

RESEARCH / ARAŞTIRMA

Validity and Reliability of the Turkish Version of the Reproductive Autonomy Scale

Üreme Otonomisi Ölçeği'nin Türkçe Versiyonunun Geçerlik ve Güvenilirliği

Ruşen Öztürk¹, Özlem GÜNER²

¹ Ege University, Faculty of Nursing, Women Health and Disease Nursing Department, İzmir, Türkiye

² Sinop University, School of Health, Department of Midwifery, Sinop, Türkiye

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Sorumlu Yazar/Corresponding Author:

Ruşen ÖZTÜRK, RN, MSN, PhD

Ege University, Faculty of Nursing, Women Health and Disease Nursing Department, İzmir, Turkey

E-posta: rusen.ozturk@ege.edu.tr

ORCID: 0000-0002-7838-2876

Özlem GÜNER, RN, MSN, PhD

ORCID: 0000-0002-8302-9073

Abstract

Objective: This study aimed to determine the reliability and validity of the Reproductive Autonomy Scale (RES), which is a measurement tool that will determine the views of women in Turkey regarding reproductive autonomy by adapting it to the Turkish language and culture.

Material and Methods: This was a cross-sectional, methodological research study. A purposive sampling technique was employed to recruit 237 women who applied to the gynecology polyclinic between February 2019 and August 2019.

Results: The consistency of the scale, which was translated into Turkish and then back to English, was determined with expert opinion (Kendall W = 0.101; $p > 0.05$). The Cronbach's alpha coefficient was 0.72 for the total scale and 0.70 to 0.85 for the subscales. Factor analysis revealed three subscales that explained 58.4% of the total variance. Based on the confirmatory factor analysis, the goodness of fit index was 0.92, the comparative fit index was 0.95, and the non-normed fit index was 0.94.

Conclusion: The RAS is valid and reliable for the determination of reproductive autonomy among Turkish women. These results suggested that RAS could be used in family planning programs to identify coercion or barriers against contraception, understand the limitations of reproductive autonomy, and improve women's health.

Keywords: Personal autonomy, reproductive health, scales, validity and reliability

Özet

Amaç: Bu çalışma, Türkiye'deki kadınların üreme otonomisine ilişkin görüşlerini belirleyecek bir ölçüm aracı olan Üreme Otonomisi Ölçeği'nin (ÜÖÖ) Türk diline ve kültürüne uyarlanarak ölçeğin güvenilirlik ve geçerliğini belirlemek amacıyla yapılmıştır.

Gereç ve Yöntem: Araştırma, kesitsel, metodolojik bir araştırma çalışmasıdır. Şubat 2019-Ağustos 2019 tarihleri arasında kadın hastalıkları polikliniğine başvuran 237 kadının katılımıyla amaçlı örnekleme tekniği ile gerçekleştirilmiştir.

Bulgular: Ölçeğin tutarlılığı, Türkçeye çevrildikten sonra tekrar İngilizceye çevirilerek uzman görüşü ile belirlenmiştir (Kendall W = 0,101; $p > 0,05$). Cronbach alfa katsayısı ölçeğin tamamı için 0,72 ve alt ölçekler için 0,70 ile 0,85 arasındadır. Faktör analizi sonucunda toplam varyansın %58,4'ünü açıklayan üç alt ölçek ortaya çıkmıştır. Doğrulayıcı faktör analizine göre uyum iyiliği indeksi 0,92, karşılaştırmalı uyum indeksi 0,95 ve normlanmamış uyum indeksi 0,94'tür.

Sonuç: ÜÖÖ, Türk kadınları arasında üreme özerkliğinin belirlenmesi için geçerli ve güvenilir bulunmuştur. Bu sonuçlar, ÜÖÖ'nin üreme kontrolüne karşı zorlama veya engelleri belirlemek, üreme özerkliğinin sınırlamalarını anlamak ve kadın sağlığını iyileştirmek için aile planlaması programlarında kullanılabileceğini göstermiştir.

