ATATÜRK ÜNİVERSİTESİ YAYINLARI
ATATURK UNIVERSITY PUBLICATIONS

Research Article *Araştırma Makalesi*

DOI: 10.5152/JMHS.2023.22040

Turkish Adaptation of the Desire to Avoid Pregnancy Scale: A Validity and Reliability Study

Gebelikten Kaçınma Ölçeğinin Türkçe Uyarlaması: Geçerlik ve Güvenirlik Çalışması

Esra KARATAŞ OKYAY[1]
Esra GÜNEY[2]
Tuba UÇAR[2]

[1]Department of Midwifery, Kahramanmaraş Sütçü İmam University, Faculty of Health Sciences, Kahramanmaraş, Turkey
[2]Department of Midwifery, İnönü University, Faculty of Health Sciences, Malatya, Turkey

ABSTRACT

Objective: This study aimed to adapt the Desire to Avoid Pregnancy scale into Turkish and conduct its validity and reliability analyses.

Methods: A methodological study was carried out with a total of 742 women included in the sample, and they were randomly allocated into two groups. Exploratory factor analysis was performed on sample I (462 women), and confirmatory factor analysis was performed on sample II (280 women). Among the reliability analyses, Cronbach's alpha reliability coefficient, test–retest analysis, and the item–total score correlation coefficient were administered.

Results: As a result of the exploratory factor analysis performed on sample I, it was determined that 14 items explaining 57.262% of the total variance for the Desire to Avoid Pregnancy scale were included in one sample. According to the confirmatory factor analysis performed on sample II, the scale model was found to have good fit values. It was determined that Cronbach's alpha internal consistency coefficient obtained from the reliability analysis of the scale was .94, and the item–total score correlation and test–retest reliability coefficients obtained after the application at 2-week intervals were at acceptable levels for the women.

Conclusion: The results showed that the Desire to Avoid Pregnancy scale is valid and reliable for measures of pregnancy avoidance in women in the Turkish population.

Keywords: Desire to Avoid Pregnancy scale, pregnancy, pregnancy avoidance, reliability, validity

ÖZ

Amaç: Bu çalışmanın amacı Gebelikten Kaçınma Ölçeğini (GKÖ) Türkçeye uyarlamak, geçerlik ve güvenirliğini yapmaktır.

Yöntemler: Örnekleme 742 kadın alındı. Örneklem grubu rasgele 2'ye ayrıldı. Birinci örneklem (462 kadın) grubuna Açımlayıcı Faktör Analizi (AFA); 2. örneklem (280 kadın) grubuna Doğrulayıcı Faktör Analizi (DFA) yapıldı. Güvenirlik analizlerinden madde toplam puan korelasyon katsayısı, Cronbach's alfa güvenirlik katsayısı ve test-retest analysis bakıldı.

Bulgular: Birinci örnekleme uygulanan AFA'ya göre GKÖ'nün toplam varyansın %57,262'sini açıklayan 14 maddelik tek faktör altında toplandığı belirlendi. İkinci örnekleme uygulanan DFA'ya göre ölçek modelinin uyum değerlerinin iyi olduğu bulundu. Güvenirlik analiz sonuçlarına göre, ölçeğin Cronbach's alfa iç tutarlılık katsayısının 0,94 olduğu, madde-toplam puan korelasyon katsayı değerlerinin ve test-retest güvenilirlik katsayı değerinin örneklem için kabul edilebilir düzeyde olduğu belirlendi.

Sonuç: Elde edilen sonuçlar GKÖ'nün Türk toplumundaki kadınlarda gebelikten kaçınma ölçümleri için geçerli ve güvenilir olduğunu gösterdi.

Anahtar Kelimeler: Gebelikten kaçınma ölçeği (GKÖ), gebelikten kaçınma, gebelik, geçerlik, güvenirlik

This research was presented as an oral presentation at World Women Conference-II, 11-12 February 2021, Türkiye

Received/Geliş Tarihi: 09.04.2022
Accepted/Kabul Tarihi: 01.12.2022
Publication Date/Yayın Tarihi: 01.09.2023

Corresponding Author/Sorumlu Yazar: Esra GÜNEY
E-mail: esra.guney@inonu.edu.tr

Cite this article as: Karataş Okyay, E., Güney, E., & Uçar, T. (2023). Turkish adaptation of the desire to avoid pregnancy scale: A validity and reliability study. *Journal of Midwifery and Health Sciences*, 6(3), 128-134.

Introduction

Although the idea of conception may provoke excitement among many women, some women may want to avoid it because of the complications that may arise during pregnancy and delivery (Gatny et al., 2014; Samari et al., 2020). The idea of conception could go beyond normal childbirth concerns and worries, and it may become an intense and irrational fear of pregnancy and/or labor. Moreover, some women are more susceptible to fear of childbirth than others (Fenwick et al., 2015). In particular, women with tokophobia prefer to use family planning methods with a high protection rate to avoid becoming pregnant (Fenwick et al., 2015; Klabbers et al., 2016). These thoughts of women about the idea of conception may also affect their desire for pregnancy (Samari et al., 2020).

