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Psychometric evaluation of the women's perception of respectful maternity care scale Turkish version

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ABSTRACT

This study aimed to assess the validity and reliability of the Turkish version of the Women's Perception of Respectful Maternity Care Scale. This methodological, cross-sectional study was conducted between December 2020 and July 2021. The sample of the study consisted of 259 women who had vaginal birth and gave birth to a healthy baby with normal birth weight. Data analysis and evaluation were performed using factor analysis, Cronbach's alpha, split-half, item-total score correlation, Hotelling T^2, Tukey's test and ceiling and floor effect of the scale. The scale consists of 19 items and three sub-dimensions. The scales explained 76.04 percent of the total variance. In both exploratory and confirmatory factor tests, the overall factor loading was greater than 0.30. In the confirmatory factor analysis, all the goodness-of-fit indexes were greater than 0.90, and the root mean square error of approximation was less than 0.08. The Cronbach's alpha coefficient of the scale was 0.96, with Cronbach's alpha values ranging between 0.88 and 0.95 for the subscales. In conclusion, this scale can be used by nurses, midwives and other health professionals as a valid and reliable measurement tool to evaluate women's perception of respectful maternity care.

Introduction

Obstetric care should be respectful to women's and mothers' rights, in compliance with ethical principles, based on scientific foundations and should be woman-centered (Miller et al. 2016). Intrapartum respectful maternity care is a fundamental human right, and the ethical, psychological, social and cultural dimensions of birth should be taken into account in this process (Miller et al. 2016; WHO 2018). The World Health Organization (WHO) recommends a respectful approach to maternity care for all women. This approach eliminates useless health outcomes and inappropriate or unnecessary medical interventions, while promoting safe, effective and personalized care (Bowser and Hill 2010; White Ribbon Alliance 2011; WHO 2018). Although childbirth is an important physiological and transitional period in a woman's life, it also represents a period of vulnerability. It has been reported that women giving birth are exposed to various degrees of maltreatment and neglect around the world, especially in developing countries and countries with more gender inequality (Bohren et al. 2015; Warren et al. 2017). Despite the WHO reporting the importance of respectful maternity care (RMC), there are differences in the prevalence of disrespect and abuse between countries. This is thought to be due to the differences in different intrapartum care protocols, terminology and measurement tools between countries (Bohren et al. 2019; Kassa and Husen 2019; WHO 2018).

According to Bowser and Hill, disrespectful and abusive care elements during the birth process are classified into seven categories: physical abuse, non-consented care, non-confidential care, non-

dignified care, discrimination, abandonment of care, and detention in facilities (Bohren et al. 2015; Bowser and Hill 2010). These practices have negative physical and emotional effects on maternal health (The Lancet 2016). However, many women are unaware of the abuse or neglect they are exposed to or perceive this as a normal part of the birth process. Improving the quality of intrapartum care units and assessing the current situation with standardized measurement tools is an important step for preventing and reducing the consequences of disrespect and abuse, evaluating the effectiveness of interventions, and promoting RMC among women during childbirth (Ansarı and Yeravdekar 2019; Perera et al. 2018).

There are a number of scales to measure women's childbirth experiences; however, few measurement tools are currently available to assess women's perceptions of respectful maternity care (Ayoubi et al. 2020; Sheferaw et al. 2017; Taavoni et al. 2018). Scales related to the perception of respectful maternity care were evaluated in a systematic review (Dhakal et al. 2021). According to the results of this study, six measurement tools were determined (Afulani et al. 2017, 2018, 2019; Ayoubi et al. 2020; Sheferaw et al. 2017; Taavoni et al. 2018). No scales with high-quality evidence were identified (Dhakal et al. 2021). For this reason, we chose Women's Perception of Respectful Maternity Care (WP-RMC) scale, which is accepted as the most up-to-date, short and clear, easy and applicable scale (Ayoubi et al. 2020). This scale also includes some statements based on the "12 Steps for Safe and Respectful Mother Baby Family Maternity Care" guide published by The International Childbirth Initiative (ICI 2020). In Turkey, respectful maternity care has not been studied, and there is no scale to evaluate women's perception of respectful maternity care. Measuring and reporting women's maternity care experiences is crucial to understand the quality of intrapartum care and their interactions with health professionals (Asefa et al. 2020).

