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Translation and Psychometric Evaluation of the Iranian Version of Iowa Infant Feeding Attitude Scale (IIFAS)

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Abstract

Background

The maternal attitude toward infant feeding is one of the strong predictors of the start and continuation of exclusive breastfeeding. According to the validity and reliability assessment of Iowa Infant Feeding Attitude Scale (IIFAS) in many countries, the purpose of this study was to examine psychometric properties of an Iranian version of this scale.

Materials and Methods: The present study was a cross-sectional and performed on 280-breastfeeding mothers in the first 48 hours after delivery. After translation with forward-Backward technique, in order to assess the structure validity, the confirmatory factor analysis (CFA) was conducted and the goodness of fit indices were calculated. Reliability of the tool was measured with the use of Cronbach's Alpha coefficient for the measurement of internal consistency and the intra-class correlation coefficient (ICC) to assess the stability through test-retest method.

Results: In the first phase of CFA, from 17 questions of the original version of the scale, six questions included 1, 4, 5, 8, 10, and 17 were removed due to the loading factor of less than 0.3. In the second phase of CFA, validity of the 11-question version with two-factor structure confirmed. The ratio of Chi- square to the degree of freedom was 2.44 that along with other goodness of fit indices of the model showed the two-factor model has excellent fit. The Cronbach's alpha and ICC were 0 .856 and 0 .885, respectively; that represented the good reliability of the scale.

Conclusion

Overall, the results showed that the 11-question version of (IIFAS) is a valid, reliable, acceptable and repeatable tool for measuring infant feeding attitude in Iranian mothers.

Key Words: Attitude, Breastfeeding, IIFAS, Iran, Psychometric.

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1- INTRODUCTION

Exclusive breastfeeding as an ideal and efficient food until the age of 6 months has been recommended by the World Health Organization (WHO) for optimum growth and supplying the nutritional needs of the child (1). Malnutrition causes the death of half of the children under five year-old, and almost two-third of it occurs in the first year of life due to poor feeding with mother's breast milk. Exclusive breastfeeding until the 6 months of age and continuing it with complementary feeding up to the age of 2 years is a cost-effective way to improve the survival of children (2, 3). Breastfeeding has benefits for mother and infant. In infants, it reduces respiratory infections, gastrointestinal infections, sudden infantile death, obesity and type-2 diabetes in adulthood; and causes the mothers to return faster to the weight before pregnancy, reduces postpartum hemorrhage, postpartum depression and ovarian cancer (4-6).

In spite of these advantages, around the world only 37% of infants below 6 months of age in low and middle income countries had been fed exclusively with mother's breast milk (7). The Ministry of Health and Medical Education of Iran has introduced the breastfeeding promotion as an important strategy for the survival and growth of the children. Despite this, the results of a study in 2016 in Iran showed only 49.1 percent of mothers exclusively feed their children with their breast milk (8). In addition to factors such as age, education level, returning to work and social class, relevant psychological factors such as self-efficacy, attitude, and knowledge and breastfeeding intention affect the start and continuation of breastfeeding (9-11). The breastfeeding attitude is one of the flexible factors at an individual level and influences the start and continuation of breastfeeding. A positive attitude to breastfeeding is a predictor of selection and the continuation of exclusive breastfeeding (12). The results of studies in the cities of Mashhad and Yazd in Iran suggest the moderate attitude of mothers toward breastfeeding (13, 14); but the results of a study in Shiraz suggests a positive attitude toward breastfeeding in mothers (15). The different results of these studies can be caused by the use of different questionnaires by the researchers to assess the mothers' breastfeeding attitude. Iowa Infant Feeding Attitude Scale (IIFAS) was a valid and reliable tool for measuring the breastfeeding attitude that has been created in the year 1999 by De la Mora and its reliability and validity has been approved (16), and has been evaluated in many countries such as Romania (17), Japan (18), Spain (19), Canada (20), Singapore (21) China (22) and Lebanon (23). Due to the lack of a psychometric questionnaire in order to assess the breastfeeding attitude in Iranian mothers as well as the importance of breastfeeding attitude to avoid early breastfeeding cessation, the present study was conducted to translation and psychometry of the IIFAS in Iranian women refer to the hospitals affiliated to the Shahid Beheshti University of Medical Sciences in Tehran in 2017.

