





Original Research / Orijinal Araştırma

Reproductive Autonomy Scale: Turkish Validity and Reliability Study Üreme Özerkliği Ölçeği: Türkçe geçerlik ve güvenirlik çalışması

Rukiye SULU DURSUN¹, Ebru GOZUYESİL²

Abstract

Objective: This study aims to determine the validity and reliability of the Turkish version of the Reproductive Autonomy Scale. **Methods:** A methodological study was conducted with 320 women who sought treatment in a Family Health Center between November 5, 2022, and February 1, 2023. Data were collected through the Personal Information Form and the Turkish version of the Reproductive Autonomy Scale. The content validity index (CVI-Lawshe technique) was used to analyze the agreement in expert opinions. While Pearson correlation analysis was used for the test-retest analysis of the scale and its sub-scales, Cronbach's alpha coefficient was utilized to analyze the internal consistency of the scale and its sub-scales. Exploratory factor analysis and confirmatory factor analysis were utilized to test the scale's construct validity. These factor analyses were conducted separately in two samples divided randomly.

Results: The adequacy of the sample size was calculated using the Kaiser-Maier Oklin (KMO) value, which was found to be 0.704. The significance value of Bartlett's Test of Sphericity (χ 91 196.033. p < .001) was below 0.05, indicating that a factor analysis may be useful with the data. A three-factor structure explaining %77.84 of the variance and having an eigenvalue above one was obtained due to the varimax axis rotation. All the items were included in the factors in the original scale, and a structure with factor loadings ranging between 0.589 and 0.917 emerged. The model was found to fit the data for the overall scale. Cronbach's alpha internal consistency coefficients of the scale were calculated as 0.903, 0.891, 0.928, and 0.918 for the total score, decision-making, freedom from coercion, and communication sub-scales, respectively.

Conclusion: The Reproductive Autonomy Scale was found to be a valid and reliable measurement tool for the Turkish population. **Keywords:** Reproductive health; personal autonomy; scale; reliability; validity

Özet

Amaç: Çalışmanın amacı, Üreme Özerkliği Ölçeği'nin Türkçe formunun geçerlilik ve güvenilirliğini belirlemektir.

Yöntem: Araştırma 05 Kasım 2022-01 Şubat 2023 tarihleri arasında bir Aile Sağlığı Merkezine başvuran 320 kadın ile metodolojik tipte gerçekleştirilmiştir. Araştırmada veri toplama aracı olarak kişisel bilgi formu ve Üreme Özerkliği Ölçeği'nin Türkçe formu kullanılmıştır. Uzman görüşlerinin uyumluluğu Kapsam geçerlik indeksi (KGİ-Lawshe tekniği) ile değerlendirilmiştir. Ölçek ve alt boyutlarının test-tekrar test değerlendirmesi Pearson korelasyon analizi ile, ölçek ve alt boyutlarının iç tutarlılığı Cronbach alfa katsayısı ile değerlendirilmiştir. Ölçeğin yapı geçerliği açımlayıcı faktör analizi ve doğrulayıcı faktör analizi ile test edilmiştir. Söz konusu faktör analizleri örneklemin randomize olarak bölündüğü iki örneklemde ayrı ayrı yürütülmüştür.

Bulgular: Örneklem büyüklüğünün yeterliliğini belirlemede Kaiser-Maier Oklin (KMO) değeri hesaplanmış ve 0.704 olarak bulunmuştur. Bartlett Küresellik Testi'nin anlamlılık değerinin (χ 91 196.033. p < .001) 0.05'in altında olması, bu veri analizinin yararlı olabileceğini göstermektedir. Yapılan Varimax ekse döndürmesi sonucunda varyansın %77.84'ünü açıklayan ve özdeğeri 1'in üzerinde olan üç faktörlü bir yapının elde edildiği görülmektedir. Bütün maddelerin orijinal ölçekteki faktörlerde yer aldığı ve 0.589 ile 0.917 arasında değişen faktör yüklerine sahip bir yapının ortaya çıktığı görülmektedir. Ölçeğin geneli için modelin veriye uygum gösterdiği görülmüştür. Ölçeğin Cronbach Alfa iç tutarlık katsayıları, toplam puan, karar verme, zorlamadan kaçınma ve iletişim alt boyutları için sırasıyla 0.903, 0.891, 0.928, 0.918 olarak hesaplanmıştır.

Sonuç: Üreme Özerkliği Ölçeği'nin Türk toplumu için geçerli ve güvenilir bir ölçme aracı olduğu tespit edilmiştir.

Anahtar Kelimeler: Üreme sağlığı; kişisel özerklik; ölçek; güvenilirlik; geçerlilik

* Bu çalışma, 25-27 Eylül 2023 6. Uluslararası 7. Ulusal Ebelik Kongresi'nde, sözel bildiri olarak sunulmuş, özet metin olarak yayınlanmıştır.

