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A Scale Development Study: Gynecologic Cancer Prevention Information Scale

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ABSTRACT

Objective: The aim of this study is to develop a valid and reliable measurement tool to determine the knowledge level of women about gynecologic cancer prevention.

Methods: This study is of the methodological research type. The number of draft scale items in this study is 50. Women were taken to sample 10 times for each item (500 women) and pre-test was applied to 125 women which was 25% of the sample. The scale was re-applied to the first pre-test group after 3 weeks by test-retest method. The data were collected by using the Personal Information Form and Gynecologic Cancer Prevention Information Scale. The suitability of the data for factor analysis was investigated by the Kaiser-Meyer-Olkin coefficient and by Barlett's test of sphericity. In order to test the construct validity of the scale, exploratory and confirmatory factor analyses were performed.

Results: Content validity index of the draft scale was 94%. Kaiser Meyer Olkin test value was 0.902 and the sample was found to be adequate and appropriate. On the other hand, the Bartlett test was obtained as X^2=9542.07 p<0.001 and it was accepted that the scale fulfilled the requirements for exploratory factor analysis. The scale took its final form and consisted of 35 items and 5 sub-dimensions as a result of the exploratory factor analysis and confirmatory factor analysis. Total percentage of variance explained of 5 factors was 66.53%. That the cronbach alpha coefficients of the scale have high coefficients of 0.82-0.95 and that the test-retest values have coefficients of 0.566-0.881 and the Cronbach's alpha coefficient of the scale was 0.951.

Conclusion: The data obtained from this study reveal that scale is a valid and reliable measurement tool to determine the knowledge level of women about gynecologic cancer prevention.

Keywords: Gynecologic cancer, information, prevention, scale, women

1. INTRODUCTION

Health, as defined by the World Health Organization, is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. This understanding is based on gaining behaviors that will protect, sustain and improve the individual's well-being, ensuring that the individual makes the right decisions about his/her own health and is protected against diseases (1-4). As cancer is one of the leading causes of death, it is a critical health issue concerning all the world. Cancer is the second leading cause of death in the world and it is estimated to be responsible for approximately 9.6 million deaths in 2018. According to the World Health Organization 2018 report, approximately one in six people in the world die due to cancer, with 70% of these deaths occurring in low and middle income countries (4). The importance of early diagnosis in the fight against cancer and preventability of approximately one third of cancer dignoses are emphasized (3-5).

Gynecological cancers are the fourth most common type of cancer worldwide and an important public health problem that increases the risk of mortality and morbidity in women. Nowadays, gynecological cancers account for about 15% of all cancers and 10% of all cancer-related deaths. Gynecologic cancer-related deaths are among the top ten cancer-related deaths that are most commonly seen and cause death in women in Turkey (#6 ovarian cancer, #4 endometrial cancer, #9 cervical cancer (4,6,7). The symptoms of gynecological cancers differ according to the organ and the negative effects on women's health are multidimensional. Diagnosis and treatment procedures applied in gynecological cancers negatively affect the quality of life of the woman and her family regarding body image, sexual identity and reproductive ability, as well as problems in other organ cancers (8).

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Care approach focusing on individual needs plays an important role in raising awareness and gaining healthy lifestyle behaviors in gynecologic cancer prevention (7,9-11). Health professionals (nurses, midwives, doctors, etc.) have the responsibility of protecting and improving health, and reaching women who constitute a large group of the society (12-15). Accordingly, the first thing that should be done is to determine the current knowledge levels of the women objectively. Knowing the level of knowledge of women contributes to the realization of educational plans in a realistic way and the structuring of educational contents according to the needs. However, in the literature review, a measurement tool could not be found to provide the current knowledge level of women related to gynecologic cancer prevention. The aim of this study is to develop a valid and reliable measurement tool to determine the knowledge level of women about gynecologic cancer prevention.

