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ORIGINAL RESEARCH

Psychometric Validation of a Patient-Reported Measure of Pregnancy and Motherhood Experiences in Turkish Women with Physical Disabilities

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Objective: Women with physical disabilities experience distinct physical, psychological, and social challenges during pregnancy and motherhood, yet culturally appropriate and psychometrically validated patient-reported outcome measures remain limited. The Pregnancy and Motherhood Evaluation Questionnaire (PMEQ) was developed to address this gap. No validated instrument currently captures these experiences in the Turkish context. This study aimed to translate, culturally adapt, and comprehensively validate the PMEQ for use in the Turkish population.

Methods: The PMEQ was translated and culturally adapted in line with internationally accepted cross-cultural adaptation procedures for self-report instruments, including forward–backward translation, expert review, and cognitive debriefing. The study included 160 Turkish women with chronic physical disabilities who had experienced pregnancy and early motherhood. Internal consistency was assessed using Cronbach's alpha and McDonald's omega. Construct validity was examined using exploratory and confirmatory factor analyses, and test–retest reliability was evaluated over a 10-day interval using intraclass correlation coefficients (ICCs).

Results: The Turkish PMEQ demonstrated excellent internal consistency (Cronbach's $\alpha = 0.90$; $\omega = 0.92$). Exploratory factor analysis identified a four-factor structure explaining 64.1% of the total variance. Confirmatory factor analysis supported this structure, showing good model fit ($\chi^2/df = 2.1$, RMSEA = 0.056, CFI = 0.94, TLI = 0.91, SRMR = 0.045). Test–retest reliability was high, with ICCs ranging from 0.79 to 0.86 across subscales and 0.88 for the total score. The factor structure was consistent with the original PMEQ framework.

Conclusion: The Turkish version of the PMEQ is a valid and reliable patient-reported outcome measure for assessing pregnancy and motherhood experiences among women with physical disabilities. This study provides the first culturally validated tool for this population in Turkey, addressing a critical gap in disability-inclusive maternal health assessment.

Keywords: pregnancy and motherhood, disability, psychometric validation, cross-cultural adaptation, Turkish

Introduction

Motherhood is widely acknowledged as a transformative life experience, encompassing a spectrum of physiological, psychological, and sociocultural changes. While this transition often brings a sense of fulfillment, it is also associated with elevated emotional demands and vulnerability to mental health challenges, including stress, anxiety, and depression, particularly during pregnancy and the early postpartum period.[1,2] These multidimensional changes directly influence women's health-related quality of life and subjective well-being during the perinatal period. The assessment of maternal well-being during this time is therefore critical not only for the health of the mother but also for neonatal outcomes, infant bonding, and long-term child development.[3]

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Despite growing awareness, the majority of research and clinical practices around maternal health remain focused on nondisabled women, resulting in a substantial knowledge and service gap for individuals with chronic physical disabilities.[4,5] Physical disabilities encompass a heterogeneous group of conditions affecting mobility, neuromuscular function, or musculoskeletal integrity, including spinal cord injury, multiple sclerosis, and rheumatic disorders, which may significantly influence pregnancy and motherhood experiences. Women with mobility impairments often experience restricted access to reproductive care, attitudinal and physical barriers in healthcare environments, and insufficient emotional support throughout the perinatal period.[6,7] These challenges not only compromise their autonomy and decision-making capacity but may also exacerbate psychological distress, ultimately reducing their quality of life and parenting satisfaction.[7] From a patient-reported outcome perspective, these barriers represent undermeasured determinants of maternal health and well-being, particularly in populations with a substantial epidemiological burden. According to recent national data, approximately 6.9% of the population in Turkey lives with at least one form of disability, highlighting the substantial size of this underrepresented group in maternal health research.[8]

Assessment tools that fail to consider these unique experiences can be inappropriate or even harmful when applied to women with disabilities. Existing instruments used to evaluate maternal functioning or psychosocial outcomes during pregnancy—such as those measuring maternal role adaptation, depression, anxiety, or health-related quality of life—were primarily developed in able-bodied populations from Western high-income countries.[4] In the Turkish context, several instruments such as the Wijma Delivery Expectancy/Experience Questionnaire and the Pregnancy Experience Scale have been adapted and validated; however, these tools are not designed to capture disability-specific maternal experiences.[9] When used in cross-cultural or disability-inclusive contexts without adaptation, such tools may yield misleading results due to linguistic differences, cultural mismatches in expectations of motherhood, or structural inequities in healthcare access.[10] This limitation underscores the need for disability-sensitive, patient-reported outcome measures that capture lived experiences relevant to health-related quality of life.

