Adaptation of the Sexual Adjustment and Body Image Scale in Turkish Breast Cancer Women

Figen Erol Ursavaş, RN, MSc, and Özgül Karayurt, RN, PhD

Figen Erol Ursavaş, RN, MSc, is a Research Assistant at Department of Nursing, School of Health, Çankırı Karatekin University, Çankırı, Turkey, and Özgül Karayurt, RN, PhD, is an Associate Professor at Faculty of Nursing, Dokuz Eylül University, Izmir, Turkey.

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Author contact:
figenerolll@gmail.com, with a copy to the Editor: journal@nanda.org

PURPOSE: To investigate the validity and reliability of the Sexual Adjustment and Body Image Scale in Turkish breast cancer women.
METHODS: This is a methodological and cross-sectional study, and included 161 breast cancer women.
RESULTS: The factor loadings in the exploratory factor analysis ranged from 0.83 to 0.90 for the sexual adjustment scales and ranged from 0.52 to 0.86 for the body image scale. The Cronbach's alpha values were 0.86, 0.83, and 0.89 for the subscales of sexual adjustment and 0.77 and 0.81 for the subscales of body image.
CONCLUSION: The scale is a valid and reliable tool to evaluate sexual adjustment and body image in Turkish breast cancer women.
AMAÇ: Meme kanseri tanısı konulan Türk kadınlarında Cinsel Uyum ve Beden İmajı Ölçeği'nin geçerlilik ve güvenirliğini incelemektir.
METHOT: Bu çalışma 161 meme kanserli kadın ile kesitsel ve metadolojik tipte yapılmıştır.
BULGULAR: Açıklayıcı faktör analizinde faktör yükleri cinsel uyum ölçeğinde 0.83 ile 0.90, beden imajı ölçeğinde ise 0.52 ile 0.86 arasında değişmektedir. Cinsel uyum ölçeğinin alt boyut cronbach alfa değerleri 0.86, 0.83, 089 iken beden imajı ölçeği alt boyut cronbach alfa değerleri 0.77 ve 0.81 bulunmuştur.
SONUÇ: Ölçek, Türk meme kanserli kadınların cinsel uyum ve beden imajını değerlendirmede geçerli ve güvenilir bir ölçektir.

Breast cancer is the most common cancer in women both in the developed and less developed world. It was reported that the worldwide breast cancer incidence was 25.1% and that the 5-year prevalence was 36.3% per 100,000 women (GLOBOCAN, 2012). Breast cancer is the most common cancer in Turkish women at an incidence of 45.10 in 100,000 and at a prevalence of 23.4% (Republic of Turkey, 2012).

Many studies report that the surgical treatment of breast cancer has a negative impact on sexual health and body image (Anagnostopoulos & Myrgianni, 2009; Baxter et al., 2006; Dalton et al., 2009; Falk Dahl, Reinertsen, Nesvold, Fossa, & Dahl, 2010; Ussher, Perz, & Gilbert, 2012). Other studies have reported that poor self-image postbreast surgery negatively impacts on women's sexual relationships with their partners (Can et al., 2008; Chen, Liao, Chen, Chan, & Chen, 2012; Fobair et al., 2006; Uçar & Uzun, 2008; Ussher et al., 2012). In a study that explored men's responses to their wives who had undergone breast surgery for cancer, the men reported that they were anxious about seeing their wife's body and avoided sexual activity (Nasiri, Taleghani, & İrajpour, 2012). In one study, women reported that counseling and education about the body changes as a result of breast surgery would help them to communicate with their spouses about sexual health issues more comfortably (Sheppard & Ely, 2008).

Nurses play a key role in identification of a negative body image and sexual problems in women postsurgery to treat breast cancer. Strategies to help these women and their partners cope with the woman's body image and sexual health are imperative to provide comprehensive care and enhance sexual health. Understanding body image and sexual adjustment may provide a basis for designing appropriate nursing care (Sheppard & Ely, 2008; Ussher, Perz, & Gilbert, 2013). In order to improve care, culturally congruent, reliable, and valid tools that accurately measure the phenomenon of concern are needed. Such a tool has the potential to guide interventions aimed at improving body image and sexual health in women after breast surgery.

