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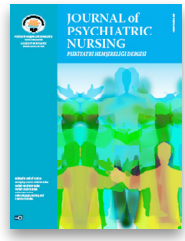

Original Article

A validity and reliability study of the Turkish version of the Assessment of Survivor Concerns Scale

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Abstract

Objectives: This study aims to test the validity and reliability of the Assessment of Survivor Concerns Scale (ASC) adapted to Turkish.

Methods: This research is a methodological study of 200 people. Data were collected from November to December 2018, through a social media account of a cancer-oriented association and those who had been diagnosed and treated for cancer for at least a year, at least primary school graduates and individuals over the age of 18 years. For validity analysis, language equivalence, scope validity, exploratory and confirmatory factor analysis were used. For reliability, internal consistency, item-area and test-retest were used. Data were analyzed with SPSS V22.0 and LISREL 8.8 programs.

Results: According to the exploratory factor analysis; the factor loads of the scale items and the total variance explained were sufficient, according to the confirmatory factor analysis the fit indexes were found to be at a desired level. For the reliability analysis; Cronbach's alpha internal consistency coefficient was highly reliable, each item represented the scale, according to item total score correlations each item was strongly or very strongly related to the scale and four weeks later the re-test given to the 50 survivors was found to be highly reliable.

Conclusion: The Assessment of Survivor Concerns Scale has been determined to be a suitable and valid-reliable measurement tool for use in Turkish society.

Keywords: Cancer survivor; concern; Turkish culture; validity-reliability.

What is known on this subject?

- Individuals who have survived cancer continue to experience concerns even after the treatment. No measurement tool was found in Turkish society that evaluated the concerns of such individuals.

What is the contribution of this paper?

- The scale immediately and practically measured concerns of the individual who survived the cancer.

What is its contribution to the practice?

- The Assessment of Survivor Concerns Scale is a valid and reliable measurement that is appropriate for Turkish culture.

Cancer is a significant global health problem.[1] In 2018, 9.5 million people died from cancer and 18.1 million new cancer cases were diagnosed. These numbers are estimated to reach 29.2 million by 2040.[2] In Turkey, 97,830 male and 69,633 female patients were diagnosed with cancer in 2018 according to the cancer statistics of the Turkey Public Health Association.[3]

Cancer is a difficult disease considerably affecting patients.[4] Cancer patients experience numerous physiological (hair loss, pain, nausea, vomiting, constipation, fatigue, loss of appetite, difficulty breathing) and psychological (insomnia, anxiety, depression, loss of control, ambiguity, stigmatization, fear of death, risk of suicide) difficulties due the disease and the treatment.[5–7] Apart from the difficulties patients experience, patients have concerns about the recurrence of cancer.[8] A review has stated that individuals experience concerns about the recurrence of cancer and these concerns continued throughout their entire life.[9] A qualitative study found that when individuals, who have completed their cancer treatment

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and survived, experience the slightest change in their body, they experience constant fear and concern that the cancer may have recurred.[10] Unlike other diseases, the fear of cancer recurrence triggers emotions such as terror, sadness, ambiguity, tension, weakness, hopelessness, and despair.[11]

The term "survivor (an individual surviving cancer)", which is usually related to cancer, is defined differently in different resources.[12–14] According to the American Cancer Society (ACS), the term "survivor" is used for anyone diagnosed with cancer, individuals surviving a few years after their diagnosis, or individuals who have completed their treatment.[13] According to the National Cancer Institute (NCI), individuals are referred to as "survivors" throughout their entire life from the moment they are diagnosed with cancer.[14] According to another definition, the term "survivor" is used for individuals who survive for five years after their cancer diagnosis. Another definition states that individuals are called "survivors" after they have completed their first treatment.[12] The definition of "survivor" in this study includes individuals who are diagnosed with cancer for at least a year and have completed their treatment.

