Validity and reliability of the Farsi version of Wijma delivery expectancy questionnaire: an exploratory and confirmatory factor analysis

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Abstract

Background: Fear of childbirth may cause complications such as experiencing severe labour pain, postpartum depression, and impaired mother–fetus attachment.

Objective: To validate the Farsi version of the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) (versions A & B) in a sample of Iranian women.

Methods: The WDE-Q (versions A & B) was translated into Farsi, and the content validity of the scales was confirmed. In a cross-sectional study conducted in 2015, 405 pregnant women in the third trimester of pregnancy and 320 postpartum women completed the Farsi W-DEQ versions A & B, respectively. The construct validity and reliability of the scales were examined using exploratory and confirmatory factor analyses (EFA and CFA) and Cronbach's alpha coefficient, respectively. SPSS version 18 and Lisrel version 8.80 were used for statistical analyses.

Results: Results of the CFA on 33 items could not confirm the one-factor structure proposed by Wijma (RMSEA= 0.14, SRMR=0.11, Chi-square/df=8.95, p<0.05, CFI=0.86, IFI=0.86) or other structures suggested by previous studies. We conducted an EFA on 33-item version A and found six factors with eigenvalue > 1. One item was not loaded on any factor. A CFA on 32 items of the W-DEQ (version B) yielded acceptable fit for the factorial structure found on version A (RMSEA= 0.075 (CI [0.071, 0.08]), SRMR=0.078, Chi-square/df=2.93, p<0.05, CFI=0.95, IFI=0.95). Cronbach's Alpha coefficients for the 32-item Farsi W-DEQ (versions A & B) were 0.914 and 0.919, respectively.

Conclusions: Both Farsi W-DEQ are reliable and valid instruments to assess fear of childbirth in Iranian pregnant and postpartum women. Further research should be designed to examine the validity of the W-DEQ (A) in pregnant women regardless of gestational age.

Keywords: Fear, Anxiety, Childbirth, Parturition, Psychometric, Postpartum

1. Introduction

Pregnancy and giving birth to a child are two of the most significant, fantastic, and pleasant events in most women's lives. However, for some women, these events are stressful and may be associated with severe fear of childbirth. Receiving support from partner and family and counselors may decrease unusual fear of childbirth. If untreated, fear of childbirth remains and increases with approaching labor onset (1). According to previous studies, 20% of women experience severe anxiety and fear of childbirth. Severe fear of childbirth may interfere with the daily life of 6% to 10% of women (2). Studies indicated that fear of childbirth is multidimensional and can be categorized into domains including pain, obstetric injuries, loneliness, loss of control, insufficient support, and loss of the baby's or the mother's life (2, 3). Childbirth fear may cause complications such as experiencing severe labor pain (4), postpartum depression or anxiety, physical problems, and impaired mother–fetus attachment (5-7). Anxiety and stress can increase the levels of catecholamine, which can decrease uterine contraction and prolong labor duration (8, 9). It is also reported that the rate of both elective and urgent Cesarean increased as fear of childbirth increased (10, 11). One

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of the negative consequences of childbirth fear is the growing demand for cesarean (12). Maternal requests for Cesarean has risen in recent decades. The rates were 6.4% in Australia (13), 8.2% in Sweden, and 7% in the United Kingdom (14, 15). Iran was ranked as the second country in the world with the highest Cesarean rate (42%) in 2010 (16). In a study in Iran, Tehran, the rate of elective Cesarean was 72% of which 22% was done due to maternal request (17). It seems that maternal requests for Cesarean in Iran are more than twofold the rate in developed countries. It is, therefore, important to screen pregnant women for fear of childbirth to design interventions for making childbirth a pleasant event in a woman's life. For the task of screening and care of childbearing women, it is necessary to validate a scale to measure and quantify childbirth fear. The Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) is the most commonly used scale to measure different aspects of childbirth fear. The scale was designed by Wijma in late 1980 and included two versions for assessing childbirth fear during pregnancy (version A) and after childbirth (version B) (18). The scales were designed to measure different dimensions of childbirth fear, though it was ideated as a one-dimensional instrument. Thus far, the W-DEQ scales has not been either translated into Farsi or validated in Iran. Therefore, this study was conducted to translate the scales into Farsi and validate and investigate the factor structure of the Farsi W-DEQ versions A & B in Iranian women. Lack of such instruments has been led to poor knowledge about psychological aspects of childbirth in an eastern country such as Iran.