Anahtar Kelimeler: Bireysel özerklik, üreme sağlığı, ölçek, geçerlilik ve güvenilirlik

1. Introduction

Reproductive autonomy is described as “the women’s and couples’ power to decide and control and freely determine whether and when to become pregnant” (1-3). Reproductive autonomy provides a broad framework for understanding the factors that contribute to self-efficacy, which includes women’s free decision-making and empowerment for their reproductive health, communication, and the forced management of the individual (4). Reproduction takes place in the female body, and women are generally expected to take primary responsibility for child-rearing. Therefore, reproductive autonomy is very important in improving women’s health and reproductive rights (1,3).

A woman’s free will in making decisions about her body depends on several factors, such as the behavior of the partner, the number of partners, economic conditions, age, region, education, religious beliefs, marital status, color/race, and professional circumstances (3,5). Culture and society are among the most important factors that can lead to the stigma that affects free will and prevents consultation with family planning services (6). Reproductive autonomy is common in societies that protect women’s rights. However, men are more dominant in fertility preferences and the selection of related methods in patriarchal and male-oriented/male-privileged societies (5,7). Women have limited decision-making power, limited ability to take action, and limited power to directly oppose contraceptive use (8). Therefore, the use of contraception is related to the partner’s desire for children when women do not have sufficient decision-making rights(5).

The male partners are dominant in methodological preferences and fertility, which could be interpreted as reflections of the male-dominant society and gender-based power relations (9,10). Furthermore, the women’s role in Turkey, high domestic violence, inequalities in education, significant gender inequality (11-12), cultural differences in society, and the patriarchal and conservative social structure lead to restrictions on reproductive autonomy (6,13). According to the ICPD 1994, women’s right to autonomous reproductive decision-making forms the basis of gender equality, reproductive health, and population programs. However, gender equality and reproductive rights are not at the expected level. Turkey’s global gender gap ranking was 131 among 144 countries in 2017 (14-15). Thus, due to the above-mentioned conservative structures and social frameworks in Turkey, which could be the reason for limited reproductive autonomy, the analysis of the current status of reproductive autonomy in Turkey based on reproductive rights is important since several studies have emphasized the significance of the analysis of reproductive autonomy in family planning (1,16). The determination of reproductive autonomy will contribute to the empowerment of women and the improvement of their health by developing different approaches and strategies for creating new services and policies, as well as conducting family planning services. Furthermore, it is expected that it will have an indirect effect on increasing the welfare of the whole society (1,16). However, the lack of relevant literature on the above-mentioned issues, such as the importance of Turkish women’s reproductive autonomy and its empowerment in Turkey, reveals that there is a need for a standard measurement tool to analyze reproductive autonomy based on women’s reproductive

rights. For this purpose, this study aimed to translate and adapt the Reproductive Autonomy Scale to the Turkish language and culture and to examine the reliability of the adapted scale.

2. Materials and Methods

2.1. Participants and Setting

This was a methodological (scale validation and cross-sectional) study conducted in a gynecology-obstetric clinic in Turkey between February 2019 and August 2019. The participants were 237 literate, healthy women with no mental disorders, non-pregnant, of reproductive age (18-45 years), who voluntarily participated in the study. Using the purposive sampling method, the participants were selected from the applicants in a gynecology outpatient clinic who met the inclusion criteria. The sample size is an important factor for the estimation method to give accurate results in validity and reliability analysis, but there is no definite consensus about the number of samples (17). According to Kline (2005), the sample should have 10 times the number of items, and this number should not be less than 200 (18). Andrew, Pedersen, and McEvoy (2011) stated that the sample size is preferred to be 20 for each item, but it is sufficient to take 10 subjects for each item (19). In our scale, the criteria of conforming to the normal distribution and having 14 items were taken into consideration. In this context, 237 people were included in the study, considering that the sample size and the number of items are ten times the number of items, and this number is at least 200 (20,21). After data collection, the program “G. Power-3.1.9.7” was used to calculate the power of the study with a margin of error of 0.05. Accordingly, the study’s effect size value was calculated as 0.27, and the power was calculated as 99.

