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Research Article

# Validity and reliability of the turkish version of "Labor Pain Relief Attitude Questionnaire for Pregnant Women"

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ABSTRACT

Labor pain management is a critical concern in maternal healthcare due to its influence on the health and comfort of a mother. The "Labor Pain Relief Attitude Questionnaire for Pregnant Women" (LPRAQ-p) is a tool used to assess the opinions of pregnant women about pain relief during labor. Therefore, a Turkish version of the LPRAQ-p was developed and evaluated for its reliability and validity. An optimal sample size is five to ten times more than the number of components on the scale for investigations. Reports indicate that test-retest evaluation requires a minimum of 30 data pairs. This methodological descriptive study involved 90 pregnant women attending family health institutions within a district health directorate from May to November 2021. Eligibility criteria included participants in their third trimester and devoid of pregnancy-related complications. The Turkish translations of the LPRAQ-p were conducted using linguistic validation protocols. Data were collected using a "Pregnancy Introductory Form" and the LPRAQ-p, provided to the mothers at 30 and 32 weeks of gestation. The data were analyzed on SPSS 23 and AMOS 25 software tools. Experts mostly agreed on the language's validity, as shown by Kendall's W test (W=0.805, p=0.000). Consistent with the original scale, exploratory factor analysis revealed a two-factor structure with factor loadings ranging from 0.439 to 0.769. The Cronbach's alpha values indicated a substantial degree of internal consistency, with an overall scale value of 0.733 and sub-dimension values of 0.853 and 0.699, respectively. The temporal stability was confirmed by test-retest correlations between r=0.849 and r=0.868. Confirmatory factor analysis fit indices showed that the model performance was satisfactory. The Turkish adaptation of LPRAQ-p is a viable and accurate tool for evaluating pregnant women's attitudes towards labor pain relief. Its use may improve maternal care by identifying patients who may need supplementary assistance during childbirth. Additional investigation is advised to examine its relevance in various therapeutic environments.

## 1. Introduction

Despite being normal, the pain resulting from uterine contractions during labor is among the most intense and significantly contributes to many women's apprehension toward childbirth (ElFattah *et al.*, 2015; Ergin and Kömürcü, 2009). The psychological impact of labor pain is indisputable. Numerous women perceive that the aggregate effect of several contractions with decreasing relaxation intervals is more challenging than the intensity of any single contraction. The continuous cycle may exacerbate the perception of pain during childbirth by heightening anxiety and apprehension. Therefore, controlling labor pain is one of the primary goals of care for women in labor (Ergin and Kömürcü, 2009). The severity and perception of labor pain can vary from person to person (Rathfisch, 2012). In addition to being a difficult experience, the stress that occurs when severe labor pain cannot be controlled negatively affects maternal, fetal, and neonatal health. Moreover, labor pain may result in adverse perceptions of labor, extended labor duration, unfavorable labor-related experiences, fetal hypoxia, and diminished contentment. The fear of women about labor also elevates the incidence of elective cesarean deliveries (Lowe, 2002; Nwanodi, 2016). The feeling of labor pain varies for each individual based on their own circumstances, including physiological composition, mental health, cultural context, and social network. Healthcare practitioners must possess a comprehensive awareness of these aspects to provide individualized support and effective pain management strategies during childbirth.

Pregnant women find it difficult to imagine the sensation of labor pain, and even those who have given birth several times struggle to recall their previous labor experiences (Lally *et al.*, 2014). The majority of pregnant women need epidural analgesia to manage labor pain, which is often arranged throughout pregnancy (Schytt and Waldenstrm, 2010). Factors such as pain relief during labor, catastrophizing prenatal pain, fear of labor, external locus of control, history of epidural analgesia, and nulliparity have been associated (Logtenberg *et al.*, 2018; Riley *et al.*, 2011; Schytt and Waldenstrm, 2010; Sitras *et al.*, 2017; Veringa *et al.*, 2011). Pregnant women exhibiting depressive symptoms may possess heightened projections about labor pain and pursue more analgesic intervention, aligning with the adverse outcome

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expectancies often associated with depression. Cultural norms, the perspectives of a woman's prenatal care providers, and the effect of her social network—including friends, family, and partner—can all affect her perceptions of labor pain management (Haaga *et al.*, 1991; Robertson, 1996). Cultural attitudes significantly affect women's perceptions and management of labor pain. Due to enhanced positive emotions and improved coping strategies, women are more inclined to see labor pain as a pleasurable and significant event. Conversely, seeing pain as hazardous may result in heightened anxiety and an augmented need for pain control strategies. Social conventions around childbirth and women's conventional societal roles may influence this cultural context. Cultural norms, healthcare professionals' perspectives, and social networks together shape women's perceptions and experiences of pain management after labor. Enhancing women's satisfaction with the labor process and their preparedness for childbirth may be achieved via improved education and support systems (Tanrıverdi, 2017a, 2017b).

