Translation and Psychometric Properties of the Farsi Version of the Childbirth Perception Scale

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A R T I C L E I N F O	**A B S T R A C T**
	Background & aim: This study aimed to translate and evaluate the psychometric properties of the Farsi version of the childbirth perceptions scale (CPS) to assess women's experiences of their childbirth.
	Methods: In this validation study, the CPS was translated from English to Farsi using the forward-backward translation method. Subsequently, 150 women who hadrecently given birth and were the residents in Bandar Abbas, Iran were requested to fill out the CPS. The construct validity of the CPS was determined using the exploratory and confirmatory factor analysis. Moreover, Cronbach's alpha coefficient was used to determine its reliability. The reliability of the CPS was determined using the test-retest method with the calculation of the intra-class correlation coefficient. The data were analyzed in SPSS software (version 16) and LISREL 8.8.
	Results: A total of 150 individuals participated in this study. The results of the Kaiser-Meyer-Olkin test, the adequacy of the sample size was acceptable (0.722), and Bartlett's test of sphericity revealed statistically significant results (P<0.001). The mean±SD of the CPS scores was obtained as 26±5. Exploratory factor analysis confirmed the two-factor structure of the scale in which factors one and two had seven and five items, respectively. The Cronbach's alpha coefficient and the intra-class correlation coefficient were 0.975 and 0.988, respectively. Some of the fit indices of confirmatory factor analysis indicated that the two-factor model best fitted the data. ***Conclusion:*** The findings confirmed the validity and reliability of the CPS; therefore, it can be administrated to the Iranian parturient women.

Introduction

Midwifery care aims at maintaining the health of the mother and her fetus during labor. Vaginal delivery can be a mental and physical challenge in which women may feel immense abilities and achievements. Those women who are able to face the challenges of vaginal delivery experience an appropriate delivery and gain good feelings about themselves (1).Vaginal delivery as a natural physiological process is considered as a disease to be dealt with by medical interventions, which may cause problems in the process of transition to motherhood during labor. Concepts, such as risk and safety, have been causing interventions in the process of normal delivery; however, the concept of safety has not been clearly defined in the provision of care to mothers in childbirth (2). Therefore, it is of utmost importance to achieve the desired outcomes of motherhood care based on mothers' needs, expectations, and priorities (3).

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Generally, the provision of care for pregnant women is a paradoxical situation. Although mothers play central roles in the process of care, what happens to them during care is determined and decided on by others, not themselves (4). This lack of participation in decision-making and poor communication with healthcare providers can affect the satisfaction and experience of mothers during the childbirth process (5). From pregnant women's perspectives, the key factors influencing their satisfaction with labor were the quality of relationship with the midwife or physician, personal expectations, and participation in decision-making (6).

Maternal satisfaction with care during childbirth and postpartum has become a topic of interest to researchers. The childbirth experience can influence the relationship between the mother and infant and even further affect mothers' decisions for fertility, such as the decision for undergoing a caesarian section in future labors (7). Studies have shown that women's experiences of childbirth are the most important factors influencing the development of symptoms of post-traumatic stress disorder after vaginal delivery (8). It has also become apparent that women's perceptions of the delivery process and postpartum care as psychological distressful conditions may raise the occurrence of postpartum depression (9).

On the other hand, the experiences of healthcare users should be the basis for planning and evaluating the quality of care (10). Furthermore, the perceptions of healthcare providers and the provision of care for and communication with the mother play a role in the provision of high-quality care (11). In most countries, the assessment of maternal care services and decisions to classify the quality of care focus on the maternal mortality rate and the rate of injury and death during delivery (10).

The childbirth perceptions scale (CPS) was developed in the Netherlands with the aim of assessing the perceptions of women regarding childbirth and care in the first week after delivery. It is noted that in the Netherlands, maternity care is customer-oriented that has raised a series of measures to assess mothers' satisfaction, experiences, and preferences (12). It is believed that women's expectations and preferences can affect the delivery process (13).