There is a strong correlation between the desire for pregnancy and pregnancy rates, and conception that occurs despite the avoidance of it by a woman may result in an unintended pregnancy (Gatny et al., 2018; Weitzman et al., 2017). Unintended pregnancies and related abortions are a significant women's health problem and among the leading causes of death in women in their reproductive period (Ganatra et al., 2017; Gatny et al., 2014). According to the World Health Organization, 56 million women on average have abortions (safe and unsafe abortions) due to unintended pregnancies, and unsafe abortions account for 4.7% to 13.2% of causes of maternal death each year (Ganatra et al., 2017; Say et al., 2014). For this reason, it is important to determine whether women have pregnancy intentions or desires to avoid pregnancy to identify unintended pregnancies (Mumford et al., 2016; Rocca et al., 2019). However, most studies in the literature on women's intentions to become pregnant are retrospective (J. Hall et al., 2019; J. A. Hall et al., 2017). In these studies, since questions have been asked of women during their pregnancy or in the postpartum period, the responses of the women might not have accurately reflected their true thoughts about their intention to conceive or their desire to avoid pregnancy. Thus, it is important to determine thoughts about pregnancy prospectively and define women's feelings regarding a possible future pregnancy before it happens to provide appropriate women-centered care (Rocca et al., 2019; Stulberg et al., 2020).

The pregnancy desires of women can be determined by asking a single question: "Would you like to become pregnant in the next year?" It is suggested that health-care professionals provide four options for this question ("Yes," "Unsure," "No," and "Okay either way"). However, the impact of a single question on clinical care and patient outcomes has not been demonstrated well in the literature (Stulberg et al., 2020). The Desire to Avoid Pregnancy (DAP) scale, which was tested for validity and reliability in this study, measures pregnancy-related preferences prospectively. It comprises 14 items regarding how women would feel about becoming pregnant in the next 3 months and having a baby in the next year. This scale determines three areas related to women's conscious and unconscious pregnancy desires, including emotional feelings and attitudes, cognitive desires and preferences, and expected practical outcomes (Rocca et al., 2019). In Turkey, women's pregnancy-related desires are determined with a single screening question, and patient-centered counseling and services are provided according to the women's response. Presently, Turkey does not have a validated measurement tool that measures a woman's pregnancy-related preferences across different domains (desires, emotions, practical effect). Accordingly, this study aimed to adapt the DAP scale, which was developed by Rocca et al. in 2019, into the Turkish language and conduct validity and reliability analyses to determine its applicability in this context.

Methods

Procedure and Design

This methodological study was conducted between 1 and 31 December 2020 using an online questionnaire distributed through married women's groups on social media (Facebook). The study included women who volunteered to fill out the online questionnaire and met the inclusion criteria. The inclusion criteria were being literate, being 15–45 years of age, not being pregnant, not being infertile, and having been married or sexually active for at least 1 year. The exclusion criterion was not answering the questionnaire completely. A total of 1002 women responded to the online questionnaire.

Adapting a scale to a different culture requires a sample size range of 50 = very bad, 100 = bad, 200 = suitable, 300 = good, 500 = very good, and 1000 = excellent. This range indicates the perfect sample size based on the criteria proposed by Comrey and Lee (1992) for factor analysis. Incomplete and incorrectly coded questionnaire forms were identified, and 260 forms were excluded from the analysis because they were considered invalid (Comrey & Lee, 2013). Thus, a total of 742 women constituted the sample of the study. Individuals were randomly selected from the main sample to form sample I (462 women), and the remaining individuals constituted sample II (280 women). A computer-generated list of random numbers was used to allocate the women to sample I. On sample I, exploratory factor analysis (EFA) was conducted, and on sample II, confirmatory factor analysis (CFA) was conducted. The questionnaire form that was used in this study was developed using the Google Forms platform.

Data Collection Tools

Personal Information Form

In the personal information form created by the researchers, the questions were designed to determine some of the sociodemographic characteristics of the women (J. A. Hall et al., 2017; Rocca et al., 2019; Weitzman et al., 2017).

Desire to Avoid Pregnancy Scale

This scale was developed by Rocca et al. (2019) to prospectively measure women's preferences regarding a possible future pregnancy and determine their desire to avoid pregnancy. The first five items of the 14-item scale address feelings and thoughts about the idea of conceiving in the next 3 months, and the remaining items address feelings and thoughts about having a baby in the next year. Seven items in the scale are scored in reverse (items 3, 7, 9, 11, 12, 13, and 14). The response options for the five-point Likert-type scale range between 0 = "strongly agree" and 4 = "strongly disagree." The minimum and maximum total scores that can be obtained by the respondent are 0 and 4, where this total score is calculated by summing the scores of all items and dividing the result by the number of items, which is 14. Higher scores indicate higher levels of desire to avoid pregnancy (Rocca et al., 2019).

Cultural Adaptation of the Desire to Avoid Pregnancy Scale

To adapt the DAP scale to Turkish, primarily, cultural adaptation was performed. The cultural adaptation phase consisted of testing the scale's linguistic validity, content validity, and pilot implementation. The scale was translated into Turkish by five independent experts. The translated documents were examined

by the researchers, and the Turkish text that represented each item best was selected. The Turkish draft was then translated back to English. Again, five linguists worked independently on the translation. Later, it was determined that the original scale and the text that was rejected were consistent.

Content validity was assessed to determine the distinctiveness of each item on the scale and its suitability for the purpose and the culture. The scale items were sent by e-mail to 12 faculty members who are experts in the field of midwifery. The evaluation was meant to assess the comprehensibility of each question with a Likert-type scoring system including the response options of 1 = "not compatible," 2 = "somewhat compatible, needs to be adapted," 3 = "quite compatible but needs minor changes," and 4 = "very compatible." The compatibility level of the experts' scores was analyzed using the nonparametric test of Kendall's *W* (Bowling & Ebrahim, 2005). It was seen that the scores given by the experts were not significantly different (Kendall's $W = .158$; $p = .499$) and there was a consensus among the experts.