2- MATERIALS AND METHODS

2-1. Method

The present study was a cross-sectional study was conducted from September 2017 to March 2018. The research population included all of the breastfeeding mothers in the first 48 hours after giving birth in the hospitals affiliated to the Shahid Beheshti University of Medical Sciences in Tehran. In confirmatory factor analysis (CFA), the general rule is that the sample size must be more than 200 people (24). Therefore, the sample size consisted of 280-breastfeeding mothers. After obtaining the approval of the Ethics Committee of Shahid Beheshti University of Medical Sciences, the researcher referred to three

hospitals affiliated to this University (Mahdieh, Imam Hossein and Taleghani in South, East and North of Tehran), and after explaining the research objectives and obtaining informed consent; the desired samples were selected via convenience and continuous sampling method. The inclusion criteria were Iranian nationality of women, resident of Tehran, women in the first 48 hours after giving birth, above 18 years of age, and ability to read and write; and the exclusion criteria included unwillingness of women to fill out the questionnaire and not answering over five- percent of the questions of the questionnaire.

2-2. Ethical considerations

The research was conducted after obtaining permission from the original designer of the questionnaire (De La Mora) and informed consent of all of the participants in the study. The proposal of this research was approved by the research deputy of the Nursing and Midwifery Faculty of Shahid Beheshti University of Medical Sciences and the research plan with the ID-code IR.SBMU.PHNM.1396.804 was approved in the Ethics Committee of Shahid Beheshti University of Medical Sciences. At the beginning of the study, the approval of relevant authorities was obtained. The purpose of research, data confidentiality and freedom of entry to, or exit from the study were explained to participants.

2-3. Data collection tool

At first, mothers completed socio-demographic questionnaires that included 2 part: demographic information and breastfeeding history, then they were asked to fill out an Iowa Infant Feeding Attitude Scale (IIFAS) provided by De la Mora in 1999 (16). This questionnaire contains 17 questions, of which 9 questions are related to a positive attitude toward bottle-feeding with reverse score and 8 questions are related to a positive attitude toward breastfeeding, that are rated on a 5-point Likert-type scale from Strongly disagree (score 1) to Strongly agree (score 5). The total IIFAS score is between 17 and 85. The higher score represents a more positive mother's attitude toward breastfeeding. Total scores are divided into three categories: 1- Positive attitude to breastfeeding (70– 85), 2- Neutral (49–69), and 3- Positive attitude to formula feeding (17–48). The scale is a reliable and valid tool to measure maternal attitude toward infant feeding methods. The reliability of the original version of the questionnaire with $\alpha = 0.86$ and its validity with high correlation with the composite score from the multi-attribute utility scale (r=0.80), and the predictor validity with prediction of a positive attitude to breastfeeding in mothers who had planned feeding with breast milk after hospital discharge has been confirmed (16). In the analysis process, all of the questions were aligned with each other.

2-4. Translation process

After obtaining a written permission from the original designer of the questionnaire (De La Mora), to maintain semantic equivalence to the original version, we used forward-backward translation technique for translating the scale from English into Persian. The English version was translated to Persian by two English-Persian translators included an ordinary translator and a native midwifery expert translator. After comparing the two translations in expert panel consisting of the authors of this paper and the two translators and choosing the appropriate options, a single copy was drawn up and in order to determine the face and content validity, was presented to 10 expert in midwifery and reproductive health, faculty members of Shahid Beheshti University of Medical Sciences and their comments were used in the Persian version and the final Persian version was confirmed. Two translators who were unaware of the

primary English version translated this version into English and after a second review, the final English version was sent to the original owner of the questionnaire to compare with the original version of the questionnaire and her approval was obtained.

