

## RESEARCH ARTICLE

# Psychometric Properties of the Persian Version of the Self-Assessed Support Needs Questionnaire for Breast Cancer Cases

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### Abstract

**Background:** It has been found that support given to women with breast cancer has a positive effect upon their reactions to the illness and may even prolong their survival. Perceived support needs assessment in breast cancer women could be considered as a necessary part of nursing function. **Aim:** The purpose of this study was to translate and culturally adapt the self-assessed support needs (SASN) questionnaire into Persian language and to investigate its psychometric properties. **Materials and Methods:** After forward-backward translation of the questionnaire and making appropriate changes, we selected 160 women with breast cancer as our study sample. The psychometric properties of the SASN, including its internal consistency, test retest reliability, and construct validity were evaluated through the known-groups technique. **Results:** The calculated Kaiser Meyer Olkin was 0.756, indicating that the sample was sufficiently large to perform a satisfactory factor analysis. The six factors all together explained 50.7% of the variance; the first factor (diagnosing) explaining the biggest part of variance (10.9). Internal consistency reliability was 0.83 for the whole scale and the stability of test was 0.78. For the first factor, Cronbach's alpha was 0.90 and factor loadings of scale's items were found to deal with diagnosis subscale. The domains described patients' diagnosis, treatment, support, femininity and body image, family and friends and information. **Conclusions:** The reliability and validity of the adapted version of the SASN was shown to be satisfactory. Thus, it can be used to investigate self-assessed support needs of Iranian women suffering from breast cancer since the SASN is a multi-domain scale.

**Keywords:** Breast cancer cases - support needs - SASN questionnaire - Persian

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### Introduction

Breast cancer is one of the most common cancers in female population (Joolaee et al., 2012). According to the international reports, an annual 1.15 million cases are identified globally, and 502000 patients die from this disease each year (Harirchi et al., 2011). In Iran, with crude incidence of nearly 24.4% and Age Specific Rate (ASR) of 23.65% in 2006, breast cancer in female population was the most common type of all cancers, and the third cause of mortality (Ebrahimi et al., 2007; Mousavi et al., 2009; Fouladi et al., 2012).

Patients in Iran are usually diagnosed in more advanced stages of the disease, and are relatively younger than those in Western countries. National Reports indicate that Iranian women are diagnosed with breast cancer about 10 years earlier than their Western counterparts (Radmard, 2010).

Early detection of breast cancer has an important role in reducing its mortality rate, and also in development of its prognosis (Montazeri et al., 2008; Kadivar et al., 2012). Different aspects of breast cancer, particularly

psychological aspects, have interested researchers worldwide (Buchi, 2010). Many studies have discussed and described women's reactions to diagnosis previously. Studies have shown that many women with breast cancer experience high levels of stress, anxiety, and depression during time (diagnosis, treatment, and relapse). Responses to the disease is highly complex, and much dependent on the stage of the disease, type of therapy, and individual's culture (Joolaee et al., 2012).

Some studies show that many breast cancer patients experience a range of negative ideations including fear of spread or relapse of disease, chemotherapy-induced nausea (Molassiotis et al., 2008), reduced self-esteem and mental self-image (Markopoulos et al., 2009), and reduced inclination to engage in social and family activities (Emery et al., 2009). There is a considerable reduction in psychological, physical, and social performance following diagnosis of breast cancer, and this becomes extremely important with younger age at diagnosis and longer survival. Clearly, health care service providing systems have an important role in reducing burden of the disease (Nizamli et al., 2011). Yet, most studies in this area believe

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that initial focus of these centers is more on treatment of physical aspects of the disease and prolonging life of these patients, and are less concerned with psychological aspects (Harrison et al., 2009; McDowell et al., 2010; Park and Hwang, 2012). According to the breast cancer researchers, In psychological terms, support is one of the most basic needs of cancer patients (Kroenke et al., 2006; Yoo, 2010).

