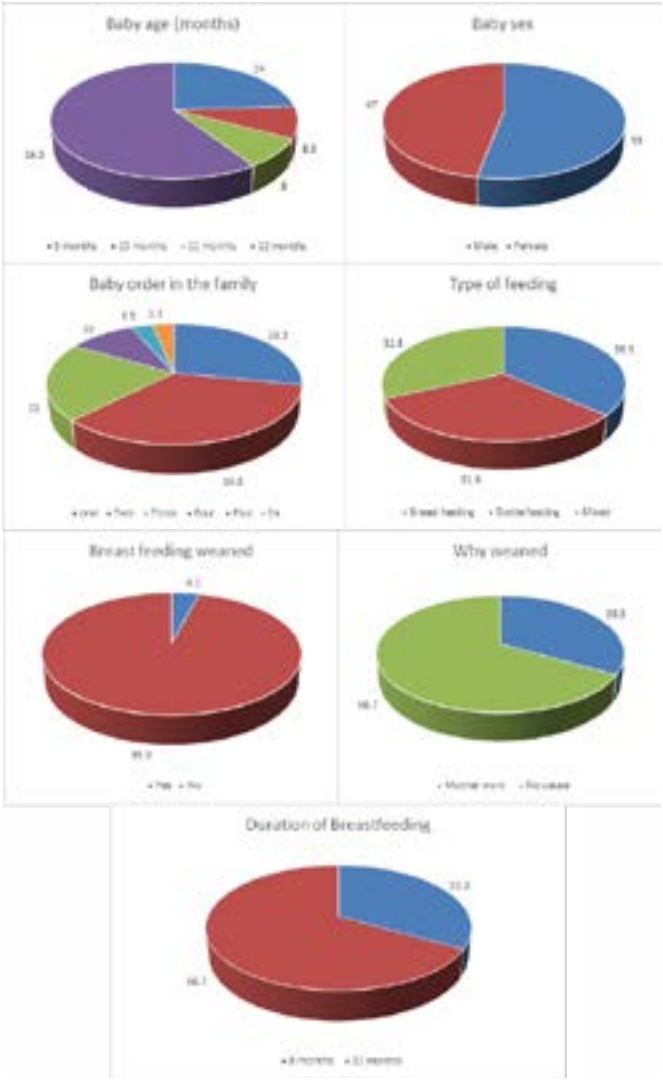


Figure 4: Babies Age, Sequence, Gender, and Type of Feeding.

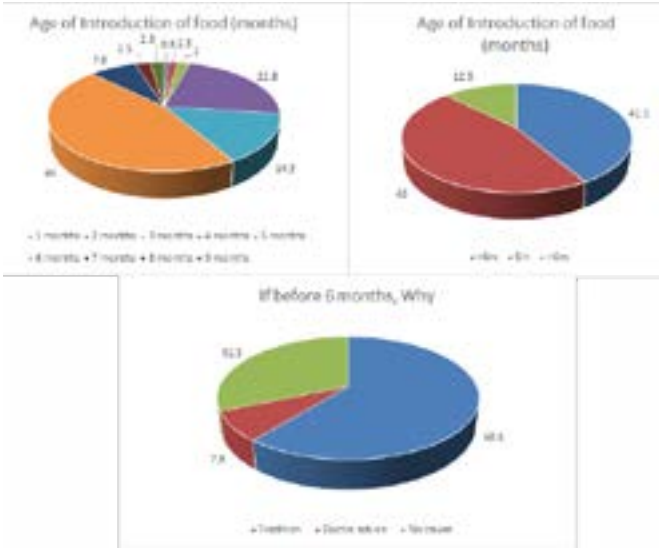


Figure 5: Age of Introduction of Food.

Figure 6: No. of Meals, Snacks, Person who Introduce Food.

and baby order in the family, in which the p-value was 0.002, 0.035, 0.003, respectively, as shown in Figure 13.