2. METHODS

2.1.Research Type and Place

This study is of the methodological research type. The study was carried out in Cumhuriyet University Research and Application Hospital, Obstetrics and Gynecology Clinic of Sivas Numune Hospital, Aydoğan Family Health Center, Çayyurt Family Health Center, Sivas Yenişehir Hanımlar Culture Center and Sivas Quran Course in Sivas province.

2.2. Research Sample

The population of the study consisted of all women who referred to institutions stated above between April 15 Nisan and August 20, 2018. The sample of the study consisted of women who were at 15-60 age group, who had no psychiatric disease and who agreed to participate in the study. The ideal time to increase knowledge about gynecological cancers is the adolescent period. The knowledge gained from the adolescent period and the acquired healthy lifestyle behaviors can contribute to protection from cancer. Advanced age is a risk factor for many gynecological cancers. In the postmenopausal period, it is very important for early diagnosis and treatment to regularly screen women aged 50-60 for gynecological cancers. For this reason, women between the ages of 15-60 constituted the sample of the study. Many suggestions on sample selection are included in the literature in scale development studies. An important factor in determining the sample size is the number of variables. According to Gorsuch (2008), the number of samples (n) should be at least 5 times the number of variables. Cattell (1978) stated the minimum sample number to be 250 (16) Comrey and Lee (2009) presented a graded scale in determining the number of samples in the factor analysis: 100=weak, 200=moderate, 300=good, 500=very good and 1000=excellent (17,18). Kline (2005) proposes to keep the variable (item) ratio to be taken into consideration for sample size by 10:1 (19). The number of draft scale items in this study is 50. Women were taken to sample 10 times for each item (500 women) and pre-test was applied to 125 women which was 25% of the sample. The scale was re-applied to the first pre-test group after 3 weeks by test-retest method.

2.3. Data Collection Tools

The data were collected by using the Personal Information Form and Gynecologic Cancer Prevention Information Scale.

2.3.1.Personal Information Form: The form was created by the researchers. There are 19 questions in the form that question socio-demographic characteristics (age, education, job, social security, income status, family type, marital status), obstetric characteristics (age of marriage, number of children) and genital hygiene practices of women.

2.3.2.Gynecologic Cancer Prevention Information Scale: The scale consisted of 50 items based on a large literature review and clinical observations to determine the information of women on gynecologic cancer prevention (4-15). The content validity was assessed in order to determine whether the items in the draft scale were sufficient in terms of quality and quantity. For the draft scale, five faculty members specialized in Obstetrics and Gynecology Nursing expressed their opinions. The experts were asked to evaluate each item in terms of conformity to the scale, subject compatibility, comprehensibility and sentence contents (1=Suitable, 2=Not suitable, 3=To be corrected). As a result of these evaluations, the items which were not clear and which needed to be corrected were determined, necessary changes related to language and scientific content were made. According to expert opinions, there was no need to exclude an item from the draft scale.

2.4. Analysis of the Data

After the application of the scale material to the sample group, the data was analyzed by using computer programs such as Statistica Academic 13.3 and SPSS 22.0, and tested whether the scale was a valid and reliable tool.

2.4.1.Validity Analysis: The content validity of the scale was analyzed with the content validity index, and the agreement between the scores was examined. The suitability of the data for factor analysis was investigated by the Kaiser-Meyer-Olkin (KMO) coefficient and by Barlett's test of sphericity. In order to test the construct validity of the scale, exploratory and confirmatory factor analyses were performed.

2.4.2.Reliability Analysis: In the evaluation of the reliability of the scale, item analysis was performed, cronbach α reliability coefficient was calculated and test-retest technique was used.

2.5. Ethical Aspect

Prior to the validity and reliability study of the scale, consent was taken from the ethics committee of the university where the authors were attached (Ethics No=2018-03/19). The women who would participate in the study were informed about the study and consent were taken.