This study aimed to assess the validity and reliability of the Women's Perception of Respectful Maternity Care scale Turkish version (WP-RMC-T).

Materials and methods

Study design

This was a methodological, cross-sectional study.

Sample of the study

Data were collected at the Postnatal Clinic of the State Hospital located in the western region of Turkey between December 2020 and July 2021. The sample size for psychometric studies in the literature is suggested to be as follows: excellent—up to 1000; very good—up to 500; good—200–500 (Karagöz 2018). The sample consisted of 259 women who met the inclusion criteria. The sample consisted of 259 women who met the inclusion criteria. The inclusion criteria were defined as women who were older than 18, able to speak and understand Turkish, having a vaginal birth, and not having any complications during labor or in the first 24 h after birth. The exclusion criteria were defined as women who voluntarily refused to participate in the study.

Procedure

Translation procedure

Written permission for the Turkish adaptation and use of the Women's Perception-Respectful Maternity Care (WP-RMC) Scale was obtained via e-mail. Then, the scale was translated into Turkish by two linguists independently. The translation was reviewed and evaluated by the researchers. The Turkish language of the scales was confirmed by a Turkish language specialist. A separate linguist specialist reverse translated the Turkish scale into English.

Expert opinion

It was recommended to use at least three expert opinions to determine the content validity of scales (Şencan 2005). To assess the appropriateness of the Turkish version, seven nurses and three doctors who were obstetrician experts in either a clinical or academic setting reviewed the items. Experts were asked to respond to each item using "1: not relevant," "2: somewhat relevant," "3: highly relevant," and "4: extremely relevant." Experts were asked to give suggestions for responses other than "extremely relevant." The Item Content Validity Index (I-CVI) and the Scale Content Validity Index (S-CVI) were calculated, respectively. In the literature, it was suggested that I-CVI and S-CVI should be over 0.80 (Polit and Beck 2006).

Pilot test

As recommended in the literature, the scale was administered to 25 women who had similar characteristics to the sample; these women were not included in the sample (Şencan 2005). After determining that the language and scope equivalence of the scale was sufficient, the scale was administered to the study sample.

Data collection

Before data collection, the purpose of the study was explained to the women verbally, and their written informed consent was obtained. The data were collected face to face in 20–25 min within the first 48–72 h after the delivery in the patient rooms at the postpartum services.

Data collection tools

The data were collected using a sociodemographic/obstetric form and Women's Perception of Respectful Maternity Care scale Turkish version (WP-RMC-T).

Sociodemographic/obstetric form
This form was composed of 16 questions on women's age, educational status, working status, the number of births, gestational age and birth process.

Women's perception of respectful maternity care scale
The scale was developed by Ayoubi et al. (2020) to assess the Women's Perception Respectful Maternity Care in Iran (Ayoubi et al. 2020). The original scale consists of 19 items and three sub-dimensions and is scored in a range of 1–5: 1 = almost never; 2 = sometimes; 3 = often; 4 = almost always; 5 = always. Items 15, 16, 17 and 19 are reversely scored. The internal consistency analysis of the scale yielded Cronbach's α coefficient of 0.91. The Cronbach's α values of the sub-dimensions were 0.89 (Providing comfort), 0.72 (Participatory care) and 0.77 (Mistreatment). The factor analysis revealed that the scale was three-factor, and the explained variance ratio was 53.6 percent. Also, the factor loadings of the three sub-dimensions ranged between 0.32 and 0.84. Minimum score of the questionnaire is 19 and maximum score is 95. Higher scores indicate a more positive perception of respectful maternity care (Ayoubi et al. 2020).

