

Gebelikten Kaçınma İsteği Ölçeği: Türkçe Versiyonunun Geçerlik ve Güvenirliği

Desire to Avoid Pregnancy Scale: Validity and Reliability of the Turkish Version

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ÖZ

Amaç: Bu çalışmanın amacı, Gebelikten Kaçınma İsteği Ölçeği'nin Türkçe versiyonunun geçerlik ve güvenirliliğini belirlemektir.
Yöntem: İngilizce ve İspanyolca dilinde yayınlanan Gebelikten Kaçınma İsteği Ölçeği'nin İngilizce formu ileri ve geri çeviri yöntemi kullanılarak Türkçe'ye çevrilmiştir. Veriler, Mayıs 2021 - Ağustos 2021 tarihleri arasında 185 katılımcıdan yüz yüze görüşme yöntemiyle toplanmıştır. Araştırma örneklemini; en az ilkokul mezunu, Türkçe konuşup anlayabilen, gebelik veya menopoz tanısı almamış, 18-49 yaş arasındaki kadınlar oluşturmuştur. Ölçeğin geçerliği ve güvenirliliği belirlemek için doğrulayıcı faktör analizi yapılmış ve Cronbach's alfa güvenirlilik katsayısı hesaplanmıştır.
Bulgular: Gebelikten Kaçınma İsteği Ölçeği'nin Türkçe versiyonu orijinal ölçekle uyumlu olarak 14 madde ve üç faktöre sahiptir. Gebelikten Kaçınma İsteği Ölçeği'nin Türkçe versiyonunun uyum incelemesinde; model uyum incelemesi $\chi^2/df = 1,406$, GFI = 0,988, TLI = 0,993, AGFI = 0,983, CFI = 0,995, RMSEA = 0,047 ve SRMR = 0,077'dir. Gebelikten Kaçınma İsteği Ölçeği'nin Cronbach's alfa katsayısı ise 0,951 olarak bulunmuştur.
Sonuç: Gebelikten Kaçınma İsteği Ölçeği'nin Türkçe versiyonu geçerli ve güvenilirdir. Ölçek, gebelikten kaçınma isteğinin değerlendirilmesinde bir ölçüm aracı olarak kullanılabilir.

Anahtar Kelimeler: Gebelikten kaçınma, Geçerlik, Güvenirlilik, Ölçek.

ABSTRACT

Objective: This study aims to determine the validity and reliability of the Turkish version of the Desire to Avoid Pregnancy Scale.
Methods: Originally published in English and Spanish, the Desire to Avoid Pregnancy Scale was translated into Turkish using the translation and back-translation technique. Data were obtained by face-to-face interview method with the participation of 185 volunteers between May 2021 and August 2021. The research sample consisted of women aged 18-49 who had at least a primary school education, were able to speak and understand Turkish, and had not been diagnosed with pregnancy or menopause. To determine the validity and reliability of the scale, confirmatory factor analysis was conducted, and Cronbach's alpha reliability coefficient was calculated.
Results: The Turkish version of the Desire to Avoid Pregnancy Scale, consisting of 14 items and three factors, is aligned with the original scale. In the model fit tests of the Turkish form of the Desire to Avoid Pregnancy Scale, $\chi^2/df = 1.406$, GFI = 0.988, AGFI = 0.983, TLI = 0.993, CFI = 0.995, RMSEA = 0.047, and SRMR = 0.077. The Cronbach's alpha coefficient of the Desire to Avoid Pregnancy Scale was found to be 0.951.
Conclusion: The Turkish version of the Desire to Avoid Pregnancy Scale has demonstrated validity and reliability in Turkish. The scale can be utilized as an assessment tool for evaluating the desire to avoid pregnancy.