Self-efficacy during labor is crucial for alleviating labor pain. Consequently, the LPRAQ-p may serve as an effective screening instrument to identify women exhibiting diminished labor self-efficacy and heightened pregnancy-specific distress symptom, who may need supplementary assistance (Hulsbosch *et al.*, 2020). The objective of this research was to translate the LPRAQ-p into Turkish and to provide the scale to the academic literature via a validity and reliability assessment.

## 2. Materials and Methods

This study used a methodological descriptive strategy to assess the Turkish validity and reliability of the LPRAQ-p.

### *2.1 Population and sample*

The research sample included pregnant women visiting 15 family health clinics associated with a district health directorate. The study sample comprised of healthy pregnant women available between May and November 2021, aged >18 years, in the 30$^{th}$ week of pregnancy, without prior conception treatment, lacking pregnancy-related risk factors, with no indication for cesarean delivery, consented to participate, possessed communication skills, were literate in Turkish, had no history of fetal demise or stillbirth, and were not diagnosed with any psychiatric disorder.

A sample size that is five to ten times larger than the number of items on the scale should ideally be used in studies that evaluate the reliability and validity of the scale using component analysis. According to reports (Tavşancıl, 2005; Karakoç, 2014), test-retest assessment requires at least 30 data pairings. From May to November of 2021, 90 pregnant women participated in the study to evaluate the validity and reliability of the six-item LPRAQ-p.

### *2.2 Investigation of psycholinguistic features*

Three experts in the field initially translated the LPRAQ-original p's scale from English to Turkish to ensure its language accuracy. A translator who was proficient in both Turkish and English then retranslated it. After comparing the English translation with the original scale text, the required modifications were made to the Turkish translation text, and the final version of the scale was given to pregnant women (Esin, 2015; Sperber, 2004).

### *2.3 Investigation of psychometric properties*

In order to ensure that the items were clear, simple, and applicable, experts were consulted throughout the scale's convergent validity research. The validity study finds the content validity index (CVI) for topic/scope validity and computes Kendall's concordance coefficient (W) to examine the concordance of raters' judgments. After the pilot investigation, data were collected. As part of the reliability analysis, Cronbach's alpha was used to analyze the internal consistency of the scale and its sub-dimensions. Using Pearson correlation, we looked at the item totals (Rutherford-Hemming, 2015; Gözüm and Aksayan, 2003).

### *2.4 Data collection*

Two data collection forms were used in the study. The researchers collected data from pregnant women via interview after obtaining informed consent at 30 weeks of gestation and via telephone follow-up at 32 weeks of gestation. In case of unclear questions, the researchers provided feedback on the questions.

Pregnancy Introductory Form: This form has 16 questions, including ten on the personal characteristics of the pregnant woman and six on pregnancy-related characteristics. Data were numbered for test-retest analysis.

Labor Pain Relief Attitude Questionnaire For Pregnant Women: The LPRAQ-p was created by Hulsbosch *et al.* in 2020 in the Netherlands, consisting of six measures designed to assess labor pain relief attitudes among pregnant women. All items on the measure are evaluated using a 5-point Likert scale. Scoring was categorized as follows: strongly disagree (0), disagree (1), unsure (2), agree (3), strongly agree (4). The scale's smallest score is 0, while the highest value is 24. The aggregate of the scores for each item creates the overall scale score. Elevated scores on this measure indicate an increased tendency to solicit painkillers during childbirth. The scale has two sub-dimensions: Women's Perception (items 2, 3, and 5) and Social Environment (items 1, 4, and 6). Hulsbosch *et al.* reported Cronbach's alpha values of 0.78 for the women's perception sub-dimension, 0.67 for the social environment sub-dimension, and 0.75 for the overall scale score (Hulsbosch *et al.*, 2020).