An optimistic mood reduces the psychological stress of individuals who are diagnosed with cancer.[15] However, concerns about cancer negatively affects the optimistic mood of individuals diagnosed with cancer.[16] Making interventions to assess and reduce an individuals' concerns are significant for supporting them during the process after the treatment.[7] Suggested interventions administrated to cancer patients include cognitive-behavioral therapy,[17] music therapy,[18] reiki,[19] reflexology and progressive relaxation exercises[20] and reduce patients' depression, post-traumatic stress disorder and anxiety levels. Therefore, a practical measurement tool to assess concerns of individuals who survived cancer and that can be administrated in a short period of time is needed. No measurement tool was found in Turkey that assesses the concerns of individuals who survived cancer. Therefore, this study aims to adapt the Assessment of Survivor Concerns Scale to Turkish society and to ensure its validity and reliability.

Materials and Method

Study Type

This is a cross-sectional and methodological study.

Sample

The study sample was composed of individuals who were following a social media account of an association regarding cancer (with the highest number of users and followers in Turkey), and who were diagnosed with cancer and completed their treatment at least one year ago, who had completed at least primary school and who were older than 18. The social media account included cancer patients, individuals who survived cancer and relatives of patients who obtained information about the disease, diagnosis, ways to protect themselves from recurrence, and shared their feelings and supported one another.

In validity and reliability studies, the number of individuals recommended for the sample size is 5–10 times the total number of items of the scale.[21] Since the Assessment of Survivor Concerns Scale has five items, the number of individuals recommenced to be included in the study was 50. To increase the reliability of the data and considering the possible losses, 210 patients were contacted. Ten people were removed because they did not answer all the questions or submitted an incomplete form, so the study was completed with 200 patients.

Data Collection

Data were collected between December and November 2018. Before data were collected, written consent was obtained from the association and the administrator of the social media account connected to the association. An online questionnaire including information about the study was created and shared in the social media account. Individuals who fit the inclusion criteria and who wanted to participate completed the questionnaire. The online questionnaire included ten questions about patients' age, gender, education, marital status, employment and income status, occupation, cancer diagnosis, duration of diagnosis, treatments received, and five questions regarding the Assessment of Survivor Concerns Scale.

Individuals who identified their e-mail address on the questionnaire (122) were sent the Assessment of Survivor Concerns Scale a second time and 50 of them completed the questionnaire again for retest.

Assessment of Survivor Concerns Scale (ASC): The scale was developed by Gotay and Pagano in 2007 to evaluate the fear of recurrence of cancer and general health in cancer patients who had been diagnosed with cancer at least one and half years before and who were 18 years and older. The scale has two subscales: "cancer worry subscale" and "general health worry subscale". The scale included six items, three in each subscale. However, as the sixth item was 'children's health worry'" which cannot be administered to those who have no children, the scale was revised, and this item was removed. The number of items was reduced to five. The new 5-item form of the scale is recommended. According to the revised scale, the "cancer worry subscale" is comprised of three items and the "general health worry subscale" is comprised of three items and the "general health scale" two items. The Assessment of Survivor Concerns Scale is a 4-point Likert type scale that is evaluated as "not at all" and "very much". The lowest score possible on this scale is five and the highest is 20. Higher scores indicate higher levels of concern. The subscales can be used separately; the internal consistency of the subscales were found to be 0.93 and 0.63, respectively.[22] The scale was previously used in other cultures and was proven to be valid and reliable.[23–25]

Language Equivalence of the Scale

The language equivalence of the scale was achieved with the back-translation method. Other than the researchers, the scale

was translated into Turkish by three translators independently who had a good understanding of English. The translations from English to Turkish were turned into a single questionnaire. The questionnaire was then translated into English by two people who were familiar with Turkish and English, who lived and worked in Turkey, and were native English speakers. After the back-translation, the scale items were reviewed by comparing the original form of the scale with the translated form. After these procedures, the Turkish version of the scale was ready to be submitted for expert opinion.

The Content Validity of the Scale

"The Assessment of Survivor Concerns Scale," of which language equivalence was achieved, and the original English form were presented to six experts who work in the field of cancer (2 internal disease, 2 psychiatric, 1 surgery, 1 public health nursing academic member) to evaluate the scale in terms of clarity, ability to serve its purpose and suitability to the Turkish language. The experts were asked to evaluate the scale items by scoring them from 1 to 4 (1: "Not suitable"; 2: "Partly suitable but the item needs to be revised"; 3: "Suitable but needs minor changes"; 4: "Very suitable").[26]