There are several tools for assessing maternal experience and satisfaction; however, given the aforementioned and its applicability in Iranian society due to its shortness and simplicity of questions, it seems to be useful in evaluating and improving the care provided during labor and delivery to increase the satisfaction of Iranian mothers.

This study aimed to translate and evaluate the psychometric properties of the Farsi version of CPS. This scale can be used by healthcare providers for the assessment of the quality of care during labor and identification of psychological disorders in the postpartum period.

Materials and Methods

This validation study aimed to translate and evaluate the psychometric properties of the Farsi version of CPS. The CPS is designed by Truijens et al. (2014) in both Dutch and English (9). It consists of 12 items with two 6-item sections for assessing the women's perceptions of childbirth and cares in the first week of childbirth, respectively. Items 3, 4, 9, 11, and 12 describe positive perceptions, and the remaining items belong to women's negative perceptions regarding childbirth. The scoring of each item is based on the 4-point Likert scale with a range from one (strongly disagree) to four (strongly agree). The total score range is between 12 and 48, and the scoring of positive and negative items are different. (i.e., Score 1 indicates "strongly agree" and score 4 indicates "strongly disagree" for positive items). Furthermore, higher scores of the CPS indicate a higher risk of anxiety and depression in mothers during the postpartum period. The primary objective of the CPS is to compare women's experiences of childbirth at homes with those who give birth to children at hospitals. However, the CPS designers recommend its application for assessing the perceptions of women who have given birth alone or along with other similar instruments.

After obtaining informed consent from the designers of the questionnaire via e-mail to translate and use the CPS, it was translated from English to Farsi using the forward-backward method. In this respect, the original version was translated to Farsi by two expert translators, and then one version was provided through the

comparison of the translations. Following that, a third person translated the Farsi version back to English. A comparison of the original version and the back-translated one led to the development of the final version that was sent to the CPS designers to providing feedbacks, which were incorporated into the final version.

Face validity was qualitatively assessed through cognitive interviews with 20 women who had met the inclusion criteria which were:1) experience of vaginal delivery with a healthy term newborn, 2) no history of postpartum depression or infant hospitalization during the last 8 weeks.

The final Farsi version was given to them, and they were asked to read the items and express their perception of the items to the researcher. They were also asked about the difficulty level, appropriateness, and the need to remove or integrate any items in the questionnaire.

Content validity was also evaluated qualitatively with the help of 12 experts who were asked to examine the cultural relevance, validity of translation, and semantic convergence. These specialists were four midwives working at the labor and delivery ward, a midwife and two nurses working at the postpartum ward, one nurse and one midwife working at the neonatal ward, one neonatal specialist, one gynecologist, and one midwifery's instructor with fieldwork experience. All of these specialists had over 5 years of experience in the aforementioned sectors.

After evaluation, some minor revisions were incorporated into the CPS, and its validity was confirmed in this study. Exploratory and confirmatory factor analyses were also employed to confirm the CPS' construct validity. Considering the minimum sample size required for exploratory factor analysis and based on the number of items, 10 samples were selected for each item (14). In total, 150 women (given the minimum sample size required for factor analysis) who referred for routine postpartum or neonatal care participated in this study. The participants were selected using a convenience sampling method from four healthcare clinics in Bandar Abbas, Iran, from January to March 2017. It should be mentioned that the clinics were selected by cluster sampling out of 14 public-sector clinics.

The inclusion criteria were: 1) maximum time elapse of one month from vaginal childbirth, 2) full-term baby with no congenital anomaly, 3) no history of neonatal hospitalization after birth, 4) literacy, and 5) willingness to participate in the study. On the other hand, the participants who were reluctant to continue participation and those who did not fill the questionnaires completely (failure to complete even a question) were excluded from the study. It should be noted that all questionnaires were completely filled, and the written informed consent was obtained from all participants.

Cronbach's alpha coefficient was utilized to determine the reliability of the CPS. Furthermore, the stability of the CPS was determined using the test-retest method with the calculation of the intra-class correlation coefficient (ICC). Out of the total participants, 30 women were selected randomly and requested to fill out the CPS after a two-week interval. Subsequently, the scores obtained from two sets of the questionnaire administration were compared to each other.