The intermittent method was preferred in the test-retest method, and the second application was performed after a three-week interval, taking into account that the interval in the intermittent time method in the literature recommendation should not be less than two weeks and more than four weeks (22,23,24). Participants who agreed to participate in the retest were written nicknames to ensure their confidentiality. Nicknames and phone numbers were matched to collect the retest data. Individuals who agreed to provide a phone number and reached out after the required time for a retest were included in the study. According to Deniz (2007); the reliability coefficient based on the test-retest method should be calculated for a sample of 30-50 people, although not for the entire group (25). In this direction; the retest was conducted with 56 individuals after three weeks.

2.2. Data Collections Instruments

The Personal Information Form: The form included 10 questions (socio-demographic attributes and obstetrics history) and was developed by the authors based on the literature (2,4).

The Reproductive Autonomy Scale (RAS): The Reproductive Autonomy Scale provides researchers with a reliable tool to assess women’s power to control contraceptive use, pregnancy and fertility-related issues, and to evaluate interventions to enhance women’s autonomy domestically and globally. The scale developed by Upadhyay et al.(3) includes 14 items and is a three-point (my partner or someone else, me and my partner

(or someone else) equally, me) and four-point (strongly agree, agree, disagree, strongly disagree) Likert-type scale. The scale has three sub-dimensions: "freedom from coercion (5 items)," "communication (5 items)," and "decision-making (4 items)." Five items belonging to the sub-dimension of freedom from coercion are reverse coded. The original scale reported a Cronbach's alpha coefficient of 0.77 for the overall scale. The Cronbach coefficients of the subscales were 0.82 in the freedom from coercion, 0.74 in the communication, and 0.651 in the decision-making dimension. The scale has no cut-off point. A high scale score indicates higher reproductive autonomy in each of the three sub-scales and total scale (3).

2.3. Data Collection

The data were collected using the self-report method to ensure the privacy of the participants, the reliability of the responses and to reduce bias without the intervention of the authors. The participants completed the scale in about 20-25 minutes.

2.4. Data Analysis

Data were analyzed with SPSS 25.00 and Linear Structural Relations (LISREL) software. Percentage and mean tests were used to describe the demographic characteristics of the women who participated in the study, and the significance test for the difference between the two means (t-test) was used for comparisons between groups.

