

Knowledge, Attitude and Practice of Female Physicians, Dentists, and Pharmacists Regarding Complementary Feeding of Their Infants: An Online Study

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ABSTRACT:

BACKGROUND:

The transitional period from exclusive breastfeeding to family foods, is known as complementary feeding, and it is a very vulnerable period. WHO has developed and updated the guide "Complementary feeding: Family Foods for breastfed children" that gives a clear guidance for health care workers on how to promote complementary feeding.

OBJECTIVE:

To assess the knowledge, attitude and practice of mothers from the medical staff concerning complementary feeding, and pattern of their infants feeding

SUBJECTS AND METHODS:

A cross sectional study with analytic components was carried out online through Facebook, targeting members of close group of mothers from the medical staff. The study was done in 2018.

RESULTS:

The age of mothers ranged between (23- 44) years, (45.6%) were physicians, (54.2%) of them were prim gravida. 73.2% of mothers introduce the complementary food between the age of four to six months. The total knowledge score of mothers was (68.4 ± 23.03) . The total attitude score was (44.1 ± 22.8) . The total practice score of mothers was (51.25 ± 18.2) . (59%) received their information from the internet.

CONCLUSION:

Almost half of the participants had a good knowledge, majority of them had poor attitude and almost half had a poor practice toward their infants feeding. Internet is the major source of their information.

KEYWORDS: complementary feeding, medical professions, online(facebook) group.a

INTRODUCTION:

The transition from exclusive breastfeeding to family foods, referred to as complementary feeding, typically covers the period from 6 to 18-24 months of age, and is a very vulnerable period⁽¹⁾. The WHO recommends exclusive breast feeding for 6 months, followed by the introduction of complementary feeding alongside breast-feeding⁽²⁾.

WHO has developed the guide "Complementary feeding: Family Foods for breastfed children" that gives more detailed guidance for health workers on how to support complementary feeding.⁽³⁾

Physicians, dentists and pharmacists are important part of the community to study their practice concerning complementary feeding since they represent the major health educators, community leaders and care providers, in addition, of course, as mothers themselves, nevertheless, there is a scarcity of researches done on complementary feeding in general, factors associated with it, and on samples from the medical field professions on complementary feeding practices.

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STUDY OBJECTIVES:

- 1- To assess the knowledge, attitude and practice of mothers from the medical staff concerning complementary feeding of their infants and factors that may contribute for them.
- 2- To demonstrate the feeding patterns in the first year: breast, bottle or mixed feeding among this specific cohort.

SUBJECTS AND METHODS:

Study design:

Cross sectional study with analytic components.

Study setting:

The study was carried out online from the 1st of March till the 1st of May 2018.

Study group:

A convenient sample of 500 mothers who joined a group in the Facebook named "doctors` babies" a well-known group of female doctors join more than 6000 mothers, the group is secret, strictly conditioned adding only female physicians, dentists and pharmacists who live in and outside Iraq and only through recommendation by a previous well known member. Those mothers who had an infant aged 4 to 12 months old were illegible to participate in this study.

Tool and method of data collection:

The data was collected on line through Facebook. A structured questionnaire was used containing items of knowledge, attitude and practice of mothers concerning their infants feeding, type of feeding of the current infant, source of their information and some sociodemographic data.

Scoring:

For knowledge and attitude, the questions were multiple choice questions with single correct answer, a total score was calculated by giving (zero) for wrong answer and (one) for correct answer making a total of (5), then the result was multiplied by (20) to transform them to percent, (100%).

Concerning the practice score, the questions were multiple choice questions with one correct answer, one acceptable answer and a third wrong answer, and the score was calculated by giving (20) for correct answer, (10) for acceptable answer and (zero) for poor or wrong practice, making a total of (200) was divided by 2 to

transform the total score into percent, (100%).