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Yazar Katkıları: A) Fikir/Kavram, B) Tasarım, C) Veri Toplama ve/veya İşleme, D) Analiz ve/veya Yorum, E) Literatür Taraması, F) Makale Yazımı, G) Eleştirel İnceleme

Key words: Avoiding pregnancy, Reliability, Scale, Validity

1. INTRODUCTION

Planning and wanting to have children or avoiding this situation is one of the most important goals of married individuals (1). Many women in the fertile period desire to prevent and avoid pregnancy in order not to become pregnant unplanned or unintentionally, except for some phases of their life (pregnancy, puerperium) (1-3). Therefore, avoidance and protection from pregnancy are important in planning pregnancy (3-6).

Although pregnancy is a physiological event, unplanned and unwanted pregnancies pose a risk to maternal and infant health. The desire and/or intention of pregnancy is the most important factor that determines the behavior of avoiding pregnancy. Pregnancy planning and desire to become pregnant are expressed as pregnancy intention. It is known that women are often undecided about their intention to become pregnant (4, 7). In addition, many psycho-social and socio-cultural factors affect the pregnancy intention of women, and pregnancy intentions vary over time. However, pregnancy intentions of women can be affected by their pre-pregnancy, pregnancy, birth and postpartum experiences (8-13).

There are retrospective and prospective studies on pregnancy intention. However, most studies on pregnancy intention are retrospective in nature (2,6,14). Retrospective assessments involve asking women who are currently pregnant or have given birth to reassess their pregnancy intentions at the time of evaluation. Prospective assessments, on the other hand, ask women to evaluate their intentions for future pregnancies. Retrospective evaluations have been criticized because women's perceptions of pregnancy may change during pregnancy, after childbirth, or during child-rearing (15-16). On the other hand, it has been reported that prospective evaluations are used less frequently in determining pregnancy intention (2,14,16).

In the literature, no Turkish measurement tool has been found to evaluate and measure individuals' intentions about pregnancy prospectively. Turkish researchers and health care providers do not use a measurement tool to determine the pregnancy intentions of individuals. It is important to evaluate the pregnancy intentions of women with accurate and reliable measurement tools in evaluating the desire to avoid pregnancy, preventing unwanted pregnancies and determining the needs for contraceptive methods (17-18). The Desire to Avoid Pregnancy Scale (DAPS) was developed by Rocca et al. in 2019 to assess pregnancy avoidance (2). The aim of this study was to adapt the Desire to Avoid Pregnancy Scale to the Turkish population.

Research Question:

RQ₁= Is the Desire to Avoid Pregnancy Scale a valid and reliable measurement tool suitable for Turkish culture?

2. MATERIALS AND METHODS

Study design

This study is a methodological design type study.

Location and time of the study

The research was conducted at a public hospital in Tekirdag Province in Turkey between May 2021 and August 2021.

Population and sample of the study

The population of the study consisted of women who applied to the gynecology outpatient clinic of a public hospital in Tekirdag Province, while the sample consisted of fertile women aged 18-49 who applied to this clinic between May 2021 and August 2021, had at least primary education, could speak and understand Turkish, and were able to communicate in Turkish. The sample size of the study was determined according to the criteria of scale development and adaptation. In the literature, the general rule in scale development or validity and reliability studies is to determine the sample size as 5-10 times the number of scale items (19-22). The sample of the study was calculated considering the 14×10 criterion and 10% potential data loss, and the data of 185 women were analyzed in total.

Inclusion criteria for the study

Women aged between 18 and 49, with at least a primary school education, who could speak and understand Turkish, had not been diagnosed with pregnancy or menopause, were fertile, and agreed to participate in the research were included in the study.

Exclusion criteria for the study

Women who decided to withdraw from the study after participating, who did not fill out or complete the data forms were excluded from the study

Data collection instruments

The research data were collected through face-to-face interviews using the "Introductory Information Form" created by the researchers, the "Desire to Avoid Pregnancy Scale" developed by Rocca et al. (1-3). The measurement tool was translated into Turkish. In the testing of the Turkish form for validity and reliability, procedures adopted as standards in Turkey for scale testing studies in the research area of midwifery and nursing were followed (19-22).

