

Validity and reliability of the Turkish version of the Birth Experiences Questionnaire

 ¹Fadime BAYRI BİNGÖL

 ¹Meltem DEMİRGÖZ BAL

 ²Melike DİŞSİZ

 ³Sümeyye TOKAT

 ³Melek IŞIK

¹Department of Midwifery, Marmara University Faculty of Health Sciences, İstanbul, Turkey

²Health Sciences University Hamidiye Nursing Faculty, İstanbul, Turkey

³Esenler Gynecology and Pediatrics Hospital, İstanbul, Turkey

ORCID ID

FBB : 0000-0002-0304-6165

MDB : 0000-0003-4009-7137

MD : 0000-0002-2947-3915

ST : 0000-0002-4270-1388

MI : 0000-0002-9330-768X



ABSTRACT

Objective: The aim of this study was to examine the validity and reliability of the Turkish version of the Birth Experiences Questionnaire.

Material and Methods: This methodological study was carried out with 110 couple who were admitted to a in İstanbul between January and December 2019. This research is a methodological study. This study was conducted with 110 couple who gave birth in a public hospital in İstanbul between January and December 2019. The data of the study were obtained using Personal Information Form and Turkish version of Birth Experiences Questionnaire. Birth Experiences Questionnaire measurements were tested with validity and reliability analyzes. For this purpose, validity analysis of data; scope validity index, exploratory factor analysis, confirmatory factor analysis (CFA), reliability analysis; Pearson moment product correlation and Cronbach Alpha reliability coefficient tests were used. In the evaluation of data, t-test, correlation analysis, Cronbach α analysis, and CFA were used.

Results: It is a 10-item self-rating scale. To assess the consistency of the questionnaire overtime, test-retest measurement was performed with an interval of 1 day. As a result, no difference was found between the mean scores ($p>0.05$). In the analysis conducted for the internal consistency in the reliability study of the Birth Experiences Questionnaire, the Cronbach alpha reliability coefficient all scales was determined for all scales as $\alpha=0.78$ for mothers and $\alpha=0.86$ for fathers.

Conclusion: In this study, it was shown that the Turkish version of the scale was valid and reliable.

Keywords: Birth experiences, childbirth, reliability, validity.

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Correspondence: Melike DİŞSİZ, MD. Sağlık Bilimleri Üniversitesi, Hamidiye Hemşirelik Fakültesi, İstanbul, Turkey.

Tel: +90 543 799 51 43 **e-mail:** melekd78@gmail.com

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INTRODUCTION

Even though thousands of births have occurred around the world daily, majority of people define the birth as the hardest and the most significant experiences of their lifespan in birth psychology studies.^[1,2] During that period, due to mental health issues experienced by the parents, negative impacts might occur on emotional commitment with the baby as well as ruining family relations that lead to emotional, cognitive, and behavioral problems in the children in long-term period.^[1,3–5] Negative birth perception was reported to trigger psychiatric diseases.^[6,7] It is rather crucial for couples to assess their birth experiences as positive since the birth is a factor increasing psychological vulnerability and sustain their psychological wellness.

Positive birth experience is defined as the occurrence of the birth with certain outcomes targeting healthy mother/baby and satisfaction of individual needs.^[8] Since a positive birth experience lets parents get stronger, self-realization, self-esteem, and enhancing connection with their babies, it eases the adaptation to role of parenting. A negative birth experience, on the other hand, is defined as an experience including unfulfilled expectations, feeling of failure, and disappointment.^[2,4,9]

Although negative birth experiences effecting mental health at postpartum period are investigated with mothers, fathers also are reported to experience psychological problems at postpartum period.^[10,11] Positive birth experience of fathers might contribute their participation to the family at postpartum period. For instance, the fathers considering the birth experience risky or frightening or feeling not providing sufficient support during the birth period are reported to experience certain problems in the adaptation of the role of becoming father.^[12]