Dalton et al. (2009) developed the Sexual Adjustment and Body Image Scale (SABIS) for use in breast cancer patients in the United States. The SABIS was further tested

in Canadian women with all types of gynecological cancer and was found to be reliable and valid in this population (Ferguson et al., 2012). To date, there is no reliable and valid instrument measuring body image for Turkish women. Therefore, the aim of this study was to adapt the SABIS into Turkish culture and to test the validity and reliability of the scale in Turkish women undergoing breast surgery. As compared with the development of a new scale, an adaptation of an available one is less costly, saves time, and contributes to comparisons of data collected with different versions of a scale (Jamieson, 2004).

Methods

Data Collection and Sample

This methodological and cross-sectional study was conducted in chemotherapy and radiotherapy units of a university hospital in İzmir, a city located in the west part of Turkey.

Data were collected between July 2013 and February 2014. In view of the principle of including 10 participants for each item of a given scale in methodological studies (Şencan, 2005), 161 women satisfying inclusion criteria were enrolled in the study. The inclusion criteria were having primary breast cancer, being female, voluntarily accepting to participate in the study, being older than 18 years, having a sexual partner, being able to understand and speak Turkish, not having hearing and speech problems, having mastectomy or breast conserving surgery (BCS), having a stable condition, and not having a cognitive or mental impairment diagnosed.

Instruments

A sociodemographic and clinical features form, the SABIS, and the Hospital Anxiety and Depression Scale (HADS) were used for data collection.

The form of sociodemographic and clinical features is composed of 11 items about sociodemographic features such as age, education, and occupation, and clinical features like duration of diagnosis, type of surgery, and stages of the disease. The SABIS was developed by Dalton et al. (2009) in the United States to evaluate sexual adjustment and body image in women before and after breast cancer. It has two main scales (sexual adjustment and body image) and 14 items. The sexual adjustment scale has three subscales (prior sexual adjustment, impact on sexual functioning, and sexual importance of breasts) and eight items.

Items 1, 2, 7, and 8, included in prior sexual adjustment and sexual importance of breasts, are scored on a five-point Likert scale ranging from 1 to 5. The items 3, 4, 5, and 6, included in impact on sexual functioning, are scored on a five-point Likert scale ranging from −2 to +2. The body image scale has two subscales, namely prior body image and postbody image, and six items. The items are scored on a five-point Likert scale ranging from 1 to 5. Mean scores for the subscales are used for evaluations and a total score for the SABIS is not calculated. Lower scores indicate poor sexual adjustment and poor body image.

The validity of the SABIS was tested with the construct validity, and the reliability of the SABIS was tested with Cronbach's alpha and the test–retest reliability. The factor loadings ranged from 0.83 to 0.92 in the sexual adjustment and from 0.73 to 0.91 in the body image. The Cronbach's alpha coefficients were 0.78, 0.91, and 0.66 for sexual adjustment subscales prior sexual adjustment, impact on sexual functioning, and sexual importance of breasts, respectively, and 0.80 and 0.87 for body image subscales prior body image and postbody image, respectively. For testing stability, the test–retest reliability coefficients were 0.77, 0.70, and 0.66 for prior sexual adjustment, impact on sexual functioning, and sexual importance of breasts, respectively, and 0.81 and 0.70 for prior body image and postbody image, respectively (Dalton et al., 2009, 2010).

The HADS was developed by Zigmond and Snaith in 1983 to screen anxiety and depression in patients with physical conditions in a short time and to determine risk groups. The scale has 14 items, seven of which are about depression and seven of which are about anxiety. In adaptation of the HADS into Turkish, the construct validity revealed two factors, as in the original scale. The Cronbach's alpha coefficient was 0.85 for the anxiety subscale and 0.77 for the depression subscale, and the item-to-total correlation coefficients ranged from 0.81 to 0.85 for the anxiety subscale and from 0.73 to 0.77 for the depression subscale. As a result, the Turkish version of the HADS was found to be valid and reliable (Aydemir, 1997). In this study, the HADS was used in discriminant validity analyses.