Support is referred to a person's perception of care, love, perceived respect and value, regardless of situation (Bloom and Spiegel, 1984). Supporting women with breast cancer positively affects their reaction to the disease and even, causes prolonging their lives, and it is an essential need of these patients (Nelson et al., 2009). Support needs assessment of cancer patients indicate that they are exposed to high levels of needs, especially health-related information needs (Li et al., 2011), psychological needs (Thewes et al., 2004; Fann et al., 2008; Reich et al., 2008) and physical and routine daily needs (Lin and Pan, 2012). Although many studies have been conducted on medication therapy process, following obtaining disease-related information, treatment, and diagnostic procedures on patients with breast cancer (Rees and Bath, 2000; Sanson Fisher et al., 2000), only a few studies have focused on perceived support needs in this group of patients. (Girgis et al., 2000; Schmid Buchi et al., 2008). Use of tools that are able to directly investigate cancer patients' perceived support needs and sources that cause them, can lead to understanding the importance of the need to receive help. Also, use of those tools can be conducive to prevention and reduction of many disease-related problems (Hellbom et al., 1998). So far, no studies have been conducted on psychometrics of Self-Assessed Support Needs (SASNs) questionnaire for breast cancer patients in Iran. Furthermore, there is no specific tool compatible with Iranian culture and with suitable validity and reliability. Also, given the importance of these studies in providing quality care, enhancing quality of life, and increased survival of these patients (Girgis et al., 2000), researchers aimed to investigate the compatibility of the English version of this tool with the Persian version, and evaluate its psychometrics (validity and reliability) in Iranian society.

## Materials and Methods

In this methodological study, psychometric properties of SASNs were analyzed. Sampling was conducted in continuous method, and researcher was present on site, and after obtaining written consents, issued the questionnaire to those that met the study inclusion criteria.

Study population consisted of all women with breast cancer that had had mastectomy and were hospitalized for chemotherapy in oncology wards at teaching hospitals affiliated to Tehran University of Medical Sciences in Iran in 2013. After a review of related literature and a pilot study, sample size was estimated at 160 persons. Study inclusion criteria were: aged 18 years and older, literacy in Persian, no history of mental disorders or chronic diseases, being in stage II of the disease, and being married.

In this study, data were collected through SASNs

questionnaire, which contained 54 items in 7 categories, including: diagnosis of disease, duration of treatment, social support, family and friends, femininity and self-image, receiving information, and post-therapy. This tool was designed by Lindop et al. (2001). In this questionnaire, questions were arranged according to the 5-point Likert scale (from not important at all to very important), and higher scores indicated higher importance of the subject for the patient.

Demographic details of the participants such as age, marital status, education level, occupation status, duration of illness, number of children, occupation of spouse, rate of income, housing status, place of residence, and type of insurance were investigated at the beginning of the questionnaire.

### *Psychometric testing*

**Translation procedure:** After contacting and gaining the designer's permission to use and translate from English into Persian, the questionnaire was translated by the research team (Forward translation). The translated version was checked for face and content validity against the English version by 10 faculty members of Nursing School of Tehran University of Medical Sciences, and finally, translations were reviewed by the research team and a comprehensive version was produced in accordance with the original version. The final translated and validated version was translated back into English by an expert in English language, familiar with nursing and medical context (Backward translation). Then, the above text was compared with the original English version, and its agreement was confirmed.

### *Reliability of the tool*

In this study, to investigate reliability, stability and homogeneity aspects of the tool were examined. To measure stability, test-retest method was used. To this end, the researcher completed the tool with a two-week interval (Fox, 1983), and compared scores of these two stages using Intra-class Correlation Coefficient (ICC). For homogeneity of the tool, its options were split to two halves and using Spearman-Brown method, correlation between the two halves was examined. Correlation coefficient of 0.8-0.9 indicated a good distinction between levels of the construct (Burns and Grove, 2010). Cronbach's alpha was used to investigate internal consistency of items. Minimum acceptable score for Cronbach's alpha for the new psychosocial scales is 0.7 (Burns and Grove, 2010). Face validity

To evaluate face validity, we should respond the question whether the form of the tool is appropriate for assessing the intended objective. Since face validity is a kind of content validity, the same method used for content validity is also used for face validity; that is, using experts' opinion. In this study, views of 10 experts in relation to face validity, rationality, suitability, attractiveness, and logical sequence of items, as well as brevity and comprehensiveness of the tool were used. Also, 10 persons from the target group expressed their views on fluency and understandability of items, and the questionnaire was

modified according to their comments.

### Construct validity

Evidence of content validity indicates how much measurement method is inclusive of main components of the concept under study. This evidence is obtained from three sources of theory, related statistical population, and scientists and professionals (Burns and Grove, 2010).