The Pregnancy and Motherhood Evaluation Questionnaire (PMEQ) was specifically designed to address these limitations by offering a disability-informed framework for evaluating maternal experiences. Developed by Panuccio et al (2022), the PMEQ captures four interrelated dimensions: physical and emotional impact, maternal role competence, social support and stigma, and access to care. It is brief, self-administered, and structured to be accessible to women with various physical impairments.[11] As a patient-reported instrument, the PMEQ enables the systematic assessment of subjective experiences that are central to health-related quality of life in the context of pregnancy and motherhood. While the original PMEQ demonstrated a multidimensional factor structure with satisfactory internal consistency and content validity, its psychometric properties have not been evaluated across different cultural contexts.

Cultural adaptation is essential to ensure semantic, conceptual, and technical equivalence of psychometric tools when used in diverse populations.[12,13] This process is particularly important in Turkey, where maternal roles are shaped by a complex interplay of traditional family expectations, evolving gender norms, and structural disparities in disability rights. Recent reports indicate that women with disabilities in Turkey face persistent inequalities in access to reproductive health services, including physical accessibility barriers, limited provider awareness, and insufficient tailored care pathways, all of which may negatively impact health-related quality of life.[4,8] Although recent health reforms in Turkey have improved access to antenatal services, women with physical disabilities remain largely underserved in both research and practice domains.[14] The absence of culturally adapted patient-reported measures limits the accurate evaluation of maternal health-related quality of life in this population. Importantly, no validated tool currently exists in Turkish to evaluate the pregnancy and motherhood experiences of women with mobility impairments.

Furthermore, psychometric adaptation studies often stop at preliminary steps—such as translation and internal consistency analysis—without addressing test-retest reliability or structural validity through confirmatory factor analysis.[15,16] The absence of longitudinal reliability data and model-based validation limits the interpretability and generalizability of such tools in real-world clinical settings. For patient-reported outcome measures, comprehensive psychometric evaluation is essential to ensure measurement precision, temporal stability, and construct validity across different cultural and clinical contexts.[17]

In this context, the present study aimed to translate and culturally adapt the PMEQ into Turkish and to conduct a comprehensive psychometric validation among Turkish women with chronic physical disabilities who had experienced

pregnancy and early motherhood. This validation included internal consistency, exploratory and confirmatory factor analyses, and test-retest reliability over a 10-day interval. By positioning the PMEQ as a patient-reported outcome measure, the study specifically addresses gaps in the assessment of health-related quality of life and maternal experiences in disability-inclusive perinatal care. This is the first study to provide a full validation of the PMEQ in a non-English language and cultural context, and the first to offer comprehensive psychometric evidence for its use among women with physical disabilities during the perinatal period.

By addressing both methodological rigor and sociocultural relevance, this study contributes to the growing literature on inclusive maternal health assessment and advances the availability of validated patient-reported outcome tools for evaluating health-related quality of life in underserved maternal populations, offering a practical instrument for use in clinical services, public health monitoring, and future disability-focused perinatal research.

Methods

Study Design and Ethical Considerations

This methodological study was conducted to translate, culturally adapt, and perform a full psychometric validation of the PMEQ for use among Turkish-speaking women with chronic physical disabilities. The study was designed in accordance with best-practice recommendations for the development and validation of patient-reported outcome measures. The study was carried out at Kayseri City Hospital, a tertiary care institution serving a wide and demographically diverse population. Ethical approval was obtained from the Ethics Committee of Kayseri University (Approval No: 185/2024), and all procedures were conducted in accordance with the Declaration of Helsinki. Informed consent was obtained from each participant before data collection commenced. Confidentiality and anonymity were ensured through de-identified coding.