Geliş tarihi / Received: 30.09.2023Kabul tarihi / Accepted: 21.04.2024

¹ Cukurova University, Health Sciences Institute Midwifery Department, Adana, Turkey

² Çukurova University Faculty of Health Sciences, Midwifery Department, Adana, Turkey

Address for Correspondence / Yazışma Adresi: Rukiye SULU DURSUN. Cukurova Universitesi, Sağlık Bilimleri Fakültesi Balcali Kampusu 01330 Saricam – Adana / TURKEY E-posta: rkysulu@gmail.com Tel: +905531826562

Sulu Dursun R, Gozuyesil E. *Reproductive Autonomy Scale: Turkish Validity and Reliability Study. TJFMPC, 2024; 18 (3) :293-302* DOI: 10.21763/tjfmpc.1369040

Introduction

Many factors related to psycho-social factors, individual health status, fertility behavior, and reproductive health affect women's health.¹ When women reach reproductive age, they encounter many negative issues such as difficulties in the use of contraceptives; unwanted pregnancies; unhealthy abortions; adolescent pregnancies; prenatal, perinatal, and postnatal complications; and maternal death.^{1,2}

Unwanted pregnancies account for 40% of all pregnancies worldwide.³ The lack of consistent and correct contraceptive use is the main determinant of unwanted pregnancies.⁴ United Nations 2019 data indicate that of 1.9 billion women aged 15-49 worldwide, 1.1 billion need family planning. The unmet need for family planning is 17.3% in the world, and this rate increases to 24.6% when traditional methods are added.⁵ As for Turkey, according to TDHS, the unmet need for family planning doubled from 6% in 2013 to 12% in 2018. On the other hand, the proportion of women who need contraception but do not/cannot use effective methods increases to 33% when traditional methods are added.^{6,7} Women's lack of effective contraceptive method use is caused by the experience and fear of side effects, lack of contraceptives, health concerns, social and cultural norms, religious beliefs, and lack of knowledge and partner attitudes.⁸⁻¹⁰ Studies in the literature have reported the effect of peers and partners on contraceptive use.⁹⁻¹¹ The rate of contraceptive use decreased with the increase in intimate partner violence.¹¹ Empowerment and autonomy are two interrelated concepts. Women are reported to be empowered for the prevention of domestic violence.¹²

Reproductive autonomy is having the ability to decide and control issues related to contraception, pregnancy, and childbearing.¹³ Women's reproductive decisions could be affected by factors including sociodemographic conditions such as age, education, region, marital status, religion, color/race, and employment status.^{14,15} Reproductive autonomy consists of three basic constructs: decision-making power, freedom from coercion, and communication.¹³ Studies have reported a positive relationship between intimate partner violence and reproductive coercion, a domain of reproductive autonomy.^{13,16} In their study including young women, There was a relationship between social support, income level, choice of contraceptive method, and previous pregnancy status and decision-making and communication, which are other branches of reproductive autonomy.¹⁷ The impact of reproductive autonomy on contraceptive use has been investigated in many qualitative studies, which reported that women's disempowerment may increase partner pressure,¹⁸ lead to poor communication with their partners,^{19,20} and decrease contraceptive use.¹⁸⁻²⁰ According to the World Health Organization (WHO violence against women is a very serious yet preventable public health problem. According to WHO estimates, around one in three women worldwide are exposed to physical or sexual violence by an intimate partner.²¹ The roots of a patriarchal culture persist in our country today, giving men a natural privilege of a choice. This condition negatively affects many women's reproductive autonomy.²² In this regard, the evaluation and consideration of reproductive autonomy by health professionals is considered to have a key role in preventing gender-based violence.

No studies or measurement tools were found to have investigated reproductive autonomy in the national literature. In our country, which has a patriarchal family structure²³, reproductive autonomy is considered to be of great importance in understanding the unmet need for family planning and evaluating another face of violence. This study aims to adapt the Reproductive Autonomy Scale (RAS) developed by Upadhyay et al.¹³ to Turkish society to assess women's reproductive autonomy. In this regard, the research question of the study is as follows:" Is the Reproductive Autonomy Scale a valid and reliable measurement tool for Turkish culture?"