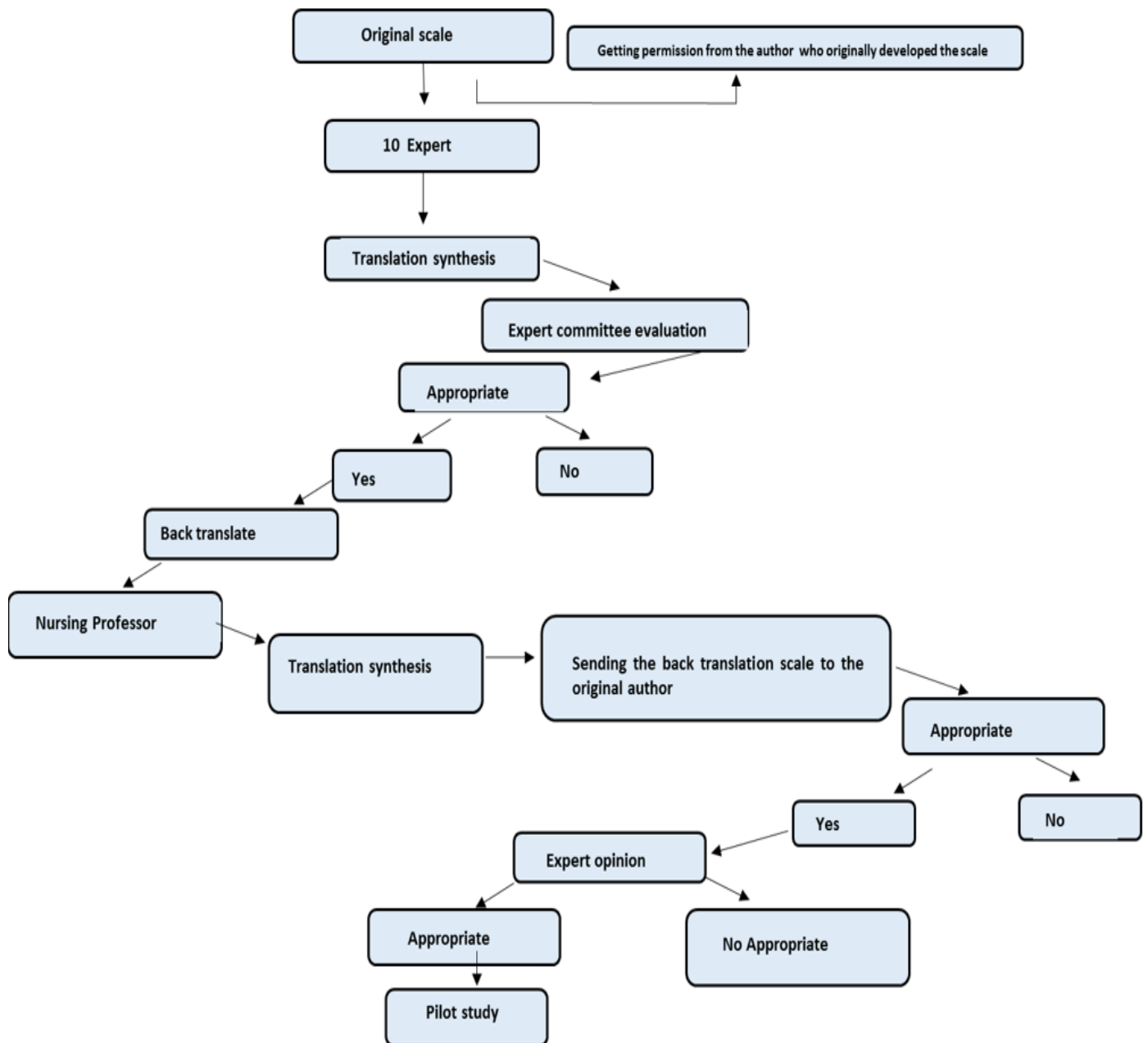


Figure 1. A chart of research procedures for what we do with language and context validity.

Validity and reliability analyses were carried out on the RAS-T. For the validity of the scale, the Kendall W test was used to assess expert opinion. In the validity analysis, confirmatory factor analysis (CFA), factor analysis tests (KMO, Bartlett test, principal component analysis, varimax rotation method) were used to ensure construct validity. Cronbach alpha, split half scores and test-retest analysis (Pearson correlation, independent group t-test) were used to assess the reliability of the scale. Values were considered statistically significant at $p < 0.05$.

2.5. Steps of Scale Development

Scale Translation Procedures (Language Validity):The research instrument was translated into the Turkish language by 10 experts, including nurse educators and linguists who are fluent in both Turkish and English. Certain statements were corrected due to inadequate translation, clarity, or cultural differences. After expert feedback, the scale was revised without changing the meaning of the items. The scale was reverse-translated into Turkish by a nursing professor with education and linguistic experience employed at Ege University. The translator, the primary author of the scale, compared the reverse translation with the original English to stabilize the meanings in the two versions, and the translation procedure was finalized.

Content Validity Analysis:The Davis technique was employed in expert opinion analysis. Expert opinions were provided by nine faculty members in the Obstetrics and Gynecology, Psychiatry, Public Health Nursing departments, and a specialist nurse to analyze item scope and comprehensibility in the RAS-T Turkish version based on a four-point analysis. The differences between the expert scores for the items were statistically insignificant (Kendall's $W=0.101$; $p=0.175$). It was determined that the CVI was 0.91 after the analysis of the expert opinion. The language and content validity study details are presented in Figure 1.

Pilot Test: A pilot scheme was conducted with face-to-face interviews and indicated that each item was comprehensible. The pilot scheme was conducted with 20 participants. There was no negative feedback about the scale items. The data collected from the female participants who participated in the pilot scheme were not included in the study.