3. RESULTS

The mean age of the women in the study was 33.89±9.33. 28.2% of women were primary school graduates, 96.6% of them were married and their first marriage age was 21.17±4.24. 81.9% of the women were housewives, 38.8% had 2 children, 76% had nuclear families and 83.5% had moderate level income. The height of the women was 161.74±6.08, their weight was 70.02±12.07, and their body mass index was 26.35±4.95. 88.9% of women did not smoke, 52.2% of them washed their vagina. 72.4% of women washed their vagina for hygiene and 36% washed not to conceive after sexual intercourse. Of 95% of the women without a history of sexually transmitted disease, 76.4% of them did not have regular pap-smear tests, 60.7% did not have breast examination, and 75.2% did not have regular reproductive organ examination. Only 19.8% of the women got information about reproductive health, 15.1% of them about gynecological cancers, and doctors were among their first sources of information.

3.1.Validity Findings

3.1.1.Content Validity Findings

The draft validity index of the draft scale, which consisted of materials developed according to expert opinions, was calculated. Content validity index (CVI) of the draft scale was 94%.

3.1.2.Item Analysis Findings

Item analysis was applied to the scale. In item analysis, standard error, item total correlation and item residual correlation values of each item in draft scale were obtained. According to item analysis findings, item total correlations were statistically significant for all items ($p<0.05$). Similarly, the item residual correlations of all items were found to be statistically significant ($p<0.05$). It was found that all items in the draft scale met the necessary conditions as long as item total and item residual correlation values were taken into consideration in scale development. The results are shown in Table 1.

Table 1. *Item Analysis of Draft Scale*

	Mean	SEM	Total Items	Residual Items		Mean	SEM	Total Items	Residual Items
Item 1	0,87	0,01	0,383	0,356	**Item 26**	0,45	0,02	0,415	0,376
Item 2	0,86	0,02	0,429	0,402	**Item 27**	0,31	0,02	0,294	0,253
Item 3	0,57	0,02	0,454	0,416	**Item 28**	0,31	0,02	0,314	0,274
Item 4	0,48	0,02	0,471	0,434	**Item 29**	0,54	0,02	0,528	0,492
Item 5	0,41	0,02	0,512	0,477	**Item 30**	0,45	0,02	0,613	0,583
Item 6	0,55	0,02	0,547	0,513	**Item 31**	0,54	0,02	0,660	0,632
Item 7	0,44	0,02	0,147	0,101	**Item 32**	0,28	0,02	0,303	0,264
Item 8	0,37	0,02	0,407	0,368	**Item 33**	0,40	0,02	0,565	0,533
Item 9	0,42	0,02	0,529	0,494	**Item 34**	0,46	0,02	0,478	0,441
Item 10	0,33	0,02	0,454	0,418	**Item 35**	0,26	0,02	0,391	0,355
Item 11	0,24	0,02	0,406	0,372	**Item 36**	0,48	0,02	0,275	0,231
Item 12	0,22	0,02	0,354	0,319	**Item 37**	0,39	0,02	0,349	0,308
Item 13	0,25	0,02	0,387	0,352	**Item 38**	0,65	0,02	0,593	0,563
Item 14	0,31	0,02	0,463	0,428	**Item 39**	0,63	0,02	0,624	0,595
Item 15	0,30	0,02	0,248	0,207	**Item 40**	0,71	0,02	0,602	0,574
Item 16	0,24	0,02	0,374	0,339	**Item 41**	0,67	0,02	0,574	0,541
Item 17	0,28	0,02	0,165	0,123	**Item 42**	0,42	0,02	0,366	0,325
Item 18	0,28	0,02	0,310	0,271	**Item 43**	0,52	0,02	0,553	0,519
Item 19	0,58	0,02	0,530	0,496	**Item 44**	0,33	0,02	0,443	0,407
Item 20	0,37	0,02	0,581	0,549	**Item 45**	0,30	0,02	0,379	0,341
Item 21	0,43	0,02	0,631	0,602	**Item 46**	0,28	0,02	0,381	0,344
Item 22	0,56	0,02	0,539	0,505	**Item 47**	0,49	0,02	0,597	0,565
Item 23	0,36	0,02	0,435	0,398	**Item 48**	0,62	0,02	0,637	0,609
Item 24	0,68	0,02	0,408	0,370	**Item 49**	0,65	0,03	0,498	0,449
Item 25	0,45	0,02	0,274	0,230	**Item 50**	0,58	0,02	0,654	0,626