The final score of participants (decided by the researchers) was assessed as the following:

Less (than 50%): poor, (51-75%): acceptable, (76-100%): good

Ethical consideration:

The purpose and details of the study were clarified to the participants through a detailed post on the same group. Each participant received the questionnaire through messenger after taking her agreement to participate and the questions was sent one by one and got the participant answers directly.

Statistical Analysis:

Statistical analysis was performed using (SPSS 20).

Descriptive statistics (frequencies, percent, mean and standard deviation) were computed for demographic data of the mothers and infants

Analytic statistics (student T test, ANOVA (F), and Pearson`s correlation) was used to compute differences of scores mean.

P value of 0.05 was considered as cut off point for significance.

RESULTS:

Nearly half of participants were physicians (45.6%), the mean age was (28.7 ± 3.22) and more than half of mothers (54.2%) were prim gravida.

Major number of infants in the study was more than six months old and mostly fed by mixed feeding (201 infants, 40.2%). (Table 1)

Table 1: The distribution of infants according to their age and pattern of feeding:

Variables	Number (500)	Percent
Age in months		
- 4-6	142	28.4
- 7-9	191	38.2
- 10-12	167	33.4
Mean ± Sd	8.2 ± 2.44	
Current feeding		
- Breast feeding	107	21.4
- Bottle feeding	192	38.4
- Mixed feeding	201	40.2
Feeding in the first 6 months		
- Breast feeding	151	30.2
- Bottle feeding	134	26.8
- Mixed feeding	215	43.0

Knowledge:

The mean score was 68.4 ± 23.03 , and results showed that more than half of the participants had poor knowledge regarding the best source of iron in complementary foods.

Most of mothers (366 infants, 73.2%) acknowledged that the appropriate time to introduce complementary food to their infants is between the age of four to six months.

Table 2: Distribution of the answers on knowledge about complementary feeding

Question	Incorrect answer		Correct answer	
	No.	Percent	No.	Percent
Q1: Time of introduction of C.F	134	26.7	366	73.2
Q2: Signs that the baby is ready for C.F.	115	23.0	384	77.0
Q3: Best food item to start with	129	25.9	370	74.1
Q4: Signs of food allergy	141	28.1	359	71.9
Q5: Best source of Iron	271	54.3	228	45.7

On the other hand, the study found a significant difference in mean knowledge score between different medical jobs ($F=10.52$, $P=0.0001$), as physicians had the highest score (73.2%),

and their parity, as prime gravid mothers achieved higher score (70.47%) ($t=2.2$, $P=0.028$) (Table 3).

Table 3: Differences in the knowledge scores according to mothers' occupation and parity.

Variable	No.	Mean score ± SD	Significance
Occupation of mothers			
Physicians	228	73.2 ± 22.18	F=10.521 P= 0.0001
Dentists	133	66.6 ± 22.25	
Pharmacists	139	62.3 ± 23.6	
Parity			
Primi	271	70.47 ± 23.01	t=2.2 P= 0.028
Multi para	229	65.93 ± 22.85	
Total	500	68.4 ± 23.03	

Attitude

Concerning mother's attitude, the total attitude score was 44.1 ± 22.8 . About two thirds of mothers (337, 67.3%) answered the question

concerning giving exclusive breast feeding till the age 6 months make the baby "hard eater" incorrectly. (Table 4).

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Table 4: Distribution of the answers on attitude about complementary feeding:

Question	Correct answer		Wrong answer		Total	
	No.	Percent	No.	Percent	No.	Percent
Q1: Giving prelacteal fluid to the baby	224	44.9	275	55.1	499	100
Q2: Starting C.F before the age of 4 months	250	50.3	247	49.7	497	100
Q3: Exclusive Breast feeding till the age of 6 months make the baby "hard eater"	163	32.7	337	67.3	500	100
Q4: Meat and poultry before the age of one year can cause worm infestation	241	48.1	259	51.9	500	100
Q5: Giving Cereals shaken with milk	200	40.2	297	59.8	500	100

Also there was a significant difference in mean attitude scores ($F=10.27$, $P=0.0001$) between different jobs, and the physicians (228) had the highest score (48.9%) but no significant difference was found according to parity (Table 5).

