Original Article

Stress, Social Support, and Sexual Adjustment in Married Female Patients with Breast Cancer in Korea

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ABSTRACT

Objective: This study identified the level of stress, social support, and sexual adjustment in married women with breast cancer in Korea. **Methods:** This study used a subgroup analysis, prospective, cross-sectional, and descriptive correlation design. Data were obtained using the perceived stress scale, multidimensional scale of perceived social support, and sexual adjustment subscale of the Korean version of the psychosocial adjustment to illness scale. From May 2015 to April 2016, 272 married female patients who had been diagnosed with breast cancer were recruited at a university hospital in Korea. Data were analyzed using SPSS Win 21.0. **Results:** The mean score of stress level was 17.53 ± 4.13, social support was 5.37 ± 1.07, and sexual adjustment was 6.36 ± 3.29. A significant positive correlation emerged between sexual adjustment and stress (r = 0.161, P = 0.008). Significant negative correlations were observed among sexual adjustment and family support (r = –0.177, P = 0.003) and friends' support (r = –0.205, P = 0.001). **Conclusions:** The assessment of stress level and social support may be used in planning sexual-adjustment interventions appropriate for married female breast cancer patients in Korea.

Key words: Breast cancer, sexual adjustment, social support, stress

Introduction

Breast cancer is a rapidly growing disease worldwide, with a 20% increase in incidence in 2012 compared with 2008.[1] Breast cancer is the second most common cancer in Korea, following thyroid cancer, among all cancers in women, accounting for 19.7% of all cancers affecting women in 2015.[2] Breast cancer treatment is applied appropriately by surgery, radiotherapy, chemotherapy, hormone therapy, and immunotherapy[1] and has a serious negative impact on the sexual health of women.[3-5]

After surgery and chemotherapy or radiotherapy, some breast cancer patients stop having sexual intercourse due to vaginal dryness, premature menopause, decreased sexual

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desire, and negative body image, with the sense that their femininity disappears.[4] Such negative sexual health is due to the physical symptoms of surgery and treatment, as well as psychological and emotional negative responses that lower their self-esteem and put priority to their illnesses rather than relationship with their husbands.[6] Patients with breast cancer have no other thoughts about their disease and survival in the treatment process, and patients and their spouses had fears about sexuality related to the disease.[7] Sexual problems in breast cancer patients are important because they can worsen the quality of life of not only the patient but also the spouse.[8-10]

Sexual adjustment refers to a change in sexual relations with a partner with a disease.[11] Female cancer patients' sex-related psychological maladjustment is higher than their male counterparts.[12] The duration and severity of sexual adjustment depends on various factors, including medical, physical, emotional, and social areas and interpersonal relationships.[5] Women's sexuality is more affected by emotional, social, and cultural aspects than men, and women tend to emphasize relationship-oriented intimacy rather than seek physical and sexual pleasure.[13,14] Although previous studies[9,15,16] have showed significant relationships between sexual function, sexual adjustment, age, subjective health, and menopausal symptoms in breast cancer patients, research on relationships between sexual adjustment and emotional social aspects of breast cancer patients is insufficient. Especially, research on the sexual health of cancer patients should cover the emotional and social aspects and not be limited to the physical and functional areas.

Stress is an event perceived as an overconsumption of burden that threatens the well-being of an individual or exceeds an individual's resources.[17] Breast cancer may impact the way a woman perceives her womanhood, which may heighten the stress perceived by patients in a way greater than that perceived by benign breast cancer patients.[18] Psychological stress is found to be a strong predictor of positive and negative emotional adjustment (depression, anxiety, and positive and negative affect) in patients who have been first diagnosed with breast cancer.[19] The social support of cancer patients not only has a positive effect on mortality and the recurrence of cancer[20] but also helps the cancer patient cope well, recover quickly, and adapt to change.[21] Stress and social support influence psychosocial adjustment, including sexual adjustment in breast cancer patients.[22,23] Nurses' support for women with breast cancer reduces the risk of negative changes in sexual function.[24] In addition, individuals under stress gain support from family or people they consider important,[21] and support from a significant other can relieve a patient's cancer related stress.[25] Although previous researchers identified sexual adjustment as part of psychosocial adjustment,[22,23] studies have been limited to topics on deriving sexual-adjustment results.

Therefore, this study aimed to examine the level of stress, social support, and sexual adjustment in married female patients with breast cancer and investigate the relationships among these variables. Basic data provided here can be used to improve sexual adjustment of married female patients with breast cancer.