A pilot study was conducted to determine whether the items of the scale, which was prepared with the recommendations of experts, were clear, understandable, and applicable. In the pilot study, 33 women who had similar characteristics to the sample were contacted. Results of pilot participants were not included in the main analyses. There are no misunderstood questions in the scale in the pilot application. Thus, the use of the draft of the Turkish version of the EAP scale was approved.

Psychometric testing of the Desire to Avoid Pregnancy scale

Validity

Kaiser–Meyer–Olkin (KMO) test was performed to evaluate the suitability of the sample size and the dataset for factor analysis, Bartlett's test of sphericity was used to determine the adequacy of the sample size. A KMO value above 0.60 and a statistically significant result of the Bartlett's test indicated that the sample size was sufficient for factor analysis (Hadi et al., 2016). Exploratory factor analysis was performed on sample I (462 women), which was randomly selected from the entire sample. Exploratory factor analysis is a process that determines the number of factors of the measurement tool that is being tested. Cases where the rate of the total variance explained by the factors exceeds 50% indicate strong construct validity (Samuels, 2017). Confirmatory factor analysis was performed on sample II (280 women), who were randomly selected from the entire sample. Confirmatory factor analysis tests whether there is sufficient correlation between the factors determined using EFA, which variables are related to which factors, whether they are independent of each other, and whether the factors are sufficient to explain the model. The fit indices of χ^2/df, comparative fit index (CFI), standardized root mean squared residual (SRMR), and root mean square error of approximation (RMSEA) were used to assess the goodness of fit (Evci & Aylar, 2017).

Reliability

The Cronbach's alpha internal consistency coefficient was calculated in the reliability analysis of the DAP scale. A sufficient reliability coefficient of a measurement tool should be as close to 1 as possible (Quansah, 1916). The item–total score correlation coefficients were analyzed to examine the relationship between the scores obtained from each item of the DAP scale and the total DAP scale scores. The item–total score correlation coefficient provides information regarding the extent to which the items in the measurement instrument are related to each other. It was stated that items with item–total correlation values below .20 in a scale should be removed from the scale (Metsämuuronen, 2016). Test–retest analysis was performed to determine the time invariance of the DAP scale. The scale was applied among 36 women for a second time 15 days after the first implementation for the retest. The correlation coefficient between the measurement values obtained from the two applications is the reliability coefficient of the scale. As this value approaches 1, the test–retest reliability of the scale increases (Yaşlıoğlu, 2017).

Statistical Analysis

The primary results were obtained with EFA. In addition, content validity analysis, CFA, and reliability analysis were carried out. The collected data in this study were analyzed using Statistical Package for the Social Sciences 25.0 (IBM SPSS Corp., Armonk, NY, USA) and Analysis of Moment Structures (AMOS) 24 software. In order to test the normality assumptions, the scores of all scale values used in this study were analyzed using the Kolmogorov–Smirnov test. Parametric tests were used as the data showed a normal distribution. Frequencies, percentages, averages, and standard deviations were used to analyze the descriptive characteristics of the study participants. Kendall's *W* test was used for the analysis of the content validity of the scale. Kaiser–Meyer–Olkin test and Bartlett's sphericity test were used to evaluate the suitability of the sample size and data set for factor analysis. To test the construct validity of the scale, EFA was used. Statistical Package for the Social Sciences 25.0 was used to describe the factor structure of the scale. Desire to Avoid Pregnancy Scale (DFA) was carried out with AMOS 24 using the maximum likelihood method. Cronbach's alpha reliability coefficient, item–total score correlation coefficient, and test–retest analysis were used in testing the reliability of the scale.

Ethics Statement

In the adaptation process of the scale to Turkish, first of all, the necessary permission was received from Rocca, who developed the scale, via e-mail. Before the questionnaire forms were distributed to the participants, an information text about the research process and data collection tools was created, and the consent of the participants was obtained. Participation in the study was on a voluntary basis. Ethics committee approval was received for this study from the İnonu University Health Sciences Non-Interventional Clinical Research and Publication Ethics Committee (Date: November 10, 2020, Decision number: 2020/1237).

Results

The sample (n = 1002) was screened for the inclusion criteria, and 26% of the potential participants, who responded to the questionnaire incompletely or incorrectly, were excluded from the study. The mean age of the EFA group participants in the study was 32.39 ± 7.53 years, and the mean age of the CFA group participants in the study was 32.85 ± 19.47 years. The sociodemographic characteristics of the women are shown in Table 1.

Validity

As a result of the EFA applied to Sample I, it was found that the KMO value of the DAP was 0.933, its Bartlett's sphericity test value was $X^2 = 5191.506$, and the significance level was $p < .001$. Based on these results, the sample size was perfectly adequate to perform factor analysis for both questionnaires (Hadia et al., 2016). With respect to the EFA results, one factor (unidimensional

Table 1.
Sociodemographic Characteristics of the Women (n = 742)