Procedures

A written permission was obtained via e-mail from Oxana Gronskaya Palesh, one of the authors who developed the SABIS, before adaptation of the scale into Turkish. Approval was obtained from the ethical committee for noninterventional research in Dokuz Eylül University, and either oral or written informed consent was obtained from the women to be included into the sample before the study was conducted. Data were collected at face-to-face interviews.

Data Analysis

Data were analyzed with SPSS 16.00 (SPSS, Inc., Chicago, IL, USA). The confirmatory factor analysis (CFA) was made with LISREL (Albright & Park, 2009). Data about demographic and clinical features of the women included in the study were expressed in numbers and percentages. The validity of the SABIS was tested with linguistic, content, and construct validity analyses, and the reliability of the SABIS was tested with internal consistency and stability test–retest. The Kolmogorov–Smirnov test was used to test normality of obtained data from 161 women. Because the data

were not normally distributed, the nonparametric tests Spearman–Brown correlation analyses and Mann–Whitney U-test were used. Because the data from the retest administered to 41 women were normally distributed, their analyses were made with Pearson correlation and Student's t-tests.

Results

Demographic Data

The distribution of sociodemographic and clinical features of the breast cancer women is presented in Table 1. The women were aged between 28 and 68 years with a mean age of 51.63 ± 1.00 years. Of all the women included in the study, 98.10% were married, 48.40% were primary school graduates, 57.10% were employed, 53.40% had an income equal to their expenses, 50.30% had stage two breast cancer, 65.20% had BCS, 94.40% received chemotherapy, 60.20% received radiotherapy, and 34.20% received hormonotherapy. Time elapsing after the diagnosis of breast cancer was 3 years or more in 35.40% of the women.

Descriptive Statistics of the SABIS-Turkish

The mean score ranged from 3.74 ± 0.91 to −0.92 ± 0.06 for the sexual adjustment scale and from 4.07 ± 1.33 to 3.36 ± 0.08 for the body image scale.

The validity of the SABIS-Turkish (SABIS-Tr) was tested with linguistic, content, and construct validity analyses.

Linguistic validity. The scale was first translated into Turkish by the researchers. It was then translated into Turkish by three linguists whose native languages were Turkish and who had a good command of both languages and knowledge of both cultures. Two researchers determined the best translation of each item and created a single draft of the Turkish version of the scale. The obtained Turkish version of the scale was back translated into English by two linguists who did not see the English version of the scale and had a good command of both Turkish and English and knowledge of both cultures. When the backtranslated version of the scale was compared with the original SABIS, they were found to be similar and the SABIS-Tr was obtained.

Content validity. For the content validity of the SABIS-Tr, six breast cancer experts including one general surgeon and five nurses were asked their opinions. After that, the necessary arrangements were made by the experts. For evaluation of the expert opinions, the content validity index (CVI) developed by Polit and Beck (2006) was used. The CVI for the items (I-CVI) ranged from 1.00 to 0.83 for the sexual adjustment scale and was 1.00 for each item of the body image scale. The CVI for the scale (S-CVI) was 0.92 for the sexual adjustment scale and 1.00 for the body image scale.

Piloting study. It is recommended that a scale whose linguistic validity and content validity were achieved should be piloted on individuals having the same features as the study sample, although the exact size of the piloting test sample has not been noted (Deniz, 2007). In this study, the SABIS-Tr, the linguistic validity, and content validity of which were proven, was piloted on 25 patients. The patients participating in the piloting study noted that it was not tiring to read the scale, easy to understand the items, and quick to complete the scale and that they could read it easily.