Materials and method

Study design and sample

This study utilized a methodological design to assess the reliability and validity of the Turkish version of the RAS. The study was conducted between November 5, 2022, and February 1, 2023, with 320 women who sought treatment in a Family Health Center and met the inclusion criteria. The sample size for methodological studies is considered sufficient if it is five times higher than the number of items on the scale.²⁴ Given that the number of items in the Reproductive Autonomy Scale is 14, a sample size of 140 is considered to be sufficient. Since the exploratory and confirmatory factor analyses would be conducted on different sample groups, this study included a total of 320 women. Participants were over 18 years old, of reproductive age, literate, willing to participate, and either married or in a relationship. Women with a mental health-related diagnosis were excluded from the study **Data Collection Tools**

Data collection was done using a questionnaire form consisting of two parts. The first part included the "Personal Information Form" concerning women's descriptive features, and the second part included the "Reproductive Autonomy Scale". The women were informed about the purpose of the study, voluntary participation, and confidentiality, and data were collected by the researcher by meeting the participants face-to-face.

Personal Information Form

The Personal Information Form, which was used in the validity and reliability phase of the present study, consisted of seven questions about women's descriptive characteristics such as age, education level, and marital status.^{13,17,25}

The Reproductive Autonomy Scale

The scale developed by Upadhyay et al. (2014) in the USA is designed to assess the reproductive autonomy of women of reproductive age. The RAS, which has 14 items and three sub-scales, can be used for all women of reproductive age. The sub-scales of the scale include decision-making (1-4), freedom from coercion (5 -9) and communication (10-14). The first sub-scale, decision-making, includes questions about who has the final say in different reproductive situations with three answer options: my sexual partner = 1 point; both I and my sexual partner equally = 2 points; I = 3 points. The questions in the second sub-scale are about the difficult situations experienced by women. The third subscale includes issues related to the possibility of communication between women and their partners (or another person such as father, mother, mother-in-law/father-in-law) regarding sexual and reproductive decisions. The questions in the second and third sub-scales are responded to on a Likert-type scale including "1 point =Strongly disagree; 2 points =Disagree ; 3 points =Agree; and 4 points =Strongly disagree)". All the items in the freedom from coercion sub-scale theoretically contradict reproductive autonomy, so all the items in this structure should be scored reversely to calculate the absence of coercion score. The total and sub-scale scores are calculated by dividing the total score by the number of items, with higher scores indicating higher levels of reproductive autonomy.¹³

Language Validity of the Reproductive Autonomy Scale

Initially, permission was obtained from the author who developed the scale for the language validity phase of the study. Three academicians proficient in English independently translated the scale into Turkish. An expert faculty member and a Turkish language expert reviewed these translations, selecting the most appropriate wording for each item to create the Turkish version of the scale. This version was then back-translated into English, and Dr. Upadhyay evaluated it to identify any discrepancies with the original. With Dr. Upadhyay's approval, the final Turkish version of the scale was established, ensuring language validity.

Data Analysis

Data were analyzed in SPSS 21 and AMOS 21 programs. While freedom from coercion sub-scale mean scores were calculated and the relationships between sub-scales were examined, all the items were reversed like in the original scale. The frequencies, rates, means and standard deviations of the individuals in the groups were presented using descriptive statistics in terms of different variables. Skewness and kurtosis values, histograms, and Q-Q plot values were analyzed to examine whether the data met the normality assumption. Values were between - 1.5 and +1.5. According to Tabachnick and Fidell (2007), skewness and kurtosis coefficients between -1.5 and +1.5 indicate that the data are normally distributed.²⁷

The content validity index (CVI) using the Lawshe technique was employed to assess the consistency of expert opinions. The values demonstrated a normal distribution of the data. The test-retest reliability of the scale and its subscales was evaluated using Pearson correlation analysis, while internal consistency was assessed with Cronbach's alpha coefficient. Construct validity was examined through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), conducted separately on two randomly divided samples.

Content Validity

After language equivalence, content validity was conducted with 13 expert faculty members (experts in the fields of Obstetrics, Gynecology, and Obstetrics Nursing and Midwifery). The experts evaluated the measurement tool in terms of its suitability for the purpose, comprehensibility, cultural appropriateness, and determination of reproductive autonomy.

The agreement between the experts was evaluated using the content validity index (CVI). The item is sufficient in terms of content validity if the CVI is greater than 0.80. If it is lower, the item is removed.²⁸ The expert scores were found to be compatible (CVI = 0.804).

Pilot Study

The pilot study was conducted to evaluate the comprehensibility of the items in the scale in terms of language and content, spelling errors, and the duration to fill in and administer the scale. After the language and content validity analysis was performed, the scale was piloted with 30 women, who were not included in the study. No changes were made in the items after the pilot study, and the items were found to be comprehensible.

Ethical Considerations

Prior to the study, approval was obtained from the Non-invasive Clinical Research Ethics Committee of X (04.11.2022/127). The study followed the principles of the Declaration of Helsinki.

Results

The sample of this study consisted of 320 participants with an average age ranging from 18 to 48 (mean= 35.93 ± 6.32). Of all the participants, 50.9% had a bachelor's degree or postgraduate degree, 79.7% were married, 64.7% had a middle socioeconomic level, 61.6% were employed and 81.6% lived in a province. Finally, 22.8% had an abortion experience (Table 1).