2. Material and Methods
2.1. Research design, settings, and sampling
This cross-sectional study was conducted in two phases. In the first phase, 405 pregnant women registered at eight public health clinics affiliated with Sabzevar University of Medical Sciences participated in the validation of the Farsi W-DEQ version A. Sampling was done in Sabzevar City in Iran from January to June 2015. The inclusion criteria were as follows: having the ability to read and being in the third trimester of pregnancy with no indication for cesarean. In the second phase, 320 women at two weeks postpartum were included for the validation of the Farsi W-DEQ version B. The inclusion criteria for the study second phase were as follows: having the ability to read, giving birth vaginally, and being at two weeks postpartum.

2.2. Data collection
The city has 16 clinics, which cover the entire population. To select clinics, the city was divided into four regions. In each region, two clinics were randomly selected. In each clinic, all women who consented to participate in the study and met the inclusion criteria were enrolled. Women with a history of psychiatric disorders who were under medical care were excluded.

2.3. Measurement tools
2.3.1. Childbirth Attitudes Questionnaire (CAQ)
The Childbirth Attitudes Questionnaire (CAQ) was first created by Harman (19), but he did not examine the reliability and validity of the scale. Lowe revised the scale and demonstrated reliability and validity of the scale (3). The original version of the scale consisted of 16 items scored on a 4-point Likert scale ranging from 1 to 4. Items began with "fear of" such as "fear of the baby being injured during childbirth," and "fear of being torn during childbirth." The internal consistency of the 16 items was good (Cronbach's alpha = 0.83). The Farsi CAQ consisted of 14 items. Khorsandi supported the content validity of the Farsi CAQ. The internal consistency of the Farsi CAQ was good (Cronbach's alpha = 0.84) (20).
2.3.2. The State-Trait Anxiety Inventory (STAI)
The Spielberger State-Trait Anxiety Inventory (STAI) is composed of two inventories (21). The State Anxiety Inventory measures anxiety at the time of assessment, which can fluctuate over time. The Trait Anxiety Inventory measures anxiety level as a personal characteristic, which is stable over time. Each scale included 20 items with a response scale of 1-4. The scales' total score ranges from 20 to 80, with higher scores indicating higher anxiety. The STAI showed good internal consistency (Cronbach's alpha = 0.89) (22). Mahram translated the scale into Farsi and confirmed the validity of the instrument. The internal consistency of the Farsi state (Cronbach's alpha = 0.91) and trait (Cronbach's alpha = 0.90) items were excellent (23).
2.3.3. Edinburgh Postpartum Depression Scale (EPDS)
The Edinburgh Postpartum Depression Scale (EPDS) was developed by Cox et al. (24) for use in postpartum women. It consisted of 10 items. Each item is rated on a 4-point Likert scale, yielding maximum scores of 30. The scale was translated into Farsi and validated. The Farsi EPDS discriminated well between women with caesarean and women with vaginal delivery (25).