Participants

The study sample consisted of 160 women aged between 18 and 50 years, all of whom had a confirmed diagnosis of a chronic physical disability prior to pregnancy. Participants were recruited through purposive sampling from the hospital's outpatient rehabilitation and obstetrics clinics. Inclusion criteria included the ability to read and write Turkish, completion of at least one pregnancy and early motherhood experience within the past ten years, and no ongoing pregnancy at the time of the study. Common diagnoses included spinal cord injury, multiple sclerosis, and rheumatic diseases. Women with intellectual disabilities, major psychiatric diagnoses, or severe sensory impairments were excluded to ensure cognitive compatibility with the self-report format of the questionnaire. These criteria were applied to ensure the reliability and interpretability of patient-reported responses.

The sample size was determined based on established recommendations for factor analysis, which suggest a minimum of 5–10 participants per item. Given that the PMEQ consists of 31 items, a minimum sample of 155 participants was considered adequate. Therefore, the inclusion of 160 participants ensured sufficient statistical power and stability for both exploratory and confirmatory factor analyses.

All participants completed the PMEQ twice, with a 10-day interval between the two administrations to allow for test-retest reliability analysis.

Instrument

The PMEQ is a 31-item, self-administered scale developed to assess the multidimensional experiences of pregnancy and motherhood in women with chronic physical disabilities. Each item is rated on a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"), with higher scores indicating more favorable perceptions. As a patient-reported outcome measure, the PMEQ captures subjective perceptions related to physical, emotional, and social dimensions of maternal health. The questionnaire consists of four conceptual subscales: Physical and Emotional Impact, Maternal Role Competence, Social Support and Stigma, and Access to Care.[11] The original PMEQ demonstrated a multidimensional factor structure with satisfactory internal consistency and content validity; however, its psychometric properties have not been evaluated across different cultural and linguistic contexts.

Translation and Cross-Cultural Adaptation

The translation and cultural adaptation process of the PMEQ into Turkish followed internationally endorsed guidelines for cross-cultural instrument adaptation. The objective was to achieve semantic, conceptual, and experiential equivalence while preserving the measurement properties of the original patient-reported instrument. First, two independent native Turkish-speaking translators produced separate forward translations—one with a healthcare background and the other with expertise in linguistics. These versions were synthesized into a single reconciled draft by the research team. Next, two bilingual native English speakers, blinded to the original scale, independently conducted back-translations. A multidisciplinary expert panel including professionals in obstetrics, rehabilitation, psychology, and psychometrics evaluated all versions to assess semantic, idiomatic, experiential, and conceptual equivalence. The resulting pre-final version was tested in cognitive interviews with 10 women from the target population. This step ensured the clarity, relevance, and comprehensibility of items from the respondent's perspective. Feedback from this phase informed minor adjustments in wording and phrasing, resulting in the finalized Turkish PMEQ. The entire process is summarized in a flow diagram (Figure 1).

Data Collection Procedure

Sociodemographic and clinical information was gathered using a structured questionnaire designed by the research team, covering variables such as age, marital status, education, employment, type of disability, number of children, and use of assistive devices. Participants completed the Turkish PMEQ in either paper-based or secure online format, depending on their preference and accessibility needs. Multiple administration formats were used to minimize respondent burden and improve data completeness. The test-retest phase was conducted by re-administering the scale under identical conditions after a mean interval of 10 days (range: 7–14 days). This interval was selected to balance the risk of recall bias and the