2-5. Data analysis

In order to assess the structural validity, Confirmatory factor analysis (CFA) was used in 2 phases; with regard to the two-factor structure of the original version of IIFAS including the positive attitude toward breastfeeding and positive attitude toward bottle-feeding, both phases of CFA were carried out in accordance with the original version as two-factor. To examine the goodness of fit of the final questionnaire model, the ratio of Chi-square to the degree of freedom was calculated. Next, the model fitness was studied by goodness of fit indices that divided into three general categories: Absolute fit included: Goodness of fit index (GFI), and Root mean square error approximation (RMSEA), Comparative fit included: Non-normed fit index (NNFI), Normal fit index (NFI), Relative Fit Index (RFI), Comparative fit index (CFI), Incremental fit index (IFI), and Parsimonious fit included: Parsimonious Normed Fit Index (PNFI), and Adjusted goodness of fit index AGFI) (25). These indexes indicate whether the hypothesized model was a good fit to the observed data (26). There is much goodness of fit indices and in many articles recommended the use of multiple fit indexes (25-27).

In order to assess the tool reliability, for the calculation of overall internal consistency of the scale and any of the factors, the Cronbach's alpha was obtained. For this purpose a pilot study was carried out on 30 breastfeeding mothers who were not members of the research and alpha Cronbach was calculated. If Cronbach's Coefficient Alpha be over 0.7, the tool is reasonably (28). To test the stability of the whole scale and any of the factors, the intra-class correlation coefficient (ICC) was used based on test-retest method. In order to assess the stability, the questionnaire was submitted to 30 breastfeeding mothers during 2 weeks and the ICC was calculated. This indicator is acceptable if it is equal or higher than 0.75 (29). Data analysis was carried out using SPSS software version 22.0 and LISREL software version 8.8.

3- RESULTS

The purpose of this study was to examine psychometric properties of an Iranian version of IIFAS and performed on 280-breastfeeding mothers in the first 48 hours after delivery. The average age of the participants was 28.47 ±2.75 with minimum 18 years and maximum 44 years; 78.6% of the samples had reasonable income, 57.9% of mothers said they have received breastfeeding training during pregnancy and for 70% of the samples, the breastfeeding time of the previous child was over 18 months. The majority of samples (95.4%) chose breastfeeding in this pregnancy (**Table.1**.)

The first phase of CFA was carried out to assess the structure validity of the 17-question version. At this point, 6 questions (1, 4, 5, 8, 10, 17) were removed due to loading factor of less than 0.3 and low correlation with other questions (**Table.2),** and again, second phase of CFA was carried out with 11 questions and the validity of the 11-question Iranian version of the Iowa Infant Feeding Attitude Scale (IIFAS-I) was confirmed (**Table.3**). In **Figure.1**, the two-factor structure of (IIFAS-I) is shown. F1 is positive attitude toward bottle-feeding factor and F2 is positive attitude toward breastfeeding factor. The ratio of Chi-square to the degree of freedom is good if it is less than 3 and less than 5 is acceptable (25). In the present study, the Chi-square was 105 and

the degree of freedom was 43. Therefore, the ratio of Chi-square to the degree of freedom is 2.44 indicating the perfect fit of the 11-question version of the scale. Other model fitness indices are listed in **Table.4** that and shows the suitable fitness of the final model. In examining the reliability of IIFAS-I, the Cronbach's alpha coefficient was calculated as 0.856 in order to assess the internal consistency and ICC was calculated as 0.885 in order to assess the stability that represent the optimal internal consistency and stability of the 11-question scale (**Table.5)**. The total score of attitude in the 11-question scale was 11 to 55 and in accordance with the original version a higher score indicates a positive attitude toward mother's breastfeeding. The average attitude score in the present study was 45.97±4.94 and shows the positive attitude of mothers toward breastfeeding. The results of t-test and ANOVA tests showed a positive and significant relationship between attitude scores and higher educational level (P=0.048), Employing (P=0.002), and planned pregnancy (P=0.017). The Pearson test also showed that a significant relationship between age of mothers and attitude score (P=0.001) (r=0.193) (**Table.6)**. Also, in order to better measure the quality of the tool, the ceiling and the floor effect was measured and showed that the effect of the floor is 0% and the effect of the ceiling is 2.1%. This effect occurs when more than 15% of participants get the lowest (score 11), and most (score 55) achievable scores respectively and indicative of inadequate content validity and low reliability (30). In this study, this effect did not exist. The Iranian version of Iowa Infant Feeding Attitude Scale (IIFAS-I) is show in (**Table.7**).