It is rather important to assess birth experience to gain awareness about mental health of the couples, establish early diagnosis by the physician, prevent serious mental diseases in the future, and determine the infrastructure of the treatment when needed. Even though a number of studies exist in our country investigating mother satisfaction at postpartum period^[13] and birth experience,^[5,7,14,15] not any studies occurred to examine the birth experience including the fathers in their samples and the assessments with mothers were conducted with instruments including more questions. In studies assessing the psychosocial dimensions of birth experience, the measurement instrument should be brief, clear, standardized, and reliable. The current study might be predicted to close a significant gap in our country. The current study was conducted to present Turkish version of the Birth Experiences Questionnaire developed by Saxbe et al.^[1] (2018) including 9 items to assess birth experiences.

MATERIAL AND METHODS

The present methodological study was carried out in a maternity and children's hospital Istanbul province with primipara women admitting to the hospital to deliver birth and their spouses between the dates January 2019 and December 2019. Those women and their spouses selected through improbable random sampling method, understanding and communicating in Turkish, not having any physical and psychological problems to participate in the study, and being volunteer were included in the study. Those women diagnosed as risky pregnancy, developing any medical complication in the mother or baby,

and taking cesarean delivery were excluded from the study. The data were collected through face-to-face interviews. The sample size was planned as 10 times more than items^[16,17] so that the study was completed with 110 couples. Test-retest measurement was completed in one day intervals with 40 couples to assess stability of the questionnaire overtime. The permission was obtained from Ethic Committee of Health Sciences Faculty of Marmara University (10.09.2018–179). Moreover, the couples included in the study were explained the aim, method, and their contributions to get their verbal permission and they were also informed about they could withdraw from the study whenever they wished.

The data were collected using information form and the Birth Experiences Questionnaire.

Introductory Information Form

It consisted of items including week of the pregnancy, any health problems during pregnancy and delivery method, as well as age, education, and occupation of the participants.

The Birth Experiences Questionnaire

The questionnaire developed by Saxbe et al.^[1] (2018) is used in the assessment of birth experience. The permission was obtained from Saxbe for the Turkish validity and reliability study of the questionnaire. It is a 20 itemed self-assessment questionnaire; 10 items for mother and 10 items for spouses. It was developed specifically for birth experience and scanning purposes and assesses the psychological dimension of the birth. The original questionnaire was developed with newly delivered mothers and spouses and confirmed accordingly. Cronbach's alpha value for original questionnaire was 0.81 for mothers and 0.80 for fathers. It includes the items related with birth experience. It assesses the stress, fear, and worries of couples during the period of pregnancy. The Birth Experiences Questionnaire is the shortest, simplest, and the most practical one among the current scales. It is rather suitable for the primary assessment of the birth both for mothers and fathers. It is recommended to implement the questionnaire in the hospital just 1 or 2 days after the birth.^[1] Higher scores mean negative birth experience.

Data were analyzed using SPSS version 21 (SPSS Inc., Chicago, IL, USA) and SPSS Amos (Analysis of Moment Structures) version 23. Test-retest methodology was used to assess the consistency overtime, and Pearson's correlation coefficient was calculated. For evaluating the internal consistency and item-total correlation coefficients, Pearson's moment correlation coefficient was used. Cronbach's alpha reliability coefficient was performed to find the coefficient of internal consistency. The Lawshe technique was used to examine the opinions of experts on content validity. Further, an exploratory factory analysis and a confirmatory factor analysis (CFA) were used to assess construct validity.