DISCUSSION

We found that infants whom breastfed 36.5 %, mixed feeding 31.8, and bottle feeding represent 31.8 %, and these results disagree with a study in Saudia Arabia conducted by Mohammed I. El Mouzan revealed that 91.6 % were breastfed [24] world health organization states that breastfeeding should continue at least 4 -6 months; However, after this period additional foods (complementary foods) are needed[25] and that complementary foods introduced before six months tend to displace breast milk[26] We found 184 infants (46%) were optimally fed at the age of 6 months, and these results agreed with a study conducted in India by Shivani Lodha[27] and his colleagues revealed 40% received complementary feeding at the age of 6 months. Additionally, most newborns are developmentally prepared for other foods by the time they are six months old (Naylor and Morrow, 2001). Waiting even longer than 6 months to introduce supplemental foods may limit exposure to food-borne diseases in areas with extremely low environmental cleanliness.28 When asking the women who gave their infants breastfeeding (36.5%) about weaning, we found that only 4.1% of infants were weaned one-third of them due to mother work. The duration of breastfeeding varies from 8 months (one-third of infants), 12 months (two thirds). This result agreed with the result of a study conducted by Gary Ong in Singapore 2005 who found that breastfeeding between was stopped primarily due to attributor to work.[29] While asking about the number of meals/snacks per day, we found that there is a wide range of results from 1-5, 1-4 meals/snacks per day respectively. While World Health Organization recommendations state that 3-4 times a day between the ages of nine and eleven and between twelve and twenty-four months, with additional nourishing snacks (such as a piece of fruit, bread, or chapatti with nut paste) supplied 1-2 times per day,

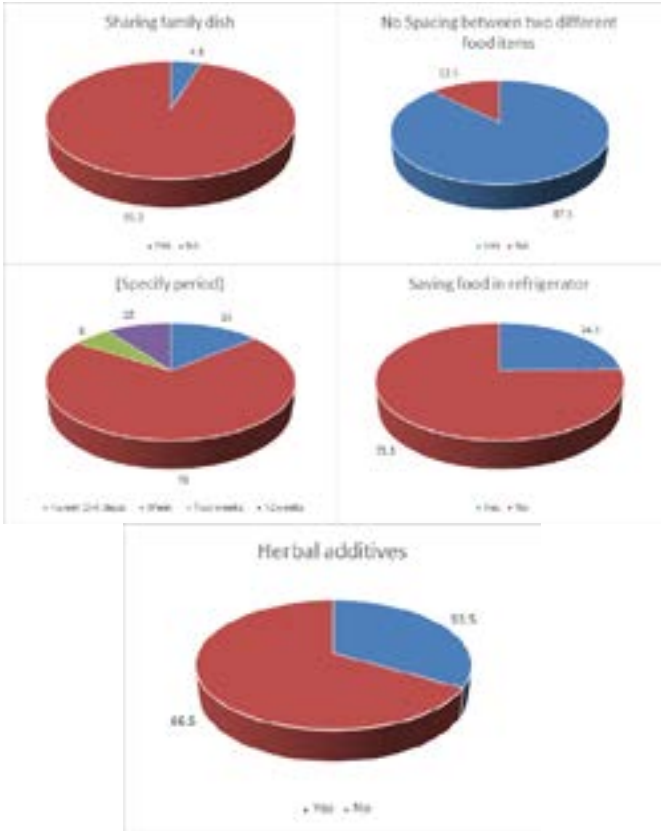


Figure 7: Unfavorable Practices.

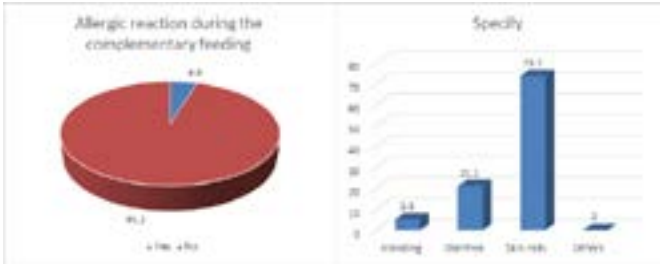


Figure 8: Allergic Reactions.

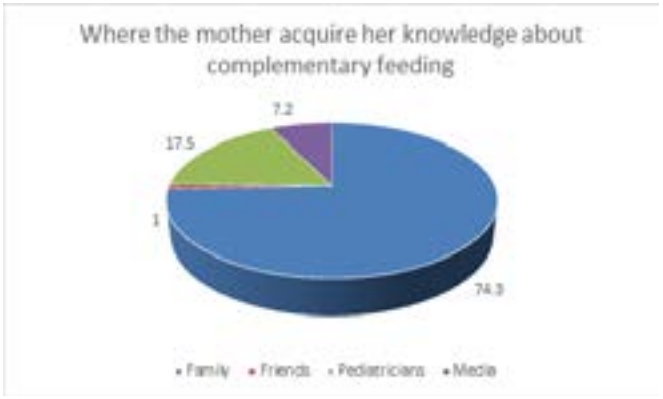


Figure 9: Source of Knowledge about Complementary Feeding.

Table 1: PHCC Visits.