Characteristics	n	%
Education level		
Primary school and below	16	5.0
Secondary school	29	9.1
High school	112	35.0
Undergraduate and postgraduate	163	50.9
Marital Status		
Married	255	79.7
Single	28	8.8
Widowed	37	11.6
Employment status		
Employed	197	61.6
Unemployed	124	38.4
Income level		
Good	76	23.8
Middle	207	64.7
Low	37	11.6
Place of residence		
Province	261	81.6
District	54	16.9
Village	5	1.6
Having abortion		
Yes	73	22.8
No	247	77.2

Table 1. Demographic Characteristics of the Participants (n=320)

Exploratory and confirmatory factor analyses were performed to test the construct validity of the scale. These factor analyses were conducted separately in two randomly divided samples (Exploratory factor analyses:160, confirmatory factor analyses:160).²⁹ Kaiser-Maier Oklin (KMO) value was calculated to determine the adequacy of the sample size, which was found to be 0.704. In addition, the significance value of Bartlett's Test of Sphericity $(\gamma 91 \ 196.033. p < .001)$ was below 0.05, indicating that a factor analysis may be useful with the data. The relationships between the decision-making sub-scale, freedom from coercion sub-scale, and communication subscale were examined to test the convergent validity of the Reproductive Autonomy Scale. The results indicated significant relationships between the sub-scales (Table 3). Principal component analysis was performed to analyze the factor structure of the scale using the varimax axis rotation method. The varimax axis rotation results indicated a three-factor structure explaining 77.84% of the variance and having an eigenvalue above one. Factor loadings in the original scale ranged from 0.64 to 0.81.¹³ All the items were included in the factors in the adapted scale, and a structure with factor loadings ranging from 0.589 to 0.917 emerged. Table 2 presents the exploratory factor analysis results of the adapted scale. confirmatory factor analysis (CFA), was also conducted for testing the construct validity (n=160). In confirmatory factor analysis, all factor loadings ranged between .63 and .87. These values indicated that the power of each item to predict the latent construct was sufficient and high. CFA was conducted with a sample of 160 participants. It is assumed that a sample size of 10 times the number of indicator variables is sufficient for confirmatory factor analysis.³⁰ With 14 indicator variables in the scale, the sample size is sufficient. The γ^2/df value was found to be less than three. In line with this finding, the model for the scale was determined to fit the data well. Once the measurement model indicated a good fit, the structural model was tested. Fit indices for CFI, GFI, and NFI values were all greater than 0.90. All factor loadings exceeded 0.30, and error variances were below 0.90, indicating that each item effectively served its purpose. The results demonstrated a good fit of the data to the model: $\chi^2(72, N = 160) = 119.175, p > .05, \chi^2/df = 1.655, GFI = .91, NFI = .93, TLI = .96,$

CFI = .97, and RMSEA = .064 (Figure 1. Confirmatory Factor Analysis Results of the Reproductive Autonomy Scale)

Items	F1	F2	F3
Who has the most say about which method to use to prevent pregnancy?	.878		
Who has the most say about whether you use any methods to prevent pregnancy?	.863		
Who has the most say about when you have a baby?	.853		
In the case of an unplanned pregnancy, who has the most say while deciding whether or not to have an abortion, to give birth to the baby, or to give out the baby for	.846		
adoption? If I use any methods to prevent pregnancy, my partner prevents me.		.900	
When I want to use any methods to prevent pregnancy, my partner makes its use difficult for me.		.872	
When I do not want to use any methods to prevent pregnancy, my partner pressures me to use one.		.871	
When I want to use any methods to prevent pregnancy, my partner stops me.		.841	
My partner pressures me to get pregnant.		.714	
When I want to use any methods to prevent pregnancy, my partner supports me.			.917
It is easy to talk about sexuality with my partner.			.886
If I do not want to have sex, I can tell this to my partner.			.883
If I am worried about whether I conceive or not, I can talk to my partner about it.			.845
If I do not really want to get pregnant, I can get my partner to agree with me			.589
Explained variance	12.308	45.455	20.081
Eigenvalue	1.723	6.364	2.811
Cronbach's Alpha	.891	.928	.918

Table 2. Exploratory Factor Analysis Results of the Reproductive Autonomy Scale (n=160)

Factor 1: Decision-Making Factor 2: Freedom from Coercion Factor 3: Communication