Introductory information form (IIF): The form consisted of questions including socio-demographic (Including age, level of education, employment status, perception of income, perception of social support, etc.), obstetrical characteristics (number of pregnancies, planning

status of the most recent pregnancy, outcome of the most recent pregnancy, reasons for wanting to have children, reasons for not wanting to have children, etc.) and pregnancy intentions of women, which were developed by the authors based on the information in the relevant literature (1-3).

Desire to Avoid Pregnancy Scale (DAPS): DAPS, which was created in 2019 by Rocca et al. to evaluate the desire of women to avoid pregnancy in a prospective manner (in the next three months and one year) (2), consists of 14 items and 3 factors. The factors of the scale are named as Cognitive Desires and Preferences, Affective Feelings and Attitudes, and Anticipated Practical Consequences. Each DAP item has response options that range from 0-4. For negatively worded items, 4 is “strongly agree” for positively worded items, 4 is “strongly disagree”. Researchers using a classical approach should sum raw item scores and divide by 14 to obtain an average pregnancy preferences score (final range: 0-4). Higher scores on the scale indicate an increased desire to avoid pregnancy, while lower scores indicate a decreased desire to avoid pregnancy (2). The Cronbach’s alpha coefficient for the English form of DAPS was reported as 0.95 (2), while the Cronbach’s alpha coefficient for the Turkish form was also found to be 0.951.

Factor 1: Cognitive Desires and Preferences Items 1, 2, 6, 7, 8, and 9,

Factor 2: Affective Feelings and Attitudes Items 3, 4, 10, and 11,

Factor 3: Anticipated Practical Consequences Items 5, 12, 13 and 14

Data collection and procedure

The data were obtained between May 2021 and August 2021 with the participation of volunteer women who met the study criteria, using the face-to-face interview method. Filling the forms took approximately 15~20 minutes for each participant. All participants (n=185) filled out the forms completely.

Permission was obtained from the XXX Provincial Health Directorate to conduct this study. Approval was provided by the Faculty of Health Sciences Ethics Board of XXX University. In addition, consent was provided by the participants who satisfied the criteria for inclusion. The participants were informed by the researcher about the objective and protocol of the study, and they were guaranteed that they could drop out of the study at any time if they wished.

Ensuring language equivalence

The original form of DAPS was translated into Turkish by two English instructors to ensure compatibility between the two languages and analyze the scale’s content validity (2). The authors examined the translation text and created a combined form in Turkish. The appropriateness and clarity of the form was assessed by a Turkish language teacher. After this, the form was translated back into English by two English-speaking translators. Neither translator saw the original form of the instrument prior to translation. The form was finalized by evaluating whether there were semantic changes compared to the original form.

Content validity testing

Following the establishment of the linguistic validity of the form in the Turkish language, the form was submitted to 9 experts (midwife-nurse, academician), and their opinions were asked to evaluate the content validity of the scale. These experts were requested to rate the items between 1 and 4 points (1= Not appropriate, 2= Somewhat appropriate/The wording needs to be adjusted, 3= Fairly appropriate but needs minor changes, and 4= Very appropriate) to assess the power of each item to measure the intended variable. Differences of opinion were analyzed with Davis method (7,23), and the review results of the consulted experts were compared based on the Content Validity Index (CVI) parameter. The CVI values of the items were over 0.778 for a total of fourteen items. After the assessments of the experts, the scale was tested in a pilot implementation with 25 people whose result were excluded from the main analyses, and revisions were implemented when necessary.

Statistical analysis

All of the confirmatory factor analysis findings were analyzed in the R-Project software (24) and using the lavaan (25) package, while the other findings were analyzed by a statistics expert with the IBM Statistical Package for Social Sciences 26 program. Pearson's correlation analysis was conducted for test-retest analysis to evaluate the time-invariance of the scale. For internal consistency assessment, Pearson's product-moment correlation coefficient for item-total score comparisons and Cronbach's alpha internal consistency coefficient for reliability were computed. The Davis method was employed to assess the outcomes of the expert reviews for testing content validity, and confirmatory factor analysis (CFA) was employed to test construct validity (23).

