Preliminary testing of a Turkish version of the Strategies Used by Patients to Promote Health (SUPPH) scale in a sample of breast cancer patients

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Aims and objectives. The study is designed to test the validity and reliability of the Turkish version of the SUPPH Scale.

Background. Self-efficacy has been found to have a major impact on adjustment to illness and health practices. The importance of the concept of self-efficacy and its effects on treatment has begun to be investigated, particularly in cancer patients. There is need for research to be conducted in Turkey on the validity and reliability of instruments to measure level of self-efficacy in breast cancer patients receiving chemotherapy.

Design. It is a descriptive study. The research was conducted in the outpatient Chemotherapy Unit Oncology Institute in 2007.

Method. The sample selection criteria were: patients with the diagnosis of breast cancer who were receiving chemotherapy, were female, were 18 years old or older, and who volunteered to participate in the study. The study was conducted with 141 patients. Permission to conduct the study was received from the Oncology Institute and the ethics committee. After the translinguistic study, the content validity of the scale was confirmed and tested. Reliability and validity of the scale was done using intra-class correlation (ICC) analysis and Cronbach's α statistics.

Results. The Turkish version of the SUPPH Scale is valid and reliable for measuring breast cancer patients' self-efficacy level. The scale's Cronbach alpha value and item-total score correlation coefficients were found to be adequate, in general. The scale can be used to guide nurses to understand changes that occur in self-efficacy in breast cancer patients receiving chemotherapy.

Conclusions. The Turkish version of the SUPPH Scale showed an adequate reliability and validity for its use on adult Turkish breast cancer patients.

Relevance to clinical practice. This study is significant in providing the opportunity to use this scale in breast cancer patients in areas with a high Turkish population globally.

Introduction

Perceived self-efficacy is a primary determinate of behaviour and can be defined as an individual's confidence about his abilities to mobilise the motivation, cognitive resources and courses of action needed to execute a given task successfully (Aksayan & Gozum 1998, Chang *et al.* 2007). Perceived self-efficacy mediates health behaviours because people need to believe they can master and adhere to health-promoting habits in order to devote the effort necessary to succeed. Self-efficacy provides a framework for a specific supportive educative intervention that enables people to develop their self-care behaviours. Support for self care involves increasing the capacity, confidence and efficacy of the individual for self care by providing a range of options (Wu *et al.* 2007). A study reports that any effort to improve the wellbeing of these adults needs to address self-efficacy in the hope of improving self-care for their physical health needs (Schmutte *et al.* 2009). Self-efficacy beliefs emerged as the predictor of adoption of healthful practices. According to Bandura (1997) self-efficacy operates as a common mechanism of behavioural change, enhancing coping behaviour in part by creating and strengthening beliefs of personal efficacy. As a person develops competency in an area and deals with challenges in life their sense of self-efficacy is strengthened (Bandura 1997). In this paper we report the findings of a study is designed to test the validity and reliability of the Turkish version of the SUPPH Scale.

Background

Self-efficacy plays an important role in coping with chronic physical illnesses and engaging in health-promoting behaviours (Conner & Norman 2005). Improving the perception of self-efficacy has a positive effect on an individual's health behaviours, motivation, thinking style, and state of emotional wellness (Promoting Self-Efficacy of Family Caregivers 2002; Lorig & Holman 2003). Health behaviours such as non-smoking, physical exercise, dieting, condom use, dental hygiene, seat belt use, or breast self-examination are, among others, dependent on one's level of perceived self-efficacy (Conner & Norman 2005). Another study reports that self efficacy for health promotion is a predictive factor for functional ability (Yokokawa & Kai 2004). Symptom management occurs through self-directed action, with perceived self-efficacy being a key factor. In some populations, a positive relationship between a person's perceived self-efficacy and his or her ability to manage symptoms has been shown (Lorig *et al.* 2005). Findings support the use of the self-efficacy model as a framework for understanding adherence to self-care behaviour. Using self-efficacy theory when designing patient education interventions for people with type 2 diabetes will enhance self-management routines and assist in reducing major complications in the future (Wu *et al.* 2007).