### *2.5 Data analysis*

Software tools SPSS 23 and AMOS 25 were used for data analysis. The descriptive features of the sample group were evaluated numerically and as a percentage. CVI and W were used to evaluate the scale's content validity (Waltz and Bausell, 1981). Reliability was evaluated using Pearson correlation and Cronbach's alpha. Analyses of reliability included Pearson correlation and Cronbach's alpha. The data was evaluated for suitability for factor analysis using the Kaiser-Meyer-Olkin (KMO) and Bartlett's tests before factor analysis was carried out. The Pearson Product Moment Correlation Coefficient was used to assess the scale's temporal invariance. Confirmatory factor analysis was carried out when the idea validity was established.

### *2.6 Ethical approval*

Prior to the study, Hulsbosch was contacted online and written consent was obtained for the adaptation of the scale into Turkish. The necessary ethical approvals were obtained for the study. This study was approved by the Non-invasive Clinical Research Ethics Committee of a university (Report number, place and date: GO 2021/183, Burdur-Turkey, 07.04.2021). Written and oral informed consent was obtained from the participants after informing them of the purpose and importance of the study. All procedures followed national and international ethical guidelines, including the Declaration of Helsinki.

## 3. Results

### *3.1 Some characteristics of pregnant women*

Table 1 displays some demographic information about the research participants.

### *3.2 Validity results*

#### *3.2.1 Language validity*

The Kendall W test was used to assess expert assessments of the scale items. The experts were requested to provide a score between 1 and 4 to each item on the scale, evaluating its appropriateness in terms of language and scope. Upon doing an analysis of the responses from 11 experts using Kendall's W test, we found that the scale items were significantly matched with the experts' evaluations on comprehensibility, simplicity, and relational validity (Kendall's W=0.805; p=0.000).

**Table 1.**
Some characteristics of pregnant women.

| Characteristic | Mean | Standard deviation |
|---|---|---|
| Age (years) | 26.98 | 4.70 |
| | **Number** | **Percentage** |
| Education | | |
| Primary school | 32 | 35.6 |
| Middle school | 26 | 28.9 |
| High school | 17 | 18.9 |
| University | 15 | 16.7 |
| Occupation | | |
| Housewife | 52 | 57.8 |
| Worker | 30 | 33.3 |
| Officer | 8 | 8.9 |
| Place of residence | | |
| Province | 12 | 13.3 |
| District | 13 | 14.4 |
| Village | 65 | 72.2 |
| Income status | | |
| Income less than expenditure | 21 | 23.3 |
| Income equal to expenditure | 43 | 47.8 |
| Income matches expenditure | 26 | 28.9 |
| Family type | | |
| Nuclear family | 81 | 90.0 |
| Extended family | 9 | 10.0 |
| Duration of marriage | | |
| 1-6 years | 46 | 51.1 |
| 7-12 years | 44 | 48.9 |
| Intentional conception | | |
| Yes | 66 | 73.3 |
| No | 24 | 26.7 |
| Number of pregnancies | | |
| First | 8 | 8.9 |
| Second-third | 67 | 74.4 |
| Fourth and above | 15 | 16.7 |
| Baby sex | | |
| Female | 52 | 57.8 |
| Male | 38 | 42.2 |
| Total | 90 | 100 |

### *3.2.2 Construct validity - exploratory factor analysis*

This study used factor analyses to evaluate the adaption techniques and construct validity of the scale created by Hulsbosch *et al.* (2020). Prior to doing confirmatory factor analysis, exploratory factor analysis was carried out. The KMO measure, Bartlett's test, and exploratory factor analysis (EFA) were used to evaluate the scale's applicability for this research before doing the confirmatory factor analysis. While EFA resembles confirmatory factor analysis (CFA), a distinction exists between the two. Because the theory and model of the researcher conducting CFA are initially clear, EFA may not be necessary (Tabachnick and Fidell, 2007). However, studies have shown that in scale adaptation processes, it is a common method first to conduct EFA and then confirm it with CFA (Koyuncu and Kılıç, 2019).

The construct validity of the scale was assessed using KMO and Bartlett's tests. The experiments yielded a KMO score of 0.701 (exceeding 0.60), a Bartlett's test statistic of 185.446, and a significant p-value ($p<0.001$) (Table 2). The data were suitable for factor analysis.