Construct Validity: Principal component analysis was employed in the exploratory factor analysis. The adequacy of the sample and normal distribution in EFA were determined with Kaiser-Meyer-Olkin (KMO) and the Bartlett's test of sphericity (26). A KMO value between 0.80 and 0.90 reflects a "very good" fit. It was determined that the KMO value was 0.80. Along with sample size, normality and linearity are also significant factors in factor analysis. The Bartlett test of sphericity was employed to analyze whether the data reflected a multivariate normal distribution. The test result was highly significant ($X^2=1188.260$, $p<0.001$) and the correlation matrix was fit for factor analysis. Furthermore, the fitness subscales were determined with principal component analysis with varimax rotation. CFA and EFA are similar techniques; however, in CFA, the authors could specify the number of required factors and the correlations between the measured and latent variables. CFA is an instrument employed to confirm or reject the measurement theory(27).

Reliability analysis: Reliability was determined with

Cronbach's alpha coefficient, item-total correlation, and Hotelling's T2 test. To determine the temporal invariance in the scale, dependent t-test was employed. Also, Pearson correlation coefficients were used in the analysis.

2.6. Ethics consideration

The author of the RAS-T was contacted via e-mail to obtain approval for the adaptation of the scale to the Turkish language. Ethical approval was obtained from the Ege Ethics Committee (24/01/2019, Decision no:19.-1/1.T/37). Furthermore, written authorization was obtained from the institution where the study was conducted, and informed consent forms were signed by the participants.

3. Findings

3.1. Baseline Characteristics

Among the participants, 95.8% were married. Participants' mean age was 33.24 ± 8.91 years. The main participant demographics are presented in Table 1.

3.2. Exploratory factor analysis

EFA and CFA techniques were employed to test the construct validity of the instrument. The adequate sample size was determined with the KMO test(28). The adequate sample size was 0.801 in the present study, and the Bartlett's test of sphericity indicated that the sample size was adequate for EFA ($X^2=1188.260$, $p<0.00$). To determine the number of scale sub-dimensions, the principal components analysis was conducted in the exploratory factor analysis for size reduction. The principal component analysis yielded three factors that exceeded the eigenvalue (Figure 2). The largest factor with Varimax rotation explained 22.81%, the second

Table 1. Distribution of study participants according to sociodemographic characteristics

Variable	n	%
Educational level		
Primary	66	27.5
Secondary/High	64	26.7
Bachelors	107	45.8
Working Status		
Yes	109	45.9
No	128	54.1
Income Status		
Low	54	22.8
Medium	151	63.7
High	32	13.5
Living place		
Big city	106	44.2
City	87	36.3
District	44	19.5
	Mean±Sd	Min-Max
Wedding Year	9.57±8.6	0-40
Number of Pregnancy	2.06±1.3	0-7
Number of Births	1.44±1.13	0-7
Number of Voluntary Abortions	0.26±0.86	0-5

and third factors explained 20.43% and 15.16% of the variance, respectively. The total variance explained by the three factors was 58.40%. Varimax rotation results are presented in Table 2. Items 1, 2, 3, and 4 were grouped under factor 1 (decision-making), items 5, 6, 7, 8, and 9 were grouped under factor 2 (freedom from coercion), and items 10, 11, 12, 13, and 14 were grouped under factor 3 (communication) based on the highest values (Table 2).

The present study employed CFA to analyze the construct validity of the scale and to control the integration of the items with the sub-dimensions. The factor load is the variance that the variable shares with other analyzed variables in CFA. The highest factor load was determined in item 12 and the lowest was found in item 7 (0.90 and 0.508). It was observed that the factor loads of all items were greater than 0.30 (Table 2). In the study, the model-data fit values were calculated as $\chi^2/df=2.056$, AGFI=0.88, CFI=0.95, RMSEA=0.067, GFI=0.92. The obtained model is presented in Figure 2.