Table 5: Differences in the attitude scores according to mothers' occupation and parity.

Variable	No.	Mean score \pm SD	Significance
Occupation of mothers			
Physicians	228	48.9 \pm 21.8	$F=10.27$ $P=0.0001$
Dentists	133	38.7 \pm 23.3	
Pharmacists	139	41.1 \pm 22.4	
Parity			
Primi	271	44.79 \pm 22.48	$t=0.7$ $P=0.45$
Multi para	229	43.23 \pm 23.2	
Total	500	44.1 \pm 22.8	

Practice:

The total practice score was 51.25 ± 18.2 , good practices were performed in only three areas: food consistency, the use of baby utensils, and the use of iron and vitamin D supplementation (65%, 57%, and 51% respectively).(Table 6).

Table 6: Distribution of the answers on practice concerning complementary feeding.

Question	20 score (Good)		10 score (Acceptable)		0 score (Poor)		Total	
	No.	%	No.	%	No.	%	No.	%
Q1: Amount of food for infants	130	26.1	137	27.4	232	46.5	500	100
Q2: Introduction of item for the first time	194	38.6	143	28.5	159	31.9	500	100
Q3: Responsive feeding	176	35.2	82	16.4	242	48.4	500	100
Q4: Feeding during illness	119	23.9	165	33.2	213	42.9	500	100
Q5: Vitamine D and iron supplements	254	51.2	89	17.9	155	30.9	500	100
Q6: Food consistency	325	65.0	57	11.4	118	23.6	500	100
Q7: Baby utensils	285	57.0	119	23.8	96	19.2	500	100
Q8: Water intake	127	25.5	202	40.6	169	33.9	500	100
Q9: Best fatty meal	146	29.4	172	34.6	179	36.0	500	100
Q10: Finger food	160	32.1	140	28.1	197	39.8	500	100

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However, there was no significant difference in practicing score between the different medical jobs ($F=1.001$, $P= 0.37$), but parity played a significant role in the scores of practice ($t=3.71$, $P=0.0001$) as primigravida had higher practice scores.(table 7)

Table 7: Differences in the practice scores according to mothers' occupation and parity.

Variable	No.	Mean score \pm SD	Significance
Occupation of mothers			
Physicians	228	52.5 \pm 19.2	F=1.001 P= 0.37
Dentists	133	50.03 \pm 17.6	
Pharmacists	139	50.3 \pm 17.03	
Parity			
Primi	271	53.99 \pm 18.32	t=3.7 P= 0.001
Multi para	229	48.01 \pm 17.5	
Total	500	51.25 \pm 18.2	

There was a significant positive linear relationship between knowledge of mother and their practice concerning infants complementary feeding. ($r=0.296$, $P=0.001$).

Table 8: percent of total scores of knowledge, attitude and practice of participants:

variable	Good score >76%	Acceptable score 51-75%	Poor score <50%	Total %
knowledge	49	30	21%	100
attitude	14	23	63	100
practice	9	37	54	100

Source of information:

More than half of mothers receiving their information from the internet (296 mother, 59.1). (table 9)

Table 9: Source of information of mothers concerning their infants complementary feeding:

Variables	Number (500)	Percent
Official college learning	68	13.6
Websites/Facebook/Online Books	296	59.1
Others' experiences (mother/mother in law)	134	26.7
Others (pediatrician)	2	0.4

DISCUSSION:

In the first year of their life, around 30.2% of infants were on exclusive breast feeding, adding to them those practicing mixed feeding (43%) making a total of 73.2% continue breast feeding whether exclusive or mixed till the age of one year, this had few difference from a retrospective cohort study in Queensland, Australia in which 33% were exclusively breast feed their infants at the age of four months and around 68% were depending on mixed feeding at this age⁽³⁾. Unfortunately, in our society, concerns about public breastfeeding and limited experience with breast pumps also reduce chances to continue

breastfeeding especially when mothers return to work.