The importance of self-efficacy has been seen in many illnesses and the effect of the level of self-efficacy on treatment and quality of life has begun to be investigated, particularly in cancer patients. Research results have shown that an increase in the level of self-efficacy has a positive effect on health behaviours, symptom control, compliance with cancer treatment, physical and psychological symptoms and quality of life (Cunningham *et al.* 1991; Lev 1997; Lev *et al.* 2001). Moreover, perceived self-efficacy for fatigue self-management was found to be a mediator that influenced the impact of cancer related-fatigue and physical functional status (Hoffman *et al.* 2009). The quality of life and self-efficacy perception of cancer patients decreases over time and that the level of self-efficacy has a significant effect on patients' quality of life (Lev *et al.* 1999; Lev *et al.* 2001). In another study, a significant negative correlation was found between self-care self-efficacy and psychological distress, and symptom distress in cancer patients, and a significant positive correlation was found between quality of life and self-efficacy perception (Lev & Owen 1996).

There are different types of instruments for measuring level of self-efficacy (Lev 1997). Although research findings have not been reported about the reliability of one-item self-efficacy instruments, multiple-item self-efficacy instruments have been reported to have high reliability in research

conducted in oncology (Lev 1997). Prospective studies to evaluate self-efficacy perception are important because they give opportunity to understand better self-efficacy perception and adaptation to cancer diagnosis over time (Lev 1997).

The improvement of self-efficacy perception is based on determination of realistic and achievable goals, working on one specific behaviour, gaining experience, rewarding of behaviour, close monitoring and recording of improvements achieved, encouraging and giving feedback to patients, and removing factors that have a negative effect on self-efficacy (Lev 1997; Graves 2003; Krichbaum *et al.* 2003; National Cancer Institute 2005). The roles of nurses in improving individuals' self-efficacy perception and in helping them gain and maintain healthy behaviours have drawn attention (Garlin & McGuiggan 2001).

Self-care perceptions were negatively related to symptom distress in breast cancer. In many studies it has been emphasised that effectively controlling the side effects of treatment for breast cancer is important for improving self-efficacy perception for maintaining self-care behaviours (Lev 1997; Lev & Owen 2000; Lev *et al.* 2001). Research on self-efficacy perception of breast cancer patients is important to maintain the patients' healthy behaviours, improve their self-care, and adaptation to their disease.

Bandura (1997) asserts self-efficacy assessments provide more powerful predictors of behaviour than psychodynamic assessments. There has been a rapid increase in studies about self-efficacy conducted in Turkey with several patient groups. In a review of the literature in Turkey and many other countries research directed at the evaluation of self-efficacy level in cancer patients has been about the relationship between health promotion behaviours and self-efficacy (Kurtz *et al.*, 1993; Boehm *et al.* 1995; Lev 1997; Gozum 1999). However there has been no research conducted in Turkey on the validity and reliability of instruments to measure level of self-efficacy in breast cancer patients receiving chemotherapy.

Aim

To test the validity, reliability and applicability of the Strategies Used by Patients to Promote Health (SUPPH) Scale in breast cancer patients to present a tool for evaluation of self-efficacy of Turkish breast cancer patients.

The research questions framing this article were: (a) Is the Turkish version of the Strategies Used by Patients to Promote Health (SUPPH) Scale a valid tool? (b) Is the Turkish version of the Strategies Used by Patients to Promote Health (SUPPH) Scale a reliable tool?

Method

Design

This research was planned as a descriptive study for the purpose of testing the validity and reliability of the Turkish version of the Strategies Used by Patients to Promote Health (SUPPH) Scale so the scale can guide nurses who work in clinical areas.

Research setting and sample

All patients who attended the outpatient clinic within a 8-month period were approached. The research was conducted in the outpatient Chemotherapy Unit Oncology Institute in 2007, in Turkey. The sample selection criteria were: patients with the diagnosis of breast cancer receiving chemotherapy, were female, were 18 years old or older, could read and write in Turkish, had no health problem that would interfere with their being interviewed, and who volunteered to participate in the study. One hundred fifty patients were approached. Nine women were not included in the study because four did not want to participate after they were given an explanation of the study, three did not know Turkish and the general health status of two patients was not appropriate for them to be interviewed. The sample consisted of 141 women who were diagnosed with breast cancer and receiving chemotherapy treatments.

Ethical considerations

Permission to use the SUPPH in this study was obtained from the developer before starting. The study was approved by the Institute administration and the ethics committee. Patients were invited to participate in the study and were informed before verbal consent was obtained.