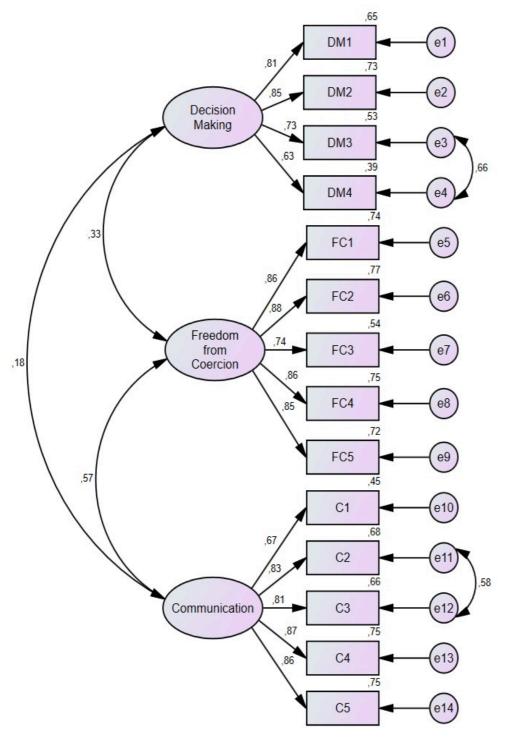


Figure 1. Confirmatory Factor Analysis of the Reproductive Autonomy Scale

Internal consistency analysis and test-retest reliability analyses were performed for reliability analyses. The total Cronbach's alpha internal consistency coefficient of the scale was calculated as 0.903. Cronbach's alpha internal consistency coefficient was 0.891 for the decision-making sub-scale, 0.928 for the freedom from coercion sub-scale, and 0.918 for the communication sub-scale. Data regarding Cronbach's alpha coefficients show that the scale yields reliable results.

To determine the significance of the scale for time invariance, the scale was administered to a group of 50 participants twice, at a two-week interval. The relationships between sub-scales and test-retest reliability were analyzed by Pearson correlation analysis. The results showed that the relationship between decision-making, communication, and freedom from coercion sub-scales was positive and significant at both times (p < 0.05). In addition, the correlations between the measurements of the sub-scales taken at two different times ranged between 0.930 and 0.750. This result indicates the stability of the scale. The findings are presented in Table 3.

Variables		1	2	3	4	5	6
1. Decision-Making T1	r	1					
	р						
2. Freedom from Coercion T1	r	.278**	1				
	р	.000					
3. Communication T1	r	.158*	.565**	1			
	р	.046	.000				
4. Decision-Making T2	r	.925**	.556**	.309*	1		
	р	.000	.000	.029			
5. Freedom from Coercion T2	r	.655**	.842**	.485**	.712**	1	
	р	.000	.000	.000	.000		
6. Communication T2	r	.458**	.601**	.747**	.439**	.610**	1
	р	.001	.000	.000	.001	.000	

Table 3. Relationships between Reproductive Autonomy Scale Sub-scales (n=320)

T: Time, Pearson correlation analysis was used.

*= p<0,05, **= p<0,01

The self-reported responses may cause significant increase/decrease in the correlations over time.

The scoring of the total and sub-scales is analyzed according to the average score obtained by dividing the total score by the number of items, with higher scores in the total scale indicating higher levels of reproductive autonomy. The total and sub-scale scores in this study are presented in Table 4.

 Table 4. Scoring of Reproductive Autonomy Scale and Sub-scales (n=320)

Subscales	Mean	Standard Deviation	Minimum-Maximum
Decision-Making	2.33	0.47	1-3
Freedom from Coercion	1.57	0.61	1-4
Communication	3.11	0.78	1-4
Total average	2.33	0.28	1.3-2.9

Discussion

This study sought an answer to the question" Is the Reproductive Autonomy Scale a valid and reliable measurement tool for Turkish culture?". In line with this purpose, validity and reliability of the scale were analyzed.

Validity refers to the extent to which a measurement tool accurately measures the variable it is intended to measure. This study assessed the validity of the scale through language validity, content validity, and construct validity. The translation-back translation method was employed for language validity. Scale adaptation studies often use various translation methods for language validity, including one-way translation, group translation, and translation-back translation.²⁶

For language validity, the scale items were initially translated into Turkish by three experts who had a good command of the English language. The translations were combined to form the Turkish version of the "Reproductive Autonomy Scale". The Turkish form was back-translated into English by a linguist who had not seen the original scale before. The back-translated scale items were sent to Dr. Upadhyay, the original author of the scale, for the evaluation of any differences. The final version of the Turkish form of the scale was structured, and language validity was ensured.

The literature identifies two methods for ensuring content validity in scale adaptation studies: the Lawshe and Davis techniques. This study employed the Lawshe technique for content validity. In this method, experts evaluate the relevance and clarity of each scale item using a four-point rating scale: (4) 'The item is very relevant,' (3) 'The item requires minor revision,' (2) 'The item requires major revision,' and (1) 'The item is not relevant.' Expert opinions were gathered from 13 academics specializing in Midwifery, Obstetrics, and Gynecology Nursing, and consensus was achieved among them. Consequently, the scale items were deemed comprehensible, applicable to our country, representative of the measured area, and suitable for measurement. After the language and content validity analysis, a pilot study is recommended to test the comprehensibility and applicability of the items in a small group that meets the target sample criteria.³⁵ In this study, the pilot study was conducted with 30 women, who were not included in the actual study. After the pilot study, it was concluded that the scale was comprehensible and applicable. In line with these results, no changes were made in the items.