Characteristics	EFA (*n* = 462)		CFA (*n* = 280)	
Age (years)	32.39 ± 7.53		32.85 ± 19.47	
Educational level				
Lower levels than high school	168	(36.4%)	91	(32.5%)
High school	120	(26.0%)	87	(31.1%)
College or higher degree	174	(37.7%)	102	(36.4%)
Employment status				
Employed	126	(27.3%)	76	(27.1%)
Unemployed	336	(72.7%)	204	(72.9%)
Income status				
Low	103	(22.3%)	83	(29.6%)
Medium	334	(72.3%)	183	(65.4%)
High	25	(5.4%)	14	(5.0%)
Length of marriage				
1–5 year(s)	151	(34.9%)	85	(32.8%)
6–12 years	112	(25.9%)	79	(30.5%)
13+ years	170	(39.3%)	95	(36.7%)
Parity				
Nullipara	57	(12.5%)	37	(13.4%)
Primigravida	97	(21.3%)	63	(22.7%)
Multigravida	301	(66.2%)	177	(63.9%)
Current contraceptive use				
Yes	300	(64.9%)	191	(68.2%)
No	162	(35.1%)	89	(31.8%)
Status of planning pregnancy				
Yes, planning now	42	(9.1%)	19	(6.8%)
Yes, in the next 3 months	16	(3.5%)	6	(2.1%)
Yes, in the next year	27	(5.8%)	21	(7.5%)
Yes, after the next year	48	(10.4%)	41	(14.6%)
No, not planning	329	(71.2%)	193	(68.9%)

Note: CFA = Confirmatory factor analysis; EFA = Exploratory factor analysis.

model) with an eigenvalue above 1 for 14 items was obtained for the DAP scale (Table 2). Sample II was subjected to DFA. In the evaluation, the desired result could not be obtained in terms of the goodness of fit indices obtained from the first model. A second CFA model was obtained by correlating the error covariances for these items. Confirmatory factor analysis results revealed a good fit based on the goodness of fit indexes of the scale (Table 3; Figure 1).

Reliability

The Cronbach's alpha reliability coefficient for the DAP scale was calculated as .942 (Table 2). It was found that the correlation coefficients between the overall score obtained from the scale and those obtained for each item were positive and high (Table 2). The mean total DAP scale score of the participants in the first implementation was 2.23 ± 0.96, while their retest mean total score was 2.25 ± 0.74. The correlation values between the mean scores obtained at the two different times demonstrated a positive and strong statistically significant relationship ($r = .581$, $p = .001$).

Table 2.
Factor Loads and Item–Total Score Correlation Coefficients of the Desire to Avoid Pregnancy (DAP) Scale (Sample I, n = 462)

Item No.	Items	Factor	Mean	SD	Item–Total Score Correlation
10	Baby: makes me smile (+)	0.86	1.74	1.24	0.85*
6	Baby: want (+)	0.82	2.03	1.35	0.81*
8	Baby: positive addition to life (+)	0.82	1.74	1.17	0.81*
2	Pregnant: good thing for me (+)	0.81	2.25	1.26	0.81*
4	Pregnancy: excited (+)	0.81	2.19	1.26	0.80*
1	Pregnancy: would not mind (+)	0.76	1.96	1.31	0.76*
11	Baby: stressed out (–)	0.75	1.79	1.31	0.76*
3	Pregnancy: unhappy (–)	0.75	1.90	1.27	0.75*
7	Baby: bad for life (–)	0.73	1.28	1.14	0.73*
5	Pregnancy: closer to partner (+)	0.72	2.22	1.32	0.71*
13	Baby: hard for me to handle (–)	0.71	1.89	1.27	0.72*
14	Baby: harder to achieve other things (–)	0.67	1.77	1.22	0.68*
12	Baby: loss of freedom (–)	0.65	1.59	1.24	0.66*
9	Baby: end of the world for me (–)	0.64	0.85	1.00	0.64*
Cronbach's alpha (0.942)			2.23	0.96	
Variance explained (%) 57.262					

Note: SD = Standard deviation.
*p <.001.

Discussion

This study aimed to adapt the DAP scale into Turkish and assess its validity and reliability. According to the findings of the study, the Turkish version of the DAP scale is a valid and reliable scale to use in day-to-day practice for identifying unintended pregnancies. For the psychometric analysis of the original scale, the researchers used item response theory (IRT) or item response modeling (IRM) on the measurements (De Boeck & Wilson, 2004). Item response modeling-based methods are used to reduce the number of items and evaluate the performance of items. Item response modeling is a leading statistical paradigm for the development and evaluation of scales, including self-reported

Table 3.
Goodness-of-Fit Indices for the Desire to Avoid Pregnancy (DAP) Scale: Confirmatory Factor Analysis (Sample II, n = 280)

Fit Criteria	Model Result	Good Fit	Acceptable Fit
χ^2/df (cmin/df)	2.994	$0 \leq \chi 2/df \leq 3$	<5
p for the model	.000	<.05	
CFI	.95	.97 ≤ CFI ≤ 1	.90 ≤ CFI < .97
SRMR	.00	0 ≤ SRMR ≤ .05	.05 < SRMR ≤ .10
RMSEA	.08	≤ .05	.05 < RMSEA ≤ .08

χ^2/df = Chi-squared relative to its degrees of freedom; CFI = Comparative fit index; RMSEA = root mean square error of approximation; SRMR = Standardized root mean squared residual.