Measures

Two data collection tools were used; the SUPPH and Patient Information Form.

The Patient Information Form included questions about the patients' personal and illness characteristics. In the personal characteristics section there were questions about the patients' age, marital status, educational level, perceived income status, occupation, and employment status. In the second section there were questions about the patients' health and illness characteristics, including ECOG performance score, number of courses, and stage of disease. The ECOG is one item measure of performance status. The total score ranges from 0–4.

The Strategies Used by Patients to Promote Health (SUPPH) Scale was developed by Lev and Owen (1996) to evaluate individuals' belief in the strategies they use to improve their health. Originally the scale had 36 items and four subscales (Coping, Stress Reduction, Making Decision, Enjoying Life), but it was revised (Owen & Lev 2001) and the number of items was decreased to 29 with three subscales (Stress Reduction: items 1–10, Making Decision: items 11–13, and Positive Attitude: items 14–29). In this study the final version of the 29 item and three subscale tool was used. It is a 5 point Likert-type scale (1 = very little $\rightarrow$ 5 = quite a lot). The evaluation is made by totaling the scores given to all of the items. The minimum possible score from the scale is 29 and the maximum is 145. An increase in score shows an increase in level of self-efficacy related to self-care behaviours.

This scale's validity and reliability has been tested in different patient groups (Lev *et al.* 2001). In a longitudinal study that evaluated the adaptation of cancer patients to their illness the (SUPPH-36 item) test-retest correlation value was reported to be 0·94 (Lev & Owen 1996). Internal Consistency: In another study the SUPPH-36 item Cronbach alpha value was reported to be 0·94 (1st interview) and 0·96 (retest interview) (Lev *et al.* 1999). In Owen and Lev's (2001) study the alpha value for the Positive Attitudes Subscale was reported to be 0·92, for Stress Reduction was 0·89, and for Making Decision was 0·83. In a study with 122 male patients with prostate cancer the SUPPH-29's Cronbach alpha value for the Positive Attitudes Subscale was reported to be 0·94, for Stress Reduction was 0·88, and for Making Decision was 0·77 (Lev *et al.* 2004).

Data collection

Patients who met the research criteria and who gave their verbal consent were included in the study. Data were obtained from the patients in two stages. In the first stage, the participants completed the scale in the treatment setting. Before participants left the treatment setting they were given a scale to be completed at home 1 week later (retest). Participants were informed that the researcher would call them and ask for their responses. In the second stage the researcher called the participants and asked for their responses to the scale. It took approximately 5–10 minutes for patients to complete the scale. In addition, personal, illness and treatment related characteristics were obtained from patients' medical records.

Data analysis

Data analysis was performed using SPSS software, version 11.5 (SPSS Inc., Chicago, IL, USA). Descriptive statistics, means, median, frequencies, and percentage were used to show the distribution of the personal characteristics, illness-related characteristics, and the self-efficacy level. Reliability and validity of the scale was done using intra-class correlation (ICC) analysis and Cronbach's α statistics.

Results

Validity

The scale was translated using back-translation method for the test of the Turkish adaptation. The translations were carried out by independent translators. Two bilingual linguistic experts translated the original structure of the SUPPH Scale independently from English to Turkish. The Turkish translation was reviewed for inconsistencies with the original English form. Another linguistic expert back translated the Turkish version of the SUPPH Scale into English. The back translated and original forms of the SUPPH Scale were compared and found to be highly similar in meaning. After reviewing both back translated and original forms of the scale, the most appropriate terms were selected by translators and bilingual nurses with expertise in breast cancer research and employed at the clinic. Later, content validity was ascertained by an expert panel whose members were asked to review the 29 items of SUPPH Scale. The expert group consisted of 10 nursing faculty academics specialising in breast cancer and care. They were asked to review and rate the relevance of each item using a four-point rating scale ranging from 1 (not at all important) to 4 (very important). The content validity index (CVI) of each component was calculated based on the experts' ratings. The CVI score was computed by summing the percentage agreement scores of all items that were given by the experts a rating of '3' or '4'. The criterion for retaining an item was at least 80% agreement among the experts at the agree or strongly agree level of relevance to the construct (Pierce 1995). CVI of the Turkish version of the Strategies Used by Patients to Promote Health (SUPPH) Scale is 91%. Individual item CVIs values were 87–100%. After the scale was put into its final format according to their recommendation, it was tested with 10 breast cancer patients for the understandability of the items and the scale was found to be understandable.