The expert opinions were evaluated using the content validity index (CVI). The Davis technique was used to determine the content validity. The Davis technique grades the opinions of the experts from a to d. Thus, a means suitable; b means the item needs to be somewhat analyzed; c means the item needs to be thoroughly analyzed; And d means the item is not suitable. The number of experts who scored an item with " a and b" was divided into the total number of experts to calculate the CVI of that item.[27] The threshold for CVI was 0.80.[27,28] Moreover, the compatibility between experts was analyzed with Kendall's concordance test.[29]

The Construct Validity of the Scale

The Kaiser-Meyer-Olkin (KMO) was used to carry out the factor analysis of the data to evaluate suitability, and the Bartlett's test was carried out to test the correlation between variables. The KMO is the criteria for sample sufficiency and it should 0.50 and above to be able to carry out the validity analysis.[30,31]

The Reliability of the Scale

Within the context of reliability analysis, Cronbach's alpha coefficient and Hotelling's T^2 was used to determine internal consistency; item total score (item-field) correlations were used to analyze the relationship between items and scale and subscale total score; and retest analysis was carried out to determine the time invariance of the scale. The threshold for item total score correlation coefficient was accepted as 0.20.[32]

Data Analysis

Statistical analyses were carried out using the SPSS V22.0 software program and LISREL 8.8. Data were evaluated using mean, percentage, number, and standard deviation. Language equivalence, content validity and construct validity were tested for the validity analyses. The language equivalence was achieved using the back-translation method; content validity index (CVI) was calculated with Davis technique. The compatibility between experts was analyzed with Kendall's concordance test. Exploratory and confirmatory factor analyses were used to determine the construct validity of the scale.

Ethical Considerations

Carolyn C Gotay, the owner of the scale, gave permission via email to use the scale. The ethics committee of a university hospital (Non-invasive Clinical Research Ethics Committee) gave their approval (05.01.2018/ 11). Since data were collected through online questionnaires, it was stated at the beginning of the questionnaire that answering the questions was voluntary and the information on the questionnaires would not be shared with others. The questionnaire was activated for those who read this explanation and clicked on the "I accept" button.

Results

The mean age of the participants was 44.08±10.62. Of the 200 participants, 83.5% were female, 40% completed high school, 73% were married, 73% were employed, 27.5% were housewives, and the income of 48.5% was equal to their expenses (Table 1).

Of the participants, 60.5% had breast cancer, 46% was diagnosed with cancer 1–2 years before, and 33.1% had received chemotherapy (Table 2).

The Validity of the Scale

The CVI values of all the items of the 5-item scale was found to be 1.00. Moreover, according to the Kendall' concordance test, expert opinions were not different from one another (Kendall's W=0.167, p=0.406). The independent inter-observer reliability and content validity criteria was achieved in terms of the suitability of the Turkish version of "Assessment of Survivor Concerns Scale."

Exploratory and confirmatory factor analyses were used to determine the construct validity of the scale. Table 3 shows the results of the exploratory factor analysis. According to the factor structure obtained from principal components analysis, the KMO coefficient was 0.852, the Bartlett's test value was (x2) 462.559 and the p-value was 0.000. The analysis found a single-factor structure. The scale has a single factor of which eigenvalue is above one. It was found that the eigenvalue was 3.249, and the total explained variance was 64.976. The factor loads of the 5-item scale ranged from 0.69 to 0.86 (Table 3).

Confirmatory factor analysis was carried out after the exploratory factor analysis (Table 4). The Maximum Likelihood estimation method was used as the data were continuous and

Table 1. The sociodemographic characteristics of survivors the participants (n=200)

Variables	n	%
Age (mean±standard deviation)	44.08±10.62	
Gender		
Female	167	83.5
Male	33	16.5
Education		
Primary school	36	18.0
High school	80	40.0
University	75	37.5
Postgraduate	9	4.5
Marital status		
Married	146	73.0
Single	54	27.0
Employment status		
Employed	146	73.0
Unemployed	54	27.0
Income status		
Lower income than expenses	91	45.5
Income equal to expenses	97	48.5
Higher income than expenses	12	6.0
Occupation		
Civil servant	22	11.0
Teacher	19	9.5
Housewife	55	27.5
Laborer	19	9.5
Other	85	42.5

Table 2. The distribution of survivors' characteristics regarding cancer (n=200)