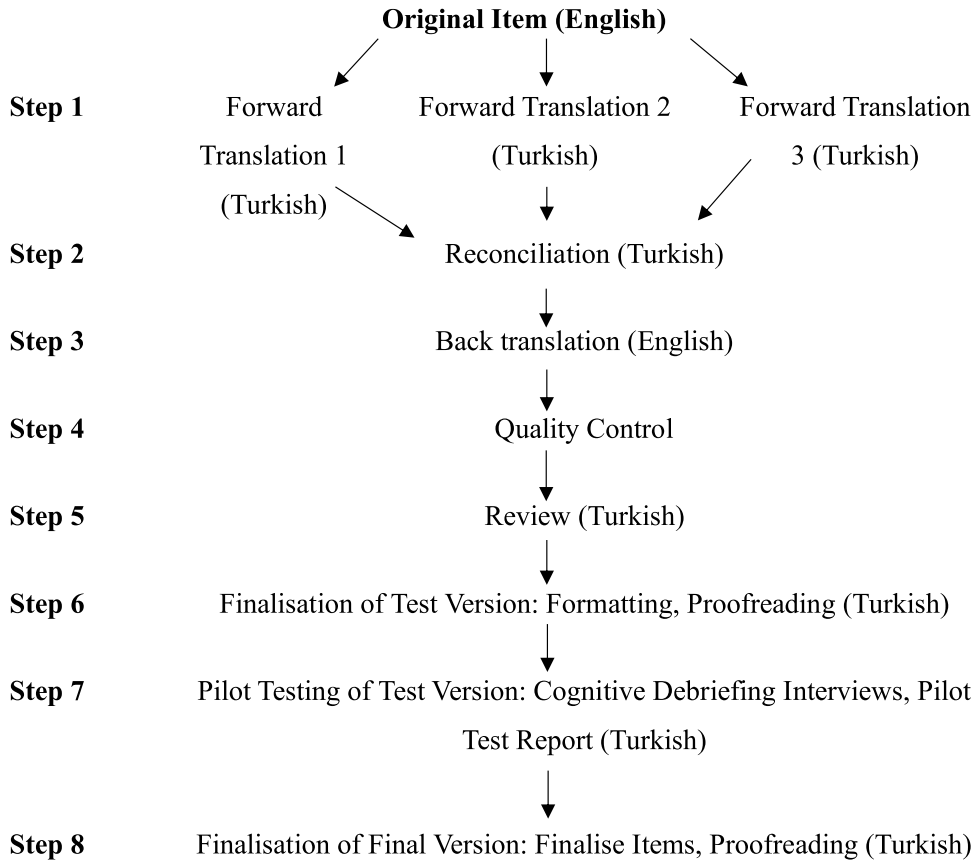

Figure 1 Translation and Cultural Adaptation Process of the PMEQ into Turkish.

likelihood of true clinical change, in line with recommendations for reliability assessment in patient-reported outcome measures. Unique coded identifiers were used to match responses while preserving participant anonymity.

Statistical Analysis

All statistical analyses were performed using IBM SPSS Statistics version 26.0 and AMOS version 24.0. Descriptive statistics, including means, standard deviations, skewness, and kurtosis values, were computed for all PMEQ items to evaluate response distribution and detect potential floor or ceiling effects. Normality assumptions were assessed using skewness and kurtosis values within the acceptable range of ±1, supporting the use of parametric statistical methods. Internal consistency was assessed using both Cronbach's alpha and McDonald's omega coefficients; values of 0.70 or higher were considered acceptable in accordance with established psychometric standards. Test-retest reliability was evaluated using ICCs based on a two-way mixed-effects model with absolute agreement. This model was selected to quantify the temporal stability of patient-reported scores. ICC values were interpreted according to standard benchmarks: values above 0.75 were considered good, and values above 0.90 were considered excellent.

Construct validity was examined in two stages. Although the PMEQ has an established theoretical structure, exploratory factor analysis (EFA) was conducted to evaluate the dimensional structure within the Turkish cultural context, as recommended in cross-cultural validation studies. EFA was performed using principal component analysis with varimax rotation. Principal component analysis was used as an extraction method, as commonly recommended in initial exploratory psychometric evaluations.[16] The total sample was randomly divided into two equal subsamples (n = 80 for EFA and n = 80 for CFA) to enhance methodological rigor and reduce the risk of overfitting. Sampling adequacy was verified with the Kaiser–Meyer–Olkin (KMO) test, and the factorability of the correlation matrix was assessed using Bartlett's Test of Sphericity. A four-factor solution was retained based on eigenvalues greater than 1 and visual inspection of the scree plot. CFA was subsequently performed using AMOS to evaluate model fit for the four-factor structure. Fit indices included chi-square per degree of freedom (χ^2/df), root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker–Lewis index (TLI), and standardized root mean square residual (SRMR). Acceptable model fit was defined as $\chi^2/df < 3$, RMSEA < 0.08, CFI and TLI ≥ 0.90, and SRMR < 0.08, in accordance with recommended thresholds in structural equation modeling literature. To further explore the scale's discriminant validity, Pearson correlation coefficients were calculated between subscales. Pearson correlation was preferred due to the approximately normal distribution of the data and the continuous nature of the scale scores. Convergent validity could not be assessed due to the absence of a comparable validated instrument for women with physical disabilities in the Turkish context and was therefore considered a methodological limitation of the study. Item-level standardized factor loadings obtained from CFA are provided in the Supplementary Material.