To investigate content validity, Content Validity Index (CVI) and Content Validity Ratio (CVR) were used. CVI was developed by Waltz and Bausell in 1981 (Yaghmale, 2009). To determine CVI, the final tool was presented to 10 faculty members of Tehran School of Nursing. Item-total correlation was assessed with 4 options (1: not associated, to 4: highly associated), so that its relevance, clarity, simplicity or ambiguity can be assessed. Content validity ratio (CVR) was also examined in this study, and experts in the field (faculty members of Nursing School of Tehran University of Medical Sciences) were asked to assess necessity of one option out of a series of options, in order to make a construct operational according to a 3-option range including: necessary, useful but unnecessary, and unnecessary, and ultimately, the researcher made his judgment about content validity ratio based on content validity table and minimum value of content validity ratio. Calculated ratios for each item were compared with those in Lawsche table, and higher values of the ratio found than those in the table, meant confirmation of content validity of that item. Minimum value was considered 79% (Davis, 1992). This index, compared to other validity determination methods has higher objectivity (Yaghmale, 2009).

In order to explain the correlation pattern between items in each section of SASNs, the confirmatory factor analysis was used. Factor analysis as one of the most reliable methods for determining validity, especially in psychometric tools, is of particular interest. In this method, related variables are summarized into a new variable called factor.

Although, the number of participants required undertaking factor analysis remains under debate, a minimum of five participants per variable is generally recommended (Munro, 2005). However, to ensure an appropriate sample size was obtained for the current study to enable factor analysis to be undertaken two criteria were considered: 1) Kaiser-Meyer-Olkin (KMO) sampling adequacy 2) Factor loadings and the correlation between a variable and a factor (Hayes, 2002).

Scree plot method and Eigen value were used to determine number of factors in the tool. Factors were extracted from groups of highly correlated variables. After completion of factor analysis, suitable items remained in

the tool.

## Results

In this study, 160 women with breast cancer, with mean age  $44.6 \pm 12.63$  years, and diagnosis duration of one year participated. Statistical analysis for age, education, occupational status, income, type of insurance, and treatment details is presented in Table 1.

Descriptive analysis of data showed that the highest mean score ( $4.64 \pm 0.93$ ) related to "receiving attention of a particular nurse in the ward environment", and the lowest mean score ( $2.68 \pm 0.95$ ) related to "having the possibility of contact with a member of the treatment team". The highest mean score ( $4.62 \pm 1.1$ ) related to femininity factor and self-image, and the lowest ( $2.47 \pm 1.5$ ) related to disease diagnosis factor. In the femininity and self-image, "having an emotional support and confidence of the spouse or partner" scored the highest mean ( $3.21 \pm 1.2$ ), and in disease diagnosis factor, "change in my perspective of life, e.g. not worrying about trifles anymore, scored the lowest mean ( $2.11 \pm 1.1$ ).

Values calculated for content validity ratio of each item were higher than those in Lawsche table; hence, none of the items, for subsequent stages were eliminated. In terms of the content validity index, results showed remaining 52 items with content validity index  $\geq 0.79$ , and two items; "having the attention of a particular breast cancer-care

**Table 1. Women's Demographic and Disease/Treatment Details**

Participants' details (160 people)		Number (%)
Age range	18-32	31 (18.5)
	33-47	68 (43)
	48-62	46 (29.1)
	63-77	13 (7.3)
	With	151 (97.4)
Insurance	Without	9 (2.6)
	Education level	
Education level	Illiterate	34 (21.2)
	Elementary	53 (33.8)
	Middle school	38 (23.8)
	High school diploma	23 (13.9)
	Associate diploma	7 (3.3)
	Bachelor's	3 (2)
	Master's and higher	2 (1.3)
Occupational status	Housewife	104 (66.2)
	Employed	48 (29.1)
	Retired	8 (4)
	Income	
Income	Sufficient	69 (42.4)
	Insufficient	91 (57)
Treatment details	Chemotherapy	149 (95.4)
	Radiotherapy	8 (2)
Surgery	Lumpectomy	63 (40.4)
	Right	38 (23.2)
	Left	24 (14.6)
	Both sides	5 (2)
	Mastectomy	
Mastectomy	Right	45 (27.8)
	Left	26 (15.2)
	Both sides	9 (4.6)
	Prosthesis	3 (0.7)