Variables	n	%
Cancer type		
Breast	121	60.5
Colon	9	4.5
Lung	8	4.0
Gynecological cancer	16	8.0
Prostate	1	0.5
Gastric	1	0.5
Esophageal	1	0.5
Thyroid	8	4.0
Skin	1	0.5
Other	34	17.0
Duration of diagnosis		
1–2 years	92	46.0
3–5 years	58	29.0
5–10 years	40	20.0
Over 10 years	10	5.0
Treatments*		
Surgery	170	30.7
Chemotherapy	183	33.1
Radiotherapy	128	23.1
Hormone	72	13.1

*The n value is higher than the sample size because of multiple answers.

Table 3. Exploratory Factor Analysis of Survivors' Assessment of Survivor Concerns Scale Scores

Items	Factor load
1. I am worried about the diagnosis tests.	0.69
2. I am worried about getting another type of cancer.	0.84
3. I am worried about the recurrence of the cancer.	0.86
4. I am worried about dying.	0.76
5. I am worried about my health.	0.85
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.852
Bartlett's Test of Sphericity	462.559
p	0.000
Eigenvalue	3.249
Total variance	64.976

normally distributed. The confirmatory factor analysis found that the chi-square (χ^2) value was 10.64, the degree of freedom (df) was 5, and the p-value was 0.0589. The rate of chi-square to the degree of freedom ($\chi 2/df$) was 2.12. The Root Mean Square Error of Approximation (RMSEA) was 0.07, the Goodness of Fit Index (GFI) was 0.97, the Adjusted Goodness of Fit Index (AGFI) was 0.93, the Normed Fit Index (NFI) was 0.98, the Non-Normed Fit Index (NNFI) was 0.98, the Comparative Fit Index (CFI) was 0.99, The Root Mean Square Residual (RMR) was 0.02, and the Standardized Root Mean Square Residual (SRMR) was 0.02. Figure 1 shows the factor loads and error variances of the model. The values at the left of the diagrams of Figure 1 indicate the error variances, and the values in the middle indicate the factor loads. In this study, the factor loads of the scale ranged from 0.59 to 0.83.

The Reliability of the Scale

The reliability of the 5-item Assessment of Survivor Concerns Scale was analyzed using the item-total correlation, Cronbach's alpha coefficient and retest analysis. The Cronbach's alpha coefficient of the scale was 0.86, and that of the subscales was 0.78 for the "cancer worry subscale" and 0.73 for the "general health worry subscale." When an item was omitted from the scale, the Cronbach's alpha coefficient ranged from 0.81 to 0.85. The item average ranged from 2.56 (min) to 3.35 (max). General mean score of the scale items was found to be 3.03 (Hotelling T^2=147.802, F=36.393, p=0.000). The general mean score of the scale was 15.17±3.74. Item-total score (item-field) correlations ranged from 0.71 to 0.84 (Table 5). To evaluate the time invariance of the Assessment of Survivor Concerns Scale, the scale was administered to 50 patients after four weeks. Pearson product-moment correlation analysis was used to an-

Table 4. Confirmatory Factor Analysis Fit Indices of Assessment of Survivor Concerns Scale

Goodness of fit	Value	Normal value	Acceptable value	Fit
p	0.0589	>0.05		Acceptable
χ^2	10.64			
df	5			
χ^2/df	2.12	<3	<5	Good fit
RMSEA	0.075	<0.05	<0.08	Acceptable
GFI	0.97	>0.95	>0.90	Good fit
AGFI	0.93	>0.95	>0.90	Acceptable
NFI	0.98	>0.95	>0.90	Good fit
NNFI	0.98	>0.95	>0.90	Good fit
CFI	0.99	>0.95	>0.90	Good fit
RMR	0.02	<0.05	<0.08	Good fit
SRMR	0.02	<0.05	<0.08	Good fit