3.3. Internal Consistency Analysis

The internal consistency of the RAS-T and its sub-dimensions was determined based on Cronbach's alpha coefficient. Cronbach's alpha reliability coefficient was 0.72 for the overall scale. The analysis of the sub-dimensions indicated that the highest coefficient was obtained in "sub-dimension 3" (communication) ($\alpha = 0.85$), "sub-dimension 2" (freedom from coercion) ($\alpha = 0.75$), and the lowest was in "sub-dimension 1" (decision-making) ($\alpha = 0.70$) (Table 2).

The item-total correlation analysis indicated that there were no items that yielded results below 0.30; thus, no items were removed from the scale (27) (Table 2). The semi-test reliability results of the Reproductive Autonomy Scale are shown in Table 3. There were differences between the item scores (Hotelling's $T^2 = 655.476$, $p < 0.0001$).

3.4. Test-Retest Reliability

The "RAS-T" was applied to 56 female participants twice within three weeks as test and retest applications, and the correlation coefficients were calculated. Test-retest reliability was calculated based on the mean score (31.35; SD = 4.66) in the initial analysis of the scale and the mean retest score (31.78; SD = 3.07). There was no statistically significant difference between the two test scores ($t = -0.936$, $df = 55$, $p = 0.353$). Pearson's correlation coefficient was calculated for the total reproductive autonomy score and test-retest item scores. A moderate correlation was determined between the total test and retest scores ($r = 0.796$, $p < 0.000$) (Table 4).

4. Discussion

The present study aimed to determine the validity and reliability of the Turkish language adaptation of the "Reproductive Autonomy Scale" developed by Upadhyay et al. (3) to achieve a scale to determine the reproductive autonomy of Turkish women. Therefore, the Turkish-language version of the Reproductive Autonomy Scale, a measure of a woman's ability to achieve reproductive goals validated with a multi-dimensional approach, is presented. The scale exhibited good internal consistency and construct validity.

Table 2. Reliability and Validity Analysis of Reproductive Autonomy Scale (N=237)

Item	M±SD	Factor loading	Item-total correlations	Internal consistency coefficient when Item is deleted	Eigen-values	VE (%)	Cronbach's Alpha
Subscale 1					1.75	15.16	0.70
Item 1	2.21±0.51	0.78	0.49	0.51			
Item 2	2.24±0.58	0.77	0.48	0.52			
Item 3	2.17±0.56	0.69	0.49	0.66			
Item 4	2.16±0.49	0.52	0.42	0.57			
Subscale 2					1.87	20.43	0.75
Item 5	1.46±0.77	0.73	0.56	0.69			
Item 6	1.47±0.80	0.83	0.67	0.65			
Item 7	1.72±1.05	0.51	0.48	0.72			
Item 8	1.47±0.78	0.69	0.59	0.68			
Item 9	1.50±0.82	0.77	0.34	0.79			
Subscale 3					4.08	22.81	0.85
Item 10	3.16±1.06	0.58	0.43	0.88			
Item 11	3.09±0.98	0.84	0.71	0.80			
Item 12	3.19±0.93	0.90	0.76	0.79			
Item 13	3.40±0.85	0.86	0.76	0.79			
Item 14	3.27±0.90	0.80	0.69	0.81			
Total						58.40	0.72

M = Mean; SD = Standard deviation; VE = Variance explained.