Results

A total of 160 Turkish women with chronic physical disabilities participated in the study. The mean age was 35.8 years (SD = 7.1), and most participants were married (68.1%) and had at least a secondary school education (59.4%). The majority had one or two children (mean = 1.7, SD = 0.8), and all had completed at least one full-term pregnancy within the last 10 years. The most common diagnoses were spinal cord injury (30.6%), multiple sclerosis (25.6%), and rheumatic diseases (23.1%). All participants used mobility aids, and 88.7% reported attending prenatal care during their pregnancy. All 160 participants completed the initial assessment, and no missing data were observed for the PMEQ items. Additionally, all participants completed the retest assessment within the specified time interval, ensuring complete data availability for reliability analysis. These characteristics indicate a clinically relevant and heterogeneous sample suitable for patient-reported outcome validation. Full participant characteristics are presented in Table 1.

Descriptive statistics and factor loadings for all 31 items of the Turkish PMEQ are presented in Table 2. Item means ranged from 3.31 to 4.17, with standard deviations between 0.49 and 0.93. Skewness and kurtosis values were within acceptable ranges (±1), indicating approximately normal distributions. These distributional properties support the appropriateness of parametric psychometric analyses. No floor or ceiling effects were observed, suggesting adequate response variability across items. Exploratory factor analysis revealed item loadings between 0.42 and 0.83 across the

Table 1 Demographic Characteristics of Participants

Variable	Value
Age (years)	35.8 ± 7.1
Marital Status (Married)	109 (68.1%)
Education (≥ Secondary)	95 (59.4%)
Number of Children	1.7 ± 0.8
Spinal Cord Injury	49 (30.6%)
Multiple Sclerosis	41 (25.6%)
Rheumatic Diseases	37 (23.1%)
Use of Mobility Aid	160 (100%)
Attended Prenatal Care	142 (88.7%)

Notes: Mean ± SD for continuous variables; n (%) for categorical variables.

Table 2 Item Statistics and Factor Loadings

Item	Mean	SD	Skewness	Kurtosis	Factor Loading
Item 1	3.63	0.56	−0.19	0.45	0.57
Item 2	4.15	0.51	−0.45	0.67	0.81
Item 3	3.95	0.90	−0.49	0.37	0.72
Item 4	3.83	0.91	−0.35	0.40	0.67
Item 5	3.44	0.84	−0.57	0.30	0.48
Item 6	3.44	0.62	−0.20	−0.12	0.48
Item 7	3.35	0.53	−0.60	−0.03	0.44
Item 8	4.07	0.79	−0.10	−0.11	0.78
Item 9	3.84	0.68	−0.22	0.53	0.67
Item 10	3.93	0.54	−0.54	0.18	0.71
Item 11	3.31	0.70	−0.64	0.39	0.43
Item 12	4.17	0.50	−0.20	0.82	0.82
Item 13	4.04	0.89	−0.26	0.11	0.76
Item 14	3.49	0.60	−0.24	0.28	0.51
Item 15	3.46	0.78	−0.22	0.65	0.49
Item 16	3.46	0.62	−0.60	0.09	0.5
Item 17	3.57	0.71	−0.45	−0.06	0.54
Item 18	3.77	0.73	−0.58	0.16	0.64
Item 19	3.68	0.57	−0.17	0.02	0.6

(*Continued*)

Table 2 (Continued).