Methods

Design and sample

This study used a subgroup analysis, prospective, cross-sectional, and descriptive correlation design. In this study, the relationships among stress, social support, and sexual adjustment of married women with breast cancer were confirmed using a subgroup analysis of the collected data.[26]

Participants in this study were female breast cancer patients, aged 18 years or older, who were treated and followed in the ward or outpatient department of breast endocrine surgery in Hallym University Sacred Heart Hospital in Korea. Inclusion criteria were married female patients with breast cancer. Sexual-adjustment questionnaires presupposed the presence of a spouse, thus 29 single and 66 divorced or bereaved women were excluded. Participants who were diagnosed more than 5 years earlier (complete remission) and older than 60 years old were also excluded based on previous studies[9,27,28] that have examined sexual function and sexual adjustment of female cancer patients. According to a longitudinal study,[29] perceived stress by breast cancer patients continued up to 2 years, and not 5 years, after their diagnosis. In addition, 71% of cancer patients after 2–5 years[30] and 37.5% of cancer survivors after 5 years[31] showed a decrease in sexual satisfaction and a long-term recovery of sexual problems. Therefore, patients with breast cancer within 5 years were expected to have stress and sexual problems. The exclusion criterion on the diagnosis period and age of active treatment was based on the fact that adults are generally sexually active through 74 years old[32] and 67.8% of female cancer patients receiving chemotherapy are younger than 60 years.[33] Our final analyses for this study included 272 patients, of the 600 recruits from May 2015 to April 2016 [Figure 1].

Ethical approval

The institutional review board of the hospital approved the original study. The purpose and process of this study was explained to the physician in charge of the department of breast endocrine surgery before the data collection. Patients who met the criteria were selected with permission to

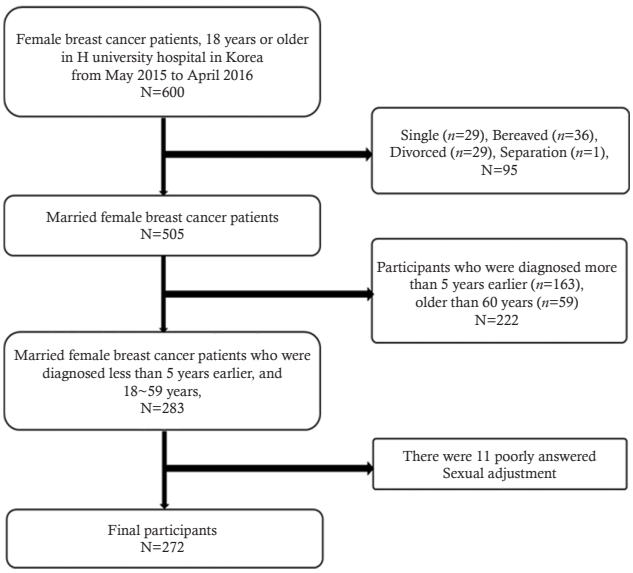

Figure 1: Flow chart of participants' selection

confirm the electronic medical record. A research assistant with nurse license conducted data collection. Participants' written consent included explanation of the study purpose, the method of research, the right to withdraw from the study, anonymity, and confidentiality of the data.

Instruments and variables

Participants' general characteristics included age, marriage duration, monthly income, job, educational status, and religion. Clinical characteristics were cancer stage, period after diagnosis, treatment method, and menopausal status.

Stress was measured using the perceived stress scale developed by Cohen *et al*.[34] This measurement consisted of 10 items and was evaluated on a 5-point Likert scale. The total possible range of scores was 0–40 points. A higher score indicated a greater stress level. Cronbach's α was 0.84 at the time of measurement development and 0.69 in this study.

Zimet *et al*. studied social support.[35] Their multidimensional scale of perceived social support consisted of the three subdomains of family, friends, and significant others, with 12 items evaluated on a 7-point Likert scale. The range of possible points was 1–7 points. A higher score indicated a greater degree of social support provided by family, friends, and significant others. Cronbach's α was 0. 88 at the time of measurement development and 0.93 in this study.

Meanwhile, we obtained a self-reported Korean version of the psychosocial adjustment to illness scale–self-report on psychosocial adjustment, developed by Derogatis and Lopez for cancer patients[36] from the Clinical Psychometric Research Institute. Psychosocial adjustment was used in the seven subdomains of health – management orientation, leisure environment, home environment, sexual relationship, extended family relationship, social environment, and psychological suffering. Six items on sexual relationship were used in the subdomains. Examples of questions included, "When people become ill, they report a loss of interest in sexual activities; have you experienced a reduction of sexual interest associated with your illness?" Evaluated on a 4-point scale, the total possible range of scores was 0–18 points. A higher the score indicated that the more likely the female patient encountered a sexual adjustment problem. Cronbach's α was 0.93 in Derogatis's study of lung cancer patients[11] and 0.69 in this study.