Exploratory and confirmatory factor analyses were performed to test the construct validity of the scale. Kaiser-Maier Oklin (KMO) value was calculated to determine the adequacy of the sample size. In the literature, the adequacy of the sample is decided by looking at the KMO value in explanatory factor analysis, which is expected to be above 0.600.³⁶ The KMO value of 0.704 in this study indicates that the sample size is sufficient for factor analysis. The target population should be distributed normally in factor analysis. For this purpose, Bartlett's test is performed to determine whether the data have a multivariate normal distribution, and the significance value is analyzed to evaluate the suitability of the data for factor analysis. The items in the scale are suitable for factor analysis if this value is <0.05.³⁴ The significance value of Bartlett's Test of Sphericity was less than 0.05 in this study, indicating that the multivariate normality criterion was met. The factor structure of the Reproductive Autonomy Scale was analyzed by principal component analysis using the varimax axis rotation method. Varimax rotation is applied if the purpose is to reveal more than one sub-scale. This method aims to minimize the number of variables that can be grouped under one factor, a common approach in the literature. The eigenvalue indicates the amount of variance each factor accounts for within the total variance. Factors with eigenvalues greater than one are considered significant. The Varimax rotation revealed a three-factor structure explaining 77.84% of the variance, with each factor having an eigenvalue above one. All items had factor loadings ranging from 0.589 to 0.917, surpassing the minimum expected thresholds of 0.30 or 0.40. Confirmatory factor analysis validated the factor structure of the scale, as illustrated in Figure 1. The fit indices for the scale items aligned with values reported in the literature, supporting the three-factor structure. Consequently, the Turkish version of the scale demonstrates a three-factor structure and satisfies construct validity criteria. The reliability of the scale was assessed using Cronbach's alpha coefficient and the test-retest method. According to the literature, a Cronbach's alpha coefficient value of 0.70 or higher is considered the standard for evaluating the reliability of measurement tools. The overall scale achieved a Cronbach's alpha value of 0.903. Additionally, the test-retest method was employed to verify the consistency of measurements over time. The reliability analysis results exceeded 0.70, indicating high reliability of the scale scores. The correlation coefficient used for determining test-retest reliability should fall between zero and on The literature reports that a correlation value of 0.20 or less indicates a very weak relationship, 0.20 to 0.39 indicates a weak relationship, 0.40 to 0.59 indicates a moderate relationship, 0.60 to 0.79 indicates a strong relationship, and 0.80 to 1.0 indicates a very strong relationship.^{38,39} The relationship between decision-making, freedom from coercion, and communication sub-scales of the Reproductive Autonomy Scale was found to be positive and significant at both measurement times in a two-week interval (p < 0.05), indicating the stability of the scale.

The total mean score of the Reproductive Autonomy Scale was calculated as 2.33 ± 0.28 . While this mean was 2.83 ± 0.35 in the Brazilian validity and reliability study, it was reported as 3.38 ± 0.26 in the England study.^{25,40}

Conclusion

The Reproductive Autonomy Scale is validated for use in Turkey, with the adapted Turkish version demonstrating compatibility with the original scale. The Turkish version retains the original structure of three sub-scales and 14 items. To ensure generalizability, further testing with a larger sample group is recommended. This scale can serve as a screening tool in sexual and reproductive health clinics across Turkey. Reproductive autonomy is a human rights issue that health professionals and midwives can address, offering guidance to women. This scale is considered a valuable tool for identifying women with low reproductive autonomy.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding Sources

This research did not receive any specific grants from funding agencies in the public, commercial or not-for-profit sectors.

Acknowledgments

The authors would like to thank all participating respondents.