Item	Mean	SD	Skewness	Kurtosis	Factor Loading
Item 20	3.56	0.91	−0.30	0.84	0.54
Item 21	3.85	0.83	−0.46	0.71	0.67
Item 22	3.42	0.90	−0.61	0.52	0.48
Item 23	3.56	0.88	−0.47	0.78	0.54
Item 24	3.62	0.75	−0.47	0.70	0.57
Item 25	3.71	0.89	−0.24	0.04	0.61
Item 26	4.00	0.52	−0.29	0.80	0.74
Item 27	3.47	0.57	−0.16	0.42	0.5
Item 28	3.76	0.50	−0.39	0.71	0.63
Item 29	3.83	0.63	−0.58	0.80	0.66
Item 30	3.34	0.66	−0.25	0.19	0.44
Item 31	3.84	0.60	−0.23	−0.03	0.67

Notes: Descriptive analysis (mean, SD, skewness, and kurtosis) for item-level. Exploratory factor analysis (EFA) with varimax rotation for factor loadings.

four underlying constructs, supporting item alignment with the theoretical structure of the original PMEQ. Overall, item-level results demonstrated satisfactory measurement performance at the individual item level.

As shown in Table 3, the Turkish PMEQ demonstrated excellent internal consistency, with a Cronbach's alpha of 0.90 and McDonald's omega of 0.92 for the total scale. Subscale alpha values ranged from 0.79 to 0.86, and omega values ranged from 0.80 to 0.87. These findings indicate strong internal reliability of the patient-reported outcome measure across all domains. The test–retest reliability, evaluated over a 10-day interval in all 160 participants, was also strong. ICCs ranged from 0.79 to 0.86 across subscales, and the total ICC reached 0.88, reflecting excellent temporal stability. This level of stability supports the consistency of self-reported scores over time.

Exploratory factor analysis confirmed the presence of four interpretable factors aligned with the theoretical structure of the original PMEQ, each representing a unique psychosocial dimension of pregnancy and motherhood among women with disabilities. These four factors—Physical and Emotional Impact, Maternal Role Competence, Social Support and Stigma, and Access to Care—explained 64.1% of the total variance. Factor loadings ranged from 0.42 to 0.83 across subscales, indicating adequate representation of each latent construct by its corresponding items. Confirmatory factor analysis further supported this structure. Standardized factor loadings ranged between 0.52 and 0.84, indicating adequate

Table 3 Combined Reliability and Test-Retest Table

Subscale	Cronbach's Alpha	McDonald's Omega	Test-Retest ICC
Physical and Emotional Impact	0.86	0.87	0.86
Maternal Role Competence	0.84	0.85	0.83
Social Support and Stigma	0.81	0.83	0.81
Access to Care	0.79	0.8	0.79
Total Scale	0.9	0.92	0.88

Notes: Cronbach's alpha and McDonald's omega coefficients for internal consistency. Intraclass correlation coefficient (ICC) for test-retest reliability.

Table 4 Construct Validity – EFA and CFA Summary

Factor	Construct	Variance Explained (%)	Factor Loading Range
Factor 1	Physical and Emotional Impact	22.4	0.51–0.83
Factor 2	Maternal Role Competence	17.1	0.52–0.78
Factor 3	Social Support and Stigma	13.2	0.42–0.76
Factor 4	Access to Care	11.4	0.42–0.74
CFA Model Fit	χ^2/df = 2.1, RMSEA = 0.056, CFI = 0.94, TLI = 0.91, SRMR = 0.045		

Notes: EFA for underlying factor structure. CFA for maximum likelihood estimation. Model fit was evaluated via χ^2/df, RMSEA, CFI, TLI, and SRMR indices.