Table 1. Sociodemographic and Clinical Features of the Patients (n = 161)

Sociodemographic features	X ± SD	Range
Age	51.63 ± 1.00[a]	28–68

	N	%
Education		
Illiterate	10.00	6.20
Literate	3.00	1.90
Primary school	78.00	48.40
Secondary and high school	36.00	22.40
University or higher education	34.00	21.10
Income		
Less than expenses	67.00	41.60
Equal to expenses	86.00	53.40
Higher than expenses	8.00	5.00
Employment		
Employed	39.00	24.20
Unemployed	92.00	57.20
Retired	30.00	18.60
Marital status		
Married	158.00	98.10
Single	3.00	1.90

Clinical features		
Disease stage		
Stage I	39.00	24.00
Stage II	81.00	50.30
Stage III	35.00	22.00
Stage IV	6.00	3.70
Type of surgery		
Breast conserving	105.00	65.20
Mastectomy	56.00	34.80
Time elapsing from diagnosis		
1–6 months	50	31.10
7–12 months	26	16.10
13 months–3 years	28	17.40
3 years or more	57	35.40
Chemotherapy		
Yes	152.00	94.40
No	9.00	5.60
Radiotherapy		
Yes	97.00	60.20
No	64.00	39.80
Hormonotherapy		
Yes	55.00	34.20
No	106.00	65.80
Total	161.00	100.00

[a]Values given are mean ± standard deviation (SD).

Construct validity. The construct validity of the SABIS-Tr was tested with the factor analysis, the discriminant validity, and the known-group comparison. The factor analysis of the SABIS-Tr was tested with the exploratory factor analysis (EFA) and CFA. In the EFA of the sexual adjustment scale, the Kaiser–Meyer–Olkin (KMO) value was 0.75, and the Bartlett's test result was highly significant (chi-square [χ^2] = 523.808; p = .000). The analysis revealed three factors with the Eigen value of higher than 1. Obtained three factors explained 77.46% of the total variance. Factor loadings of the items ranged from 0.83 to 0.90. In the EFA of the body image scale, the KMO value was 0.56, and the Bartlett's test result was highly significant (χ^2 = 188.333; p = .000). The EFA revealed two factors with the Eigen value of higher than 1. Obtained factors accounted for 59.55% of the total variance. Factor loadings of the items ranged between 0.52 and 0.86 (Table 2).

According to the CFA of the sexual adjustment scale, minimum fit function χ^2 was 15.01, degrees of freedom (df) was 17, χ^2/df was 0.88, root mean square error of approximation (RMSEA) was 0.00, standardized root mean square residual (S-RMR) was 0.03, comparative fit index (CFI) was 1.00, and goodness of fit index (GFI) was 0.98. Based on the results of the CFA of the body image scale, χ^2 was 6.54, df was 7, χ^2/df was 0.93, RMSEA was 0.00, S-RMR was 0.05, CFI was 1.00, and GFI was 0.99.

The discriminant validity of the SABIS-Tr was tested with the relation between the subscales of HADS anxiety and depression. There was a significant (p = .006) weak negative (rs = −0.22) relation between the subscale impact on sexual functioning of the sexual adjustment scale and the subscale anxiety, and a significant (p = .04) weak negative (rs = −0.16) relation between impact on sexual functioning and depression. There was a significant (p = .00) moderate negative (rs = −0.33) relation between postbody image and anxiety.

In the known groups comparison, there was a significant difference in the postbody image subscale between the women having mastectomy (10.30 ± 3.23) and those having BCS (11.67 ± 3.02) (p = .006).

Reliability of the SABIS-Tr. The reliability of the SABIS-Tr was tested with internal consistency and test–retest. The internal consistency of the SABIS-Tr was tested with item subscale total score correlations and Cronbach's alpha coefficients. The item subscale total score correlations ranged between 0.78 and 0.91 for the sexual adjustment scale and between 0.63 and 0.81 for the body image scale. The Cronbach's alpha coefficients were 0.86, 0.83, and 0.89 for prior sexual adjustment, impact on sexual functioning, and sexual importance of breasts, respectively, and 0.77 and 0.81 for prior body image and postbody image, respectively (Table 3).

The test–retest correlation coefficients ranged from 0.47 to 0.67 for the sexual adjustment subscales and from 0.63 to 0.67 for the body image subscales. In the test–retest, there were significant strong and moderate posi-

tive correlations between the subscale scores in the initial test and the scores in the retest. However, the difference between the mean scores in the initial test and the mean scores in the retest was not significant (p > .05) (Table 4).