Data analysis

The Statistical Package for Social Sciences (SPSS) 21 and LISREL (LinearStructural Relations) version 8.8 statistical software packages were used in the analysis of the data. The Shapiro–Wilk normality test was used to determine whether the data have a normal distribution. The content validity index was used to analyze the compatibility of expert opinions. To explain the relationship between the scores

from the scale items and the total scale score, the Item-Total Score Analysis and Pearson correlation coefficient were calculated. The Cronbach's alpha coefficient and half-split methods were used to determine the internal consistency of the total scale and subscales. Explanatory factor analysis (EFA) was used to determine the item-factor correlations. Confirmatory factor analysis (CFA) was used to verify the structure explained by the explanatory factor analysis (Figure 1). Hotelling's T-square test was used to determine the bias in the responses to scale items, and floor and ceiling effect analysis was performed (Şencan 2005). A significance level of $p < .05$ was used.

Ethical considerations

The research was approved by the Non-Interventional Research Ethics Committee. Permission was obtained from the institutions where the data were collected. The purpose of the study was explained to the women, and the women who agreed to voluntarily participate in the research were included in the study. Participation was anonymous and confidentiality was assured. The women's verbal and written permission was also obtained.

Results

Sample characteristics

The mean age of the women was 27.25 ± 5.06 (min: 18, max: 46). The majority (76.8 percent) of the women were unemployed. The average number of births was 1.63 ± 0.75 and the average gestational age 38.95 ± 1.30. The socio-demographic and obstetric characteristics of the participants are presented in Table 1.

Validity

Content validity
Ten experts provided their opinions on the draft of the Turkish version of the scale. The item-based content validity index was found to range from 0.80 to 1.00, while the scale-based content validity index was 0.97.

Construct validity
The construct validity of the scale was evaluated using EFA and CFA analyses.

Explanatory factor analysis (EFA)
In the EFA, the Kaiser–Meyer–Olkin (KMO) coefficient was found to be 0.94, and the Bartlett's test result (x^2: 4933.767, $p < .001$) was found to be significant. On the other hand, the EFA revealed that the Turkish scale consisted of 19 items and three dimensions (factor 1: providing comfort, factor 2: participatory care, factor 3: mistreatment), and the scale's total explained variance was 76.04 percent. The EFA also revealed that the scale's factor load values were in the range of 0.55–0.87 (Table 2).