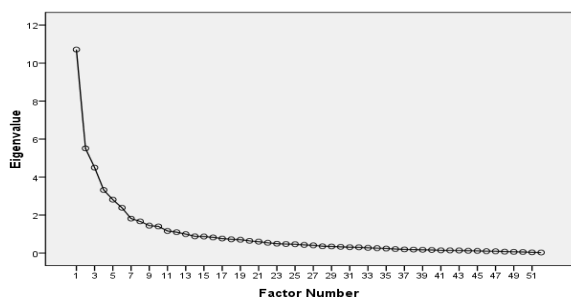
**Table 2. Total Variance Explained SASNs**

Factor	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.709	20.594	20.594	7.636	14.684	14.684	5.685	10.933	10.933
2	5.508	10.592	31.187	6.684	12.854	27.538	5.222	10.043	20.976
3	4.495	8.644	39.831	3.871	7.445	34.983	4.498	8.651	29.626
4	3.316	6.377	46.208	3.196	6.146	41.129	4.366	8.396	38.022
5	2.81	5.404	51.612	3.04	5.846	46.976	3.431	6.597	44.62
6	2.382	4.58	56.192	1.925	3.702	50.677	3.15	6.058	50.677

**Table 3. Loading Values Obtained in the Factorial Analysis after Varimax Rotation with a Six Factor Model (N=160)**

	Factor					
	1	2	3	4	5	6
Handling with feelings of shock and anxiety at the beginning of breast cancer recognition	0.362	0.33	0.318	0.096	-0.309	-0.154
Dealing with the sense of losing present and future	0.516	0.197	0.417	-0.089	-0.273	-0.162
Being able to handle a sense of loneliness and seclusion	0.478	0.165	0.413	-0.143	-0.2	-0.162
Knowing how to deal with initial symptoms	0.518	0.194	0.332	-0.037	-0.337	-0.162
Having a clear information over a period of time	0.291	0.255	0.208	0.211	-0.374	-0.252
Changing my viewpoint about life (e.g. not worrying about trifles any more)	0.443	0.267	0.21	-0.29	-0.127	-0.3
Rebuilding self-confidence	0.47	0.308	0.189	-0.355	-0.02	-0.235
Dealing with the question “why me”?	0.41	0.274	0.318	-0.2	-0.144	-0.196
Handling with the feeling of anger	0.378	0.289	0.374	-0.202	-0.134	-0.152
Facing with anxiety of surgery	0.493	0.308	0.19	-0.177	-0.079	-0.113
Facing with anxiety of cancer	0.421	0.338	0.295	-0.079	-0.217	-0.197
need to do things fast, before and after diagnosis	0.354	0.31	0.284	0.046	-0.208	-0.149
going back to life	0.412	0.333	0.045	0.145	-0.398	-0.01
Having exact information about my treatment	0.129	0.277	0.17	0.235	0.034	0.13
reaching the ability of dealing with side-effects of treatment, e.g. tiredness	0.2	0.231	0.115	-0.029	0.221	-0.038
accrediting to the necessity of long-term treatments (e.g. tamoxifen)	0.014	0.449	0.084	-0.424	0.298	-0.04
reaching the ability of dealing with the anxiety associated with treatments, especially surgery	0.051	0.518	0.186	-0.318	0.151	0.07
Being able to make an aware choice about the types of treatment on offer	0.065	0.275	0.243	-0.386	0.198	0.055
Having urgent treatment	0.091	0.352	0.301	-0.093	-0.134	0.181
Being able to handle with after-effects of surgery	0.075	0.4	0.274	-0.377	0.162	0.19
handling with physical problems followed by surgery, e.g. impairment of movement	-0.053	0.363	0.122	-0.369	0.374	0.16
Having regular follow-up appointments with a nurse for having more information, specially at the beginning of treatment process	0.174	0.179	0.047	-0.142	0.038	0.063
Having peace and silence during my hospital stay	0.042	0.349	0.213	-0.097	0.352	0.094
Being treated normally, given help but not treated as an invalid	0.224	0.24	0.137	0.051	0.294	0.095
Being treated as an individual	0.095	0.287	0.106	-0.14	0.474	0.102
Being provided with information about what treatment would be like (without needing to ask)	0.102	0.276	0.111	0.011	0.392	0.121
Sharing experiences with other women who have been through the experience	0.243	0.109	0.328	0.326	-0.155	0.451
preservation of independence	0.293	0.187	0.385	0.122	-0.23	0.376
Having professional help with family problems and upheavals made at home	0.206	0.247	0.417	0.034	-0.105	0.408
Clear communication with professional staff (health care)	0.265	0.239	0.379	0.134	-0.051	0.508
Being able to express feelings even if they seem trivial	0.284	0.202	0.39	0.131	-0.139	0.45
Having confidence that when any kind of symptom appears it is not necessarily cancer	0.269	0.296	0.347	-0.282	0.225	0.16
Husband/partner’s acceptance about my changed appearance	0.057	-0.219	0.033	0.8	-0.089	0.059
physical contact with spouse to feel confident (not necessarily sexual)	0.011	-0.215	0.018	0.863	-0.028	0.112
Having time to adapt myself to my changed appearance	-0.013	-0.233	0.019	0.9	-0.038	0.027
Having information about the option of remaking of surgery’s place	-0.158	-0.146	-0.17	0.884	-0.042	-0.01
accepting changes in sexual feelings followed by surgery	-0.126	-0.181	-0.152	0.93	0.008	-0.047
Having information about suitable and handy underwear’s for use, after the surgery	0.039	-0.055	-0.18	0.844	0.04	-0.054
Having a protector at home during the facing with treatments	0.466	0.085	0.206	0.45	0.495	-0.141
Having an emotional support and confidence from husband or partner	0.548	0.102	0.154	0.23	0.55	-0.123
Having a frank and honest communication	0.292	0.183	0.337	0.341	0.496	-0.054
Having my family around me	0.383	0.292	0.133	0.147	0.539	-0.22
Having the support of spouse and other relatives	0.298	0.24	0.17	0.25	0.484	-0.211
Having knowledge about hereditary implications	0.221	0.062	-0.316	-0.07	0.133	0.622
Accuracy and consistency Of information	0.224	0.052	-0.265	0.254	-0.117	0.536
receiving practical advices about things like contraception, sunbathing, diet and alcohol	0.144	0.04	-0.246	0.165	-0.083	0.589
having the ability of finding out about support groups	0.066	0.006	-0.466	-0.08	0.131	0.781
having the ability of finding out about complementary therapy	0.134	0.006	-0.414	-0.021	0.065	0.808
having the possibility of contact with a member of the treatment team	0.02	0.052	-0.107	0.52	-0.432	0.248
Living for today	0.105	0.169	-0.252	0.24	-0.278	0.459
Having a positive outlook where possible	0.149	0.149	-0.236	0.199	-0.323	0.423