Sample characteristics

The patients' mean age was 46·95 ± 10·16 (range: 25–70), 75·2% (*n* = 106) were married, 34·7% (*n* = 49) were primary school graduates. In this study 63·1% of the patients (*n* = 89) were housewives, but 22% (*n* = 31) reported that they were

not currently working because of their disease. Most of the sample (80·9%, n = 114) rated their income level as good. In this study 47·5% of the patients (n = 67) were at Stage II, 31·2% (n = 44) at Stage III. The patients were first approached in the first course of chemotherapy for 46·8% (n = 66), in the second course for 14·9% (n = 21), in the third course for 14·2% (n = 30), and in the fourth or later course for 24·1% of the patients.

Reliability

For test-retest evaluation the study sample was a group of 50 patients. Because chemotherapy side effects occur immediately within the first week after treatment and because they would be negatively affected emotionally and physically in this period the retest was done within 1 week after the chemotherapy was given. In this study, all items (apart from the 13th, 18th and 26th items) were found to have ICC values of between 0·41–0·79 (Table 1). Taking into consideration the fact that the side effects of chemotherapy in breast cancer patients are not physically or psychologically stable and because the administration of Likert type scales is not easy, correlation results which are slightly low are within acceptable limits. The coefficient value of 18th item [Convincing myself the treatment is not so bad] may be low due to psychological and physiological distress that patients encounter during the chemotherapy in relation to personal, treatment related factors. It is assumed that the low coefficient value of the 26th item [Doing things to control my fatigue] was due to mostly the same responses were given to item.

In this study, Cronbach alpha reliability coefficients for the subscales ranged from 0·74–0·93 and was 0·92 for the total scale. The scale's internal consistency was evaluated with item-total score correlation. In a study conducted with cancer patients the SUPPH's internal consistency coefficients were reported to be 0·93 (1st interview) and 0·95 (retest interview) (Lev & Owen, 1996). In this study the scale's item-total score correlation varied between 0·49–0·79, except 26th item (Table 2). Intra-class test-retest coefficients were between 0·29–0·79 (Table 3).

Table 1 Strategies Used by Patients to Promote Health (SUPPH) scale test-retest results (n = 50)

	r	p
1 Excluding upsetting thoughts from my consciousness	0·49	0·002
2 Using relaxation techniques to decrease my anxiety	0·66	0·000
3 Finding ways of alleviating my stress	0·51	0·001
4 Using a specific technique to manage my stress	0·58	0·000
5 Doing things that helped me to cope with previous emotional difficulties	0·79	0·000
6 Practicing stress reduction techniques even when I'm feeling sick	0·52	0·001
7 Managing to keep anxiety about illness from becoming overwhelming	0·71	0·000
8 Thinking of myself as better off than people who became ill when they were younger than I am now	0·47	0·003
9 Focusing on something not associated with my illness as a way of decreasing my anxiety	0·47	0·003
10 Believing that using a technique to manage treatment stress will actually work	0·44	0·006
11 Choosing among treatment alternatives recommended by my physician the one that seems right for me	0·53	0·001
12 Making my own decision regarding treatment alternatives	0·53	0·001
13 Deciding for myself whether or not to have treatment	0·32	0·048
14 Experiencing life's pleasures since I became ill	0·55	0·000
15 Doing special things for myself to make life better	0·43	0·007
16 Convincing myself I can manage the treatment stress	0·45	0·005
17 Helping other people going through illness and treatment	0·56	0·000
18 Convincing myself the treatment is not so bad	0·32	0·050
19 Keeping my stress within healthy limits	0·72	0·000
20 Appreciating what is really important in life	0·68	0·000
21 Believing I can find strength within myself for healing	0·62	0·000
22 Convincing myself I'll be O.K.	0·56	0·000
23 Finding a way to help me get through this time	0·78	0·000
24 Believing that I really have a positive attitude about my state of health	0·60	0·000
25 Doing things that helped me to cope with previous physical difficulties	0·59	0·000
26 Doing things to control my fatigue	0·36	0·027
27 Finding ways of helping myself feel better if I am feeling blue	0·67	0·000
28 Managing the side effects of treatment so that I can do things I enjoy doing	0·54	0·001
29 Dealing with the frustration of illness and treatment	0·41	0·010
Total	0·71	0·000