3. RESULTS

The average age of the women participating in the research was determined to be 32.941 ± 7.632 . While 38.9% of the participants were aged 18-29, 67% had university/graduate degrees, 73% stated that they were not working, and 72.4% stated that they had equivalent income and expense levels. 41.1% of the women reported that they were married for 0-5 years, 91.4% reported that their partner was compatible, and 88.1% reported that the perception of social support was sufficient. 59.5% of the women reported that they had a planned/wanted pregnancy, 58.4% did not want to have children, 61.6% stated that they used birth control method, and 38.4% did not use birth control method. According to male/female birth control methods, 35.1% of women use female contraception, 39.4% use male contraception, and 25.5% do not use contraception.

Reliability

Table 1 presents the descriptive statistics and Cronbach's Alpha reliability analysis results obtained from the subscales of the Desire to Avoid Pregnancy Scale among the participants in the study. All of the corrected correlation values for the subscale items of the DAPS were positive. The Cronbach's alpha coefficient of the Turkish DAPS was 0.951 (Table 1).

Table 1. Reliability Analysis of the DAPS

Size	Item	Avg	SD	CC	AIDD	Alpha
CDP	G1	2.427	1.454	0.758	0.884	0.904
	G2	2.859	1.311	0.695	0.893	
	G6	2.719	1.47	0.826	0.873	
	G7	2.081	1.467	0.702	0.893	
	G8	2.47	1.311	0.782	0.881	
	G9	1.389	1.331	0.665	0.897	
AFA	G3	2.368	1.476	0.664	0.816	0.847
	G4	2.557	1.355	0.68	0.808	
	G10	2.346	1.347	0.681	0.808	
	G11	2.308	1.447	0.715	0.792	
APC	G5	2.643	1.265	0.494	0.877	0.846
	G12	2.157	1.384	0.772	0.765	
	G13	2.465	1.456	0.758	0.77	
	G14	2.357	1.396	0.719	0.788	
DAPS					0.951	

SD: Standard Deviation, CC: Corrected Correlation, AIDD: Alpha If Item Deleted, CDP: Cognitive Desires and Preferences, AFA: Affective Feelings and Attitudes, APC: Anticipated Practical Consequences, DAPS: Desire to Avoid Pregnancy Scale. Table 1 presents the descriptive statistics and Cronbach's Alpha reliability analysis results obtained from the subscales of the Desire to Avoid Pregnancy Scale among the participants in the study (Table-1). All of the corrected correlation values for the subscale items of the DAPS were positive.

Validity

For the Turkish form of the scale, linguistic validity and content validity were tested.

Confirmatory factor analysis

Table 2 shows the goodness-of-fit index values of the confirmatory factor analysis (CFA) findings for the Desire to Avoid Pregnancy Scale among the participants in the study. In general, the validity results for the DAPS indicate compliance. The CFA goodness-of-fit index values of the adapted and tested scale are presented in Table 2. According to the CFA conducted on the three-factor construct, the fit index values were Chi-squared = 104.052 ($p < 0.001$) and degrees of freedom=74 ($\chi^2 = 104.052$; $df = 74$, $\chi^2/df = 1.406$), root mean square error of approximation (RMSEA) = 0.047 ($p < 0.05$) standardized root mean square residual (SRMR) = 0.077, comparative fit index (CFI) = 0.995, goodness of fit index (GFI) = 0.988, and adjusted goodness-of-fit index (AGFI) = 0.983 (Table 2).

Table 3 displays the confirmatory factor analysis (CFA) statistics for the Desire to Avoid Pregnancy Scale among the participants in the study (Table 3). When CFA statistics were examined, the p value of all sub-items of the scale of DAP was found to be less than 0.05 and it was found to be significant ($p < 0.05$).