Table-1: Baseline characteristics in participant breastfeeding mothers

Variables	Sub-group	Frequency	Percent
Educational Level	Primary	47	16.8
	Secondary	68	24.3
	High School	124	44.3
	University	41	14.6
Employed	Yes	20	7.1
	No	260	92.9
Residence	Rural	243	86.8
	Urban	37	13.2
Parity	Primiparous	112	40
	Multiparous	168	60
Planned pregnancy	Yes	201	71.8
	No	79	28.2
Delivery type	NVD	123	43.9
	CS	157	56.1
Number of previous breastfed children	1	113	67.3
	2	42	25
	3	12	7.1
	4	1	0.4
	Missing data	112	

NVD: Natural Vaginal Delivery; CS: Cesarean Section.

Table-2: First phase of Confirmatory factor analysis of IIFAS

IIFAS Items	Loading Factor
*1. The nutritional benefits of breastfeeding will stop upon weaning.	0.02
*2. Formula feeding is easier than breastfeeding.	0.62
3. Breastfeeding enhances the emotional relationship between the mother and infant.	0.61
*4. Breast milk is lacking in iron.	0.21
5. Formula-fed infants overfed than breast-fed infants.	0.02
*6. Formula feeding is a better choice for working mothers.	0.46
7. The mothers who formula feed their infants deprive themselves from one of the joys of motherhood.	0.35
*8. Mothers should not breastfeed their infants in public places such as restaurants.	0.26
9. Breast-fed infants are healthier than formula-fed infants.	0.59
*10. Breast-fed infants overfed than formula-fed infants.	0.10
*11. Breastfeeding makes the father feel a sense of being abandoned or neglected.	0.46
12. Breast milk is the ideal food for the infant.	0.70
13. Breast milk is more easily digested than formula.	0.66
*14. Formula is as healthy for an infant as breast milk.	0.49
15. Breastfeeding is easier than formula feeding.	0.71
16. Breastfeeding is cheaper than formula feeding.	0.63
*17. The mothers, who sometimes drink alcohol, should not breastfeed their infants.	0.04

* Items marked with asterisks are reverse-scored and positive Attitude toward bottle-feeding. IIFAS: Iowa Infant Feeding Attitude Scale.

Table-3: Second phase of Confirmatory factor analysis of IIFAS

IIFAS Items	Loading Factor
*2. Formula feeding is easier than breastfeeding.	0.66
3. Breastfeeding enhances the emotional relationship between the mother and infant.	0.61
*6. Formula feeding is a better choice for working mothers.	0.46
7. The mothers who formula feed their infants deprive themselves from one of the joys of motherhood.	0.35
9. Breast-fed infants are healthier than formula-fed infants.	0.59
*11. Breastfeeding makes the father feel a sense of being abandoned or neglected.	0.43
12. Breast milk is the ideal food for the infant.	0.70
13. Breast milk is more easily digested than formula.	0.66
*14. Formula is as healthy for an infant as breast milk.	0.48
15. Breastfeeding is easier than formula feeding.	0.71
16. Breastfeeding is cheaper than formula feeding.	0.63

* Items marked with asterisks are reverse-scored and positive Attitude toward bottle-feeding. IIFAS: Iowa Infant Feeding Attitude Scale.