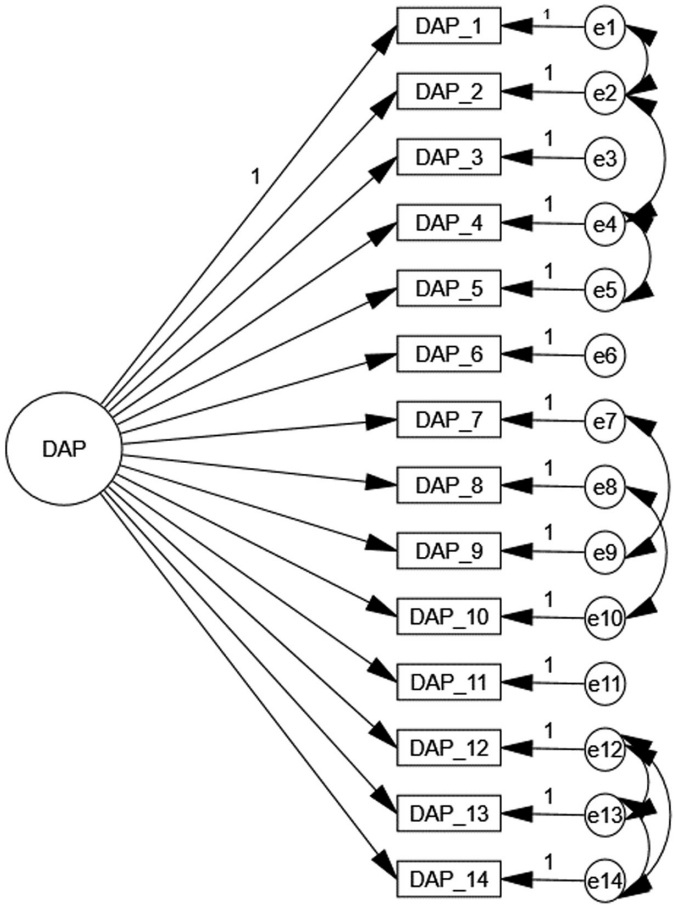

Figure 1.
Desire to Avoid Pregnancy (DAP) Scale, Standardized Factor Loadings, and Interfactor Correlations.

measures (Wilson, 2004). Additionally, IRM provides a richer description of each substance, helping researchers select the best-performing substances (Bachrach & Morgan, 2013; De Boeck & Wilson, 2004; Wilson, 2004).

Validity

In the original version of the scale, researchers used structural modeling and IRT-based methods to develop and assess the psychometric measure of the scale. Item response modeling was not used in the adaptation of the DAP scale to Turkish, but CFA and EFA were used for the validity analysis of the scale. Exploratory factor analysis was performed at the first stage to determine the construct validity of the DAP scale, the related concept of the scale, and its ability to measure the entire conceptual construct. A high ratio of the total explained variance as a result of EFA indicates that the factor structure of the scale is strong. According to the KMO test statistic, the sample size was sufficient for factor analysis (Hadi et al., 2016). The factor load values of the items of the DAP scale were found to be between .64 and .86. Therefore, no item was removed from the scale.

The researchers of this study found that the adapted DAP scale is one dimensional, as is the original scale, and the single factor of the scale explained 57.262% of the total variance. Values of 50% and above are preferred for the ratio of the total variance explained by its factors in adaptation studies (Samuels, 2017). Thus, the sufficient construct validity standard was met. Confirmatory factor analysis is used to test whether there is a sufficient correlation between the factors determined with the help of EFA. In the CFA, the fit indices of the scale were calculated. The calculation results revealed excellent fit indices for the instrument (Evci & Aylar, 2017).

Reliability

Reliability is a measure of the consistency of scale (Taherdoost, 2016). The Cronbach's alpha internal consistency coefficient, the item–total correlation coefficient and test–retest reliability analysis were used to examine the reliability of the Turkish version of the DAP scale. The Cronbach's alpha coefficient of the Turkish version of the DAP scale was found as .94. For the original version of the scale, Rocca et al. (2019) reported the Cronbach's alpha coefficient as .95 (Rocca et al., 2019). The coefficients obtained in this study were found to be compatible with the original scale, and the Turkish version of the DAP scale was determined to be highly reliable.

In this study, the item–total correlation coefficients of the scale ranged from .64 to .85. These item–total correlation coefficients were found to be above the acceptable limit for item selection ($r \geq .20$ for all items in the scale) (Metsämuuronen, 2016). The correlation between the score of each item and the total score was acceptable and statistically significant. In this study, the test–retest method was used to determine the time invariance of the scale and correlation analysis was performed. As a result of the analysis, the test–retest correlation coefficient was determined as .518. According to the literature, as this value approaches 1, the reliability of the measurement instrument that is tested increases (Yaşlıoğlu, 2017). Based on this result, the reliability of the DAP scale was high.

In the literature review, it was determined that the psychometric measurements of the DAP scale, including EFA, CFA, item–total correlation analysis, and test–retest analysis, had not yet been made for its use in different languages and cultures. Therefore, the results of the EFA, CFA, test–retest analysis, and item–total correlation analysis given in this study are the only findings presented in terms of the psychometric evaluation of the DAP scale. These results may therefore guide further studies.

Conclusion and Recommendations

The scale showed good reliability and met the criteria for internal consistency and external validity in the Turkish language. The Turkish version of the DAP scale is recommended for use in future studies to examine the preference of women to avoid pregnancy and capture a range of preferences related to pregnancy and childbearing, including cognitive evaluations of feelings, preferences, and anticipated practical consequences. It will contribute as a solid measure in determining pregnancy preferences to the literature on unintended pregnancies. The Desire to Avoid Pregnancy scale can be used to determine individual preferences for conception and contraceptive use.