Findings

The mean age of the mothers in the study was 23.28 ± 6.36 (min: 19 and max: 31) and fathers' 26.54 ± 2.89 (min: 21 and max: 38); mothers had educated 8.30 ± 1.38 (min: 8 and max: 16) years and fathers 8.51 ± 1.63 (min: 8 and max: 16) years. The majority of the mothers

Table 1: Item-subdimension total score correlations of subdimensions of the Birth Experiences Questionnaire

Subdimensions and items	Item-subdimension total score correlation coefficient		Item-total correlation coefficient		Cronbach alpha α
	r	p	r	p	
Mother (n=110)					
Stress					
Item 1	0.88	0.000	0.42	0.000	0.87
Item 2	0.85	0.000	0.33	0.000	
Item 3	0.73	0.000	0.44	0.000	
Item 4	0.73	0.000	0.44	0.000	
Item 5	0.73	0.000	0.44	0.000	
Fear					
Item 6	0.94	0.000	0.50	0.000	0.89
Item 7	0.95	0.000	0.47	0.000	
Support					
Item 8	0.92	0.000	0.52	0.000	0.84
Item 9	0.93	0.000	0.39	0.000	
Father (n=110)					
Stress					
Item 1	0.77	0.000	0.51	0.000	0.80
Item 2	0.71	0.000	0.38	0.000	
Item 3	0.60	0.000	0.74	0.000	
Item 4	0.83	0.000	0.53	0.000	
Item 5	0.78	0.000	0.49	0.000	
Fear					
Item 6	0.95	0.000	0.52	0.000	0.89
Item 7	0.95	0.000	0.60	0.000	
Support					
Item 8	0.94	0.000	0.72	0.000	0.87
Item 9	0.94	0.000	0.75	0.000	

(98.2%) were determined to be housewife and fathers were workers (97.3%). The mean gestational week of the participants is 38.21 ± 0.83 (min: 36 and max: 41). About 80.9% of the participants reported not experienced any problems in their pregnancy and 94.5% of them stated that they delivered birth through normal spontaneous vaginal labor.

Linguistic Equivalence, Content Validity Analysis

To evaluate the content validity of the instrument, the original version of the Birth Experiences Questionnaire was translated into Turkish version by a psychiatric nurse and lecturer, a obstetrics and gynecology nurse and lecturer, and an English instructor. The researchers reviewed the translated scale and collaborated in generating a Turkish form of text. A Turkish teacher then evaluated the text for linguistic suitability and comprehensiveness. In the next stage, the Turkish version of the scale was blindly translated back into En-

glish by two individuals, namely, a lecturer who had completed the doctorate study and lived abroad, and an individual who was studying and living abroad. The scale was then retranslated into Turkish by a lecturer. By this version, it was checked out whether it had changed the meaning of the original scale or not. Then, the final form of the scale was obtained.

Content Analysis

After the linguistic equivalence of the scale was tested, the Turkish version was submitted to 11 experts for the analysis of content validity. The experts were asked to score each item on a scale between 1 and 5 (1 point: Inappropriate; 2 points: Slightly appropriate; 3 points: I'm undecided; 4 points: Appropriate; and 5 points: Very appropriate). The differences in experts' opinions were examined using the Lawshe technique, and the data obtained from the experts were an-

Table 2: Comparison and correlations of the Birth Experiences Questionnaire and its subdimensions' test-retest mean scores

Questionnaire and subdimensions	First administration	Second administration	t	p	r	p
	Mean±SD	Mean±SD				
Mother BEQ (Total)	32.47±3.53	33.42±7.42	-0.930	0.358	0.494	0.001
1. Stress	18.32±2.31	18.27±2.47	0.404	0.688	0.949	0.000
2. Fear	8.90±1.56	8.90±1.27	0.000	1.000	0.896	0.000
3. Support	5.25±1.61	6.25±6.94	1.000	0.323	0.484	0.002
Father BEQ (Total)	40.42±2.62	40.70±2.23	-1.086	0.284	0.794	0.000
1. Stress	22.77±2.21	23.02±2.13	-1.220	0.230	0.823	0.000
2. Fear	12.40±1.82	12.37±1.33	0.190	0.850	0.907	0.000
3. Support	5.25±1.61	5.20±1.45	-0.628	0.534	0.951	0.000

SD: Standard deviation; BEQ: Birth Experiences Questionnaire; t: Paired samples t-test; r: Pearson correlation test.

alyzed using the content validity index (CVI). Ultimately, the CVI for the items was found to be 92%. Once the evaluations of the experts were obtained, the agreed on final scale was administered to 20 participants outside of this sample in a pilot study.