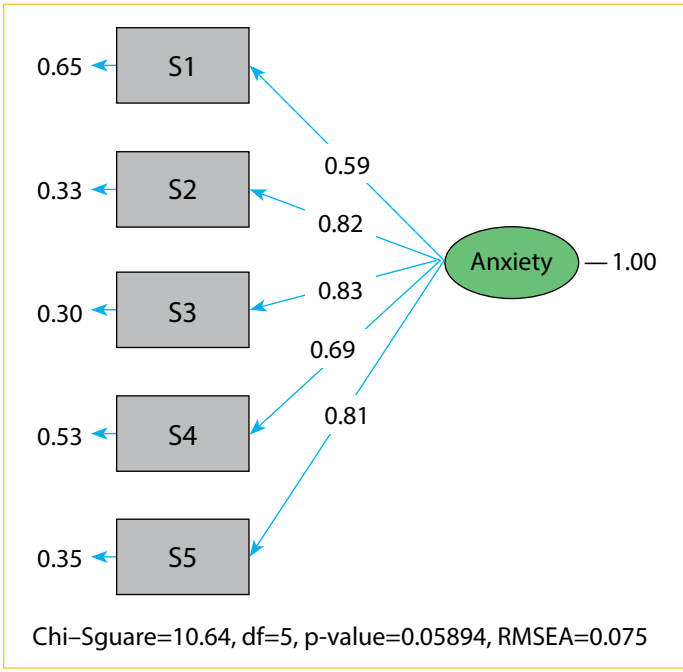

Figure 1. Factor loads of model items and their error variances.

alyze the correlation between pretest and posttest. This analysis showed that there was a positive and highly significant relationship between mean test-retest scores. (r=0.88, p=0.000).

Discussion

The Validity of the Scale

The validity of any measurement tool indicates the level of accurate measurement of the characteristics to be measured. [26] In short, the validity of a measurement tool is about what and how accurately it measures.[32] The KMO-Bartlett's test was used to analyze whether data were suitable to carry out a factor analysis. The analysis found that the KMO coefficient was 0.852, the Bartlett's test value was (x2) 462.559 and the p-value was 0.000. The threshold for the KMO coefficient was 0.50 and above. Values of 0.50 and above indicate that the data set was suitable to carry out a factor analysis; the p-value lower than 0.05 in the Bartlett's test shows that data are normally distributed.[30,31] In the original study of the scale,[22] the KMO and Bartlett's analysis were not included. Exploratory and confirmatory factor analyses were used to determine the construct validity of the Assessment of Survivor Concern Scale. The factor analysis is carried out to assess whether the scale items can be assembled under different dimensions.[31,32] According to the exploratory factor analysis, the total variance explained by factors being over 30% is sufficient in single-factor scales. [33] The exploratory factor analysis in this study found that the scale was composed of a single factor, and it explained 64.97% of the total variance. A single factor explaining more than half of the total variance can be an indication that the scale measures survivors' concern levels efficiently and accurately. Items

Table 5. The Reliability of the Assessment of Survivor Concerns Scale

Items	Mean	Standard deviation	Item-Total Correlation	If the item is omitted Cronbach's alpha	Factor load
Item 1.	3.06	0.91	0.71	0.85	0.69
Items 2.	3.09	0.91	0.82	0.81	0.84
Items 3.	3.35	0.83	0.84	0.81	0.86
Items 4.	2.56	1.10	0.79	0.84	0.76
Items 5.	3.09	0.90	0.84	0.81	0.85
Hotelling's T^2	147.802	F=36.393	p=0.000		
Mean scale score	15.17±3.74				
Cronbach's alpha	0.86				
Cronbach's alpha of subscale 1*	0.78				
Cronbach's alpha of subscale 2**	0.73				

*Cancer worry subscale. **General health worry subscale.

of which the factor load is between 0.30 and 0.59 have moderate factor load, and items of which the factor load is 0.60 and above have a high factor load.[34] In this study, the factor loads of the scale items ranged from 0.69 to 0.86. So, all the scale items had high factor loads. The scale is composed of a single factor which explains approximately 65% of the variance and its items have high factor loads. This shows that the construct validity of the scale was sufficient.