Table 2 Strategies Used by Patients to Promote Health (SUPPH) Scale item-total correlations and Cronbach alpha (*n* = 141)

	r	*p*
Stress reduction subscale	Cronbach α = 0·88	
1 Excluding upsetting thoughts from my consciousness	0·61	0·000
2 Using relaxation techniques to decrease my anxiety	0·78	0·000
3 Finding ways of alleviating my stress	0·73	0·000
4 Using a specific technique to manage my stress	0·68	0·000
5 Doing things that helped me to cope with previous emotional difficulties	0·78	0·000
6 Practicing stress reduction techniques even when I'm feeling sick	0·77	0·000
7 Managing to keep anxiety about illness from becoming overwhelming	0·70	0·000
8 Thinking of myself as better off than people who became ill when they were younger than I am now	0·49	0·000
9 Focusing on something not associated with my illness as a way of decreasing my anxiety	0·66	0·000
10 Believing that using a technique to manage treatment stress will actually work	0·61	0·000
Making decisions subscale	Cronbach α = 0·93	
11 Choosing among treatment alternatives recommended by my physician the one that seems right for me	0·78	0·000
12 Making my own decision regarding treatment alternatives	0·73	0·000
13 Deciding for myself whether or not to have treatment	0·68	0·000
Positive attitude subscale	Cronbach α = 0·74	
14 Experiencing life's pleasures since I became ill	0·75	0·000
15 Doing special things for myself to make life better	0·68	0·000
16 Convincing myself I can manage the treatment stress	0·75	0·000
17 Helping other people going through illness and treatment	0·67	0·000
18 Convincing myself the treatment is not so bad	0·58	0·000
19 Keeping my stress within healthy limits	0·74	0·000
20 Appreciating what is really important in life	0·51	0·000
21 Believing I can find strength within myself for healing	0·76	0·000
22 Convincing myself I'll be O.K.	0·70	0·000
23 Finding a way to help me get through this time	0·79	0·000
24 Believing that I really have a positive attitude about my state of health	0·76	0·000
25 Doing things that helped me to cope with previous physical difficulties	0·72	0·000
26 Doing things to control my fatigue	0·35	0·000
27 Finding ways of helping myself feel better if I am feeling blue	0·72	0·000
28 Managing the side effects of treatment so that I can do things I enjoy doing	0·79	0·000
29 Dealing with the frustration of illness and treatment	0·77	0·000
Total	Cronbach α = 0·92	

Self-efficacy

The SUPPH subscale scores were $x = 57·61 \pm 12·54$ for Positive Attitude subscale (Range: 19–80); $x = 32·19 \pm 8·60$ for Stress Reduction subscale (Range: 10–50); $x = 9·84 \pm 4·01$ for Making Decision subscale (Range: 3–15).

Discussion

In this study the Turkish version of the SUPPH Scale was determined to be valid and reliable for measuring breast cancer patients' self-efficacy. The scale's Cronbach alpha value and item-total score correlation coefficients were found to be adequate, in general. The test-retest correlation coefficients for the 13th and 18th items were found to be lower than the other items. Because patients in Turkey tend to leave treatment decisions to their physician or relatives, the 13th item caused confusion and needed to be explained. The test-retest correlation coefficient may be low because of this cultural factor. Because the total score test-retest value was good the decision was made that the 13th item could stay. However in future studies the decision needs to be made about whether or not this item should stay when the tool is used. Taking into consideration the fact that the side effects of chemotherapy in breast cancer patients are not physically or psychologically stable and because the administration of Likert type scales is not easy these correlation results which are slightly low are within acceptable limits.