2.3.4. *Wijma Delivery Expectancy/Experience Questionnaires (W-DEQ)*
The Wijma Delivery Expectancy/Experience Questionnaires (W-DEQ), developed by Wijma, et al. (18), are two scales that measure a woman's prenatal perception of childbirth and her expectancy (version A) and her experience with the delivery (version B). Each contains 33 items that are rated on a 6-point Likert scale ranging from 0 (extremely) to 5 (not at all). The minimum and the maximum total scores of the questionnaires are 0 and 165, respectively, with higher scores indicating higher fear. Validity and reliability of the scales were confirmed during the developmental processes. The internal consistency of the version A was excellent (Cronbach's alpha = 0.93) (18). The internal consistency of the version B, which was administered at 2 hours (Cronbach's alpha = 0.93) and five weeks postpartum (Cronbach's alpha = 0.94) were excellent (26). The validity of the version A and B were confirmed by moderate correlations between the scales and instruments such as the Beck Depression Inventory, Trait Spielberger Anxiety Inventory, Karolinska Scale of Personality, and S-R Inventory of Anxiousness (26), indicating that both versions were related to those scales while measured different psychological aspects. For both versions, the correlations between the scales and other instruments were higher in multiparas than nulliparous. They were translated into various languages including Italian, Turkish, and Japanese (27-30). The factorial structures of the scales were analyzed in previous studies (27-33).

2.4. Process of translation and content validity
2.4.1. *Process of translation*
Two specialists in English language and reproductive health translated both W-DEQ versions A&B into Farsi. The final versions were back-translated into English. A bilingual Ph.D. with the help of the main researcher of the study compared the three versions. Few minor revisions were done.
2.4.2. *Content validity*
An expert panel consisted of four faculty members, who were specialists in reproductive health, gynecology, and midwifery discussed the wording and relevance of the scales' items for Iranian culture. Experts expressed their worry about the rating of items. To determine content validity ratio (CVR), we used the Lawshe method (34). The scale was sent to 10 experts in reproductive health, gynecologist, psychologist, and midwives who had worked in antenatal clinics or labor and delivery wards at least for 15 years to evaluate the items. They evaluated the necessity of the items using a 3-point rating scale: (1) not necessary; (2) useful, but not essential; (3) essential. No item had a CVR < 0.62, indicating a satisfactory content validity. Subsequently, experts judged the clarity, simplicity, and relevancy of each item on a 4-point scale from not relevant, not simple, and not clear (1) to very relevant, very simple, and very clear (4). No item had a CVI less than 0.8, recommended as acceptable CVI by 10 experts (35). In the pilot study, 20 low-educated pregnant women completed the Farsi W-DEQ. Some women were confused and stated that the questionnaire was difficult to rate. To solve the problem, the researcher substituted a sentence instead of a two-tailed phrase for each item except items 32 and 33; so that women could rate each item on a 6-point Likert scale ranging from 0 (completely agree) to 5 (completely disagree).

2.5. Research ethics
The Ethics Committee of Sabzevar University of Medical Sciences approved the study protocol (Approval No: Medsab.Rec.93.38). Permission to translate and use the W-DEQ was obtained from the author before the beginning of the study. Women were ensured that their information will be kept confidential. They had signed the informed consent form before they were instructed on how to complete the questionnaires.

2.6. Statistical analysis
Data analysis was performed by SPSS v. 18 and Lisrel v. 8.80. An Alpha Cronbach coefficient was used to investigate the reliability of the both versions of the Farsi WDE-Q. Alpha Cronbach values > 0.7 were considered as acceptable (36). Exploratory factor analysis (EFA) was conducted to disclose the factorial structure of the Farsi WDE-Q version A. The extraction method was principal axis factoring with promax rotation because the data was not normally distributed. The criterion for retaining the items was item-loading $\geqslant 0.3$. Confirmatory factor analysis (CFA) was conducted to investigate the factorial structure of the Farsi WDE-Q version A proposed by other studies and to confirm the factorial structure of the version B proposed by the results of the EFA on the Farsi WDE-Q version A. The CFA was conducted via structural equation modeling. The model fit in the present study was considered acceptable if at least two of the following three criteria were met: a root mean square error of approximation (RMSEA) values < 0.08, p-value > 0.05, and relative Chi-square < 3 (37, 38). In addition, the following goodness-of-fit indices were also used to assess the model fit: normed fit index (NFI >.90 acceptable), the comparative fit index (CFI > 0.90 acceptable), incremental fit index (IFI > 0.90 acceptable), goodness of fit index (GFI > 0.90 acceptable) (39, 40), and standardized root mean square residual (SRMR < 0.08 acceptable) (41). An