Confirmatory factor analysis (CFA)
In the CFA, chi-square degrees of freedom statistics ($\chi2/df$) = 1.93, root mean square error approximation (RMSEA) = 0.06, goodness fit index (GFI) = 0.90, adjusted goodness fit index (AGFI) = 0.87, comparative fit index (CFI) = 0.99, normed fit index (NFI) = 0.98, relative fit index (RFI) = 0.98, incremental fit index (IFI) = 0.99, and non-normed fit index (NNFI) = 0.99. Correlations between subscales were between 0.61 and 0.77 and p value was <.05. The factor loads of the sub-dimensions were between 0.71 and 0.92 for the provided comfort sub-dimension, 0.66 and 0.94 for the participatory care sub-dimension, and 0.62 and 0.91 for the mistreatment sub-dimension. Correlations between subscales were between 0.61 and 0.77 and p value was <.05 (Figure 1).
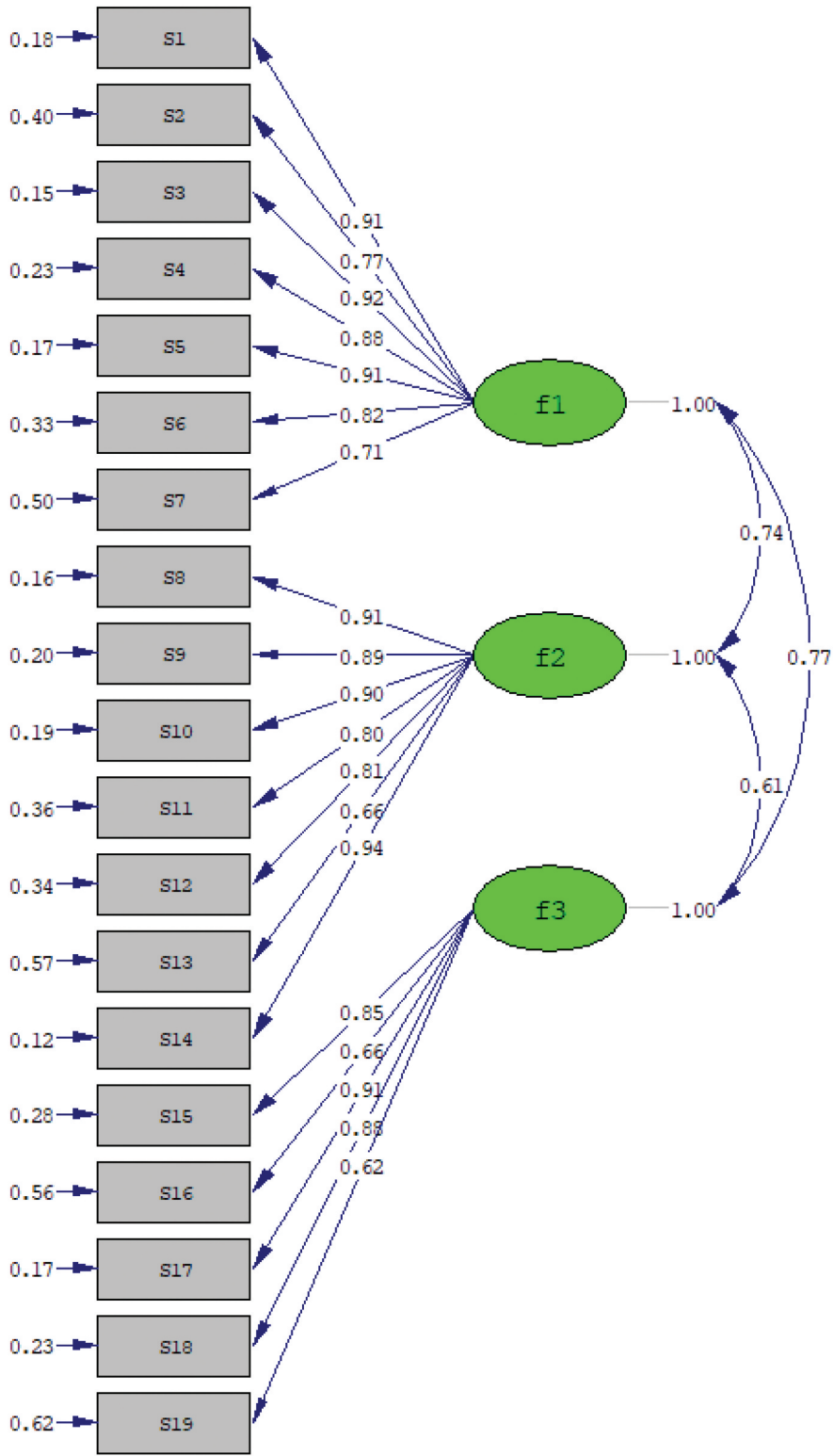
Chi-Square=264.02, df=137, P-value=0.00000, RMSEA=0.060

Figure 1. Confirmatory factor analysis.

Table 1. Descriptive and obstetric characteristics.