The negative effect of cancer diagnosis on emotional state decreases individuals' self-efficacy in carrying out some specific health behaviours (Lev 1997). In a study by Lev and Owen (2000) it was reported that efficacy-enhancing interventions planned to improve self-efficacy

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Table 3 Strategies Used by Patients to Promote Health (SUPPH) Scale intra-class correlation values (*n* = 50)

		ICC values
1	Excluding upsetting thoughts from my consciousness	0·49
2	Using relaxation techniques to decrease my anxiety	0·67
3	Finding ways of alleviating my stress	0·48
4	Using a specific technique to manage my stress	0·60
5	Doing things that helped me to cope with previous emotional difficulties	0·78
6	Practicing stress reduction techniques even when I'm feeling sick	0·55
7	Managing to keep anxiety about illness from becoming overwhelming	0·71
8	Thinking of myself as better off than people who became ill when they were younger than I am now	0·57
9	Focusing on something not associated with my illness as a way of decreasing my anxiety	0·40
10	Believing that using a technique to manage treatment stress will actually work	0·59
11	Choosing among treatment alternatives recommended by my physician the one that seems right for me	0·49
12	Making my own decision regarding treatment alternatives	0·54
13	Deciding for myself whether or not to have treatment	0·49
14	Experiencing life's pleasures since I became ill	0·56
15	Doing special things for myself to make life better	0·44
16	Convincing myself I can manage the treatment stress	0·40
17	Helping other people going through illness and treatment	0·52
18	Convincing myself the treatment is not so bad	0·37
19	Keeping my stress within healthy limits	0·73
20	Appreciating what is really important in life	0·68
21	Believing I can find strength within myself for healing	0·66
22	Convincing myself I'll be O.K.	0·66
23	Finding a way to help me get through this time	0·79
24	Believing that I really have a positive attitude about my state of health	0·56
25	Doing things that helped me to cope with previous physical difficulties	0·58
26	Doing things to control my fatigue	0·29
27	Finding ways of helping myself feel better if I am feeling blue	0·66
28	Managing the side effects of treatment so that I can do things I enjoy doing	0·50
29	Dealing with the frustration of illness and treatment	0·35

perception had a part in improving cancer patients' quality of life and in decreasing their symptom distress. High self-efficacy perception increases cancer patients' adaptation to their illness, improves quality of life, and decreases the negative effect on psychological state (Lev & Owen 2000; Lam & Fielding 2007). Thus, enhancing patients' self-care self-efficacy improves health-promoting lifestyles, self-care behaviours, increases adherence to medical treatments and decreases physical and psychological symptoms (Lev 1997). A study reported that cancer patients' self-care self-efficacy and quality of life decreased significantly over time and self-care self-efficacy significantly influenced patients' quality of life (Lev, Paul, & Owen 1999). Through the use of perceived self-efficacy-enhancing symptom management interventions, nurses and can support the patient to manage cancer-related symptoms and optimise physical functional status. It is important to improve the self-efficacy of patients who experience multiple symptoms and problems from chemotherapy because of self-efficacy has been shown to have a positive effect on psychological and physical factors.

Strengths and limitations

One of the most obvious limitations of this study is that breast cancer patients were recruited at any stage of chemotherapy and self-efficacy data was only available for each patient at one time point. The other limitations that need to be highlighted are that the sample is heterogeneous with respect to stage and histology of breast cancer and chemotherapy regime. Therefore, it is not possible to show any trends between cycles, and stages, and it may be that important self-efficacy differences are lost because they have combined these groups in the analysis.

The strength of the study is that the Turkish version of the SUPPH Scale was determined to be valid and reliable for measuring breast cancer patients' self-efficacy and the study and can be used in Turkey and many regions all over the world where nurses care for Turkish breast cancer patients.

Conclusion

The Turkish version of the SUPPH Scale was determined to be appropriate for evaluating the self-efficacy of breast cancer patients in Turkish patients. These study results enlighten nurses who care for breast cancer patients and about their self-efficacy, especially working in areas with a high Turkish population globally.

To be able to understand better the change that occurs in self-efficacy level in breast cancer patients receiving chemotherapy there is a need for studies which evaluate the change on the each cycle of chemotherapy. The scale needs to be subjected to further research in larger study and on different cancer patient population. It is very important for health care providers' to understand patients' self-efficacy expectations that may facilitate patient's coping with cancer. Further studies will contribute better understanding self-care self-efficacy and the problems cancer patients deal with and

plan psychosocial interventions to support the cancer patients throughout the illness and treatment period.

Cultural characteristics and close family ties are the main psychosocial support for the Turkish breast cancer patients. Nurses need to design psychosocial programs and encourage the use of available psychosocial support sources which aim to improve the self-care self-efficacy of breast cancer patients, and to increase patients' knowledge about fatigue management.

Acknowledgements

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