Statistical analysis

Using G-power 3.1,[37] the sample size was calculated to be 128 samples with a medium effect size, significance level of 0.05, and power of 0.80.[33] The sample size requirement was met.

SPSS version 21.0 for Windows (SPSS, Chicago, USA) was used in data analyses. We analyzed participants' general and clinical characteristics, stress, social support, and sexual adjustment using descriptive statistics. We compared the mean total scores of stress, social support, and sexual adaptation according to participants' general and clinical characteristics using *t*-test (religion and hormone therapy) and analysis of variance (age, marital duration, and education status). Scheffe's test was used for the posttest. We analyzed the relationship between stress, social support, and sexual adjustment using Pearson's correlations coefficient.

Results

Participant characteristics

Tables 1 and 2 show the general and clinical characteristics of 272 patients. The age-range distribution was between 32 and 59 years (49.04 ± 5.99). Homemakers comprised 183 patients (67.3%). Regarding educational levels, 139 patients (51.1%) were with high school education, 121 (41.2%) with a university degree or higher, and 21 (12.8%) with below middle school education. The treatment method for patients were surgery plus chemotherapy (254 patients, 93.4%), radiation therapy (178 patients, 65.4%), chemotherapy alone (174 patients, 64.0%), hormone therapy (84 patients, 30.9%), and immunotherapy (59 patients, 21.7%). Concerning menopausal status, 157 patients (57.7%) were postmenopausal, 93 (34.2%) were premenopausal, and 22 (8.1%) were perimenopausal.

Stress, social support, and sexual adjustment

The mean stress score of participants indicated that their stress level was lower. The average range of possible social

Table 1: General characteristics (n=272)

Characteristics	n (%)
Age (year)	
Mean±SD	49.04±5.99
Range	32-59
≤39	18 (6.6)
40-49	113 (41.5)
50-59	141 (51.8)
Marital duration (year)	
≤10	18 (6.6)
10-19	65 (23.9)
20-29	137 (50.4)
≤30	52 (19.1)
Monthly income (10,000 won)	
≤200	35 (12.9)
201-300	64 (23.5)
301-400	61 (22.4)
401-500	57 (21.0)
≤501	55 (20.2)
Job	
Career women	89 (32.7)
Homemaker	183 (67.3)
Educational status	
≤Middle school	21 (7.7)
High school	139 (51.1)
≥University	112 (41.2)
Religion	
Yes	185 (68.0)
No	87 (32.0)

SD: Standard deviation

Table 2: Clinical characteristics (n=272)

Characteristics	Categories	n (%)
Cancer stage	0	19 (7.0)
	1	102 (37.5)
	2	111 (40.8)
	3	30 (11.0)
	4	10 (3.7)
Period after diagnosis (year)	<2	135 (49.6)
	2-5	137 (50.4)
Surgery and chemotherapy	Yes	254 (93.4)
	No	18 (6.6)
Radiation therapy	Yes	178 (65.4)
	No	94 (34.6)
Chemotherapy	Yes	174 (64.0)
	No	98 (36.0)
Hormone therapy	Yes	84 (30.9)
	No	188 (69.1)
Immunotherapy	Yes	59 (21.7)
	No	213 (78.3)
Hormone and chemotherapy	Yes	60 (22.1)
	No	212 (77.9)
Chemotherapy and radiation therapy	Yes	113 (41.5)
	No	159 (58.5)
Hormone, chemotherapy, and radiation therapy	Yes	53 (19.5)
	No	219 (80.5)
Menopause status	Premenopause	93 (34.2)
	Perimenopause	22 (8.1)
	Natural menopause	87 (32.0)
	Menopause due to chemotherapy	70 (25.7)

support score indicates a moderate level. Sexual adjustment score was below moderate [Table 3]. Stress showed a significant correlation with social support (r = –0.303, P< 0.001) and sexual adjustment (r = 0.161, P = 0.008). In addition, social support was significantly correlated with sexual adjustment [r = –0.187, P = 0.002; Table 3].