Characteristics		
Age (mean±SD years) (min-max)	27.25 ± 5.06 (18.0–46.0)	
Parity (mean±SD years) (min-max)	1.63 ± 0.75 (1.00–3.00)	
Gestational Age	38.95 ± 1.30 (36.0–42.0)	
Cervical dilatation	2.36 ± 1.78 (0.0–6.0)	
	N	%
Education of the women		
Primary school	13	5.0
Secondary school	40	15.4
High school	104	40.2
University	102	39.4
Employment status		
Employed	60	23.2
Unemployed	199	76.8
Perceived income level		
High	15	5.8
Moderate	213	82.2
Low	31	12.0
Place of living		
Rural areas	30	11.6
Urban areas	229	88.4
Social insurance		
Yes	209	80.7
No	50	19.3
Use induction or augmentation		
Yes	132	51.0
No	127	49.0
Use epidural analgesia		
Yes	107	41.3
No	152	58.7
Use Enema		
Yes	160	61.8
No	99	38.2
Total	259	100

Reliability

Item-Total Score correlations were calculated for this scale. The correlation coefficients of the items were found to be between 0.52 and 0.86 ($p < .05$) (Table 2). The correlation coefficients between subscale item scores and the sub-scale total scores were in the range of 0.79–0.92 for *"Factor 1,"* 0.79–0.93 for *"Factor 2,"* 0.77–0.88 for *"Factor 3"*, respectively, and the correlations were found to be statistically significant ($p < .05$) (Table 2). In order to examine the alignment of each sub-scale with the scale, correlations of the subscale scores and the total score of the scale were calculated. The correlation coefficients of the subscales were between 0.79 and 0.91 and were statistically significant ($p < .05$) (Table 3).

Internal consistency reliability coefficients

The scale total Cronbach's alpha internal consistency reliability coefficient was found to be 0.96. The Cronbach's alpha internal consistency reliability coefficients of the subscales of the scale ranged from 0.88 to 0.95.

The correlation value between the two halves of the scale was 0.85, and significant ($p < .05$), according to the split-half reliability analysis. The Cronbach's alpha coefficient of the first part of the scale was 0.95, and the Cronbach's alpha coefficient of the second part was 0.89. The Spearman Brown coefficient was 0.92, and the Guttman split-half coefficient was 0.90 (Table 3).

Table 2. Item-total score analysis, explanatory factor analysis and item-total score analysis for the subscales.

Sub-Scales Items	Explanatory Factor Analysis Factor value of items	Item-Total Score Correlation (r) Sub-Scales	Total Scale	p
Factor 1				
1	0.76	0.91	0.85	<.05
2	0.73	0.82	0.73	<.05
3	0.80	0.91	0.83	<.05
4	0.82	0.90	0.82	<.05
5	0.82	0.92	0.85	<.05
6	0.71	0.86	0.80	<.05
7	0.69	0.79	0.71	<.05
Eigenvalues		5.49		
Described Variance %		28.88		
Factor 2				
8	0.80	0.92	0.86	<.05
9	0.83	0.91	0.82	<.05
10	0.82	0.91	0.82	<.05
11	0.80	0.86	0.76	<.05
12	0.78	0.85	0.77	<.05
13	0.79	0.79	0.64	<.05
14	0.84	0.93	0.86	<.05
Eigenvalues		5.43		
Described Variance %		28.56		
Factor 3				
15	0.87	0.88	0.64	<.05
16	0.86	0.78	0.52	<.05
17	0.77	0.88	0.71	<.05
18	0.59	0.82	0.76	<.05
19	0.55	0.77	0.61	<.05
Eigenvalues		3.54		
Described Variance %		16.60		
Total Described Variance %		76.04		

Table 3. Item-total score correlation and reliability analysis of the scale total and subscales.