RMSEA value ≥ 1 was considered as model misfit (40). Convergent validity of the scale was examined by calculating Spearman correlation coefficients between the Farsi W-DEQ (version A) and the Farsi CAQ. Concurrent validity was examined by calculating Spearman correlation coefficients between the Farsi W-DEQ (version A) and STAI as well as the Farsi W-DEQ (version B) and EPDS. For discriminant validity, a t-test was used to compare the Farsi W-DEQ (version B) scores of primiparous and multiparas. Also, the Farsi W-DEQ mean scores of women with low and high childbirth fear were compared. The median CAQ score of 37 was used as a cutoff point for childbirth fear in this study. Predictive validity was examined by comparing the Farsi W-DEQ (version A) mean scores of women who wished for Cesarean with women who did not. In addition, a t-test was used to compare the Farsi W-DEQ (version B) mean scores of women who preferred vaginal delivery for their next pregnancies with women who preferred cesarean.

3. Results
3.1. Socio-demographic characteristics
Characteristics of participants in ante- and postpartum phases of the study are presented in Table 1. The mean and standard deviation of women's age were 26.3±5.1 and 26.7±5.1 years for ante- and postpartum, respectively. The average gestational age was 34.6±3.2 weeks. More than half of women were primigravida (58%), and 16.8% of women in antepartum phase reported a history of abortion.

Table1. Participants' characteristics

Variables		Prenatal; *n* (%)	Postnatal; *n* (%)
Age (years)	<20	33 (8.3)	20 (6.3)
	20-30	280 (70.4)	231 (72.2)
	30<	78 (19.6)	68 (21.3)
Educational level (years)	<6	16 (4)	12 (3.8)
	6-12	233 (62)	183 (57.2)
	≥12	151 (38)	125 (40)
Job	Homemaker	340 (85)	270 (84.4)
	Employed	31 (7.5)	28 (8.8)
	Self employed	16 (4)	11 (3.4)
	Student	14 (3.5)	11 (3.4)
Parity	None	234 (58)	-
	One	136 (34)	189 (59.1)
	Two or more	34 (8)	131 (40.9)
Desirability of pregnancy	Yes	279 (70.3)	240 (75)
	No	118 (29.7)	80 (25)
Income (million RIL)	<10	296 (75)	230 (72.3)
	10-20	87 (24.2)	75 (23.4)
	>20	14 (3.6)	13 (4)

3.2. Construct validity
3.2.1. Confirmatory factor analysis (CFA)
Construct validity was assessed by conducting CFA on 33 items of the Farsi WDE-Q (version A). Results indicated that neither the uni-dimensional model proposed by Wijma nor four nor six-dimension structures found in previous studies provided a reasonable fit to our data. Because the number and content of items of the WDE-Q version A and B are the same, an EFA on the Farsi WDE-Q (version A) was conducted to find the structure of the Farsi WDE-Q version A. Subsequently, a CFA on the Farsi WDE-Q (version B) was conducted to investigate whether the structure yielded by the EFA fitted the postnatal data. Results of the CFA on the 32-items Farsi WDE-Q (version B) showed that the model yielded by the EFA on the Farsi WDE-Q (version A) fitted the postnatal data. In Table 2, results of the CFA based on structures proposed by different authors and the structure found in this study is presented. All factor loadings were 0.40 to 0.90.
3.2.2. Exploratory factor analysis (EFA)
Because the structures found in previous studies did not fit our data, an EFA was used to disclose the factor structure of the Farsi WDE-Q version A. Kaiser–Meyer–Olkin measure of sampling adequacy was .904 and Bartlett's Test of Sphericity was 6669 (p<0.001), indicating adequate correlations between variables to do an EFA. One item (item1) was not loaded on any factor and was removed from the scale. The results of the EFA on the 32-item Farsi W-DEQ

indicated six factors with eigenvalues $\geq$ one as follows: lack of self-efficacy, loneliness, fear, lack of positive anticipation, concerns for the child, and loss of control (Table 3). The factors' names were derived from the conceptual contents of their items. Factors explained 51.5% of variance.