Study Limitations

The main contribution of this study was that DAP was made ready to use in day-to-day practice for identifying the pregnancy intentions of women accurately in Turkish society. The questionnaire is short and easy to use in both clinical practice and research. Having a measurement instrument that makes it easier to identify unintended pregnancies provides the likelihood of women using effective family planning methods. Nevertheless, this study also

had some limitations. The first limitation was that only married participants were included in the study. Another limitation was that the long-term intended desire to avoid pregnancy cannot be assessed with this scale. The fact that the study was conducted on Facebook may have affected the comprehension of the scale items. While this does not invalidate the translation (adaptation), validation and reliability study, incomplete/incorrect responses to the items might indicate the difficulty of some women in understanding the items. Despite these limitations, we believe that this scale can serve as a starting point for further research, as the Turkish version of the DAP scale was found to be valid and reliable.

Ethics Committee Approval: Ethics committee approval was received for this study from the İnonu University Health Sciences Non-Interventional Clinical Research and Publication Ethics Committee (Date: November 10, 2020, Decision number: 2020/1237).

Informed Consent: Before the questionnaire forms were disseminated, an information letter about the research and data collection tools was created, and the consent of the participants was obtained. Participation in the study was done on a voluntary basis.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – E.K.O., E.G., T.U.; Design – E.K.O., E.G., T.U.; Supervision – E.K.O., E.G.; Resources – E.K.O., E.G.; Materials – E.K.O., E.G.; Data Collection and/or Processing –E.K.O., E.G.; Analysis and/or Interpretation – E.K.O., E.G.; Literature Search –E.K.O., E.G.; Writing Manuscript – E.K.O., E.G.; Critical Review – E.K.O., E.G., T.U.

Declaration of Interests: The authors declare that they have no competing interest.

Funding: The authors declared that this study has received no financial support.

Etik Komite Onayı: Bu çalışma için etik komite onayı İnönü Üniversitesi Sağlık Bilimleri Girişimsel Olmayan Klinik Araştırmalar ve Yayın Etiği Kurulu'ndan (Tarih: 10 Kasım 2020, Sayı: 2020/1237) alınmıştır.

Hasta Onamı: Online anketin ilk sayfasında çalışmanın amacı ve içeriği hakkında kısa bir bilgi notu yer almış ve katılımcıların çalışmaya katılmaya gönüllü olup olmadıklarını belirten onam formu gönderilmiştir. Araştırmaya katılım gönüllülük esasına göre yapılmıştır.

Hakem Değerlendirmesi: Dış bağımsız.

Yazar Katkıları: Fikir – E.K.O., E.G., T.U.; Tasarım – E.K.O., E.G., T.U.; Denetleme – E.K.O., E.G.; Kaynaklar – E.K.O., E.G.; Malzemeler – E.K.O., E.G.; Veri Toplanması ve/veya İşlemesi – E.K.O., E.G.; Analiz ve/veya Yorum – E.K.O., E.G.; Literatür Taraması – E.K.O., E.G.; Yazıyı Yazan – E.K.O., E.G.; Eleştirel İnceleme – E.K.O., E.G., T.U.

Çıkar Çatışması: Yazarlar çıkar çatışması bildirmemişlerdir.

Finansal Destek: Yazarlar bu çalışma için finansal destek almadıklarını beyan etmişlerdir.

References

Bachrach, C. A., & Morgan, S. P. (2013). A cognitive–social model of fertility intentions. *Population and Development Review*, *39*(3), 459–485. [CrossRef]

Bowling, A., & Ebrahim, S. (2005). *Handbook of health research methods: ınvestigation, measurement and analysis*. Mcgraw-Hill Education.

Comrey, A. L., & Lee, H. B. (2013). *A first course in factor analysis*. Psychology press.

De Boeck, P., & Wilson, M. (2004). *Explanatory ıtem response models: A generalized linear and nonlinear approach*. Springer-Verlag.

Evci, N., & Aylar, F. (2017). Use of confirmatory factor analysis in scale development studies. *Journal of Social Science*, *4*, 389–412.

Fenwick, J., Toohill, J., Creedy, D. K., Smith, J., & Gamble, J. (2015). Sources, responses and moderators of childbirth fear in Australian women: A qualitative investigation. *Midwifery*, *31*(1), 239–246. [CrossRef]

Ganatra, B., Gerdts, C., Rossier, C., Johnson Jr., B. R., Tunçalp, Ö., Assifi, A., Sedgh, G., Singh, S., Bankole, A., Popinchalk, A., Bearak, J., Kang, Z., & Alkema, L., Singh, S., Bankole, A., Popinchalk, A., Bearak, J., Kang, Z., & Alkema, L. (2017). Global, regional, and subregional classification of abortions by safety, 2010–14: Estimates from a Bayesian hierarchical model. *Lancet*, *390*(10110), 2372–2381. [CrossRef]

Gatny, H. H., Kusunoki, Y., & Barber, J. S. (2014). Pregnancy scares and subsequent unintended pregnancy. *Demographic Research*, *31*, 1229–1242. [CrossRef]

Gatny, H., Kusunoki, Y., & Barber, J. (2018). Pregnancy scares and change in contraceptive use. *Contraception*, *98*(4), 260–265. [CrossRef]

Hadi, N. U., Abdullah, N., & Sentosa, I. (2016). An easy approach to exploratory factor analysis: Marketing perspective. *Journal of Educational and Social Research*, *6*(1), 215–215.