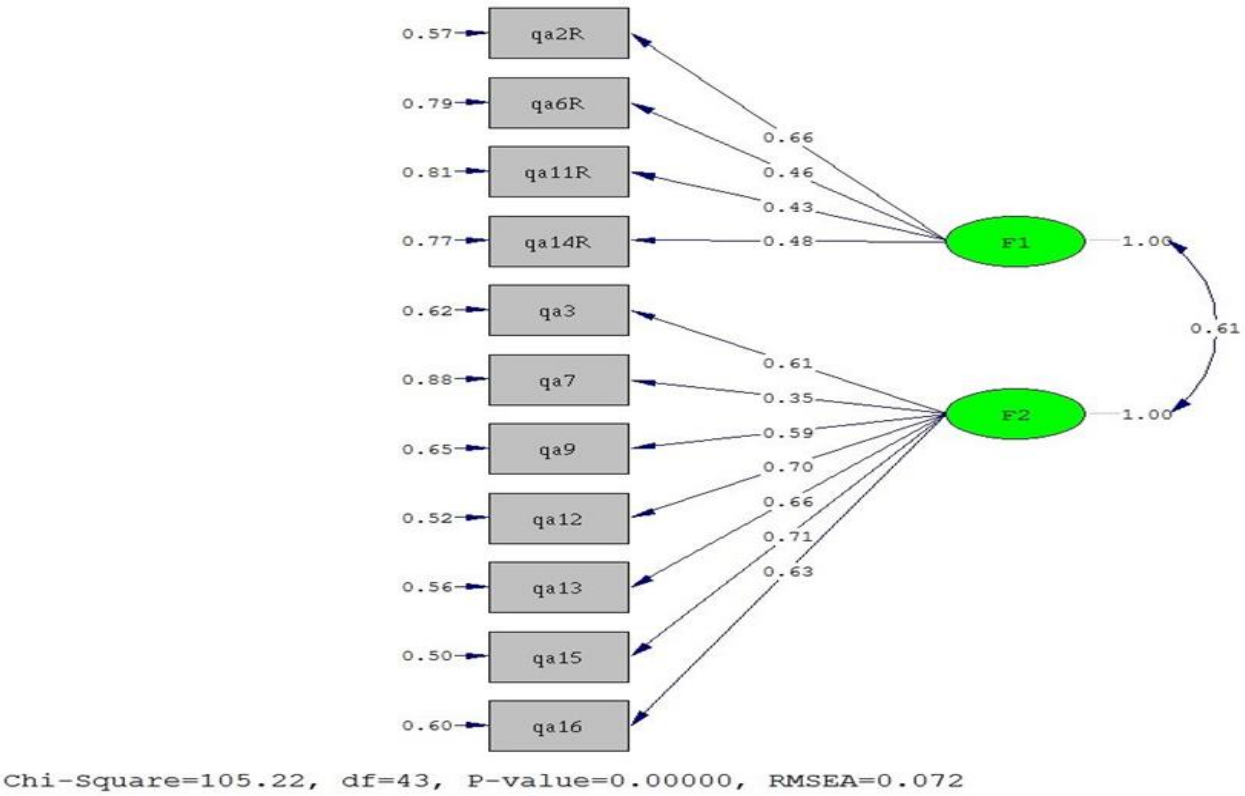

Fig.1: Two-factor structural model of the IIFAS-I.

Table-4: Goodness of fit indices of confirmatory factor analysis of (IIFAS-I).

Statistical Index	GFI	RMSEA	CFI	IFI	RFI	NFI	NNFI	AGFI	PNFI
Value	00.95	0.072	0.95	0.95	0.9	0.91	0.93	0.9	0.71
Standard	>0.9	Good<0.08 Moderate 0.08-0.1 Week >0.1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.8	>0.5

NNFI: Non-normed fit index; NFI: Normal fit index; IFI: Incremental fit index; RSMEA: Root mean square error approximation; GFI: Goodness of fit index; AGFI: Adjusted goodness of fit index; CFI: Comparative fit index, RFI: Relative Fit Index; PNFI: Parsimonious Normed Fit Index; IIFAS: Iowa Infant Feeding Attitude Scale.

Table-5: Reliability result of (IIFAS-I).

Factor	Questions*	Cronbach's alpha	ICC	P-value	95% CI
Positive attitude toward breastfeeding	2, 4, 5, 7, 8, 10, 11	0.848	0.876	0.001	0.739-0.941
Positive attitude toward bottle feeding	1,3, 6, 9	0.682	0.856	0.001	0.698-0.932
Total	1- 11	0.856	0.885	0.001	0.758-0.945

ICC: intra-class correlation coefficient; *=According to the new numbering (1-11); IIFAS: Iowa Infant Feeding Attitude Scale; CI: Confidence Interval.

Table-6: Relationship between socio-demographic variables and IIFAS score

Variables	Sub-group	Mean ± SD of attitude*	P- value
Educational Level	Primary Secondary High School University	44.89± 3.95 45.08±5.42 46.50±4.88 47.05±5.00	0.048*
Employed	Yes No	45.75±4.99 49.58±1.80	0.002**
Residence	Rural Urban	46.17±4.78 44.62±5.78	0.074**
Parity	Primiparous Multiparous	45.50±4.82 46.29±5.01	0.191**
Planned pregnancy	Yes No	46.39±4.72 44.82±5.34	0.017**
Delivery type	NVD CS	45.77±5.78 46.12±4.23	0.582**
Number of previous breastfed children	1 2 3 4	46.02±5.34 46.60±4.43 47.50±4.05 50.00±0	0.639*

NVD: Natural Vaginal Delivery; CS: Cesarean Section; *=Total attitude scores range from 11 to 55; IIFAS: Iowa Infant Feeding Attitude Scale.