Table 2. Results of confirmatory factor analyzes based on structures proposed by different authors and the structure found in this study

Variables	Chi-square/df	*p*-value	RMSEA[a]	SRMR[b]	CFI[c]	GFI[d]	NFI[e]	IFI[f]
Janson (33)	6.96	<0.05	0.12	0.095	0.88	0.67	0.86	0.88
Gartus (32)	5.31	<0.05	0.10	0.085	0.91	0.79	0.89	0.91
Korukcu (29)	5.38	<0.05	0.11	0.087	0.91	0.73	0.89	0.91
Wijma (18)	8.95	<0.05	0.14	0.11	0.86	0.60	0.87	0.86
This study	2.93	<0.05	0.075	0.078	0.95	0.79	0.93	0.95

a: root mean square error of approximation; b: standardized root mean square residual; c: comparative fit index; d: goodness of fit index; e: normed fit index; f: incremental fit index

Table 3. Farsi W-DEQ (version A) six factors and factor loadings

Item number	Items	1	2	3	4	5	6
13	Not content	0.847	-	-	-	-	-
10	Not independent	0.814	-	-	-	-	-
9	Not protected	0.774	-	-	-	-	-
5	Not confident	0.732	-	-	-	-	-
14	Not proud	0.629	-0.313	-	-	-	-
17	Not relaxed	0.558	-	-	0.509	-	-
18	Not happy	0.552	-	-	-	-	-
23	Not reassured	0.498	-	-	-	-	-
22	Not self-confidence	0.420	-	-	-	-	-
4	Not strong	0.411	-	-	-	-	-
28	Not joyful	-	1.028	-	-	-	-
21	Not eager to bear child	-	0.909	-	-	-	-
29	Not natural	-	0.719	-	-	-	-
30	Not happen as expected	-	0.639	-	-	-	-
15	Left alone	-	-	0.719	-	-	-
11	Miserable	-	-	0.627	-	-	-
8	Weak	-	-	0.584	0.327	-	-
7	Abandoned	-	-	0.537	-	-	-
3	Lonely	-	-	0.536	-	-	-
2	Terrifying	-	-	0.469	-	-	-
20	Hopeless	-	-	0.396	-	-	-
31	Dangerous	-	-	0.311	-	-	-
19	Frightened	-	-	-	0.712	-	-
6	Fearful	-	-	-	0.708	-	-
24	Painful	-	-	-	0.549	-	-
16	Not cold-blooded	0.450	-	-	0.473	-	-
12	Nervous	-	-	-	0.431	-	-
32	Child will die	-	-	-	-	0.964	-
33	Child will be hurt	-	-	-	-	0.739	-
27	Lose control	-	-	-	-	-	0.717
25	Act awfully	-	-	-	-	-	0.662
26	Not let body to control	-	0.410	-	-	-	0.421
Eigen value		10.1	3.4	2.1	1.6	1.3	1.2
Variance%		30.7	10.3	6.3	4.9	3.8	3.7

Method: principal axis factoring; method of rotation: promax; Factors' name (1. Lack of self-efficacy; 2. Lack of positive anticipation; 3. Loneliness; 4. Fear; 5. Concerns for the child; 6, concerns about losing control)