In the confirmatory factor analysis (CFA), the result of the model should be investigated with fit indices.[35] The concordance of the model with the theory can be discussed based on these fit indices.[36] When the value obtained from the ratio of χ^2 value to the degree of freedom (df) is below three, it indicated good concordance, and when the value is below five it indicates an acceptable concordance.[30,36] In this study, good concordance is achieved by calculating the χ^2/df value as 2.12. In the original study. The χ^2/df value was identified as 1.4.[22] RMSEA being below 0.05 indicates good concordance, and being below 0.08 indicated acceptable concordance.[37,38] Values over 0.10 are not acceptable for RMSEA.[39] In this study, the RMSEA value was found to be 0.07. The RMSEA value of the original study was 0.03.[22] GFI, AGFI, NFI, NNFI and CFI obtain a value between 0 and 1, and the values close to 1 indicate good concordance. This indices being over 0.95 indicates good concordance, and being over 0.90 indicated acceptable concordance.[30,36–38] Values below 0.05 indicate good concordance and values below 0.08 indicate acceptable concordance for RMR and SRMR.[40] So in this study, the GFI, NFI, NNFI, CFI, RMR and SRMR indices indicated good concordance, and the AGFI index indicated acceptable concordance. The original study included the CFI and NNFI values and it found that both of the values were over 0.95.[22] In the confirmatory analysis, the factor loads are expected to be 0.30.[41] In this study, the factor loads of the scale ranged from 0.59 to 0.83. In the original study of the scale, the factor loads were between 0.71 and 0.97 according to CFA.[22]

The Reliability of the Scale

The degree to which a measurement tool consistently measures the feature that is intended to be measured indicate the reliability of that measurement tool.[42] The Cronbach's alpha internal consistency coefficient is one of the methods used to test the reliability of scales.[43] Moreover, if there is no increase in the Cronbach's alpha value when an item is omitted compared to the first value, there is no need to remove items from the scale.[42] As the Cronbach's alpha internal consistency coefficient gets closer to 1.00, the reliability of the scale increases.[44] The Cronbach's alpha value are evaluated as follows: 0.00-0.40-the scale is not reliable; 0.41-0.60-the reliability is low; 0.61-0.80-considerably reliable; 0.81-1.00-the scale is highly reliable.[44] In the light of these information, it can be suggested that:

The Cronbach's alpha coefficient was found to be 0.86 and the scale was determined to in a highly reliable range. The "cancer worry subscale" (0.78) had a lower Cronbach's alpha value than the "cancer worry subscale" (0.93) of the original study of the scale; however, it was in a considerable reliable range. The "general health worry subscale" (0.73) had a higher Cronbach's alpha value than the "general health worry subscale" (0.63) of the original study of the scale; however, it was in a considerable reliable range. There are studies that have used the Assessment of Survivor Concerns Scale in different cultures. The scale was used in America with breast cancer patients (Cronbach's alpha Cancer and General health worry = 0.72 and 0.92),[24] in Taiwan with gynecologic cancer patients (Cronbach's alpha Cancer and General health worry = 0.90 and 0.78),[25] and in Canada with thyroid cancer patients (Cronbach's alpha Cancer and General health worry = 0.86 and 0.76);[23] and the scale was found valid and reliable.

The mean scores of the scale items were different from one another ranging from 2.56 to 3.09. This shows that the questions were perceived differently by the survivors, therefore, all items should be included in the scale, and that the difficulty level and the measurement capacities of the questions were different (Hotelling T^2=147.802, F=36.393, p=0.000).[44]

Item-total score correlation (item-field) is another analysis to determine internal consistency. The correlation coefficient of all items were over 0.20, which was accepted as the threshold.[32] The scale includes two subscales. The relationship of each item with the total score that the item belongs to was evaluated with the correlation analysis. The item-total correlation coefficients ranged between r= 0.77 and 0.91. All scale items are highly or considerably highly correlated. In the original study of the scale, the correlation between items ranged from r=0.33 and to 0.87.[22]

The time invariance of the scale was evaluated with retest that was carried out after four weeks. The ability of a measurement tool to give consistent results and show invariance can be evaluated with test-retest.[32] The Pearson product-moment correlation coefficient of the Assessment of Survivor Concerns Scale that was re-administered to 50 survivors after four weeks was found to be r=0.88, p=0.000. This result shows that the time invariance reliability of the scale was considerably high.

Conclusion

The Assessment of Survivor Concerns Scale is a valid and reliable measurement that is appropriate for Turkish culture. The scale can be administered to broader samples to evaluate the concern levels of survivors.

Limitations

The limitation of the study was that most of the study sample was composed of women.