**Table 2.**
Adequacy of the sample required analysis results (n=90).

| | | |
|---|---|---|
| **KMO - Adequacy for sample measurement value** | | 0.702 |
| **Barlett's test** | $X^2$ | 185.446 |
| | df | 15 |
| | p | 0.000 |

**Table 3.**
Exploratory factor analysis of "Labor Pain Relief Attitude Questionnaire for Pregnant Women".

| Items | Factors | | Common factor variance | Item total correlation coefficient |
|---|---|---|---|---|
| | Factor I women's perception | Factor II social environment | | |
| Item 3 | 0.885 | | 0.808 | 0.742 |
| Item 2 | 0.879 | | 0.790 | 0.769 |
| Item 5 | 0.857 | | 0.735 | 0.674 |
| Item 1 | | 0.831 | 0.691 | 0.536 |
| Item 4 | | 0.807 | 0.724 | 0.592 |
| Item 6 | | 0.706 | 0.500 | 0.439 |
| Eigenvalue | 2.363 | 1.884 | | |
| Explained variance ratio (%) = 70.78 | 39.39 | 31.39 | | |
| Cronbach's Alpha (scale total: 0.733) | 0.853 | 0.699 | | |
| Test-retest intraclass correlation coefficient (scale total: 0.868) | 0.849 | 0.812 | | |
| Factor loadings below 0.30 are not shown in the table. | | | | |

Upon confirming the data's adequacy for analysis, the scale's factor structure was assessed by principal components analysis with varimax rotation. We used Bartlett's test and the KMO test to ensure the data were sufficient prior to doing factor analysis.

Items on the scale must include just a single component and have item-test correlations of 0.30 or above, as indicated by the literature on scale creation and adaptation studies (Abell *et al.*, 2009). To include several factors, the item factor loadings must differ by a minimum of 0.10. In this context, items with loadings on two variables differing by less than 0.10 are classified as overlapping items and are removed from the scale. Additionally, exploratory component analysis considers criteria such as item eigenvalues of no less than 1, explained variance ratio, representation of the theoretical substructure under evaluation, common factor variance, and the exclusion of items that do not evaluate the same construct (Tabachnick and Fidell, 2007).

The results of the EFA conducted on the LPRAQ-p have been shown in Table 3. The studies showed that the scale was good enough to go on to further in-depth examinations; also, each item's factor loadings were 0.45 or higher, as shown in Table 3 (Büyüköztürk *et al.*, 2004). Consequently, as seen in Table 3, it was determined that the factor loadings of the scale items were within the acceptable range of values. This signifies the viability of confirmatory factor analysis. (Bandalos and Finney, 2018). A range of 0.439 to 0.769 was discovered for the item-total score correlations of the scale (Table 3). Considering that items with a value of 0.30 and above in the interpretation of the item-total score correlation are considered sufficient in terms of discriminating the trait to be measured (Büyüköztürk, 2002). There is sufficient agreement between the item-total correlations and the sub-dimensions of the scale. The exploratory factor analysis identified two sub-dimensions of the scale. The designations of these sub-dimensions were selected according to the original scale. No items on the scale were eliminated or reduced.

### 3.3 Reliability analysis

Internal Consistency Reliability Coefficient of LPRAQ-p: Cronbach's alpha, an appropriate metric for Likert-type scales, was used to evaluate the internal consistency of the scale. If the alpha coefficient of the scale is higher, it is hypothesized that the items within the scale exhibit better consistency and assess facets of the same trait. Researchers use the alpha coefficient to assess whether the scale's questions collectively represent a homogeneous structure, calculated by summing all item variances to provide a value between 0 and 1 (Akgül and Çevik, 2003). The examination of the reliability research indicated that the Cronbach's alpha coefficients for internal consistency were 0.853 for the perception of women sub-dimension, 0.699 for the social environment sub-dimension, and 0.733 for the overall scale (Table 3). The findings indicated that the scale has a high degree of internal consistency.

Test and Retest Score Correlations of LPRAQ-p: Test-retest reliability refers to a measuring instrument's ability to demonstrate stability over time and provide consistent results across various situations. The correlation between the outcomes of two applications determines test-retest reliability. The approach produces the test's repeat reliability coefficient as a correlation. The reliability of test results is often assessed using the “Pearson Product Moment Correlation Equation” since these scores are continuous variables and equal interval scales. The potential values of the correlation coefficient (r) range from zero to one. A higher correlation (r) signifies more effectiveness of the statement, whereas a lower correlation indicates the contrary. A high r value indicates that the test findings are consistent and that the quality parameters assessed at various time intervals exhibit little variation.

To evaluate the invariance of the LPRAQ-p with 90 participants across a two-week interval, we used Pearson correlation analysis and reliability analysis to examine the relationship between the outcomes of the first and subsequent test administrations. Statistical analysis indicated a robust positive connection ($p<0.01$) between the perception of women sub-dimension ($r=0.849$), the social environment sub-dimension ($r=0.812$), and the overall scale ($r=0.868$) (Table 3).