References

- 1. Koyun A, Taşkın L, Terzioğlu F. Yaşam dönemlerine göre kadın sağlığı ve ruhsal işlevler: Hemşirelik yaklaşımlarının değerlendirilmesi. Psikiyatride Güncel Yaklaşımlar. 2011;3(1):67-99.
- 2. Eroğlu K, Koç G. Dünden bugüne sağlık mevzuatında kadın sağlığı kapsamında ana çocuk sağlığı hemşirelik hizmetleri. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi, 2012;15:136-151.
- 3. Singh S, Maddow-Zimet I. Facility-based treatment for medical complications resulting from unsafe pregnancy termination in the developing world, 2012: a review of evidence from 26 countries. BJOG An Int J Obstet Gynaecol. Ağustos 2016;123(9):1489–98. https://doi.org/10.1111/1471-0528.13552
- 4. Darroch JE, Singh S. Trends in contraceptive need and use in developing countries in 2003, 2008, and 2012: an analysis of national surveys. Lancet. 2013; 381(9879):1756–62. https://doi.org/10.1016/S0140-6736(13)60597-8
- 5. United Nations, Department of Economic and Social Affairs, Population Division (2019). Contraceptive Use by Method 2019: Data Booklet (ST/ESA/SER.A/435). <u>https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd//2019_contraceptiveusebymethod_d</u> <u>atabooklet.pdf</u> Date of access: 01.09.2023
- 6. Türkiye Nüfus ve Sağlık Araştırması (TNSA) 2013. <u>http://www.hips.hacettepe.edu.tr/tnsa2013/rapor/</u>TNSA_2013_ana_rapor.pdf Date of access: 30.08.2023.
- 7. Türkiye Nüfus ve Sağlık Araştırması (TNSA) 2018. <u>http://www.hips.hacettepe.edu.tr/tnsa2018/rapor/</u> TNSA-2018_ana_Rapor.pdf Date of access: 30.08.2023.
- 8. Adiputri L, Leslie MG. Using the behaviour change wheel to examine facilitators and barriers to assertive contraception-use conversations for Indonesian women. Culture, Health & Sexuality; 2023: 1-16. https://doi.org/10.1080/13691058.2023.2238014
- D'Souza P, Bailey JV, Stephenson J, et al. Factors influencing contraception choice and use globally: a synthesis of systematic reviews. The European Journal of Contraception & Reproductive Health Care. 2022; 27(5), 364-372. <u>https://doi.org/10.1080/13625187.2022.2096215</u>
- 10. Nkonde H, Mukanga B, Daka V. Male partner influence on Women's choices and utilisation of family planning services in Mufulira district, Zambia. Heliyon, 2023; 9(3). e14405. https://doi.org/10.1016/j.heliyon.2023.e14405
- 11. Muluneh MD, Francis L, Agho K, Stulz V. The association of intimate partner violence and contraceptive use: a multi-country analysis of demographic and health surveys. International Journal For Equity in Health. 2023; 22(1), 75. https://doi.org/10.1186/s12939-023-01884-9
- Dodoon ND, Atiglo DY, Biney AA, Alhassan N, Peterson MB, Dodoo FN. Does financial autonomy imply reproductive and sexual autonomy? Evidence from urban poor women in Accra, Ghana. African Studies. 2019; 78(4), 477-495. <u>https://doi.org/10.1080/00020184.2019.1584485</u>
- 13. Upadhyay UD, Dworkin SL, Weitz TA, Foster DG. Development and validation of a reproductive autonomy scale. Studies in Family Planning. 2014; 45(1), 19-41. https://doi.org/10.1111/j.1728-4465.2014.00374.x
- Osamor P, Christine G. "Factors associated with women's health care decision-making autonomy: empirical evidence from Nigeria." Journal of Biosocial Science. 2018; 50(1)70-85. https://doi.org/10.1017/S0021932017000037
- 15. Esia-Donkoh K, Darteh EK, Blemano H, Asare H. Who cares? Pre and post abortion experiences among young females in Cape Coast metropolis, Ghana. African Journal of Reproductive Health. 2015; 19(2), 43-51
- Grace KT, Jocelyn CA. "Reproductive coercion: a systematic review." Trauma, Violence, & Abuse. 2018; 19(4),371-390. https://doi.org/10.1177/1524838016663935
- 17. Loll D, Fleming PJ, Manu A, Morhe E, Stephenson R, Kral EJ, et al. Reproductive autonomy and modern contraceptive use at last sex among young women in Ghana. International Perspectives on Sexual and Reproductive Health. 2019;45, 1-12. https://www.jstor.org/stable/10.1363/45e7419
- 18. Ketema H, Erulkar A. Married adolescents and family planning in rural ethiopia: understanding barriers and opportunities. African Journal of Reproductive Health. 2018; 22(4), 26-34. https://doi.org/ 10.29063/ajrh2018/v22i4.3
- Dansereau E, Schaefer A, Hernández B, Nelson J, Palmisano E, Rios-Zertuche D, et al. Perceptions of and barriers to family planning services in the poorest regions of Chiapas, Mexico: a qualitative study of men, women, and adolescents. Reproductive Health .2017;14, 1-10. https://doi.org/ 10.1186/s12978-017-0392-4
- Olakunde BO, Sam-Agudu NA, Patel TY, Hunt AT, Buffington AM, Phebus TD, et al. Uptake of permanent contraception among women in sub-Saharan Africa: a literature review of barriers and facilitators. Contraception. 2019; 99(4), 205-211. https://doi.org/10.1016/j.contraception.2018.12.007
- 21. World Health Organization. Strengthening health systems to respond to women subjected to intimate partner violence or sexual violence: [Internet]. WHO. 2017. http://www.who.int/reproductivehealth/publica tions/violence/vaw-health-systems-manual/en/. Date of access: 30.08.2023.