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References

1. Siegel R, Ma J, Zou Z, Jemal A. Cancer statistics, 2014. CA Cancer J Clin 2014;64:9–29.
2. WHO. All cancers in 2018. Retrieved Marc 1, 2019, from https://gco.iarc.fr/today/data/factsheets/cancers/39-All-cancers-fact-sheet.pdf.
3. T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü. Türkiye Kanser İstatistikleri 2018. Retrieved March 3, 2020, from https://hsgm.saglik.gov.tr/depo/birimler/kanser-db/istatistik/Trkiye_Kanser_statistikleri_2015.pdf.
4. Sayın YY, Kanan N. Kanserde Psikososyal Yaklaşım. İstanbul Üniversitesi FNHYO Dergisi 2004;13:127–36.
5. Günüşen NP, İnan FŞ, Üstün B. Experiences of Turkish women with breast cancer during the treatment process and facilitating coping factors. Asian Pacific J Cancer Prev 2013;14:3143–9.
6. Serçekuş P, Başkale H. Living and coping with cancer: experiences of cancer blog users in Turkey. Holist Nurs Pract 2015;29:144–50.
7. Vardar O. Jinekolojik kanser tanısı alan kadınlar ve bakım veren aile üyelerinin deneyimleri [Yayınlanmamış yüksek lisans tezi]. Denizli: Pamukkale Üniversitesi, Sağlık Bilimleri Enstitüsü; 2017.
8. Uchida M, Akechi T, Okuyama T, Sagawa R, Nakaguchi T, Endo C, et al. Patients' supportive care needs and psychological distress in advanced breast cancer patients in Japan. Jpn J Clin Oncol 2011;41:530–6.
9. Bag B. Kanser hastalarında uzun dönemde görülen psikososyal sorunlar. Psikiyatride Güncel Yaklaşımlar 2013;5:109–26.
10. Salci MA, Marcon SS. Coping with the specter of cancer. Rev Gaucha Enferm 2010;31:18–25. [Article in Portuguese]
11. Almeida SN, Elliott R, Silva ER, Sales CMD. Fear of cancer recurrence: A qualitative systematic review and meta-synthesis of patients' experiences. Clin Psychol Rev 2019;68:13–24.
12. National Cancer Institue. President's Cancer Panel. Living beyond cancer: finding a new balance. Retrieved March 01,2019, from https://pubs.cancer.gov/ncipl/detail.aspx?prodid=P986.
13. American Cancer Society. Glossary: definitions & phonetic pronunciations: survior definitions Retrieved March 01, 2019, from https://www.cancer.org/content/cancer/en/cancer/glossary.html?term=survivor.
14. National Cancer Institute. NCI dictionary of cancer terms: survivor definitions. 2018. Retrieved March 01, 2019, from https://www.cancer.gov/publications/dictionaries/cancer-terms/search?contains=false&q=survivor.
15. Matthews EE, Cook PF. Relationships among optimism, well-being, self-transcendence, coping, and social support in women during treatment for breast cancer. Psychooncology 2009;18:716–26.
16. Hodges K, Winstanley S. Effects of optimism, social support, fighting spirit, cancer worry and internal health locus of control on positive affect in cancer survivors: a path analysis. Stress Health 2012;28:408–15.
17. Watson M, White C, Lynch A, Mohammed K. Telephone-delivered individual cognitive behavioural therapy for cancer patients: An equivalence randomised trial. Psychooncology 2017;26:301–8.
18. Bradt J, Dileo C, Magill L, Teague A. Music interventions for improving psychological and physical outcomes in cancer patients. Cochrane Database Syst Rev 2016;8:CD006911.
19. Marcus DA, Blazek-O'Neill B, Kopar JL. Symptomatic improvement reported after receiving Reiki at a cancer infusion center. Am J Hosp Palliat Care 2013;30:216–7.
20. Alan H. Jinekolojik kanser hastalarında kemoterapi tedavisi sürecinde uygulanan progresif kas gevşeme egzersizleri ve refleksolojinin ağrı, yorgunluk, anksiyete, depresyon ve yaşam kalitesi üzerine etkisi; randomize kontrol çalışması [Yayınlanmamış doktora tezi], Ankara: Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü; 2015.
21. Burns N, Grove SK. The Practice of Nursing Research: Appraisal, Synthesis and Generation of Evidence. 6th ed. St. Louis, Missouri: Saunders Elsevier; 2009.
22. Gotay CC, Pagano IS. Assessment of Survivor Concerns (ASC): a newly proposed brief questionnaire. Health Qual Life Outcomes 2007;5:15.
23. Bresner L, Banach R, Rodin G, Thabane L, Ezzat S, Sawka AM. Cancer-related worry in Canadian thyroid cancer survivors. J Clin Endocrinol Metab 2015;100:977–85.
24. Coroiu A, Körner A, Burke S, Meterissian S, Sabiston CM. Stress and posttraumatic growth among survivors of breast cancer: a test of curvilinear effects. International Journal of Stress Management 2016;23:84.
25. Tsai LY, Wang KL, Tsai JM, Tsay SL. Chinese Version of the Assessment of Survivor Concerns Scale for Gynecological Cancer Survivors: A Psychometric Study in Taiwan. J Nurs Res 2019;27:e41.
26. Karakoç FY, Dönmez L. Ölçek geliştirme çalışmalarında temel ilkeler. Tıp Eğitimi Dünyası 2014;13:39–49.
27. Davis LL. Instrument review: Getting the most from a panel of experts. Applied Nursing Research 1992;5:194–7.
28. Yurdugül H. Ölçek Geliştirme Çalışmalarında Kapsam Geçerliği için Kapsam Geçerlik Indekslerinin Kullanılması. XIV. Ulusal Eğitim Bilimleri Kongresi 2005;1:771–4.
29. Karagöz Y. Nonparametrik tekniklerin güç ve etkinlikleri. Elektronik Sosyal Bilimler Dergisi 2010;9:18–40.
30. Çokluk Ö, Şekercioğlu G, Büyüköztürk Ş. Sosyal Bilimler için Çok Değişkenli İstatistik: SPSS ve LISREL Uygulamaları. 2nd ed. Ankara: Pegem Akademi; 2014.
31. Erdoğan S, Nahcivan N, Esin MN. Hemşirelikte Araştırma: Süreç, Ugulama ve Kritik. İstanbul: Nobel Tıp Kitabevi; 2015.