### 3.4 Confirmatory factor analysis

Subsequently, we assessed the validity of the notion by confirmatory factor analysis. Consequently, the AMOS 25 program was used to evaluate the structural fit of the items with the established factor structure. The chi-square value relative to degrees of freedom must be below 2.5 in the goodness-of-fit metrics of the scale (Doğan and Özdamar, 2017). The RMSEA value must range from 0.03 to 0.08; the NFI value should be at least 0.90; the CFI value must be no less than 0.85; the GFI value should be a minimum of 0.85; and the AGFI value must also be at least 0.85. (Akyüz, 2018).

The fit indices for the model built for the scale's two-factor structure have been shown in Table 4. All fit index values were determined to be within acceptable levels as per the research. The model's factor loadings for the perception of women sub-dimension ranged from 0.85 to 0.88, while those for the social environment sub-dimension varied from 0.70 to 0.83. The findings corroborated the LPRAQ-p's two-factor model, signifying the validity of the study results.

## 4. Discussion

The LPRAQ-p was developed by Hulsbosch *et al.* (2020), and its validity and reliability were established. The scale consisted of a total of six questions initially developed to test the distribution of responses to the scale questions and to examine the factor structures. It is an essential instrument for healthcare practitioners to comprehend pregnant women's perspectives on labor pain management. By recognizing variables that affect these views, such as psychological distress and prior experiences, practitioners may more effectively customize their support and treatments to address the needs of pregnant women throughout delivery.

In the study, when the answers given by the experts were analyzed for comprehensibility, simplicity, and relational validity of the scale items, it was determined that there was agreement between the scale items and the experts' opinions ($p=0.000$) when the answers given by 11 experts were analyzed according to W (Kendall's $W=0.805$). Kendall's W test evaluates the agreement between the measured values of the data. In Kendall's W test, the values are 0 (no agreement) and 1 (complete agreement). As the value approaches 1, it indicates that the agreement between experts is increasing, and a common consensus is reached. According to the results of this study, the experts reached a consensus on the scale items.

Factor analysis is a method that helps to reveal the real reasons behind a large number of measurable and observable characteristics, that is, hidden dimensions that cannot be observed and measured (Saracli, 2011). According to Saraçlı, although there is no significant difference in the statistical data of Varimax and Equamax rotation methods, there is a complete fit (Tabachnick and Fidell, 2007). In this study, Principal Components Analysis and Varimax Rotation methods were applied to assess the construct validity of the scale.

The item-total score correlations for the scale's subdimensions varied from 0.439 to 0.769, and their consistency was considered satisfactory based on the criteria for evaluating item-total score correlations. Values of 0.30 and higher are considered adequate for differentiating the measured characteristic. This research's exploratory factor analysis divided the scale into two components, yielding findings that aligned with those of the scale developed by Hulsbosch *et al.* (2020). The factor analysis findings indicated a minimum variance value of 0.50, above the 0.40 threshold. Consequently, the scale included two sub-dimensions consistent with the original, and there was no removal or decrease of scale elements.

To calculate Cronbach's alpha, divide the total variance of the scale by the sum of the variances of the items; this yields the weighted standardized mean of the items' variances. Each item on the scale may possess an individual Cronbach's alpha value, or the scale may collectively have an average value. The overall reliability of the questionnaire is shown by the Cronbach's alpha value obtained for each item. Generally, readings of 0.70 and above are deemed acceptable (Kilic, 2016). Reliability is considered sufficient when Cronbach's alpha ranges from 0.60 to 0.70 and exceptional when it falls between 0.70 and 0.80. A Cronbach's alpha around 1 indicates a substantial degree of internal consistency among the scale's components (Field, 2013). Defective measuring instruments, such as scales with low reliability coefficients, are incapable of reliably yielding identical results across all measurements. To consider test findings credible, the reliability coefficient generally must be 0.70 or above (Devon *et al.*, 2007).

The scale's reliability in the study was assessed using Cronbach's alpha values: 0.853 for the perception of women subscale, 0.699 for the social environment subscale, and 0.733 for the total scale score. Hulsbosch *et al.* (2020) found that the scale as a whole had a Cronbach's Alpha of 0.75, with the subscale evaluating social surroundings having a value of 0.67 and the subscale measuring perceptions of women having a value of 0.78. In all research, the subscale evaluating social environment demonstrated good reliability (>0.60), whereas the subscale measuring women's views and the total scale score showed high reliability (>0.70). The results of both studies demonstrate that the scale was very consistent with itself. The results of the research demonstrate that the Turkish version of the scale is valid and reliable.