Scree Plot



**Figure 1. Screen Plot of the Eigen Values Obtained in the Principal Component Analysis (n=160)**

nurse” and “having a peaceful and suitable place to face the bad news” were excluded.

Kruit-Bartlett test was 5.785 and was significant at  $p < 0.000$ . Sample sufficiency value according to Kaiser-Meyer-Olkin was 0.756, indicating sufficiency of sampling for factor analysis. The first step in factor analysis was principle components analysis, then using orthogonal Varimax and scree test, and Eigen values higher than 1, 6 factors were found (diagnosis, during treatment, social support, femininity and self-image, family and friends, and receiving information). After-treatment factor was eliminated. Altogether, these 6 factors explain 50.677%

variance of all options. In fact, the first factors had the highest share in explaining the above variance (10.933%), yet the result obtained indicates multidimensionality of SASNs scale. Also, items of this tool, given their factor load, fitted in various factors (Tables 2 and 3, and Figure 1).

To assess internal consistency of the tool, in a preliminary study, 10 women with study inclusion criteria completed 54-item questionnaire of perceived support needs. Cronbach's alpha of 0.91 showed a good internal consistency for this questionnaire. Cronbach's alpha of different categories of the questionnaire ranged from 0.73-0.81. Next, with a sample of 160 women with breast cancer, internal consistency of the 52-item final questionnaire of perceived support needs was again examined. Internal consistency of items of the tool showed Cronbach's alpha of 0.9, ranging from 0.76-0.85 in different categories, indicating a positive and significant correlation between categories and also with overall test score. The Kolmogorov-Smirnov test ( $p > 0.05$ ) indicated normal distribution of scores obtained. Test-retest was carried out on 10 subjects with a two-week interval, and Pearson correlation coefficient between the two times was found  $r = 0.78$ , indicating a good stability of the tool. The split-half method showed correlation between two halves of 0.83.