Item Analysis

When total score correlations of the 18 items were examined for the reliability testing of the Birth Experiences Questionnaire, the reliability coefficient was found to vary between 0.33 and 0.52 for mothers and 0.38 and 0.75 for fathers. It was found that there was a positive and statistically significant correlation between the item scores and the overall scale score ($p < 0.000$) (Table 1). It was shown by investigating the item-subscale total score correlations of each subscale of the Birth Experiences Questionnaire that the reliability coefficients (Pearson's correlation) for the 5 items in the "stress" subscale for mothers were in the range of $r = 0.33$ – 0.44 and it was $r = 0.38$ – 0.74 for fathers. Meanwhile, for the 2 items in the "Fear" subscale, the reliability coefficients ranged from $r = 0.47$ to 0.50 for mothers and $r = 0.52$ to 0.60 for fathers. Further, the reliability coefficients for the 2 items in the "Support" subscale were between $r = 0.39$ and 0.52 for mothers and $r = 0.72$ and 0.75 for fathers. This shows that the correlation coefficients of all items have positive and statistically significant correlations ($p < 0.001$) (Table 1). As in the original scale, item analysis was not performed for 10th item.

The Internal Consistency Reliability Coefficient

As a result of the reliability studies of Birth Experiences Questionnaire, Cronbach's alpha internal consistency coefficient of the questionnaire was found $\alpha = 0.78$ for mothers and $\alpha = 0.86$ for fathers in overall questionnaire.

Test and Retest

For testing the consistency overtime of the Turkish version of the Birth Experiences Questionnaire, 110 women with their spouses got the first evaluation after 2 h of the delivery and they reinvited to the post-maternity clinic after 24 h to get a second respond. Couples

were interviewed separately. To avoid a possible bias, couples were interviewed by different health-care professionals they never met before. Test-retest measurements performed in 1 day intervals were assessed through Pearson product-moment correlation coefficient and t-test. When the correlation between the scores of the first and second administration of the Birth Experiences Questionnaire was examined using Pearson's correlation analyses, it was found that the reliability coefficients for the difference between the two measurements of the scale ranged between 0.48 and 0.95. This demonstrates a positive, strong, statistically significant correlation ($p < 0.001$) (Table 2). When the mean scores of the participants at the two different time periods were compared using the dependent groups t-test, a statistically significant difference was not found between the mean scores ($p > 0.05$) (Table 2).

Construct validity

Three-dimensional CFA was performed for mothers and fathers to ensure construct validity. As the result of CFA for mothers, fit indices were as follows: Chi-square=17.492 ($p = 0.000$), degree of freedom=24 ($X^2 = 17.492$; $df = 24$, $X^2/df = 0.729$), root-mean-square error of approximation (RMSEA)=0.071 ($p < 0.05$), standardized root-mean-square residual (SRMR)=0.036, comparative fit index [CFI]=0.98, non-normed fit index (NNFI)=0.69, goodness-of-fit index [GFI]=0.96, and adjusted goodness-of-fit index (AGFI)=0.93. The factor loads for all items were found to 0.69 in the CFA. The diagram for the CFA is shown in Figure 1. As in the scale developed by Saxbe et al.,^[1] 10th item was not subjected CFA.

As the result of three-dimensional CFA for fathers, fit indices were as follows: Chi-square=27.078 ($p = 0.000$), degree of freedom=24 ($X^2 = 27.078$; $df = 24$, $X^2/df = 1.12$), RMSEA=0.034 ($p < 0.05$), SRMR=0.050, CFI=0.91, NNFI=0.62, GFI=0.94, and AGFI=0.90. The factor loads for all items were found to 0.61 in the CFA. The diagram for the CFA is shown in Figure 2.