Table 2. Results of Exploratory Factor Analysis of Sexual Adjustment and Body Image Scales (n = 161)

Sexual adjustment scale	Factors loadings of the items	
1-Prior to having breast cancer, how satisfied were you with your sex life?	0.83	
2-Prior to having breast cancer, how confident did you feel about yourself as a sexual partner?	0.87	
3-How has having breast cancer affected your desire for sexual contact?	0.85	
4-How has having breast cancer affected your sexual relationship(s)?	0.87	
5-How has having breast cancer affected the frequency with which you initiate sexual contact?	0.87	
6-How has having breast cancer affected your sexual satisfaction when you have sex?	0.88	
7-How important are your breasts to your sexual experience?	0.90	
8-How important are your breasts to your sexual identity (so that you can feel that you are a woman)?	0.90	
Total variance	77.46%	
Kaiser–Meyer-Olkin	0.75	
Bartlett's test	χ^2	523.808
	p	.000*

Body image scale	Factor loadings of the items	
1-Prior to having breast cancer, how satisfied were you with your physical attractiveness?	0.86	
2-Prior to having breast cancer, how uncomfortable did you feel with others seeing your body (when you wore a swimming suit or a bikini or clothes which reveal your body stature)?	0.52	
3-Prior to having breast cancer, how satisfied were you with your body measurements (height and weight)?	0.84	
4-How uncomfortable do you feel with others seeing your body (when you wear a swimming suit or a bikini or clothes which reveal your body stature) since having breast cancer?	0.82	
5-How comfortable are you with the changes in your body since having breast cancer?	0.66	
6-How uncomfortable do you feel with others (your spouse, relatives, nurses, and doctors) seeing your affected breast area since having breast cancer?	0.80	
Total variance	59.55%	
Kaiser–Meyer-Olkin	0.56	
Bartlett's test	χ^2	188.333
	p	.000*

*p < 0.001.

Table 3. Item Subscale Total Score Correlations and Subscale Cronbach's Alpha Values of Sexual Adjustment and Body Image Scale (*n* = 161)

Subscales of sexual adjustment	SABIS items	rs	*p*	Cronbach's alpha
Prior sexual adjustment	Item 1	0.85	.000*	0.86
	Item 2	0.78	.000*	
Impact on sexual functioning	Item 3	0.86	.000*	0.83
	Item 4	0.89	.000*	
	Item 5	0.87	.000*	
	Item 6	0.86	.000*	
Sexual importance of breasts	Item 7	0.91	.000*	0.89
	Item 8	0.88	.000*	
Subscales of body image				
Prior body image	Item 1	0.63	.000*	0.77
	Item 2	0.78	.000*	
	Item 3	0.67	.000*	
Postbody image	Item 4	0.81	.000*	0.81
	Item 5	0.72	.000*	
	Item 6	0.73	.000*	

rs, Spearman–Brown correlation: *p* < .001.

Table 4. The Comparison of Correlation Coefficients and Mean Scores for Subscales of Sexual Adjustment and Body Image Between Test–Retest Measurements (*n* = 41)

	Initial test	Retest		
Sexual adjustment scale	X ± SD	X ± SD	r/p*	t/p**
Prior sexual adjustment	6.82 ± 1.54	6.80 ± 1.63	0.47/.002	0.095/.92
Impact on sexual functioning	−3.34 ± 2.78	−3.51 ± 2.61	0.56/.000	0.432/.66
Sexual importance of breasts	6.43 ± 2.52	6.48 ± 2.19	0.67/.000	0.161/.87
Body image scale				
Prior body image	11.02 ± 2.31	11.24 ± 2.22	0.63/.000	0.723/.47
Postbody image	10.53 ± 3.92	10.85 ± 3.62	0.67/.000	0.660/.51

p < .05; **p* > .05.
SD, standard deviation.

Discussion

In this study, first the validity of the SABIS-Tr was tested and then the reliability of the scale was analyzed. As a result, the scale was found to be valid and reliable.

Six experts having knowledge about breast cancer and having worked with and conducted research on breast cancer patients for many years determined whether the SABIS-Tr could measure the predetermined feature and was appropriate for the Turkish culture. In accordance with the expert opinions, eight items of the sexual adjustment scale and the third and the sixth items of the body image scale were revised.