According to the graphical structure obtained from the CFA, standardized factor loadings of all items are above 0.40. We observed that the factor loading coefficients of all items obtained as a result of CFA were between 0.44 and 0.96. Figure 1 displays the CFA diagram of the results (Figure 1).

Table 2. Fit Indices of CFA Findings of DAPS

Chi-Square Statistic	df	GFI	AGFI	TLI	CFI	RMSEA	SRMR
104.052	74	0.988	0.983	0.993	0.995	0.047	0.077

df: degrees of freedom, GFI: Goodness-of-Fit Index, AGFI: Adjusted Goodness of Fit Index, TLI: Tucker-Lewis Index, CFI: Comparative Fit Indices, RMSEA: Root Mean Square Error of Approximation, SRMR: Standardized Root Mean Square Residual. Table 2 shows the goodness-of-fit index values of the confirmatory factor analysis (CFA) findings for the Desire to Avoid Pregnancy Scale among the participants in the study (Table-2). In general, the validity results for the DAPS indicate compliance

Table 3. CFA Statistics of the DAPS

Size	Item	Beta	SE	z-statistics	p
CDP	G1	1			
	G2	0.836	0.047	17.657	<0.001
	G6	1.106	0.057	19.516	<0.001
	G7	1.066	0.054	19.614	<0.001
	G8	0.949	0.050	18.960	<0.001
	G9	0.877	0.046	19.236	<0.001
AFA	G3	1			
	G4	0.916	0.050	18.214	<0.001
	G10	0.982	0.051	19.139	<0.001
	G11	1.077	0.055	19.640	<0.001
APC	G5	1			
	G12	1.158	0.065	17.699	<0.001
	G13	1.320	0.072	18.446	<0.001
	G14	1.106	0.064	17.206	<0.001

Beta: Coefficient, SE: Standard Error, CDP: Cognitive Desires and Preferences, AFA: Affective Feelings and Attitudes, APC: Anticipated Practical Consequences. Table 3 displays the confirmatory factor analysis (CFA) statistics for the Desire to Avoid Pregnancy Scale among the participants in the study (Table-3). When CFA statistics were examined, the p value of all sub-items of the scale of DAP was found to be less than 0.05 and it was found to be significant ($p < 0.05$).

4. DISCUSSION

This study included the validity and reliability testing procedures of DAPS, and it was determined that the Turkish form of DAPS had desirable psychometric features.

Internal consistency and item analyses were conducted to test the Turkish form's reliability. One of the results supporting the reliability of the scale was the statistically significant internal consistency coefficient. Cronbach's alpha method that accepted to be applicable to Likert-type instruments, was utilized to evaluate internal consistency for the investigated measurement instrument. Higher alpha values are accepted to show that there is consistency among the items of a scale, and these items predict the components of the same characteristic. A mean value of the total variances between 0 and 1 indicates that the items in the scale show a homogeneous

distribution (7,21,26). In the reliability analyses of the Turkish form of DAPS, it was seen that Cronbach's alpha values of the measurement tool were at the desired level in the three factors, and these values were quite similar to the alpha values reported for the original form of the scale (2). The Cronbach's alpha values of the dimensions of the original form, which was determined to be quite reliable, were determined to be in the range of 0.86 ~ 0.93 in this study.