- 22. Güneş A, Ezikoğlu Ç. Legal and Political Challenges of Gender Equality and Crimes Against Women in Turkey: The Question of Istanbul Convention. Women & Criminal Justice. 2022; 14(1), 14-27. https://doi.org/10.1080/08974454.2022.2040695
- 23. Tekin N, Değirmenci SD. Ataerkil Kültürde Kadın, Erkek ve Toplum İlişkisi. Akdeniz İnsani Bilimler Dergisi. 2022; 12, 187-198. https://doi.org/10.13114/MJH.2022.581
- 24. Büyüköztürk Ş. Faktör analizi: Temel kavramlar ve ölçek geliştirmede kullanımı. Kuram ve Uygulamada Eğitim Yönetimi. 2002; 32: 470-483.
- 25. Fernandes ETBS, Dias ACDS, Ferreira SL, Marques M, Pereira GCJP, Oliveira C. Cultural and reliable adaptation of the Reproductive Autonomy Scale for women in Brazil. Acta Paulista de Enfermagem. 2019; 32(3), 298-304. https://doi.org/10.1590/1982-0194201900041
- 26. Alpar R. Uygulamalı istatistik ve geçerlik-güvenirlik. Ankara: Detay Yayıncılık, 2012, 497-509, 488-90, 453-455.
- 27. Tabachnick BG, Fidell LS. Using multivariate statistics. Boston, MA: Allyn &Bacon. Pearson Education. 2007; 10. 022267.
- 28. Davis LL. Instrument review: Getting the most from your panel of experts. Applied Nursing Research. 1992; 5, 194-197. <u>https://doi.org/10.1016/S0897-1897(05)80008-4</u>.
- 29. Orçan, F. Açımlayıcı ve doğrulayıcı faktör analizi: İlk hangisi kullanılmalı. Eğitimde ve Psikolojide Ölçme ve Değerlendirme Dergisi. 2018; 9(4), 413-421. <u>https://doi.org/10.21031/epod.394323</u>.
- 30. Byrne BM. Structural equation modeling with AMOS: basic concepts, applications, and programming (multivariate applications series, 3rd Edition). New York: Taylor & Francis Group.2016; 396(1),7384.
- Hu L, Bentler PM.Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: A Multidisciplinary Journal. 1999; 6(1), 1–55. https://doi.org/10.1080/10705519909540118.
- 32. Ercan İ, Kan İ. Ölçeklerde Güvenirlik ve Geçerlik. Uludağ Üniversitesi Tıp Fakültesi Dergisi. 2004;30 (3)211-16.
- 33. Alpar R. Spor Sağlık ve Eğitim Bilimlerinden Örneklerle Uygulamalı İstatistik ve Geçerlik Güvenirlik. 5. Baskı. Ankara: Detay; 2018;313-331.
- 34. Şencan H. Sosyal ve Davranışsal Ölçümlerde Güvenirlik ve Geçerlik. 1. Baskı. Ankara, Seçkin Yayıncılık, 2005;105-500.
- 35. Aksayan S, Gözüm S. Kültürlerarası ölçek uyarlaması için rehber I: Ölçek uyarlama aşamaları ve dil uyarlaması. Hemşirelik Araştırma Dergisi. 2002;4(1):9–14.
- 36. Tezbaşaran AA. Likert Tipi Ölçek Hazırlama Kılavuzu. Likert Tipi Ölçek Hazırlama Kılavuzu Üçüncü Sürüm ekitap, 2008:1-65.
- 37. Çokluk Ö, Şekercioğlu G, Büyüköztürk Ş. Sosyal Bilimler İçin Çok Değişkenli İstatistik: SPSS ve Lisrel Uygulamaları. 2. Baskı. Ankara, Pegem Akademi Yayıncılık, 2012; 136-94.
- 38. Akgül A. Statistical analysis SPSS practices techniques in medical research (3rd ed.). Ankara, Turkey: EmekOfset; 2005; 384 s.
- 39. Karasar N. Bilimsel Araştırma Yöntemi. Ankara: Nobel Yayıncılık; 2008; 67-79.
- 40. Riches E, Barrett G, Hall JA. Evaluation of the psychometric properties of the Reproductive Autonomy Scale for use in the UK. BMJ Sexual & Reproductive Health. 2023;49(3),151-157. http://dx.doi.org/10.1136/bmjsrh-2022-201685.