Hall, J. A., Benton, L., Copas, A., & Stephenson, J. (2017). Pregnancy intention and pregnancy outcome: Systematic review and meta-analysis. *Maternal and Child Health Journal*, *21*(3), 670–704. [CrossRef]

Hall, J. A., Stephenson, J., & Barrett, G. (2019). On the stability of reported pregnancy intentions from pregnancy to 1 year postnatally: Impact of choice of measure, timing of assessment, women's characteristics and outcome of pregnancy. *Maternal and Child Health Journal*, *23*(9), 1177–1186. [CrossRef]

Klabbers, G. A., van Bakel, H. J., van den Heuvel, M. M., & Vingerhoets, A. J. (2016). Severe fear of childbirth: Its features, assesment, prevalence, determinants, consequences and possible treatments. *Psychological Topics*, *25*(1), 107–127.

Metsämuuronen, J. (2016). Item–total correlation as the cause for the underestimation of the alpha estimate for the reliability of the scale. *GJRA-global journal for research analysis*, *5*(1), 471–477.

Mumford, S. L., Sapra, K. J., King, R. B., Louis, J. F., & Buck Louis, G. M. B. (2016). Pregnancy intentions—A complex construct and call for new measures. *Fertility and Sterility*, *106*(6), 1453–1462. [CrossRef]

Quansah, F. (1916). The use of Cronbach alpha reliability estimate in research among students in public universities in Ghana. *African Journal of Teacher Education*, *6*. [CrossRef]

Rocca, C. H., Ralph, L. J., Wilson, M., Gould, H., & Foster, D. G. (2019). Psychometric evaluation of an instrument to measure prospective pregnancy preferences: The desire to avoid pregnancy scale. *Medical Care*, *57*(2), 152–158. [CrossRef]

Samari, G., Foster, D. G., Ralph, L. J., & Rocca, C. H. (2020). Pregnancy preferences and contraceptive use among US women. *Contraception*, *101*(2), 79–85. [CrossRef]

Samuels, P. (2017). *Advice on exploratory factor analysis*.

Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A. B., Daniels, J., Gülmezoglu, A. M., Temmerman, M., & Alkema, L., Temmerman, M., & Alkema, L. (2014). Global causes of maternal death: A WHO systematic analysis. *Lancet. Global Health*, *2*(6), e323–e333. [CrossRef]

Stulberg, D. B., Datta, A., White VanGompel, E. W., Schueler, K., & Rocca, C. H. (2020). One Key Question® and the Desire to Avoid Pregnancy Scale: A comparison of two approaches to asking about pregnancy preferences. *Contraception*, *101*(4), 231–236. [CrossRef]

Taherdoost, H. (2016). Validity and reliability of the research instrument; how to test the validation of a questionnaire/survey in a research. *SSRN Electronic Journal*. [CrossRef]

Weitzman, A., Barber, J. S., Kusunoki, Y., & England, P. (2017). Desire for and to avoid pregnancy during the transition to adulthood. *Journal of Marriage and the Family*, *79*(4), 1060–1075. [CrossRef]

Wilson, M. (2004). *Constructing measures: An item response modeling approach*. Routledge.

Yaşlıoğlu, M. (2017). Factor analysis and validity in social sciences: Application of exploratory and confirmatory factor analyses. *Istanbul University Journal of the School of Business*, *46*, 74–85.

Genişletilmiş Özet

Amaç: Gebe kalma fikri, kadınların çoğunda tatlı heyecanlar uyandırmasına rağmen gebelik ve doğumda meydana gelebilecek komplikasyonlar nedeniyle kadınlar gebelikten kaçınmak istemektedirler. Özellikle tokofobisi olan kadınlar, gebe kalmamak için yüksek koruyuculuk oranına sahip aile planlaması yöntemleri kullanmayı tercih etmektedirler. Bazen de bebeğin veya kendisinin zarar görebileceği korkusu da kadınların gebe kalma isteğinin önüne geçebilmektedir. Gebelik ve doğumun meydana getirebileceği faktörler dışında gebelikten kaçınma isteğinin bir diğer sebebi de bebeğe yeterince iyi bakamama endişesidir. Kadınların gebeliğe ilişkin düşünceleri gebelik ve doğum sonuçlarını da etkileyebilir. Gebe kalma isteği ile gebelik oranları arasında güçlü bir bağlantı bulunmakta olup; bir kadın gebelikten kaçınmasına rağmen oluşabilecek bir gebelik istenmeyen gebelikle sonuçlanabilir. İstenmeyen gebelikler ve buna bağlı oluşan isteyerek yapılan düşükler önemli bir kadın sağlığı sorunudur ve doğurganlık dönemindeki kadınların ölüm nedenleri arasında ilk sıralarda yer almaktadır. Bu sebeple istenmeyen gebeliklerin belirlenerek kontraseptif bakıma ihtiyaç duyan kadınların ayırt edilmesi için kadınların gebelik niyetlerinin ve gebelikten kaçınma isteklerinin olup olmadığının belirlenmesi önemlidir. Gebeliğe dair düşünceleri ileriye dönük olarak belirlemek ve kadınların gebeliğin henüz gerçekleşmediği dönemde gelecekteki olası bir gebeliğe karşı duygularını tanımlamak, hem istenmeyen gebeliklerin belirlenmesi ve kontraseptif bakıma ihtiyaç duyan kadınların ayırt edilmesi için, hem de kadın merkezli bakımın sunulması için önemlidir. Bu nedenlerden dolayı kadınların gelecekte gebe kalma ve bebek sahibi olma konusunda nasıl hissedeceklerini ve gebelikten kaçınma isteklerinin olup olmadığını belirlemek gerekmektedir. Bu çalışmada Rocca ve arkadaşları tarafından 2019 yılında geliştirilen Gebelikten Kaçınma Ölçeğinin (The Desire to Avoid Pregnancy Scale, DAP-scale) Türkçeye uyarlanarak, geçerlik ve güvenirliğinin yapılması amaçlandı.