SEM: Standart error of mean

3.1.3.Exploratory Factor Analysis

The suitability of the scale for factor analysis was tested by Kaiser Meyer Olkin (KMO) test before construct validity of the scale. The KMO value was 0.902 and the sample was found to be adequate and appropriate. On the other hand, the Bartlett test was obtained as X^2=9542.07 p<0.001 and it was accepted that the scale fulfilled the requirements for exploratory factor analysis. The principal components analysis method was used in the application of exploratory factor analysis. Varimax perpendicular rotation method was applied to ensure the significance between the factors. Items with a factor load >0.40 were included in the scale. The eigenvalue to be >1 and determination of the break point in scree plot were taken as a basis in determining the number of factors. In the first stage, 11 factors with eigenvalues higher than 1 were determined. The factor analysis was repeated by subtracting 2 items (item 26 and 36) with factor loads less than 0.40 and 10 items (items 5,6,7,19,22,23,29,33,37,45) with factor loads difference less than 0.10 and included in both factors. As a result of the repeated factor analysis, 5 factors were formed. The eigenvalues of the 5 factors were greater than 1 and breaking in the scree plot occurred after the 5th factor. The eigenvalues of factors and the 5th factor are shown in figure 1. According to the factor loadings, all items were above 0.40 and since there was no item in both factors, 38 items were obtained (Table 2, Figure 1).

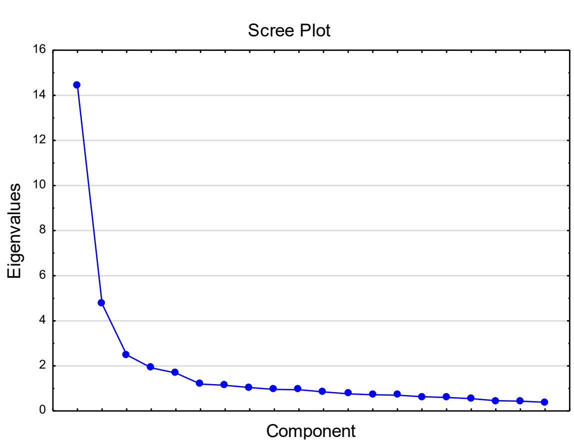

Figure 1. *Eigenvalues of components*

Table 2. *Eigenvalues of factors and total percentage of variance explained*

	Eigenvalues	Total variance	Cumulative eigenvalue	Cumulative variance
Factor 1	14,43715	37,99251	14,43715	37,99251
Factor 2	4,75365	12,50961	19,19081	50,50213
Factor 3	2,49062	6,55427	21,68143	57,05640
Factor 4	1,91392	5,03663	23,59535	62,09303
Factor 5	1,68781	4,44161	25,28317	66,53464

The eigenvalues of the factors and the percentage of variance explained are shown in Table 2. According to the table, total percentage of variance explained of 5 factors was 66.53%. Names of the factors were formed according to the contents of the items in factors. Factor 1 is "prevention from female reproductive system (FRS) cancers" sub-dimension, factor 2 is "female reproductive cancers symptoms" sub-dimension, factor 3 is "observations on female reproductive system related diagnosis" sub-dimension, factor 4 is "early diagnosis of female reproductive cancers and physiological factors" sub-dimension and factor 5 is "birth-related risks of female reproductive system" sub-dimension. Factor loads of items are explained in Table 3.