Table-7: The Iranian version of Iowa Infant Feeding Attitude Scale (IIFAS-I).

خیلی موافقم	موافقم	نظری ندارم	مخالفم	خیلی مخالفم	سوالات
					۱-تغذیه با شیر خشک، آسانتر از تغذیه با شیر مادر است.
					۲-تغذیه با شیر مادر رابطه ی عاطفی بین مادر و شیرخوار را زیاد می کند.
					۳ -برای مادران شاغل شیرخشک انتخاب بهتری می باشد.
					۴-مادرانی که شیرخوار خود را با شیر خشک تغذیه می کنند، از یکی از لذتهای مادر بودن محروم می شوند.
					۵-شیرخوارانی که با شیر مادر تغذیه می شوند سالم تر از شیرخوارانی هستند که با شیرخشک تغذیه می شوند.
					۶-تغذیه با شیر مادر سبب ایجاد احساس کنار گذاشته شدن و یا نادیده گرفته شدن در پدر می شود.
					۷-شیر مادر یک تغذیه ی ایده آل برای شیرخوار می باشد.
					۸- شیر مادر بسیار راحتتر از شیر خشک هضم می شود.
					۹-تغذیه با شیر خشک برای شیرخوار به اندازه ی تغذیه با شیر مادر سالم است.
					۱۰-تغذیه با شیر مادر، آسانتر از تعذیه با شیر خشک است.
					۱۱-تغذیه با شیر مادر ارزانتر از تغذیه با شیر خشک است.

4- DISCUSSION

This study was conducted for the first time in Iran in order to assess the validity and reliability of the Iranian version of the (IIFAS). A positive attitude of mothers toward breastfeeding is a strong predictor

relative to socioeconomic conditions to start and continue exclusive breastfeeding. Therefore, assessing the attitude of breastfeeding mothers toward breastfeeding during pregnancy and the early postpartum hours, and then correct training to modify the wrong attitudes is a proper strategy to start and continue exclusive breastfeeding in accordance with WHO recommendations until the age of 6 months (31). In the present study, the results of CFA in 2 phases and two-factor, indicates the validity and reliability of the 11-question version of the scale for the Iranian breastfeeding mothers' population. The two factors included a positive attitude toward breastfeeding and a positive attitude toward bottle-feeding was selected in accordance with the original version. Only Tomás-Almarcha et al.'s study in 2013 has used CFA for structural validity evaluation. In that study, the ratio of Chi-square to the degree of freedom has been reported as 5.50 (19); but in the present study it is reported as 2.44 that indicates a better fit of the Iranian model in comparison to the Spanish model. From the 17 questions of the original version of the questionnaire, in the Iranian version 6 questions were removed due to the loading factor of less than 0.3 as below:

1- The nutritional benefits of breastfeeding will stop upon weaning; 4- Breast milk is lacking in iron; 5- Formula-fed infants overfed than breast-fed infants; 8- Mothers should not breastfeed their infants in public places such as restaurants; 10- Breast-fed infants overfed than formula-fed infants; and 17- The mothers, who sometimes drink alcohol, should not breastfeed their infants; which complies with Tomás-Almarcha et al.'s study in order to measure the psychometric of Spanish version of Iowa Infant Feeding Attitude Scale (IIFAS-S) (19). In this study, also these questions were removed due to a loading less than 0.3, and finally the 9-item version of the questionnaire was approved in Spain (19). In a study conducted in Lebanon in accordance with the present study, questions 8 ("Mothers should not breastfeed their infants in public places such as restaurants"), and 17 ("The mothers, who sometimes drink alcohol, should not breastfeed their infants") had a low corrected item-total correlations with other questions (23); but due to a positive correlation and acceptable alpha estimates they were kept in the set of questions. This could be explained by the fact that because 99% of the Iranian population and 94% of the Lebanese population are Muslim and drinking alcohol and breastfeeding in public places are incompatible with personal beliefs, social conditions and culture. In a study conducted in Japan the questions 5 and 17 had low item-total correlations. Question 17 due to had a low corrected-item correlation and a negative factor loading was removed that complies with the results of the present study (18).