Table 5 Inter-Subscale Correlation Matrix

Subscale	PEI	MRC	SSS	AC
PEI	1.0	0.71	0.6	0.55
MRC	0.71	1.0	0.58	0.5
SSS	0.6	0.58	1.0	0.62
AC	0.55	0.5	0.62	1.0

Notes: Pearson's correlation analysis for linear associations between subscales. All p-values were set at a significance threshold of $p < 0.001$.
Abbreviations: PEI, Physical and Emotional Impact; MRC, Maternal Role Competence; SSS, Social Support and Stigma; AC, Access to Care.

item representation within their respective latent constructs. Detailed item-level standardized loadings are presented in Supplementary Table S1. CFA yielded satisfactory model fit indices: χ^2/df = 2.1, RMSEA = 0.056, CFI = 0.94, TLI = 0.91, and SRMR = 0.045. These indices indicate good model fit and support the structural validity of the patient-reported outcome measure. Detailed results are presented in Table 4.

Pearson correlation coefficients between subscales ranged from 0.50 to 0.71, as shown in Table 5. The strongest association was found between the Physical and Emotional Impact and Maternal Role Competence subscales (r = 0.71), suggesting shared variance in emotional adaptation and perceived maternal self-efficacy. All correlations were statistically significant ($p < 0.001$), and no excessively high values suggested multicollinearity or conceptual redundancy. These findings support the multidimensional structure of the PMEQ while confirming that each domain captures a distinct aspect of the maternal experience.

Discussion

This study presents the cross-cultural adaptation and comprehensive psychometric evaluation of the PMEQ for use among Turkish-speaking women with physical disabilities. The findings indicate that the Turkish version of the PMEQ is both a reliable and valid instrument, exhibiting strong internal consistency, robust test-retest reliability, and an interpretable four-factor structure consistent with the original theoretical domains. By positioning the PMEQ as a patient-reported outcome measure, these findings directly contribute to the assessment of health-related quality of life during pregnancy and early motherhood. This research responds to a critical gap in maternal health measurement—namely, the lack of inclusive tools designed for women with disabilities, whose perspectives have long been overlooked in reproductive health discourse.[5,18,19]

The translation and adaptation of the PMEQ adhered strictly to established guidelines,[20,21] including dual forward and backward translation, expert panel review, and cognitive debriefing interviews. These steps ensured both semantic equivalence and conceptual alignment. Importantly, the inclusion of lived experiences from disabled mothers during

the adaptation phase enhanced the tool's face and content validity. Several items required contextual modifications to reflect barriers in Turkey's maternal care system—for instance, transportation-related access issues or negative provider attitudes—yet the core constructs remained intact. This approach supports the interpretability of patient-reported responses within the local sociocultural and healthcare context. This is congruent with other studies demonstrating the importance of culturally sensitive instrument adaptation, especially in underserved populations.[22–24]

The Turkish PMEQ exhibited strong internal consistency, with Cronbach's alpha values ranging from 0.79 to 0.86 and McDonald's omega values from 0.80 to 0.87 across all subscales. These findings align with psychometric norms for health-related quality-of-life measures and parallel those from similar instruments such as the Maternal Adjustment and Maternal Attitudes Questionnaire[25] and the Parenting Stress Index.[26] Furthermore, the study adds to the literature by including a full-sample test-retest reliability assessment, which showed high intraclass correlation coefficients (0.79–-0.88) after a 10-day interval. Such temporal stability is a key requirement for patient-reported outcome measures intended for both clinical monitoring and research applications. Such comprehensive reliability testing is uncommon in validation studies involving disabled populations and lends confidence to the instrument's stability.

Both EFA and CFA supported the Turkish PMEQ's four-domain structure: (1) Physical and Emotional Impact, (2) Maternal Role Competence, (3) Social Support and Stigma, and (4) Access to Care. The EFA explained 64.1% of total variance, and factor loadings ranged between 0.42 and 0.83, suggesting coherent and distinct item-groupings. CFA yielded satisfactory model fit indices (χ^2/df = 2.1, RMSEA = 0.056, CFI = 0.94, TLI = 0.91, SRMR = 0.045), consistent with Hu and Bentler's (1999) recommended thresholds.[27] Together, these findings provide strong evidence supporting the structural validity of the PMEQ within the Turkish population. The consistency between the observed factor structure and the original conceptual framework further supports the cross-cultural applicability of the instrument.