3.1.4.Confirmatory Factor Analysis

As a result of the exploratory factor analysis, the validity of the draft consisting of 38 items and five sub-dimensions, and the factors were examined by confirmatory factor analysis (CFA). In the model, there are total 38 items and 5 sub-dimensions; 12 items for the prevention from FRS cancers sub-dimension, 13 items for FRS cancers symptoms sub-dimension, 6 items for observations on FRS related diagnosis sub-dimension, 4 items for early diagnosis of FRS and physiological factors sub-dimension and 3 items for birth-related risks of FRS. The draft scale was tested with confirmatory factor analysis (CFA). According to CFA, items 8, 14 and 16 of FRS cancer symptoms were excluded due to not adjusting to the model. Goodness of Fit Index (GFI), Chi-Square (X^2), Adjusted Goodness of Fit Index (AGFI) and Root Mean Square Error of Approximation (RMSEA) were examined with confirmatory factor analysis and conformity index values. According to these values, the remaining 35 items were found to be in good agreement with the exploratory factor analysis findings.

Table 3. *Factor structure of the scale according to exploratory factor analysis*

Factor 1		Factor 2		Factor 3		Factor 4		Factor 5	
Item	Factor load	Item	Factor load	Item	Factor load	Item	Factor load	Item	Factor load
34	0.541	**8**	0.564	**24**	0.546	**1**	0.724	**15**	0.713
38	0.803	**9**	0.588	**25**	0.661	**2**	0.774	**17**	0.687
39	0.799	**10**	0.806	**27**	0.870	**3**	0.737	**18**	0.773
40	0.836	**11**	0.829	**28**	0.854	**4**	0.605		
41	0.846	**12**	0.895	**32**	0.468				
42	0.485	**13**	0.827	**46**	0.553				
43	0.673	**14**	0.671						
44	0.457	**16**	0.737						
47	0.690	**20**	0.728						
48	0.861	**21**	0.656						
49	0.871	**30**	0.415						
50	0.793	**31**	0.431						
		35	0.567						

Table 4. Relationship between the scale and its sub-dimensions

	General Scale		PFFRC.		FRCS		OFRSRD		BRRFRS	
	r	p	r	p	r	p	r	p	r	p
PFFRC	,880	**p<0,001***	1							
FRCS	,785	**p<0,001***	,534	**p<0.001***	1					
OFRSRD	,561	**p<0,001***	,394	**p<0.001***	,221	**p<0.001***	1			
BRRFRS	,36	**p<0,001***	,202	**p<0.001***	,148	**p<0.001***	,254	**p<0.001***	1	
EDFRSCPF	,60	**p<0,001***	,448	**p<0.001***	,431	**p<0.001***	,181	**p<0.001***	,130	**0.003***

*PFFRC: Prevention From Female Reproductive Cancers; FRCS: Female Reproductive Cancers Symptoms; OFRSRD: Observations on Female Reproductive System Related Diagnosis; EDFRSCPF: Early Diagnosis of Female Reproductive System Cancers and Physiological Factors; BRRFRS: Birth-Related Risks of Female Reproductive System; Pearson Correlation test; a; 0.05; *Relationship is statistically significant*

The scale took its final form as a result of these findings. The scale consisted of 35 items and 5 sub-dimensions. In factoral terms, prevention from FRS cancers sub-dimension consisted of 12 items (34, 38, 39, 40, 41, 42, 43, 47, 48, 49, 50), FRS cancers symptoms sub-dimension consisted of 10 items (9, 10, 11, 12, 13, 20, 21, 30, 31, 35), observations on FRS related diagnosis sub-dimension consisted of 6 items (24, 25, 27, 28, 32, 46), early diagnosis of FRS cancers and physiological factors sub-dimension consisted of 4 items (1,2,3,4) and birth-related risks of FRS sub-dimension consisted of 3 items (15,17,18).

The relationship between the sub-dimensions of the scale was examined by Pearson Correlation Test. According to the findings in Table 4, the relationship between all sub-dimensions and scale was statistically significant.