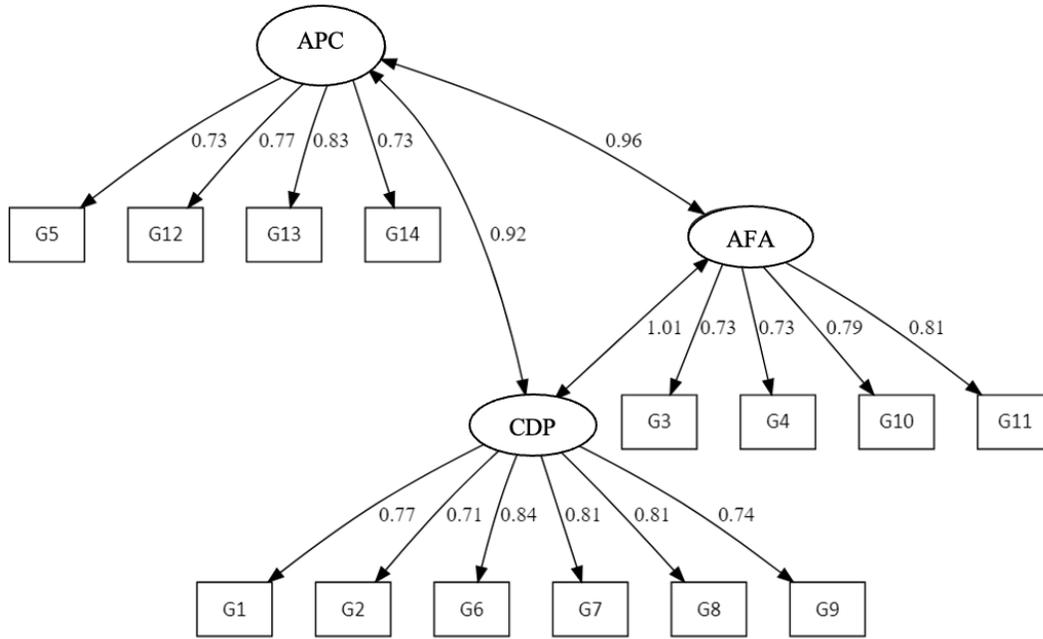


Figure 1. CFA Results of DAPS

According to the graphical structure obtained from the CFA, standardized factor loadings of all items are above 0.40 (**Figure 1**).

The high level of agreement between expert opinions on a scale is indicative of content validity for a measurement instrument (21). In this study, it was concluded that the form had a comprehensible linguistic structure and content. Based on the results of Exploratory Factor Analysis (EFA) performed to analyze a scale in terms of its construct validity, items with factor loads smaller than 0.40 and those with factor loads below 0.20 that were included in more than one factor at the same time should be removed from the scale (22). Based on the analysis results of our study, the scale included 3 factors covering 14 items, as in the original form. It was seen that the scale included a construct with an eigenvalue greater than 1, which explained over 50% of the total variance in the measured characteristic (19,21).

The usage of EFA and CFA for the same sample is debated in the literature. If the number of participants is sufficient (>300), it is suggested that both EFA and CFA can be conducted for the same sample (27-29). In agreement with the relevant literature, analyses were carried out for

the same group of participants in our study. We assessed the representation level of the items in the subscales identified using CFA and their capacity to explain the construct were assessed. In this context, frequently used goodness-of-fit indices, including the chi-squared statistic, RMSEA, SRMR, CFI, GFI, TLI (Tucker-Lewis Index), and AGFI were utilized. A CFA of a scale is expected to yield desirable goodness-of-fit statistics (27,30). The results of the study showed above-acceptable levels for all the goodness-of-fit statistics of the adapted scale, including χ^2/df , SRMR, RMSEA, GFI, TLI, AGFI, and CFI. The overall results revealed that the adapted scale model was on an acceptable level. According to these results, the Turkish form of DAPS is an instrument with validity and reliability in the evaluation of the desire of women to avoid getting pregnant.

5. CONCLUSION

This study demonstrated the sufficient validity and reliability of the Turkish form of DAPS. The results of the scale regarding internal consistency and validity were consistent with those reported for the original scale development study. Thus, it can be stated that the scale has adequate psychometric features.

In line with these results, since the Turkish version of DAPS is a measurement tool that determines the desire to avoid pregnancy, health care providers can benefit from this measurement tool. In addition, researchers can use the Turkish version of DAPS to determine women's pregnancy intention and improve pregnancy avoidance behaviors.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest.

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Ethical considerations

For the study, approval was obtained from the Ethics Committee of XXX University, Faculty of Health Sciences [18.01.2021-09], permission was obtained from XXX Provincial Health Directorate [28.04.2021/E-12641312-044] and informed consent was obtained from the participants.

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