The mean Birth Experiences Questionnaire scores of mothers included in the study were found 34.25 ± 2.68 (min: 31, max: 42) and mean scores of fathers were determined as 40.20 ± 4.18 (min: 35, max: 50).

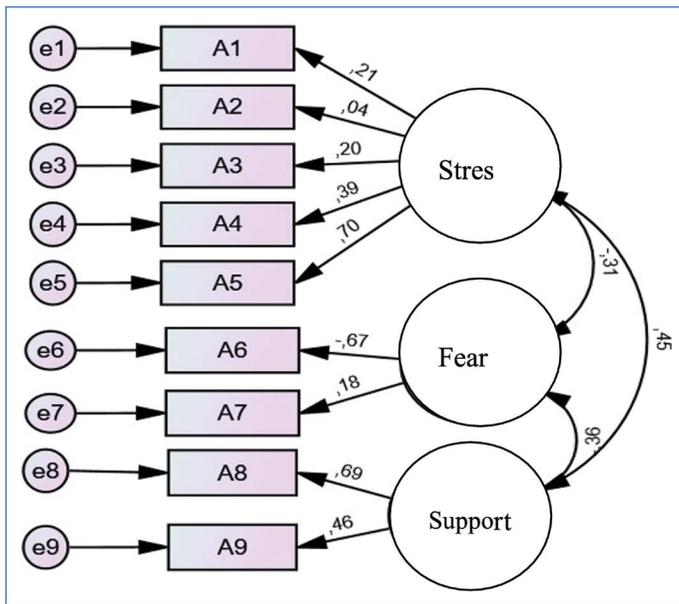


Figure 1: BEQ two-factor confirmatory factor analysis diagram.

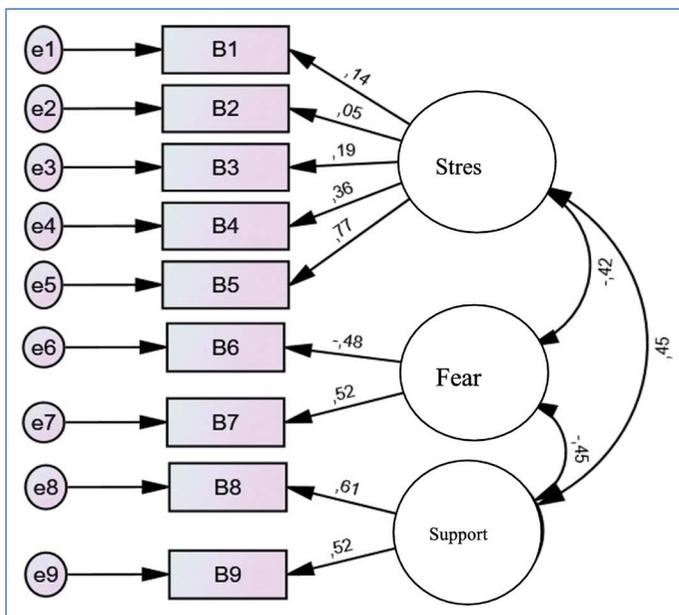


Figure 2: BEQ four-factor confirmatory factor analysis diagram.

DISCUSSION

At present study, validity and reliability study of the Birth Experiences Questionnaire was realized and the results indicated that Turkish version of the Birth Experiences Questionnaire had appropriate psychometric characteristics. As for the reliability analysis of the Birth Experiences Questionnaire test-retest, internal consistency and item analysis were utilized. Test-retest reliability is the degree to which test scores remain unchanged when measuring a stable individual characteristic on different occasions. Having statistically significant level of relation in test-retest measurement supported the reliability of scores obtained from the Birth Experiences Questionnaire with regard to stability overtime.^[16-19] Another supportive finding about the

reliability of the questionnaire was that it had statistically significant level of internal consistency coefficient. Cronbach alpha techniques were used to evaluate internal consistency of the questionnaire since it was suitable for Likert-type scales. A high coefficient alpha means a high degree of internal consistency that is each of items in the scale is consistent with one another and the scale consists of items that predict the elements of the same characteristics. Alpha coefficient is used to determine reliability by comparing the amount of shared variance, or covariance, among the items making up an instrument to the amount of overall variance and presented with values between 0 and 1.^[16,19] In reliability study of Turkish version of the Birth Experiences Questionnaire, it was identified that Cronbach alpha reliability coefficient reached the desired level for each of the three dimensions.