Table 4 shows the differences in stress, social support, and sexual adjustment according to general and clinical characteristics. Stress differed significantly according to age (F = 4.49, P = 0.012), marital duration (F = 5.11, P = 0.002), and religion (t = 2.70, P = 0.007). Social support differed significantly according to educational status (F = 3.50, P = 0.003). Scores differed for sexual adjustment according to hormone therapy (t = –2.25, P = 0.025).

Discussion

This study aimed to identify the levels of stress, social support, and sexual adjustment in married female patients with breast cancer and investigate the relationships among these variables. This study stemmed from the fact that there is limited information related to sexual adjustment in Korean breast cancer patients.[38] Therefore, based on the results of this study, it was necessary to approach sexual adjustment as an integral part of married female patients with breast cancer.

Participants' stress level was relatively low. In the study of breast cancer patients with spouses in Korea,[39] no statistically significant difference emerged according to age and length of marriage. However, in this study, participants in their 30s and those with marriages of <10 years had relatively high levels of stress. It is necessary to select these participants for stress management as well as understand and improve their stress and its related factors. Meanwhile, a study is yet to confirm differences in stress levels according to religion. In this study, the number of patients with religion is two times more than that of patients without religion; therefore, it is necessary to be cautious when making conclusions regarding how religion can help manage stress.

In this study, the mean score of patients' social support was above the moderate level. The comparison of social support received by patients in terms of general characteristics showed differences according to educational level. Higher education among cancer survivors who were recently diagnosed is found to be associated with perceived emotional support.[40] In contrast, long-term cancer survivors (breast, prostate, colon, and gynecologic

Table 3: Descriptive statistics and correlations among study variables (n=272)

Variables	Mean±SD	Minimum	Maximum	Possible range	1	2	3	4	5
1. Stress	17.53±4.13	2	29	0-40	1				
2. Social support	5.37±1.07	1	7	1-7	–0.303 (<0.001)	1			
3. Significant other	5.45±1.28	1	7	1-7	–0.285 (<0.001)	-	1		
4. Family	5.60±1.13	1	7	1-7	–0.294 (<0.001)	-	-	1	
5. Friend	5.05±1.26	1	7	1-7	–0.217 (<0.001)	-	-	-	1
6. Sexual adjustment	6.36±3.28	0	14	0-18	0.161 (0.008)	–0.187 (0.002)	–0.111 (0.069)	–0.177 (0.003)	–0.205 (0.001)

SD: Standard deviation

Table 4: Differences in stress, social support, and sexual adjustment according to general and clinical characteristics (n=272)

Characteristics	Stress		Social support		Sexual adjustment	
	Mean±SD	t or F (P) Scheffe's	Mean±SD	t or F (P) Scheffe's	Mean±SD	t or F (P) Scheffe's
Age (year)						
≤39[a]	20.28±4.38	4.49 (0.012)[a>b,c]	5.52±1.24	0.81 (0.446)	6.44±2.59	0.21 (0.812)
40-49[b]	17.48±4.46		5.44±1.02		6.20±3.46	
50-59[c]	17.23±3.70		5.29±1.09		6.47±3.25	
Marital duration (year)						
≤10[a]	21.11±3.82	5.11 (0.002)[a>b,c,d]	5.23±1.13	0.36 (0.782)	7.61±2.99	1.36 (0.257)
10-19[b]	17.46±4.60		5.39±1.06		6.63±3.66	
20-29[c]	17.19±3.79		5.42±0.98		6.08±3.14	
≤30[d]	17.29±3.99		5.27±1.27		6.31±3.26	
Education status						
≤Middle school	17.81±2.25	0.109 (0.897)	5.05±1.26	3.50 (0.031)	5.38±2.69	1.13 (0.325)
High school	17.59±4.10		5.05±1.56		6.53±3.52	
≥University	17.41±4.45		5.26±1.01		6.32±3.08	
Religion						
Yes	17.08±3.97	–2.70 (0.007)	5.42±1.05	–1.21 (0.229)	6.09±3.27	–1.95 (0.053)
No	18.51±4.32		5.26±1.11		6.92±3.27	
Hormone therapy						
Yes	18.07±4.51	–1.44 (0.151)	5.40±0.94	–2.72 (0.786)	7.02±3.06	–2.25 (0.025)
No	17.29±3.93		5.36±1.12		6.05±3.06	

SD: Standard deviation

cancer survivors) who received a college degree had lower emotional/informational support than those with less education.[41] These results suggest that long-term survivors with higher education may have different priorities or requirements, more critical evaluation of available support, or less awareness of emotional support.[41]

In terms of social support, participants' family support was highest in the subdomains, followed by significant others and friends. Family support for breast cancer patients is an important factor related to quality of life[42] and should be maintained to provide continued support. It is also necessary to strengthen the social support, including significant others and friends, of married female patients with breast cancer.