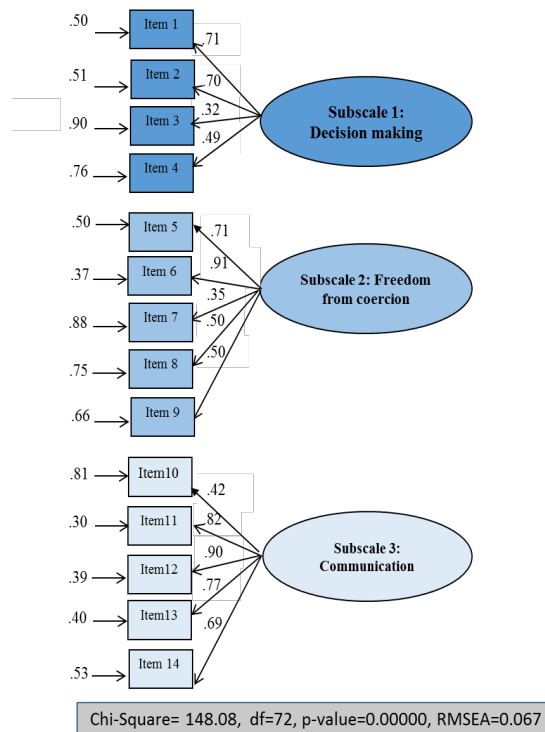


Figure 2. Confirmatory factor analysis for the Reproductive Autonomy Scale.

Reliability and validity are considered fundamental psychometric analyses for developing a scale or

adapting an existing scale into another language (29). In the present study, language equivalence, content validity, EFA, and CFA were utilized to test the scale's validity. For content validity, expert evaluation scores were analyzed with Kendall W analysis, and expert scores were not statistically different. This phenomenon suggested that there was an agreement among the experts, confirming the content validity criterion.

Construct validity investigates the concepts or attributes measured by the scale. The construct validity of the "Reproductive Autonomy Scale" was evaluated by CPA and EFA. In the AFA, the main component of the scale is evaluated with items with an eigenvalue greater than one (30). In factor analysis, the RA scale included three variables with an eigenvalue greater than one (4.084, 1.874, and 1.743), and these variables explained 58.4% of the variance. Variance rates between 40% and 60% are considered sufficient (28). Similar to the present study findings, the three sub-dimensions in the original scale explained 60.8% of the variation (3).

Table 3. Half-Test Reliability Analyses of the Reproductive Pressure Scale

Guttman Split-Half Coefficient		0.82
Spearman-Brown Coefficient	Equal Length	0.72
	Unequal Length	0.71
Correlation Between Forms		0.70

Table 4. The Comparisons and Correlations of the Test-Retest Means of the Reproductive Autonomy Scale (n=56)

Test	The first application	The second application
n	56	56
X	31.35	31.78
Sd	4.66	3.07
t	-0.94	
p'	>.05	
r	.796	
p	p < .01	

n=Number of cases in a subsample; X= Mean, Sd= Standart deviation; t= t-test; p'=t-test significance level; r=Pearson correlation coefficients; p=Correlation significance level)

Factor loads are calculated to test the correlation between an item and a sub-dimension (28). Büyüköztürk (21) considered factor loads greater than 0.60 as high, those between 0.30 and 0.59 as medium, and those less than 0.29 as low. The factor loads for all items were between 0.50 and 0.89 in the present study. This finding indicated that the items fit into the assigned sub-dimensions. The factor loads were between 0.63 and 0.81 on the original scale (3). The consistency between the two findings exhibited similar approaches to women's reproductive autonomy.

The CFA method determines the primary trend in a large set of variables (30,31). Fit indices determine whether the data fits well in the three sub-dimension structures.

The CFA findings were consistent with the EFA results. The literature suggests that χ^2/df should be between 3/1 and 5/1, and NNFI, NFI, and CFI should be greater than 0.90. Besides, RMSEA should be between 0 and 1, and low RMSEA scores correspond to a well-fit model. The upper limit should not be greater than 0.08. A GFI value between 0 and 1 indicates a well-fit model (28,30,32). The present study findings indicated that the model exhibited a good fit. CFA confirmed that the correlations between the subscales were positive and significant. Path diagrams were plotted with the construct equity model analyses (31). The path analysis indicated that the path graph plotted for the scale items was within an adequate range (Figure 2). In conclusion, the three sub-dimension structure of the 14-item "Reproductive Autonomy Scale" was an adequate model and reflected the construct validity of the scale.