It is required that the I-CVI should be over 0.78 and the S-CVI should be over 0.80 (Polit & Beck, 2006). In this study, the I-CVI was over 0.78 and the S-CVI was over 0.80 for the sexual adjustment and the body image scales. In the EFA, the KMO value is used to determine whether a sample

size is sufficient. It is recommended that the KMO value should be higher than 0.50 (Baydur & Eser, 2006; Marshall et al., 2007). In the present study, the KMO value was 0.75 for the sexual adjustment scale and 0.56 for the body image scale, which indicate that the sample size of this study was sufficient for the factor analysis. To determine whether the correlation matrix between the variables in the EFA is appropriate for a factor analysis, Bartlett's test is used (Akgül, 2005; Anastasiadou, 2011; Williams, Onsman, & Brown, 2010). In this study, the Bartlett's test results for the sexual adjustment and the body image scales were highly significant. This finding showed that the correlation matrix of the items in the scales was appropriate for the factor analysis (Büyüköztürk, 2010).

Factor loadings are the coefficients that describe the relation between items of a scale and factors. They are taken into consideration to determine which items will be deleted (Büyüköztürk, 2010). Because the factor loadings of

the SABIS were over 0.45, none of the items was deleted. Consistent with the results of the present study, in an unpublished article written by Dalton et al. (2010), the factor loadings ranged between 0.83 and 0.92 for the sexual adjustment scale and between 0.73 and 0.91 for the body image scale.

The number of the items in the scale, administered to patients with gynecological cancers, was reduced to seven, and the factor loadings of the new scale ranged from 0.75 to 0.94 for sexual adjustment and from 0.79 to 0.89 for body image (Ferguson et al., 2012). To calculate the variance explained by a factor and to determine the number of factors, the Eigen value is used. It is recommended that the factors having an Eigen value of higher than 1 should be taken into consideration (Marshall et al., 2007; Williams et al., 2010). Therefore, the factors with an Eigen value of higher than 1 were considered in the evaluation of the SABIS-Tr (Büyüköztürk, 2010).

As in the original scale, three factors with Eigen value of higher than 1 and two factors with Eigen value of higher than 1 were obtained in the SABISs, respectively (Dalton et al., 2010). It is suggested in the literature that the variance should be 40–60% in multifactor scales (Büyüköztürk, 2010; Marshall et al., 2007). In the present study, the finding that three factors in the sexual adjustment scale were responsible for 77.46% of the total variance and that two factors in the body image scale were responsible for 59.55% of the total variance suggests that the scale has a powerful factor structure.

The CFA is used to determine whether there is a sufficient relationship between the factors of a scale determined in the EFA, which variables were related to which factors, whether the factors were independent of each other, and whether the factors were sufficient to explain a given model (Albright & Park, 2009; Erkorkmaz, Etikan, Demir, Ozdamar, & Sanisaoğlu, 2013; Özdamar, 2013). In the present study, among the fit indices of the CFA χ^2/df was lower than 2, the RMSEA was lower than 0.05, the S-RMR was equal to or lower than 0.05, the CFI was higher than 0.97, and the GFI was higher than 0.95.

These findings indicate that the SABIS-Tr has a good fit and the obtained subscales explained the model. In a study by Ferguson et al. on patients with gynecological cancers, CFA showed that the adapted version of the SABIS had good fit indices (S-RMR = 0.05, CFI = 0.98, GFI = 0.96), which are consistent with the fit indices determined in the present study. Ferguson et al. also found that the scale had an RMESA of 0.08. This showed that the adapted version of the scale had a good fit (Ferguson et al., 2012).

It is assumed that there will be a weak relation between relevant but different constructs in the discriminant validity. In the present study, the finding that there was a weak negative relation between the items of the two different scales shows that the discriminant validity of the scale was achieved (Tavşancıl, 2006). In the present study, the finding that there was a significant weak negative relation between the subscales impact on sexual functioning and postbody

image in the SABIS-Tr and the subscale anxiety in the HADS, and between impact on sexual functioning in the SABIS-Tr and depression in the HADS indicates that the SABIS-Tr could discriminate between different constructs and had a high construct validity, which is consistent with the results of the study on the original scale. In fact, the study by Dalton et al. (2009) showed a significant weak negative relation between impact on sexual functioning and anxiety ($r = -0.26$, $p < .05$), between postbody image and anxiety ($r = -0.19$, $p < .05$), and between impact on sexual functioning and depression ($r = -0.42$, $p < .001$).