One of the most frequently used methods in validity and reliability analysis is the test-retest method (Devon *et al.*, 2007). In the study, when the compatibility between the mean test-retest scores of the scale's perception of women's sub-dimension, social environment sub-dimension, and the total scale was examined, a positive, strongly significant relationship was found ($r=0.849$, $r=0.812$, $r=0.868$,

**Table 4.**
Fit indices for confirmatory factor analysis.

| | $\chi^2$ | p | CMIN/df | RMSEA | CFI | AGFI | NNFI | GFI |
|---|---|---|---|---|---|---|---|---|
| Labor pain relief attitude questionnaire for pregnant women | 10.281 | 0.246 | 1.285 | 0.057 | 0.987 | 0.903 | 0.946 | 0.903 |

CMIN: Minimum discrepancy chi-square ($\chi^2$), df: degrees of freedom, RMSEA: Root mean square error of approximation, CFI: Comparative fit index, AGFI: Adjusted goodness of fit index, NNFI: Non-normed fit index, GFI: Goodness of fit index

respectively; p<0.01). This result shows that the scale is not affected by time and always measures the same situation, even if time passes.

In the study, the item-total correlation coefficients of the scale ranged from r=0.85-0.88 for the perception of women subscale and r=0.70-0.83 for the social environment subscale. “In the literature, it is stated that the reliability of items with a coefficient less than 0.50 should be doubted, and in some sources, it is stated that this coefficient should be above 0.30, but most researchers consider 0.20 as the limit (Aksoy *et al.*, 2019).” In this framework, in our study, since the correlation coefficients of the scale items were above 0.20, no item was discarded from the scale, and the scale was found to be compatible with the two-factor model.

Pain during labor is a physiological event. However, when labor pain cannot be controlled, a vicious cycle of fear, anxiety, and pain is formed, negatively affecting the health of the mother, fetus, and newborn, and the progress of labor. Failure to control labor pain causes pregnant women to perceive labor negatively, have negative experiences with labor, and decrease their satisfaction. Another negative effect of pain during labor is that fear of labor and labor pain leads women to have a cesarean section of their own accord. The rates in our country are quite high compared to the cesarean rates included in the World Health Organization and Mother-Friendly Hospital Practice criteria. At this point, it is very important to provide antenatal care to pregnant women and control labor pain in order to control the rates of elective cesarean sections (Gönenç and Terzioğlu, 2020; Taşkın, 2024; Fenwick *et al.*, 2010).

Pharmacological methods used to reduce labor pain cause some unwanted complications in the mother. They may also reach the fetus via the placenta. These include the mother not being able to participate in labor, not remembering what happened during labor, and increasing labor costs in terms of the country's economy (Gönenç and Terzioğlu, 2020; Ertem and Sevil, 2005).

Based on all these results, the validity and reliability study of LPRAQ-p, which was conducted in our country, will contribute to the determination of the attitudes of pregnant women regarding the use of pharmacological methods in labor pain. Thus, the management of labor pain will be facilitated by providing education and counseling to pregnant women on the subject. Relieving labor pain will positively affect mother and baby health by ensuring that pregnant women have a positive birth experience, tend towards normal birth, and reduce the cesarean section rates in our country.

## 5. Conclusion and Recommendations

The findings of this research indicate that the Turkish LPRAQ-p is a valid and dependable instrument. The scale's cultural and linguistic suitability was ensured by a comprehensive translation procedure, and its psychometric features were validated by statistical analysis. The two-factor structure effectively reflects pregnant women's perspectives on labor pain management, maintaining its original shape. The study of internal consistency, shown by Cronbach's alpha values between 0.699 and 0.853, affirmed the scale's reliability, while test-retest correlations validated its temporal stability. The Turkish version of the LPRAQ-p is an effective instrument for evaluating pregnant women's perceptions of labor pain alleviation in Turkey. The use of such equipment in maternal healthcare may enhance the identification and treatment of women requiring more help during labor via personalized programs.

Researchers studying pregnancy and childbirth are hoping to benefit from the scale. However, housewives from rural regions made up the bulk of the study's respondents. This meant that the research could not provide a full picture of Turkish pregnant women. The results suggest the need for a bigger sample size and more diverse demographics in future research.

## CRediT authorship contribution statement

**E. Ç. Ak, N. Bakir and S. U. Yamaç:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Declaration of Generative AI and AI-assisted technologies in the writing process

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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