The item analysis aimed to analyze the internal consistency of the instrument, and there were no items excluded from the scale as the total correlation was not less than 0.20. Item-total correlations were adequate for the scale (33). Since the evaluation criterion of the scale is itself, it is very important for the scale to be consistent within itself. Cronbach's alpha coefficient measures the internal consistency and homogeneity of the scale items. A high Cronbach's alpha coefficient indicates that the items in the scale are consistent and consist of items that examine the items of the same feature (29). The general internal consistency coefficient was 0.72, and the sub-dimension reliability coefficients were determined as 0.70, 0.75, and 0.85, respectively, and these results reveal that the scale is highly reliable. The Cronbach's alpha coefficient for the original scale was reported as 0.77, and the sub-dimension coefficients were 0.65, 0.73, and 0.82 (3). Similarly, the Brazilian language version of the scale reported an overall Cronbach's alpha of 0.76, and it was determined as 0.68, 0.75, and 0.81 for the sub-dimensions (5). Consistent with the original scale and Brazilian adaptation, in the present study, Cronbach's alpha was 0.72, which could be interpreted as the presence of internal consistency among the scale items, and it could be concluded that the scale could measure the views of women on reproductive autonomy. The internal consistency of the scale was consistent with studies conducted in other nations. The reliability coefficient calculated by dividing the inventory into two halves is known as equivalent two-half reliability. It is one of the most commonly used methods to determine scale reliability (34). In the half-test reliability analysis of the Reproductive Autonomy Scale, the Guttman Split-Half, Spearman-Brown coefficient, and the correlation coefficient between the two halves were found to be high. These results show that the inventory is reliable and has acceptable internal consistency.

Test-retest reliability is associated with the consistency of the measuring instrument across different applications. The correlation between the two application scores was analyzed to determine test-retest reliability. A high correlation coefficient indicates the consistency of test scores and reflects that the time between two applications does not affect the measurement (27). The reliability analysis was conducted to determine the consistency of the RA Scale, and it was applied to 56 female participants

three weeks apart. The mean scores in the two tests were compared with the t-test, which demonstrated no significant difference between the mean scores ($p>0.05$). Pearson correlation analysis was employed to investigate the reliability of RAS-T based on the correlation between the test and retest scores, and a positive, strong, and statistically significant correlation was determined between the test and retest scores with a reliability coefficient $r = 0.80$. These findings indicated that the Turkish language version of the RA Scale was consistent over time. The retest correlation coefficient was 0.931 in the Brazilian language version of the scale (5). It could be suggested that the higher retest correlation coefficient was obtained due to the rather short, one-week interval between the test and retest in the Brazilian adaptation.

Limitations of the study

A limitation of the present study could be considered as the sample included women living only in a region with certain sociocultural properties and those who applied to a single hospital. Since a single group cannot represent all adults, generalization of the findings requires caution, and the scale should be tested in different regions, socioeconomic groups, and hospitals in future studies. Another limitation of the study was that it was not possible to reach all participants for the retest.

5. Conclusion and Recommendations

The RAS-T, tested in the present study, exhibited rather acceptable validity and inter-rater reliability as a measure for women in Turkey. The scale is expected to contribute to future quantitative analyses of the views of women on reproductive autonomy. The RAS-T could bring a specific perspective to health professionals about the reasons for not using family planning methods for all women, especially women living in rural areas in Turkey with low income and education levels and women in other vulnerable groups. Furthermore, it will play an important role in the regulation of education strategies and family planning services and policies for women with weak reproductive autonomy, and it will help to include spouses in family planning services.

6. Contribution to the Field

Reproductive autonomy is important for women to have children whenever they want and to prevent undesired pregnancies. Therefore, the analysis of reproductive autonomy along with the scale can guide service providers in helping women decide on birth control methods and support women's reproductive health. The employment of the scale in future studies and clinical practices could help identify risk groups and contribute to the development of comprehensive interventions with randomized control trials.

Competing interests

The authors report no conflicts of interest.

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Author Contribution

Idea/Concept: RO, OG; **Design:** RO, OG; **Control/Supervision:** RO, OG; **Sources and Funding:** RO, OG; **Materials:** RO, OG; **Data Collection and/or Processing:** RO, OG; **Analysis and/or Interpretation:** RO, OG; **Literature Review:** RO, OG; **Writing the Article:** OG; **Critical Review:** RO, OG.

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