If the items in a scale had equal weights and were in the form of separate units, correlation coefficient expected to be higher. Higher correlation coefficient means higher level of relation between the item and characteristic it aims to measure. Even though a standard does not exist in terms of item total score correlation's decrease the certain level, it is recommended that correlations not being negative and over 0.25 or 0.30. Higher correlation coefficient means higher reliability for the items in the scale.^[16,19] When the item-total score correlations for each of the subscales regarding the reliability study of the Birth Experiences Questionnaire were examined, all the subscales were observed to meet required criteria.

The experts reviewed the items in terms of content validity and agreed on the fact that the scale demonstrated a good content validity in its original form. The high degree of experts conformity is an important finding for verifying the content validity of the Turkish version of the Birth Experiences Questionnaire.

CFA was performed for each of the subdimensions to confirm construct validity in Turkish version adaptation of the questionnaire. The most commonly employed fit tests are the Chi-square, RMSEA, SRMR, CFI, NNFI, GFI, and AGFI.^[16,18] The fit statistics resulting from a CFA must be at the desired levels. For a model to be acceptable, the Chi-square value is expected to be non-significant. In this study, the Chi-square value was found to be non-significant across all dimensions. This suggested a good model fit.

RMSEA value ≤ 0.08 with $p < 0.05$ (statistical significance) indicates a good model fit, while a value ≤ 0.10 is a poor model fit. In this study, RMSEA was found to be significant in each dimension, indicating a good fit. Factor loads should not be < 0.30 . The following values represent a good fit model: SRMR values of < 0.10 ; CFI, GFI, and NNFI values equal to or greater than 0.90; and AGFI values ≥ 0.80 .^[16-19] In the statistical analysis, it was found that the Turkish version of the Birth Experiences Questionnaire satisfied all of fit criteria.

Research Limitations

The data based on self-reporting are an important limitation in this research. Since the data collected to assess birth experience based on self-reporting, a certain degree of fallibility should be taken into consideration. The function of the questionnaire that directs participants to birth psychotherapist or psychiatry clinics just by regarding the scores they obtained should be paid attention. Moreover, the couples' not admitting to the hospital being excluded from the study are another important limitation. The present study cannot be gene

ralized to all the women in postpartum period since it was conducted only with women admitting to maternity and children's hospital in the province of Istanbul.

CONCLUSION

In this study, it has been investigated the validity and reliability of the Turkish version of the Birth Experiences Questionnaire. It is recommended that the Turkish version of the Birth Experiences Questionnaire can be used as a tool to determine negative birth experiences of women together with their spouses. The questionnaire may also provide guidance to health-care professionals and be effective for identifying negative birth experiences of couples at postpartum period as well as early detection of psychological symptoms to direct them psychotherapists, psychiatrists, and other health-care professionals when needed.

Special Thanks

To experts and couples participated in the study.

Statement

Ethics Committee Approval: The Marmara University Institute of Health Sciences Ethics Committee granted approval for this study (date: 10.09.2018, number: 179).

Informed Consent: Verbal informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – FBB, MDB; Design – FBB, MD; Supervision – MDB; Resource – FBB; Materials – FBB; Data Collection and/or Processing – ST, MI; Analysis and/or Interpretation – MD; Literature Search – FBB, MD; Writing – FBB, MD; Critical Reviews – MDB.

Conflict of Interest: The authors have no conflict of interest to declare.

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