3.2. Reliability Findings

3.2.1.Cronbach α Reliability Coefficient

The validity and reliability of the scale were tested with the Cronbach alpha coefficient. The Cronbach's alpha coefficient of the scale was 0.951. The cronbach alpha coefficient of the 5 sub-dimensions varied between 0.82-0.95. Reliability coefficients are given in Table 5.

Table 5. Reliability coefficients of the scale and sub-dimensions

Factors	Cronbach Alpha Coefficient
Prevention From FRS Cancers	0.938
FRS Cancers Symptoms	0.928
Observations on FRS Related Diagnosis	0.820
Early Diagnosis of FRS Cancers and Physiological Factors	0.830
Birth-Related Risks of FRS	0.863
General Scale	0.951

FRS: Female Reproductive System

3.2.2.Test-Retest Reliability

The test-retest validity was applied to the pre-test group consisting of 125 individuals with 3-week intervals. Test-retest correlations were between 0.566-0.881 and the agreement between test-retest findings was statistically significant. The test-retest results are given in Table 8. That the cronbach alpha coefficients of the scale have high coefficients of 0.82-0.95 and that the test-retest values have coefficients of 0.566-0.881 and it is statistically significant show the scale has a strong reliability (Table 6).

Table 6. Test-retest reliability coefficients of the scale

Factors	Test-retest (n:125)	P
Prevention From FRS Cancers	0.806	p<0.001*
FRS Cancers Symptoms	0.781	p<0.001*
Observations on FRS Related Diagnosis	0.566	p<0.001*
Early Diagnosis of FRS Cancers and Physiological Factors	0.670	p<0.001*
Birth-Related Risks of FRS	0.747	p<0.001*
General Scale	0.881	p<0.001*

** The aggrement between the first and second test results is statistically significant; α:0.05*

4. DISCUSSION

Content validity ratio (CVR) is a statistic item that is used in rejection or retention of certain items. The content validity index (CVI) value is obtained by calculating means of the CVR values of items which will retain in the scale. If the CVI is equal to or greater than the CVR, the content validity of the entire scale is considered statistically significant (20,21). If the CVI is greater than 0.80, the item is accepted sufficient in terms of content validity (21). In this study, the CVI value of the scale was found to be 94%. The content validity of the items in the scale was found to be statistically significant.

Factor analysis is a multivariate statistic to obtain few and identifiable meaningful variables from a large number of variables that measure the same structure. Factor analysis is not applicable to each data group (22). In order to apply factor analysis to a data group, the data should be adequate for the factor analysis and the sample should be sufficient. When applying factor analysis, the results of the two tests are examined first. These are Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity. If the KMO value is above 0.90 and the Bartlett test is significant, it is accepted that the sample adequacy is "excellent" and the data are suitable for factor analysis (23,24). In this study, the KMO value of the scale was over 0.90 and the Bartlett test was found to be significant. Based on the analyses, it was decided that the sample was adequate and the data were suitable for factor analysis.

Exploratory factor analysis (EFA) is the most effective method for testing the structural validity of the scale. However, it is not right to apply an exploratory factor analysis on the scales which measure the level of knowledge and scored in two categories as 0-1. Therefore, it is necessary to convert the data scored in two categories as 0-1 to the appropriate correlation matrix for exploratory factor analysis (25). For this process, tetrachoric correlation coefficients of the items were calculated and tetrachoric correlation matrix was obtained. The construct validity of the items transformed into a tetrachoric correlation matrix was tested with EFA. In the literature, it is recommended that the factor eigenvalues be above 1 when determining factors to be included in the scale after EFA. The eigenvalue of a factor informs about the relationship between the factor and the original variables. The higher the eigenvalue, the more the variance explained by the factor (25). The effect of common variance values is significant in factor analysis. Low common variance values affect the results of factor analysis. Common variance values are discussed in 3 groups as low, large and high. The common variance values range from 0.2 to 0.4 in the low group, from 0.2 to 0.8 in the large group and from 0.6 to 0.8 in the high group (18,26-28). In this study, a 5-factor structure with an eigenvalue above 1, revealing 66.53% of the variance after varimax rotation was found.