	No	%
Taking baby weight at PHCC	382	95.5
Regular weight gain	341	89.3

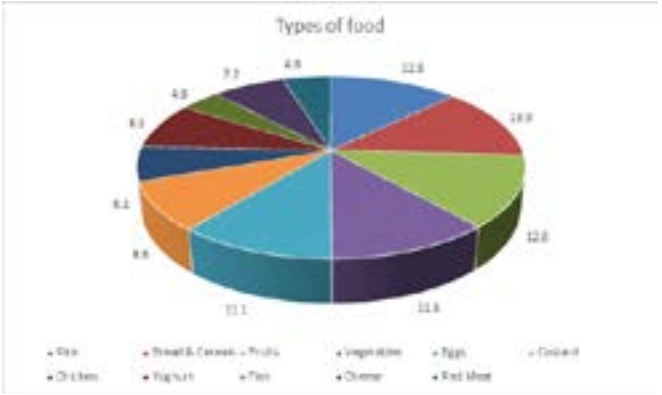


Figure 10: Types of Food Introduced.

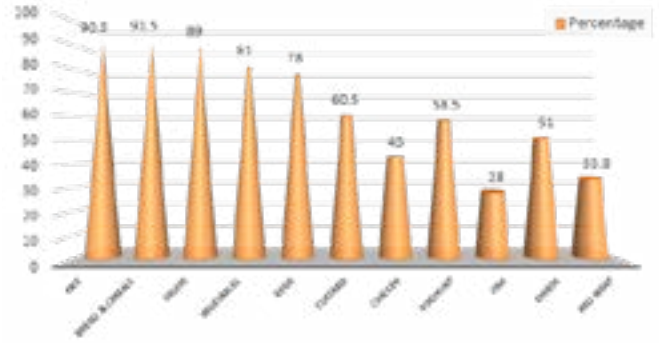


Figure 11: Percentages of Food Types Introduced.

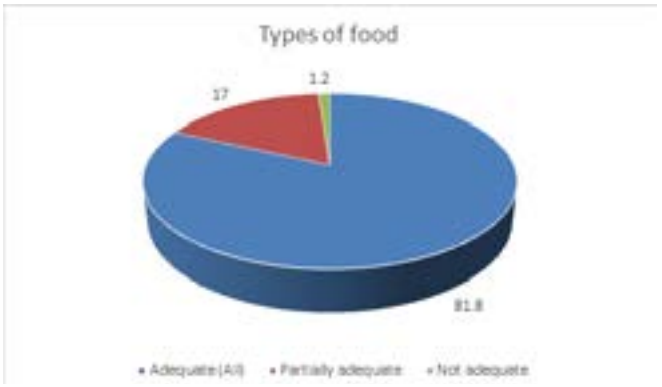
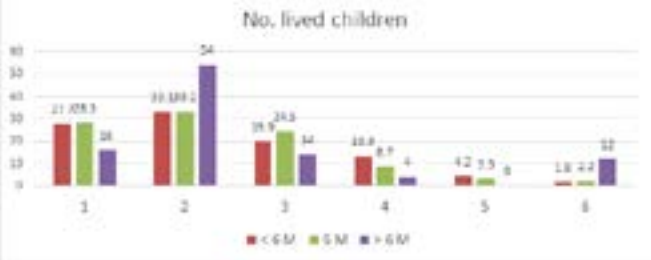
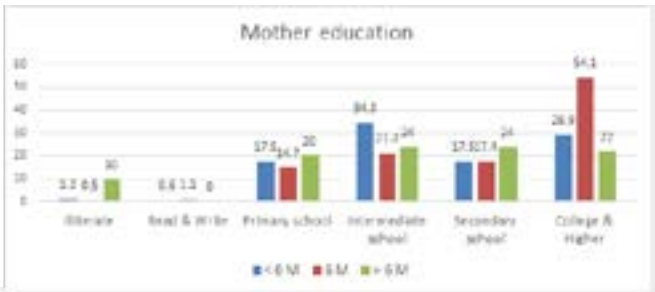
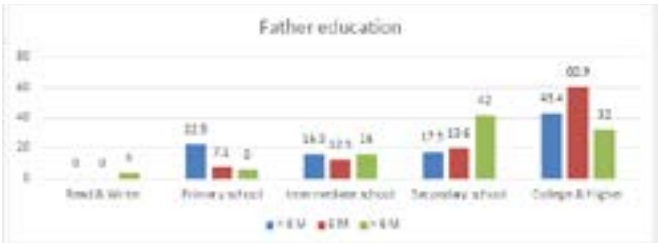


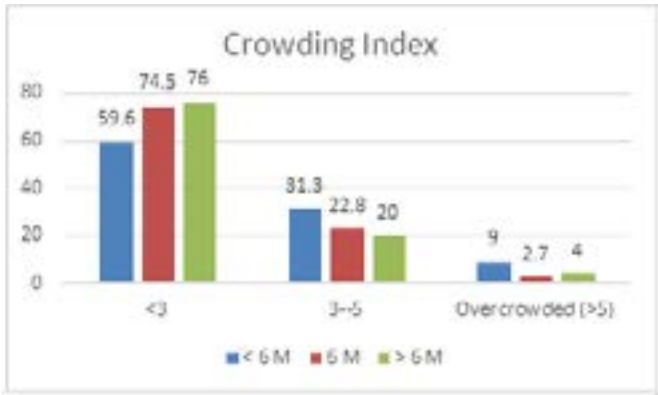
Figure 12: Percentage of Food According to Adequacy.