It is worth mentioning that permissions were obtained from the CPS designers to translate and use the questionnaire. All procedures performed in studies involving human participants were in accordance with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. In addition, the study protocol was approved by the Ethics Committee of Hormozgan University of Medical Sciences, Iran (code of IR.HUMS.REC.1398.354).

The data were analyzed in SPSS software (version 16) and LISREL8.8 through descriptive and inferential statistics. The exploratory factor analysis (EFA) was also conducted using the principal component analysis. Moreover, the Kaiser Meyer Olkin (KMO) and Bartlett tests determined the suitability of the data for data analysis. Furthermore, the Bartlett test was used to confirm the adequacy of the sample, and the Varimax method was employed for the rotation of factors. A KMO value close to 1 indicates the adequacy of the sample size for factor analysis. If KMO is greater than 0.7, it indicates that the correlations among data are suitable for factor analysis (14-15). Confirmatory factor analysis

(CFA) was also conducted to confirm the results of EFA, evaluate the data fit indices, verify factors of scale, and determine the intensity of item-factor relations (16). Additionally, the model fit was estimated using the fit indices, such as the Chi-square (X^2), relative Chi-square (X^2 / df), root mean square error of approximation, root mean square residual, incremental fit index, and comparative fit index (CFI). A P-value less than 0.05 was considered statistically significant.

Results

Regarding the face and content validity, changes were made to the form and richness of the words, and no items were deleted in this study. The mean age of the participants was 29±6.09 years and all mothers breastfed their children. Table 1 summarizes the demographic characteristics of the participants. The mean score of CPS in this study was 26±5 with a score range between 12 and 42.

Table 1. Demographic characteristics of the participants

Variables	N (%)
Parity:	
Primipara	64 (42.66)
Multipara	86(57.34)
Occupational status:	
Housewife	94 (62.66)
Employed	55 (36.66)
Others	1 (1.5)
Educational level:	
Elementary and Middle school	32 (21.2)
High school	59 (39.4)
Academic degree	59 (39.4)

The results of EFA based on the KMO test showed the adequacy of the samples for data analysis with a score of 0.772.
Moreover, the results of Bartlett's test of sphericity were statistically significant (P<0.001) leading to the development of a two-factor solution as a domain. The emerged domains accounted for 42.128% of the observed variance of the CPS with 12 items.

Table 2. Results of exploratory factor analysis of a 12-item childbirth perception scale

No	Mother's perception items	Factor 1	Factor 2
1	My delivery was much worse than I expected.	0.622	0.263
2	After childbirth, I felt lonely.	0.541	0.238
3	During the first week after childbirth, I felt proud.	- 0.157	0.560
4	I felt safe during childbirth.	0.218	0.595
5	During the first week after childbirth, I often felt guilty.	0.562	0.199
6	During labor, I did a lot of wrong things.	0.549	0.201
7	When I was in labor, I doubted whether I could do it.	0.596	0.070
8	I was nervous during labor.	0.668	- 0.181
9	I really enjoyed the first week after childbirth.	0.178	0.789
10	After giving birth, everything went different from what I expected.	0.605	0.028
11	During labor, I was able to relax.	0.263	0.413
12	My first postpartum week was very enjoyable.	0.164	0.828

The first domain entitled negative perceptions and consisted of items 1, 2, 5, 6, 7, 8, and 10. The second domain encompassed positive perceptions and consisted of items 3, 4, 9, 11, and 12 (Table 2). Fit indices are used to determine the fit of the designed model. Since there was no consensus about the optimum index, several indices were utilized to assess the validity of the model. Generally, three to five fitness indices are employed for a model (14, 16-17).
These indices are classified in different ways,

the majority of them used in this study were classified as an absolute fit index, relative or comparative fit index, and parsimonious fit index. The indices used in this study along with their cut-off points are shown in Table 3. In this study, the results of CFA using fitting indices showed that dimensions were consistent with the questions and confirmed the two-factor structure of the Farsi questionnaire. Cronbach's alpha coefficient was utilized to evaluate the reliability of all items, which was obtained at 0.757; accordingly, no items were deleted in this study.