## Discussion

Descriptive analysis of data showed that the highest mean score was related to "receiving attention of a particular nurse in the ward environment". The highest mean score was related to femininity and self-body image. In this factor, "having emotional support and confidence of spouse or partner", with mean  $3.21 \pm 1.2$ , scored the highest. In recent years, more attention has been paid to the issue of mental body image in cancer patients. For example, a study by Bakht et al. (2010) showed a significant difference between mental body image in women with breast cancer undergoing mastectomy and control group (Bakht and Najafi, 2010). Suffering self-body image problems in women with breast cancer is also associated with increased sexual problems. Fobair et al. (2006) found that, among sexually active women, main problems of mental body image with mastectomy and possible reconstruction, loss of hair due to chemotherapy, low self-esteem are associated with problems of the spouse or partner (Fobair et al., 2006). In the present study, findings show the key role of the spouse as an important factor in positive dealing with the disease. These results agree with those obtained by Avis et al. (2004) that considered having a good partner as a positive factor in breast cancer experience (Avis et al., 2004), also in line with the findings of Ashing et al. (2003) in Asian groups based on supportive role of the spouse (Tam Ashing et al., 2003).

In the present study, the lowest mean scores was related to disease diagnosis factor. In a study by Cannon and Lindop in 2001 titled "assessment of support needs in breast cancer women" results showed that 97.5% of subjects considered needs associated with diagnosis

important (Lindop and Cannon, 2001) which disagrees with results of the present study, and this could be due to the difference in cultures and age of the subjects, and discrepancy in the stage and type of treatment.

The principle aim of the present study was to investigate reliability, through factor analysis, (validity of construct) of SASNs questionnaire designed for breast cancer women. Results of the retest reliability, Cronbach's alpha, and split-half method were presented. Items of the above scale showed a significant correlation. Validity index of the scale were found to agree with reported validity index by Eric (2007), which meant that the above scale's items agreed with each other. Eric (2007) defined alpha coefficient for the 7 categories of SASNs that ranged from 0.71-0.84. In this study, 6 factors were found using factor-finding method for main components indicating multidimensionality of SASNs questionnaire, with the first factor having the most share of the variance. This finding, except in one factor (after treatment), was nearly the same as results of Eric (2007) study. This researcher introduced 7 factors as SASNs' sub-structure (Eric, 2007). This slight difference could have occurred due to type and size of sampling, or due to cultural, educational, religious, or economic differences between Turkey and Iran. Since, after treatment conditions items in the Iranian version of the tool cannot be used along with other 6 factors in assessment of perceived support needs.

In this study, the first factor had the most share of the variance in explaining total variance. In a study by Lindop et al. (2001), 97.5% of responding subjects considered diagnosis-related needs important (Lindop and Cannon, 2001). From all the above subjects, conclusion can be drawn that SASNs for women with breast cancer is a valid and reliable tool that can be used in clinical environments to screen perceived support needs of breast cancer patients. Given the lack of valid and reliable tools, consistent with cultural conditions in this society, for support needs assessment, present study could be useful in achieving the above objectives. Use of SASNs in larger sample sizes and measurement of other types of validities, such as; predictor validity, is highly recommended.

One of the limitations in this study was the use of SASNs in one region and only on patients in teaching hospitals affiliated to Tehran University. Thus, it is recommended that validity and reliability of this tool be examined in different areas of the country.

In conclusion, in this study, acceptable results were obtained for psychometric properties of the Iranian version of perceived support needs questionnaire in breast cancer patients. Review of the data collected from panel of experts indicated that the Persian version of the above tool, in terms of content and translation, did not require much modification. Values of Cronbach's alpha were indicative of sufficient internal consistency. The above tool has an acceptable stability. This tool can be used both in research and as a regular screening tool in clinical environments. Use of this tool in clinics enables determination of self-management activity of women with breast cancer. Perceived support needs assessment in breast cancer women could be considered as a necessary part of nursing function.

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