Yöntem: Metodolojik tipte olan araştırma 1- 31 Aralık 2020 tarihleri arasında sosyal medyada (Facebook) evli kadın grupları aracılığıyla web tabanlı bir çevrimiçi anket kullanılarak gerçekleştirildi. Araştırmaya çevrimiçi anketi doldurmaya gönüllü ve araştırmaya alınma kriterlerini sağlayan (okur- yazar olan, 15- 45 yaş aralığında olan, gebe olmayan, infertil olmayan ve en az bir yıldır evli olan/ en az bir yıldır cinsel olarak aktif olan) kadınlar alındı. Çevrimiçi anketlerden 1002 geri dönüş sağlandı. Bir ölçeğin farklı bir kültüre uyarlanmasında güvenilir bir faktör analizi için alınması gereken örneklem büyüklüğü 50 çok kötü, 100 kötü, 200 uygun, 300 iyi, 500 çok iyi ve 1000 mükemmel olarak sınıflandırılmıştır. Bu oran Comrey ve Lee'nin faktör analizi için önerdiği ölçütler dikkate alındığında mükemmel örneklem büyüklüğünü oluşturmaktadır. Eksik doldurulmuş, tamamlanmamış veya yanlış kodlanmış anketler belirlendi ve 260 katılımcının anket formları geçersiz sayıldığı için değerlendirme dışı bırakıldı. Böylece, araştırmanın örneklemini toplamda 742 kadın oluşturdu. Oluşturulan örneklemden random olarak bir grup seçilerek örneklem I (462 kadın); kalan grupla da örneklem II (280 kadın) oluşturuldu. Örneklem I' e AFA; örneklem II' ye DFA uygulandı. Araştırma anketleri Google formları uygulaması (https://docs.google.com/forms) kullanılarak geliştirildi. Araştırmada katılımcıların tanıtıcı özelliklerinin değerlendirilmesinde sayı, yüzde, ortalama, standart sapma kullanıldı. Ölçeğin kapsam geçerliği değerlendirilirken Kendall W analizi kullanıldı. Çalışmaya alınan örneklem büyüklüğü ve veri setinin faktör analizine uygunluğunu değerlendirmek için Kaiser- Meyer- Olkin (KMO) analizi; örneklem sınama büyüklüğünü saptamak için Barlett's Test of Sphericity testi yapıldı. Ölçeklerin yapı geçerliğinin test edilmesinde AFA yapıldı. Ölçeğin faktör yapısı açıklanırken SPSS 25.0 kullanıldı. DFA, AMOS 24 programı kullanılarak yapıldı. Ölçeğin güvenirliğinin test edilmesinde güvenirlik analizlerinden Cronbach's alfa güvenirlik katsayısı, madde toplam puan korelasyon katsayısı ve test-retest analysis kullanıldı. Veri toplama araçları olarak kişisel bilgi formu ve gebelikten kaçınma ölçeği (GKÖ) kullanıldı.

Bulgular: Çalışmaya alınan AFA grubu katılımcılarının yaş ortalaması 32,39 ± 7,53, DFA grubu katılımcılarının yaş ortalaması ise 32,85 ± 19,47'dir. Örneklem I' e uygulanan AFA sonucunda GKÖ'nün KMO değerinin 0,933, Bartlett küresellik test değerinin X^2=5191,506 ve anlamlılık düzeyinin p < ,001 olduğu bulunmuştur. Bu sonuçlara dayanarak, örneklem büyüklüğünün faktör analizi yapmak için yeterli olduğu tespit edilmiştir. AFA sonuçlarına göre GKÖ için 14 madde için öz değeri 1' in üzerinde olan tek boyutlu model elde edilmiştir. Örneklem II' ye DFA yapılmış ve sonuç olarak elde edilen uyum indeksleri modelin iyi bir uyuma sahip olduğunu ortaya koymuştur. GKÖ için Cronbach's alfa iç tutarlılık katsayısı ,942 olarak hesaplanmıştır. Ölçekten alınan toplam puan ile her bir madde için elde edilen puanlar arasındaki korelasyon katsayılarının pozitif ve yüksek olduğu saptanmıştır. Katılımcıların ilk uygulamada GKÖ toplam puan ortalaması 2,23 ± 0,96, tekrar test toplam puan ortalaması ise 2,25 ± 0,74'tür. İki farklı zamanda elde edilen ortalama puanlar arasındaki korelasyon değerleri pozitif yönde ve istatistiksel olarak anlamlı bir ilişki göstermiştir (r = ,581, p = ,001).

Sonuç: Sonuç olarak GKÖ'nün Türk toplumundaki kadınlarda gebelikten kaçınma ölçümleri için geçerli ve güvenilir olduğu tespit edilmiştir. GKÖ'nün Türkçe uyarlamasının, kadınların gebelikten kaçınma tercihini incelemek, tercihlerin, duyguların ve beklenen pratik sonuçların bilişsel değerlendirmeleri de dahil olmak üzere bir dizi gebelik ve çocuk doğurma tercihini yakalamak için gelecekteki planlı çalışmalarda kullanılması önerilir. Ölçek, bildirilen niyet ve kontraseptif kullanımı ile gebelik arasındaki tutarsızlıkları bireysel düzeyde incelemek için kullanılabilir.