3.3. Reliability and validity
3.3.1. Reliability
Table 4 shows Cronbach's alpha coefficients for the six subscales of the Farsi WDE-Q (versions A & B).
3.3.2. Convergent validity
Convergent validity was investigated by calculating the correlation coefficient between the Farsi W-DEQ (version A) scores and CAQ scores. It was 0.54 (Table 5).
3.3.3. Concurrent validity
Concurrent validity was investigated by the correlation coefficients between the Farsi W-DEQ (version A) scores, STAI-state, and STAI-Trait scores. They were 0.47 and 0.52, respectively, indicating moderate relationships ($p<0.001$). Also, the Farsi WDE-Q (version B) correlated with EPSD at expected level (Table 5).
3.3.4. Discriminant validity
Discriminant validity was examined by comparing prenatal and postnatal childbirth fear in primiparas and multiparas. In Table 6, mean scores of the Farsi W-DEQ (version B) based on parity are presented. Although the Farsi W-DEQ version B could differentiate well between primiparous and multiparas, the Farsi W-DEQ version A could not distinguish between the two groups (Table 6).
3.3.5. Predictive Validity
Predictive validity was examined by comparing prenatal and postnatal childbirth fear in pregnant women who tended to have a Cesarean and those who preferred vaginal birth. Women who tended to have a Cesarean in antepartum or preferred cesarean for their next pregnancies in postpartum had higher mean scores on the Farsi W-DEQ versions A & B respectively than those who did not ($p < 0.001$) (Table 6).

Table 4. Alpha Cronbach's coefficients of the Farsi W-DEQ (versions A & B)

Subscales	Pregnancy (version A)	Postpartum (version B)
	Total (400)	Total (320)
Lack of self-efficacy (10 items)	0.894	0.911
Lack of positive anticipation (4 items)	0.858	0.805
Loneliness (8 items)	0.809	0.731
Fear (5 items)	0.767	0.799
Concerns for the child (2 items)	0.840	0.869
Concerns about losing control (3 items)	0.696	0.633
Total	0.914	0.919

Table 5. Correlation matrix of the subscales of the Farsi W-DEQ †, CAQ‡, and STAI§

		1	2	3	4	5	6	7
1	Farsi W-DEQ (version A)	1						
2	Lack of self-efficacy	0.90***	1					
3	Loneliness	0.81***	0.62***	1				
4	Lack of positive anticipation	0.53***	0.44***	0.29**	1			
5	Fear	0.62***	0.48***	0.56***	0.04	1		
6	Loss of control	0.62***	0.44***	0.46***	0.35***	0.31***	1	
7	Concerns for the child	0.39***	0.29***	0.12*	0.15**	0.17**	0.15**	1
8	CAQ	0.54***	0.47***	0.46***	0.13**	0.46***	0.32***	0.25**
9	State-STAI anxiety	0.47***	0.45***	0.35***	0.18**	0.37***	0.26**	0.21**
10	Trait-STAI anxiety	0.52***	0.49***	0.42***	0.18**	0.42***	0.30***	0.18**
1	Farsi W-DEQ (version B)	1						
2	Lack of self-efficacy	0.90***	1					
3	Loneliness	0.84***	0.62***	1				
4	Lack of positive anticipation	0.56***	0.45***	0.31**	1			
5	Fear	0.72***	0.58***	0.68***	0.08	1		
6	Loss of control	0.60***	0.40***	0.49***	0.47***	0.26**	1	
7	Concerns for the child	0.42***	0.32***	0.17**	0.19**	0.23**	0.23**	1
8	EPDS£	0.48***	0.45***	0.40***	0.19**	0.36**	0.26**	0.22**

*$p<0.05$, **$p<0.01$, ***$p<0.001$, † Wijma Delivery Expectancy Questionnaire, ‡Childbirth Attitude Questionnaire, §State-Trait Anxiety Inventory, £ Edinburgh Postpartum Depression Scale

Table 6. Means of Farsi W-DEQ (version A and B) scores based on request for cesarean and childbirth attitudes questionnaire

Scale		n (%)	W-DEQ (version A)	p-value
CAQ score†	<37‡	178 (45)	56.8±23.7	<0.001***
	37≤	217 (55)	76.2±20.4	
Request for Cesarean	Yes	64 (16)	78.9±25.1	<0.001***
	No	333 (84)	65.2±22.5	
			W-DEQ (version B)	
Parity	Primiparas	189 (59)	68.0±27.3	0.032*
	Multiparas	131 (41)	61.9±22.8	
Preferred delivery mode for next pregnancy	Cesarean	90 (28)	82.4±22.9	<0.001***
	Vaginal delivery	228 (72)	58.8±23.6	