Table 3. Fit indicators of confirmatory factor analysis of a 12-item childbirth perception scale

Fit index name	Index abbreviation	Result	Normal limit for fitting
Chi-square	χ^2	97.90	-
Relative chi-square	χ^2/df	1.84	1-5
Root Mean Square Error of Approximation	RMSEA	0.070	>0.08: perfect fit 0.08-0.1: good fit >0.1: weak fit
Incremental Fit Index	IFI	0.94	0-1
Root Mean- Square Residual	RMR	0.065	<0.1
Comparative Fit Index	CFI	0.91	≥0.9

Cronbach's alpha coefficients were estimated at 0.971 and 0.979 for negative and positive perceptions, respectively. Moreover, the ICC was reported at 0.988 (Table 4).

Table 4. Reliability of childbirth perception scale

Name of domain	Items	Cronbach's alpha	Intra-class correlation	CI (95%)
Factor 1	1-2-5-6-7-8-10	0.971	0.972	0.941-0.987
Factor 2	3-4-9-11-12	0.979	0.995	0.990-0.998
Total	All Items	0.975	0.988	0.974-0.994

Discussion

This study aimed to translate and evaluate the psychometric properties of the Farsi version of the CPS designed by Truijens et al. (2014). All instruments that are translated into other languages should be assessed in terms of psychological properties (18). To the best of our knowledge, this study was the first attempt to evaluate the psychological properties of the CPS in Iran. The reliability of the Farsi version of CPS was obtained at 0.78 which was similar to that of the original version (0.78). The domains of the original version were women's perceptions during childbirth and one week after childbirth. However, our study led to the development of two domains entitled "positive perceptions" and "negative perceptions". In addition, with respect to the ICC value obtained in the current study (0.988) to test the reliability of this study, it was found that the internal consistency of each factor had acceptable values, and negative and positive perceptions of childbirth experience had the same reliability.

The CFI, which is preferable to other fit indices and less affected by sample size, was used in this study to evaluate the factor fitting; moreover, the values greater than 0.9 indicated good fit (19). According to the results of the KMO test, it was found that the sample size in

this study was sufficient. Furthermore, the results of the present study indicated that the model fitted the data according to the recommended standards. It is noted that cultural factors mainly influence women's preferences of childbirth that in return affect the loading scores of the items (20). Therefore, it was observed that some items had no high loading scores (i.e., items 11 and 2). Given the socio-economic and cultural differences, Iranian women's perceptions of childbirth will be different from that of Dutch women; accordingly, planned home birth is acceptable and welcomed with a high rate in the Netherlands (21).

On the other hand, Iranian women are encouraged to give birth in hospitals rather than their own homes, and almost all deliveries are performed at hospitals (22). Nevertheless, the Farsi version of the CPS showed acceptable reliability and validity in the Iranian context, which had many common items with the original version. This indicates that despite the significant differences between the context of the two societies, this questionnaire is also applicable to Iranian women. The advantage of the CPS, compared to similar instruments, is itsability in the identification of the relationship between mothers' experiences of childbirth and

their feelings in the first week after delivery. Given the impact of women's perceptions of the delivery process and the first week after delivery on the development of postpartum depression (9), this tool can also be used as a screening tool for postpartum depression in immediate postpartum care. Additionally, the scores reported by the CPS in this study showed that our participants had a low risk for the development of anxiety and depression after childbirth.

One of the strengths of this study includes its application for screening the postpartum depression in the first week after delivery. Regarding the limitations, there is a lack of knowledge about the samples' psychological condition before and during childbirth that might influence their perceptions of childbirth. Furthermore, the generalizability of the findings to other settings should be implemented with caution. Future studies are suggested to be conducted with more sample sizes in other healthcare settings.

Conclusion

The results obtained from this study confirmed the validity and reliability of the CPS; therefore, it can be administered to the Iranian parturient females. Accordingly, Iranian researchers would be able to use this instrument since it has appropriate validity and reliability and requires a short time to be filled out.

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Conflicts of Interest

The authors declare no conflicts of interest.

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