Removal of the other 4 questions indicates insufficient mother's information about breastfeeding, such as the existence of iron in mother's breast milk, not eliminating of breastfeeding benefits after weaning and that which one of the breastfed or bottle-fed infants will overfed. In the present study, only 57.9% of mothers said they have received breastfeeding training during pregnancy that represents inadequate breastfeeding training rates during pregnancy. In the final Iranian version, 4 questions related to positive attitude toward bottle-feeding and 7-questions related to positive attitude toward breastfeeding. These questions had a loading factor above 0.3, and culturally according to Iranian culture in order to measuring attitude of Iranian mothers about infant feeding (Table.3). The reliability of 11-question version was confirmed with an alpha coefficient of 0.856 that complies with the original version of the questionnaire with 17

questions (0.86), and the Canadian version (0.87) (16, 20). This rate is higher than the amount of alpha coefficient in studies conducted in other countries such as Lebanon (0.64) (23), Japan (0.66) (18), China (0.74) (22), and Spain (0.79) (19).

4-1. Limitations of the study

Some limitations of this study were the impact of physical fatigue and psychological-spiritual factors in the first 48 postpartum hours on answering the questions, but the researcher tried to control the situation as much as possible.

5- CONCLUSION

Overall, the results showed that the 11-question version of (IIFAS) is a valid, reliable, acceptable and repeatable tool for measuring infant feeding attitude in Iranian mothers and due to the importance of mothers attitude in start and continuing exclusive breastfeeding, this questionnaire can be used to assess the feeding attitude and design of optimal interventions feeding in the pregnancy and the early postpartum hours.

6- CONFLICT OF INTEREST: None.

7- ACKNOWLEDGMENT

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8- REFERENCES

1. WHO. Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services Guideline. 2017.

2. Jones G, Steketee RW, Black RE, Bhutta ZA, Morris SS. How many child deaths can we prevent this year? The Lancet. 2003;362(9377):65-71.

3. Organization WH, UNICEF. Global strategy for infant and young child feeding: World Health Organization; 2003.

4. Chung M, Raman G, Chew P, Magula N, Trikalinos T, Lau J. Breastfeeding and maternal and infant health outcomes in developed countries. Evid Technol Asses (Full Rep). 2007;153:1-186.

5. Kramer MS, Kakuma R. Optimal duration of exclusive breastfeeding. The Cochrane Library. 2012.

6. Duijts L, Jaddoe VW, Hofman A, Moll HA. Prolonged and exclusive breastfeeding reduces the risk of infectious diseases in infancy. Pediatrics. 2010:peds. 2008-3256.

7. Victora CG, Bahl R, Barros AJ, França GV, Horton S, Krasevec J, et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. The Lancet. 2016;387(10017):475-90.

8. Ranjbaran M, Nakhaei MR, Chizary M, Shamsi M. Prevalence of exclusive breastfeeding in Iran: Systematic review and meta-analysis. International Journal of Epidemiologic Research. 2016;3(3):294-301.

9. Matias SL, Nommsen-Rivers LA, Dewey KG. Determinants of exclusive breastfeeding in a cohort of primiparous periurban peruvian mothers. Journal of human lactation. 2012;28(1):45-54.

10. de Jager E, Skouteris H, Broadbent J, Amir L, Mellor K. Psychosocial correlates of exclusive breastfeeding: a systematic review. Midwifery. 2013;29(5):506-18.

11. Bai DL, Fong DYT, Tarrant M. Factors associated with breastfeeding duration and exclusivity in mothers returning to paid employment postpartum. Maternal and child health journal. 2015;19(5):990-9.

12. Semenic S, Loiselle C, Gottlieb L. Predictors of the duration of exclusive breastfeeding among first-time mothers. Research in nursing & health. 2008;31(5):428-41.