†Childbirth Attitude Questionnaire score: ‡<37 indicative of low childbirth fear

4. Discussion

This study was the first to translate and test the validity and reliability of the Farsi W-DEQ versions A & B in pregnant and postpartum women in Iran. The W-DEQ assesses childbirth fears, which a mother may experience during pregnancy and postpartum. The scales can help in identifying women with a severe fear of childbirth during pregnancy and postpartum. Results showed that the both scales are reliable and valid instruments for measuring childbirth fear in Iranian women. Internal consistency of the both Farsi W-DEQ and their subscales were satisfactory, which is in harmony with previous studies (18, 28-31, 33). Because the alpha coefficient is affected by the length of the scale (36), it is higher than 0.90 for the first subscales (self-efficacy) and scales as a whole. This phenomenon was seen in the mentioned studies, too (18, 28-31, 33). The EFA could identify six factors. The six factors were lack of self-efficacy, lack of positive anticipation, fear, loneliness, concerns for the child, and concerns about losing control (32). Korukcu also proposed a six-factor model for version B, including concerns about labor pain, lack of positive behaviors, loneliness, lack of positive feelings, concerns about childbirth, and concerns about the baby (28). The Japanese version presented a four-factor structure, which included fear, lack of positive anticipation, isolation, and riskiness (30) and which were the same as the factor structure found by Janson (33). Results of the Croatian W-DEQ (version A) have shown that one-factor solution produced acceptable fit indices (31). Although the scales were examined in different populations, no similar structure was found, indicating the necessary of more validation studies on the scales. Regarding convergent validity, it was expected that the correlation coefficient between the scores of the Farsi W-DEQ version A and CAQ be strong (r > 0.7) whereas it was moderate (r = 0.54), indicating that the version A measures different aspects of childbirth fear. Concurrent validity was confirmed by the moderate correlations between the scores of the both Farsi W-DEQ versions and STAI, which meant that the Farsi W-DEQ measured something different from the STAI, the scales for measuring anxiety. In other words, mothers with childbirth fear may not have an anxious personality or may not be in a state anxiety. In Wijma's study, the correlations between the scores of the version A and Trait Anxiety Inventory were .54 and .55 for nulliparous and multiparas, respectively. The corresponding figures for version B were 0.48 and 0.44 (18). Jansen's study also found moderate correlations between the scores of the W-DEQ and STAI, too (33). Considering the predictive validity of the Farsi WDE-Q, a higher mean score of the Farsi W-DEQ versions A & B was found in women who preferred Cesarean for current or next pregnancy than women who preferred vaginal birth, which is in agreement with the results of previous studies (10, 12). The Farsi W-DEQ version B could also discriminate between nulliparas and multiparas. These findings harmonized with previous research (6, 42, 43). In Gartus's study, the mean scores of three subscales of the W-DEQ were higher in nulliparous than multiparas (32). This study has strong and weak points. The strong point of the study was that it was composed of two phases, which enabled us to find the scale structure in the antenatal phase and subsequently examine the structure in the postnatal phase. The second strong point of the study is that the Farsi W-DEQ version B was tested in women who gave birth vaginally and had a live experience of vaginal birth. The first weak point of the study is that the Farsi W-DEQ version A was tested in women who planned for vaginal birth. It is probable that women who planned for Cesarean had a higher childbirth fear. However, the proportion of this group is low because obstetricians are not allowed to do a cesarean elective due to maternal request. The second weak point of the study is that the convergent validity of the version B was not examined because there was no other validated questionnaire in Farsi to assess childbirth fear during postpartum.

5. Conclusions
The present study confirmed the content validity, reliability, and construct validity of the Farsi W-DEQ versions A & B. The scales consisted of six factors, which are not completely replicated the factors found in previous studies. The scales can be used for understanding childbirth fear in prenatal and postpartum women in future researches. Because the Farsi W-DEQ version A was validated in pregnant women in the third trimester of pregnancy, it is recommended that the scale be validated in pregnant women regardless of their gestational age.

Conflict of Interest:
There is no conflict of interest to be declared.

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