This study represents the first comprehensive cross-cultural validation of the PMEQ in a non-English-speaking population and the first validated patient-reported outcome measure specifically designed to assess pregnancy and motherhood experiences among women with physical disabilities in Turkey. By addressing both psychometric rigor and contextual relevance, these findings extend the applicability of the PMEQ beyond its original setting and contribute to the growing field of disability-inclusive maternal health research.

The Turkish PMEQ may facilitate the systematic assessment of health-related quality of life and care accessibility among women with physical disabilities. In global maternal health research, disability remains an under-prioritized determinant despite robust evidence linking it to adverse prenatal and postnatal outcomes.[4,28] In Turkey, national maternal health surveillance often fails to include or disaggregate disability-specific indicators. By providing a validated patient-reported outcome measure, the PMEQ may serve as a useful data-gathering tool to better understand these disparities and may inform the development of more equitable, disability-aware perinatal care strategies.

Moreover, this tool may provide clinicians, midwives, and social workers with a structured approach to assess not only biomedical risks but also psychosocial, emotional, and systemic dimensions of pregnancy. Such multidimensional assessment aligns with contemporary models of patient-centered care and health-related quality-of-life evaluation. Its comprehensive nature aligns with WHO's emphasis on person-centered, respectful maternity care and may inform quality-of-care benchmarks in both public and private healthcare settings.[29,30]

A key strength of this study is its comprehensive methodology, which combines rigorous translation procedures with advanced psychometric analyses including EFA, CFA, and test-retest reliability—all applied to a targeted and clinically relevant population. Additionally, the inclusion of cognitive interviews enhances the tool's cultural sensitivity and user relevance. The incorporation of both internal consistency and temporal stability analyses strengthens the evidence base for use of the PMEQ as a patient-reported outcome measure.

However, several limitations must be acknowledged. First, the sample size—while sufficient for factor analysis—was limited to women with mobility-related disabilities and may not generalize to women with sensory, intellectual, or multiple disabilities. Second, convergent and discriminant validity could not be established due to the absence of a comparable validated Turkish tool. Third, the study's cross-sectional design precludes inferences about predictive validity or longitudinal responsiveness to clinical changes, such as improvements following interventions. These limitations should be considered when interpreting the scope of health-related quality-of-life inferences drawn from the PMEQ.

Finally, the study relied on self-report data, which may introduce recall or social desirability biases, although anonymity and clear instructions were employed to mitigate these effects. Such limitations are inherent to patient-reported outcome research and should be balanced against the value of capturing subjective lived experiences.

Conclusion

This study provides evidence supporting the cultural validity and psychometric robustness of the Turkish version of the Pregnancy and Motherhood Evaluation Questionnaire (PMEQ) among women with physical disabilities. The comprehensive validation process indicates that the Turkish PMEQ is a reliable, multidimensional patient-reported outcome measure capable of capturing key domains of pregnancy and motherhood experiences.

By enabling standardized assessment of physical, emotional, social, and access-related dimensions of maternal health, the Turkish PMEQ contributes to health-related quality-of-life measurement in an underrepresented population. Future studies should examine its responsiveness over time and extend validation to other disability groups.

Use of Artificial Intelligence

No artificial intelligence tools were used in the design, data collection, analysis, or interpretation of this study. AI-assisted tools were used solely for language editing and improving the clarity of the manuscript.

Abbreviations

PMEQ, Pregnancy and Motherhood Evaluation Questionnaire; EFA, Exploratory Factor Analysis; CFA, Confirmatory Factor Analysis; SD, Standard Deviation; KMO, Kaiser–Meyer–Olkin Measure of Sampling Adequacy; SPSS, Statistical Package for the Social Sciences; ICC, Intraclass Correlation Coefficient; RMSEA, Root Mean Square Error of Approximation; CFI, Comparative Fit Index; TLI, Tucker–Lewis Index.

Data Sharing Statement

The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Ethics Approval and Consent to Participate

Ethical approval for this study was obtained from the Kayseri University Ethics Committee (Approval number: 185/2024). All participants were informed about the purpose and procedures of the study both orally and in writing. Written informed consent was obtained from all participants prior to their inclusion in the study. Confidentiality and anonymity of participant data were ensured throughout the study in compliance with the Declaration of Helsinki.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare that they have no competing interests.

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