13. Esfandtari R, Baghiani Moghadam MH, Khakshour A, Faroughi F, Zarif B, Saeidi M. Study of Maternal Knowledge and Attitude toward Exclusive Breast Milk Feeding (BMF) in the First 6 Months of Infant in Yazd-Iran. Int J Pediatr. 2014;2(3.1):175-81.

14. Hoseini BL, Vakili R, Khakshour A, Saeidi M, Zarif B, Nateghi S. Maternal Knowledge and Attitude toward Exclusive Breast Milk Feeding (BMF) in the First 6 Months of Infant Life in Mashhad. Int J Pediatr. 2014; 2(1):63-9.

15. Haghighi M, Varzandeh R. Maternal Knowledge and Attitude toward Exclusive Breastfeeding in Six Months after Birth in Shiraz, Iran. International Journal of Pediatrics. 2016;4(11):3759-67.

16. Mora Adl, Russell DW, Dungy CI, Losch M, Dusdieker L. The Iowa infant feeding attitude scale: analysis of reliability and validity. Journal of Applied Social Psychology. 1999; 29(11):2362-80.

17. Wallis AB, Brinzaniuc A, Cherecheș R, Oprescu F, Şirlincan E, David I, et al. Reliability and validity of the Romanian version of a scale to measure infant feeding attitudes and knowledge. Acta Paediatrica. 2008;97(9):1194-99.

18. Nanishi K, Jimba M. Reliability and Validity of the Japanese Version of the Iowa Infant Feeding Attitude Scale A Longitudinal Study. Journal of Human Lactation. 2014: 0890334414534321.

19. Tomás-Almarcha R, Oliver-Roig A, Richart-Martinez M. Reliability and Validity of the Reduced Spanish Version of the Iowa Infant Feeding Attitude Scale. Journal of Obstetric, Gynecologic & Neonatal Nursing. 2016; 45(5):e26-e40.

20. Twells LK, Midodzi WK, Ludlow V, Murphy-Goodridge J, Burrage L, Gill N, et al. Assessing infant feeding attitudes of expectant women in a provincial population in Canada: validation of the Iowa Infant Feeding Attitude Scale. Journal of Human Lactation. 2016; 32(3): NP9-NP18.

21. Lau Y, Htun TP, Lim PI, Ho-Lim SST, Klainin-Yobas P. Psychometric properties of the Iowa infant feeding attitude scale among a multiethnic population during pregnancy. Journal of Human Lactation. 2016;32(2):315-23.

22. Ho Y-J, McGrath JM. A Chinese version of Iowa Infant Feeding Attitude Scale: reliability and validity assessment. International Journal of Nursing Studies. 2011;48(4):475-8.

23. Charafeddine L, Tamim H, Soubra M, de la Mora A, Nabulsi M. Validation of the Arabic version of the Iowa Infant Feeding Attitude scale among Lebanese women. Journal of Human Lactation. 2016;32(2):309-14.

24. Ebadi A ZL, Rakhshan M, Zareian A, Sharif nia H, Mojahedi M. Principles of Scale Development in Health Science. First, editor. Tehran: Jame-e-negar; 2017.

25. Hooper D, Coughlan J, Mullen M. Structural equation modelling: Guidelines for determining model fit. Articles, 2. 2008:2.

26. Schreiber JB, Nora A, Stage FK, Barlow EA, King J. Reporting structural equation modeling and confirmatory factor analysis results: A review. The Journal of educational research. 2006;99(6):323-38.

27. Sun J. Assessing goodness of fit in confirmatory factor analysis. Measurement and Evaluation in Counseling and Development. 2005;37(4):240-56.

28. Mayers A. Introduction to Statistics and SPSS in Psychology: Pearson Higher Ed; 2013.

29. Shoukri MM. Measures of interobserver agreement and reliability: CRC Press; 2010.

30. Terwee CB, Bot SD, de Boer MR, van der Windt DA, Knol DL, Dekker J, et al. Quality criteria were proposed for measurement properties of health status questionnaires. Journal of clinical epidemiology. 2007;60(1):34-42.

31. Williamson I, Leeming D, Lyttle S, Johnson S. 'It should be the most natural thing in the world': exploring first-time mothers' breastfeeding difficulties in the UK using audio-diaries and interviews. Maternal & child nutrition. 2012;8(4):434-47.