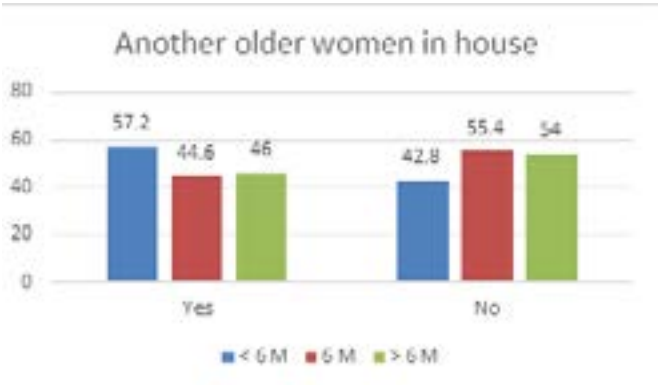
as preferred.30 On the evaluation of the allergic reactions that happened to the infants while adding complementary, we found only 19 infants out of 400, which represent 4.8 % of the sample size, developed signs of an allergic reaction. The majority developed skin rash (14 infants) 73.7 % from complication. In contrast, who developed diarrhea were only 4 infants 21.1 %,. Only one infant developed vomiting from the whole study, our result agrees with the result of a study conducted by Frank R. Greer 2008 who found that approximately 2 to 8% of infants











who received complementary feeding involve a reaction of the immune system to a food.[31]

On asking the mothers from where they obtained their information about complementary feeding, the majority of them from family 297 mothers, which represent 74.3%, while 70 mothers (17.5%) obtained their information from the pediatrician, while the media share was only 7.2% from the sample, and at least; from friends only 1%, while trying to compare these results with other studies we found that its compatible with the result of Seema Hasnain and his colleagues, in which they found 78% of mothers obtain advice regarding complementary feeding was given by family members while in 23% mothers by doctors.[32]

While evaluating the types of food introduced to the infant, we classify our sample into three groups according to what they had been taken; the first group represents infants who took all the essentials ingredients, which represents the adequate feeding group which represents 81.8 %; while infants lack one essential ingredient represent the partially adequate feeding group which represent 17%, while the non-adequate group represent only 1.2%

Figure 13: Relation of Age of Introduction of Food with Other Variables

Our results disagree with a study conducted in India that revealed that 32% of mothers were given an adequate quantity of complementary feeds; this might be due to the difference in cultural beliefs and sample size since they took 200 infants.33 We discovered that the introduction of food did not dramatically change with age related to the mother age p-value 0.466; these results seem to be similar to the results obtained by S.Rao in which he and his colleagues found that there is no statistical relation between maternal age at which food was first introduced (p-value 0.218.[33]

The mothers` educational status highly statically influences the age of food introduction to the infants since the P value was 0.0001, and these results are compatible with S. Rao and his colleague's results.[33]

We found the mother's occupation influences the age of introduction of food since the P value is 0.003, and these results are compatible with the results of a study conducted in Pakistan by Razia Chaudry and Naheed Humayun 2007 which revealed that the mothers' occupation is highly related to the date of food's introduction p-value 0.001.[(34)]

Also, we examine the relationship between the variables observed in our study and the adequacy of food; the mother's age shows no statistical relation with the adequacy of food intake, in which the P value was 0.551, the same as S.Rao found in this research since he found that the P value 0.782.[(33)]

While S.Rao and colleagues found that the mothers' education status and occupation is not related to the adequacy of feeding. [(33)]

Table 14: Relation of Adequacy of Food with Other Variables.

CONCLUSION

One-third of infants were exclusively breastfed, while the other two-thirds represented mixed and bottle feeding. Regarding the age of introduction of food, it varies from one month to nine months of age; about one-half of infants were optimally fed at six months, while 41.6 % of infants were fed earlier than six months. We found the majority of infants were optimally fed regarding the number of meals, while two third of infants never received snacks at all while adding complementary feeding. The adequacy of food is influenced by the number of lived children in the family, the mother's education, and the baby's order in the family.

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