Factor load should also be taken into account in EFA. Factor load is a coefficient explaining the relationship between the factors and the items. Factor loads of the items explaining the factors are expected to be high. In order to say that an item measures a structure or factor well, this factor load must have a value of 0.30 or above. It can be deduced that an item with a factor load of 0.30-0.59 measures the structure moderately and an item with a factor load higher than 0.60 (positive or negative) measures the structure well (19). In addition, it is recommended that each item be placed under only one factor and that the items have a difference of at least 0.10 between the two factors (22,29). In this scale study, the factor load of items varied between 0.41-0.87. The factor analysis was repeated by subtracting 10 items (5,6,7,19,22,23,29,33,37,45) from the scale with factor loadings below 0.40 and the factor loads difference less than 0.10.

Confirmatory factor analysis (CFA) is a technique used to test theories about latent variables (25). The correlation between the factors determined in exploratory factor analysis and the theoretical factors is investigated by CFA. CFA calculates the common variables among factors, the load on the factors to which the indicators are related and the measurement errors for each indicator (30). In the CFA, it is decided whether the model is compatible with the theory according to the various fit index results ($\chi 2$ / sd, GFI, AGFI, CFI, NFI, S-RMR, RMSEA). In the literature, there is no consensus about which of the fit indices will be accepted as standard and about the acceptable range of values. However, the low chi-square value (<2/sd), depending on the degree of freedom, has a value of <5 indicates that the data fit of the proposed model is sufficient. In this study, the data fit of the model ($\chi 2$ / sd=314) was found to be sufficient. In the literature, it is accepted that the data fit of the model is sufficient for CFI, GFI, AGFI> 0.90 and <0.05 for RMSEA (31,32). In this study, for fit indices >0.90 for GFI, CFI, AGFI and <0.05 for RMSEA were accepted as criteria. It has been observed that there is a fit between the model and the observed data in terms of these fit index values and the scale is fit at a good level.

The Cronbach Alpha Coefficient is considered as an indicator of the homogeneity of the measurement tool. Measurement tool is considered to have reliability if the calculated Cronbach Alpha Coefficient is close to 1. If the coefficient is 0.00<a<0.40, the scale is not reliable, 0.41<a<0.60 indicates low reliability, 0.61<a<0.80 indicates moderate reliability and 0.81<a<1.00 indicates high reliability.[33,34] In this study, the total Cronbach's alpha coefficient of the scale was found to be 0.95, and the scale was found to be of high reliability. The test-retest method is to apply a measuring tool to the same group for the second time under the same conditions and at a certain time interval. The measurement values obtained from these two applications show the reliability coefficient of the scale (35). The important point is the time interval between the two measurements. This time interval varies according to the measured behavior and the target audience but the average 2-4 weeks duration is sufficient (22,29). Correlation coefficients give information about the degree and direction of the relationship between the two variables and take values between – 1 and +1. The fact that the coefficient is +1 indicates a positive and perfect relationship. It should be at least 0.70 for the acceptance of the stability of a scale (29). In this study, it was determined that the scale total and sub-dimension values of the correlation coefficient were between 0.566-0.881 after test-retest application of the scale with 3 weeks intervals, and the agreement between the first and second test results was statistically significant. The item-total score correlation explains the relationship between the scores obtained from the test items and the total score of the test. Positive and high item-total correlation indicates that the items exemplified similar behaviors and the internal consistency of the test was high (22). In this study, item total correlations and item residual correlations were found to be statistically significant (p<0.05).

5. CONCLUSION

The data obtained from this study reveal that Gynecologic Cancer Prevention Information Scale is a valid and reliable measurement tool to determine the knowledge level of women about gynecologic cancer prevention. The scale can be used to determine the level of knowledge of the participants before the training programs, to structure the educational contents according to the information needs of the women and to measure the effectiveness of the training programs.

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