32. Aksayan S, Gözüm S. Kültürlerarası Ölçek Uyarlaması için Rehber II: Psikometrik Özellikler ve Kültürlerarası Karşılaştırma. Hemşirelikte Araştırma Dergisi 2003;5:3–14.
33. Büyüköztürk Ş. Sosyal Bilimler için Veri Analizi El Kitabı. 24th ed. Ankara: Pegem Akademi; 2018.
34. Büyüköztürk Ş. Faktör analizi: Temel kavramlar ve ölçek geliştirmede kullanımı. Kuram ve Uygulamada Eğitim Yönetimi Dergisi 2002;32:470–83.
35. Albright JJ, Park HM. Confirmatory Factor Analysis Using Amos, LISREL, Mplus and SAS/STAT CALIS. Semantic Scholar 2009.
36. Munro BH. Statistical Methods for Health Care Research. 5th ed. Philadelphia: Lippincott Williams & Wilkins; 2005.
37. Vieira AL. Interactive LISREL in Practice Getting Started with A SIMPLIS Approach. 1st ed. London: Springer; 2011.
38. Wang J, Wang X. Structural Equation Modeling: Applications Using Mplus. West Susex: John Wiley & Sons; 2012.
39. Kline RB. Principles and Practice of Structural Equation Modeling. 3rd ed. New York: The Guilford Press; 2011.
40. Iacobucci D. Structural equations modeling: Fit indices, sample size, and Advanced Topics. Journal of Consumer Psychology 2010;20:90–8.
41. Harrington D. Confirmatory Factor Analysis. New York: Oxford University Press; 2009.
42. Tavşancıl E. Tutumların Ölçülmesi ve SPSS ile Veri Analizi. 5th ed. Ankara: Nobel Kitabevi; 2014.
43. Ercan İ, Kan İ. Ölçeklerde Güvenirlik ve Ggeçerlik. Uludağ Üniversitesi Tıp Fakültesi Dergisi 2004;30:211–6.
44. Özdamar K. Paket Programlar ile İstatistiksel Veri Analizi 1. 5th ed. Eskişehir: Kaan Kitabevi; 2004.