Sub-Scales	Sub-scales Total Score Correlation r	p	Scale Cronbach's Alpha (α)	First half of Cronbach α	Second half of Cronbach α	Spearman-Brown	Guttman split-half	Correlation between two halves	Floor effect %	Ceiling effect %
Factor 1 Providing comfort	0.91	<.05	0.94						1.5	17.0
Factor 2 Participatory care	0.90	<.05	0.95						3.9	18.9
Factor 3 Mistreatment	0.79	<.05	0.88						0.8	20.1
Total Scale			0.96	0.95	0.89	0.92	0.90	0.85	0.4	3.1

Hotelling's T^2 test and Tukey's test of additivity

Hotelling T^2 analysis was performed to determine if the item score averages of all the items in the scale are equal to one another and the bias of the responses. It was found that the item averages were different and that there was no response bias (Hotelling $T^2 = 336.501$, $p < .001$). In addition, Tukey's Test of Additivity was applied to determine whether the scale has additivity. The scale was found to be additive ($p < .05$).

Ceiling and floor effect of the scale

The floor and ceiling effect of the scale was determined for the entire scale. The floor effect of the scale was 0.4, and the ceiling effect was 3.1. The floor and ceiling effects were as follows: 1.5 and 17.0 for Factor 1, 3.9 and 18.9 for Factor 2, 0.8 and 20.1 for Factor 3, respectively (Table 3).

Discussion

This study adapted the Women's Perception of Respectful Maternity Care Scale developed by Ayoubi to Turkish. The 19-item and 3-factor versions of the scale were found to be a valid and reliable measurement tool for Turkish society.

Content and construct validity were utilized for the validity analysis of the scale. Both I-CVI and S-CVI should be >0.80 in order to be able to confirm that there is an agreement between the experts' opinions (Polit and Beck 2006). In this study, I-CVI and S-CVI values were more than 0.80. It shows that there is consensus among experts that content validity is appropriate for Turkish culture.

Construct validity of the WP-RMC-T was initially analyzed using EFA and CFA analyses. In the literature, it is emphasized that explanatory factor analysis is not sufficient to evaluate construct validity, especially if cross-cultural adaptation is performed (DeVellis 2012; Jonhson and Christensen 2014). In this study, the suitability of the factor structure determined by explanatory factor analysis was evaluated with confirmatory factor analysis. Previously, KMO and Bartlett's sphericity test was performed to assess the suitability of the data for factor analysis. The literature reports that the KMO coefficient should be 0.60 or more, and Bartlett's Sphericity test should be $p < .05$ (DeVellis 2012; Hayran and Hayran 2011; Jonhson and Christensen 2014). In the present study, the KMO value of the scale was .94, and the Barlett's test result was found $p < .05$. These values indicate that the number of samples is appropriate for factor analysis, and the distribution of the data is homogeneous. As a result of EFA, factor loadings of the three sub-dimensions varied between 0.55 and 0.87. Factor loading values on the original scale are similar to the results of our study (Ayoubi et al. 2020). In the literature, it is emphasized that the factor load should be at least 0.30 for an item to be included in the scale (DeVellis 2012; Jonhson and Christensen 2014). Therefore, the results of the study point out that the scale maintains the original structure and has a strong factor structure for the Turkish society. In the present study, the three dimensions of the scale's total explained variance were 76.04 percent which indicates that the scale has a strong factor construct and a very high explained variance. In social science studies, the explained variance ratios of 50–60 percent are deemed to be adequate (Şencan 2005). The higher the variance rate obtained, the stronger the factor structure of the scale. In our study, the total variance was higher than the variance calculated in the original study (Ayoubi et al. 2020).

According to the literature, model fit indicators should be $\chi2/df$ value is below five, the RMSEA is below 0.08, the fit indexes (GFI, NFI, NNFI and CFI) are above 0.90, and the factor loads of all items are greater than 0.30 (Şencan 2005). In the present study, the CFA results were consistent with the criteria found in the literature As the confirmatory factor analysis results were not presented in the original-scale study by Ayoubi et al. (2020), the comparison could not be made. In the present study, the CFA results showed that the data were compatible with the model; the findings confirmed that the three-factor structure (the sub-dimensions) was related to the scale and the items in each sub-dimension were sufficient.