Presence of a significant difference in scores for a scale between two different groups, described in the literature, is indicative of construct validity (Şencan, 2005). It has been shown in the literature that women having BCS have a better body image than those having mastectomy (Falk Dahl et al., 2010; Moreira & Canavarro, 2010; Shoma et al., 2009). Consistent with the literature, this study revealed that the women with BCS got significantly higher scores for postbody image than those having mastectomy, suggestive of the fact that the SABIS-Tr has high construct validity.

Reliability

Cronbach's alpha shows to what extent items of a scale are related to each other and whether a scale is composed of items evaluating the same element. It is recommended that Cronbach's alpha coefficient should be at least 0.70 (Çakmur, 2012; Tavakol & Dennick, 2011). In the present study, Cronbach's alpha value of the SABIS-Tr was over 0.77. This shows that the items are consistent with each other and homogenous and that the scale has a high reliability (Baydur & Eser, 2006; Tavşancıl, 2006), which is consistent with the results of the studies on the original version of the scale. Dalton et al. (2009) reported that Cronbach's alpha coefficient ranged from 0.66 to 0.91 for the sexual adjustment. Ferguson et al. (2012) found in their study on women with gynecological cancers that Cronbach's alpha coefficient was 0.91 for sexual adjustment and 0.88 for body image.

Item Analyses

These analyses reveal the relation between the dimension supposed to be measured and items of a scale. The results of the analyses are used to judge to what degree an item discriminates individuals in terms of a feature measured and yield the item discriminatory index. In item analyses, item total score correlation coefficients are examined. However, in this study, correlations between the subscales of the SABIS-Tr were examined because the scale did not have a total score. It is agreed that items with item-total correlation coefficients of 0.30 or higher can discriminate between individuals and that items with item-total correlation coefficients of 0.20–0.30 can be included in a scale if they are really necessary or have to be revised, but that

items with item-total correlation coefficients of lower than 0.20 should be deleted (Baydur & Eser, 2006; Büyüköztürk, 2010).

In the present study, because there were not any items with coefficients lower than 0.30, none of items was deleted. The high subscale total score correlations found in the present study indicate that the items of the SABIS-Tr are related to the subscales they belong to and sufficient and effective in measurement of the features studied (Büyüköztürk, 2010). Consistent with the results of the present study, Ferguson et al. (2012), in their study on women with gynecological cancers, reported that the subscale total score correlations ranged from 0.59 to 0.81 for sexual adjustment and from 0.68 to 0.78 for body image.

Test–Retest

The test–retest measures consistency and stability between two measurements made under the same conditions at certain intervals (Karasar, 2012). It is recommended that this test should be administered to at least 30 people at 2–6-week intervals (Tavşancıl, 2006). In the present study, administrations of the scale to 41 women two times at 4-week intervals yielded the correlation coefficients of 0.47–0.67 for sexual adjustment and 0.63 and 0.67 for body image. This indicated a significant positive strong relationship and stability and consistency of the items. Similarly, the study on the original scale revealed that the correlation coefficients were between 0.66 and 0.77 for sexual adjustment and 0.70 and 0.81 for body image (Dalton et al., 2009). However, it has been recommended that mean scores for the two measurements should be tested even if test–retest correlation coefficients are sufficient (Tavşancıl, 2006). In the present study, there was not a significant difference in the mean scores for the SABIS-Tr between two measurements ($p > .05$), which is indicative of stability and consistency of the scale.

Conclusions

The SABIS-Tr is a valid and reliable scale that can be used in research to be performed to evaluate sexual health and body image in Turkish-speaking women who had breast surgery. The instrument provides information about the concerns of women who have undergone surgery to treat breast cancer. Understanding these concerns has the potential to guide the development of intervention studies directed at improving the sexual health and body image of women postbreast surgery.

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