The major number of mothers (73%) had introduced complementary food to their infants at around 4-6 months of age which totally agrees with the recent recommendation of the American Academy of Pediatrics which states that exclusive breast-feeding is recommended for the first 4 months of life and complementary foods can be introduced between ages 4 and 6 months if the infants shows signs of readiness⁽⁴⁾. While the WHO guidelines in 2015 recommended exclusive breast feeding in

the first six months of infant's life followed by the introduction of solid food⁽⁵⁾, nevertheless, this result is different from a cross-sectional household survey of Iraqi women concerning breastfeeding in which the vast majority of the women in Iraq (78.6%) introduced supplements prior to 6 months of age.⁽⁶⁾

Source of information concerning infants feeding was depending mainly on medical websites, online applications and Facebook pages and groups, this could be explained as the online method for getting information is easy, rapid and available in spite of the huge risk of miss concepts and non-valid sources. This result is very much different from the result of a cross sectional study conducted in Hiwot Fana specialized hospital in eastern Ethiopia in which the Health Extension Workers played major role as the prime source of information for 98.5% of mothers in the study.⁽⁷⁾ These differences in results between both studies could be explained as the two study groups are different (medical and non-medical).

The overall mean knowledge score of mothers in this study was 68.4 ± 23.03 , which can be considered acceptable. Majority of participants were knowledgeable about complementary feeding, on aspects of time to start, and the best first item of food introducing to the infants, which is consistent with a cross-sectional study in insecure woredas of Wolayita zone, Ethiopia in which most of caregivers answered correctly all the points concerning the timely introduction of complementary food according to WHO guidelines.⁽⁸⁾

Physicians had the highest knowledge score. This result was not consistent to a descriptive cross-sectional study in Free State Province, South Africa, in which all the healthcare workers in the maternity wards, including doctors, were involved in this study showed that their knowledge did not follow or match the current WHO guidelines concerning infant feeding.⁽⁹⁾

The prime gravid mothers achieved higher knowledge score than the multigravida mothers concerning their infants complementary feeding. This result was different from the National Telephone Survey of Early Childhood Health of African-American and Latino families in USA,

which showed that there was no association between the proper introduction of solids with the number of children in the household.⁽¹⁰⁾

The mean attitude score of mothers in the study was 44.08 ± 22.81 , the majority of mothers from the medical field had some unacceptable attitudes towards their infants' feeding. Those results also found in a cross-sectional survey among Norwegian infants of Somali and Iraqi families in eastern Norway which identified few similar behaviors, specially prelacteal water with suger from birth to 3 months of age.⁽¹¹⁾

Concerning practice score of mothers in this study, the mean score was 51.25 ± 18.18 , which is considered the minimum acceptable score. These results were close to the results of a prospective KAP study in Konaseema region, India which also showed that the feeding practices is poor among majority of mothers in the study and the majority of them were not aware of the current recommendations of WHO.⁽¹²⁾

In spite of the obvious gap between the results of knowledge and practice score, this study found that there is a weak positive linear relationship between mothers knowledge and practice, which reflects the acceptable knowledge of this cohort and unfortunately poor practice of that knowledge. These results were close to the results of a (KAP) study in Erbil City that showed a high significant correlation among mothers' knowledge and practices concerning breast feeding, bottle feeding and complementary feeding practice.⁽¹³⁾

CONCLUSION:

1. More than half of the participants had a poor knowledge, the majority of them had poor attitude and almost half of mothers in the study had a poor practice toward their infants' feeding.
2. The level of knowledge and practice score was statically different according to mother's occupation and parity.
3. The main source of mother's information was the internet.
4. Complementary feed was started early in majority of mothers.

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