The sexual adjustment was relatively low. Kim and Ko used the same instrument, which found a sexual adjustment score of 8.38 points for breast cancer survivors under 50 years old and 6.74 points for 51 years and older.[42] In this study, 50–59-year-old women accounted for the largest share (51.8%). This result is similar to the sexual adjustment scores of breast cancer survivors aged 51 years in the Kim and Ko's study.[43] In a study on the relationship between psychosocial adjustment and social support of breast cancer patients in Turkey,[23] the sexual adjustment score was 10.14 points higher than in this study. However, comparing the results of studies conducted in other countries is not ideal because sociocultural differences may influence sexual adjustment for participants. Lo and Ko[44] argued that Asian women rarely think about the lack of sexual desire because they are not allowed by social standards to openly have sexual desires. Given this context of patriarchal culture, it is possible that Korean women with breast cancer report low sexual adjustment problems.[33]

In this study, sexual adjustment problems were below moderate. However, the prevalence of sexual dysfunction is two to three times higher in women with breast cancer than in the general population.[45] Therefore, it is necessary to continue care and manage the sexual adjustment of breast cancer patients. In particular, participants who received hormone therapy had a relatively problematic

sexual adjustment. Women who were treated with hormone therapy (in combination with chemotherapy or chemotherapy and radiation therapy) had significant impairment of sexual function compared with those who received chemotherapy and radiation therapy without hormone therapy.[46] Gopie *et al*.[46] found that hormone therapy alone is associated with low sexual satisfaction in women participants. Therefore, it is necessary to discuss individualized intervention plans on sexual adjustment with patients, considering the characteristics of treatment method, to maximize effects.

Stress showed a significant correlation with sexual adjustment. Stress with breast cancer treatment and recovery process are associated with lower self-esteem, due to changes in physical condition, physical discomfort caused by various treatments, marital relationships, sexual problems, and isolation because of changes in social support.[47,48] However, because this study focused on general stress level, future studies should confirm the effect on sexual adjustment, including various specific stressors. It is possible to predict difficulty in sexual adjustment due to high stress level and low social support of married female with breast cancer.

Significant negative correlations arose between sexual adjustment and social support. Family support is inversely correlated with stress for breast cancer patients.[42] Women with breast cancer had a good sexual life with their partners when invited to socialize by acquaintances or medical personnel, and patients tried to maintain marital relationships with various kinds of physical affection.[7] Although women with breast cancer have a high rate of sexual disinterest and related stress, they receive inadequate consultation with medical professionals, owing to the discomfort and embarrassment in discussing these issues.[49,50] Therefore, nurses should perform counseling in stress management as an intervention to enhance the sexual adjustment of married female with breast cancer and establish supportive relationship with patients. It is also necessary to search for ways to use the supportive resources of spouses, family members, and friends to communicate and resolve stress problems experienced during sexual adjustment. If possible, healthcare providers should collaborate with those in other areas of medicine, such as oncologists and psychologists.

Limitations

This study had limitations. First, it had a low sample size (below than 500) in a cross-sectional study; multiple regression and longitudinal studies should also be considered to identify causal relationships. Second, it examined the sexual adjustment of only breast cancer patients; spouses' sexual adjustment or the quality of marital relationship was considered secondary in the structural model for stress, coping, and psychosocial adjustment of breast cancer patients.[26] Third, the reliability level of stress and sexual-adjustment measures used in this study is low. Moreover, the measures have not been validated in Korean population, which could present a statistical challenge to the conclusions. Future studies should verify their validity and use more reliable measures. Finally, this study cannot be generalized because it covered only breast cancer patients in a Korean hospital.

Conclusion

The results of this study showed that a low stress level is associated with greater perceived social support from family, friends, and significant others; moreover, the lower the stress level, the higher the social support and the less sexual adjustment problem experienced. Stress differed significantly according to age, marital duration, and religion. Social support differed significantly according to educational status. Sexual adjustment differed significantly according to hormone therapy. This study could serve as a practical basis for the development of an integrated intervention program for the sexual adjustment of married female with breast cancer. Future studies should identify the factors influencing sexual adjustment for not only married breast cancer patients but also single women during different time points after diagnosis. Additional variables relevant to sexual adjustment in breast cancer patients should be identified, and longitudinal follow-up studies are needed.

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Conflicts of interest

There are no conflicts of interest.

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