Reliability of the scale was tested by calculating Cronbach's α coefficient, a method to assess internal consistency, and item-total correlations were utilized to assess the internal consistency of the items. In addition, split-half reliability, Hotelling's T-squared test and floor and ceiling effect were analyzed. The Cronbach's alpha coefficient indicates whether the items measure the same property and whether the items are relevant to the subject to be measured. This value should be as close to one as possible in scales (Nunnally and Bernstein 2010; Rattray and Jones 2007; Çam and Baysan-Arabacı 2010; Şencan 2005). In our study, the overall Cronbach's alpha values were found to be 0.96 and for factors Cronbach's alpha scores were 0.94, 0.95, 0.88 which were higher than the original scale (Ayoubi et al. 2020). This result showed that the Turkish version of the scale had a strong internal consistency.

In our study, Cronbach's alpha values of both halves were >0.70 and the correlation value between the two halves of the scale was 0.85, and significant ($p < .05$) (Table 3). These results indicate that the items of the scale were homogenous and measured the same characteristics (Nunnally and Bernstein 2010; Şencan 2005). The results could not be compared with the findings reported by Ayoubi et al. (2020) because a split-half reliability analysis was not conducted in the original-scale study. Hotelling's T-squared test was used to determine whether the questions are perceived with the same approach by women and whether the difficulty levels of the questions are equal to each other (Nunnally and Bernstein 2010; Rattray and Jones 2007; Şencan 2005). In the present study, Hotelling's T^2 test (Hotelling $T^2 = 336.501$, $p < .001$) results showed that items in WP-RMC-T were perceived by women similarly, however, this finding could not be compared with the original scale. Because this analysis was not applied in the original scale (Ayoubi et al. 2020).

Item total score review explains the relationship between the scores derived from each section of the measure and the overall score of the scale (DeVellis 2012; Jonhson and Christensen 2014; Şencan 2005). In the present study, the correlation coefficients between item-total score and item-subscale total score were both positive and greater than 0.20. The findings of this study were similar to the original scale (Ayoubi et al. 2020). Thus, all items of the scale showed a high correlation with the total score and the total score of their own sub-dimensions, they adequately measured the quality to be measured, and the item reliability of the scale and sub-dimensions was high.

The floor and ceiling effect is another factor that affects the reliability and validity of scales. It is recommended to keep the floor and ceiling effect <20 percent in scale studies (DeVellis 2012; Şencan 2005). In our study, the floor and ceiling effects were <20 percent in both the total scale and sub-dimensions. This demonstrates that the scale is very reliable. This finding could not be compared with the original scale. This analysis was not applied in the original scale (Ayoubi et al. 2020).

One of the strengths of this study is that the study sample was selected among women who were in the postpartum period. In this way, they self-reported their perception of respectful maternity care. In line with the literature we could access, there is no other measurement tool in Turkey that women's perception of respectful maternity care. In this context, it is believed that our study can help to determine women's perceptions and experiences of respectful maternity care. This Women's Perception of Respectful Maternity Care scale Turkish version can be used for understanding the prevalence and status of respectful maternity care services. In addition, the results will guide the intrapartum care protocols. As a result of this, the quality of intrapartum care can be improved, and women's experiences in labor can be more positive and more satisfactory.

There are some limitations to the study. The study sample includes women with low-risk pregnancies. The results may not be generalizable to other samples.

Conclusion

As a result of the analysis, it was determined that the Turkish version of the WP-RMC consisted of three sub-dimensions similar to the original scale. In addition, the Turkish version of the scale achieved cultural equivalence. According to the study, the Turkish version of WP-RMC scale is a valid and reliable tool that can be used for evaluating women's perception of the respectful maternity care in the Turkish population.

The WP-RMC-T scale can be used in comparative studies in which the perceptions of both caregivers and women are evaluated. There is a need to evaluate women's perceptions of respectful maternity care in different demographic features and different intrapartum care models. Longitudinal and experimental studies are recommended to evaluate the long-term effectiveness of the scale.

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Disclosure statement

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