

Depression, Stress and Self-Esteem According to Treatment Phase in Patients with Breast Cancer

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Abstract

The purpose of this study was to describe the degree of depression, stress, and self-esteem according to treatment phase in patient with breast cancer in Korea. We also investigate the relationships between depression, stress, and self-esteem in breast cancer patients. The participants were 168 female patients with breast cancer who were inpatients at a university hospital. Data were collected using self-reported questionnaire utilizing the BDI-K scale, the BEPSI-K scale, the Self-esteem scale. Data were analyzed with SPSS WIN 18.0 program for descriptive statistics, Pearson's correlations, ANOVA, and Scheffe tests. The level of depression and stress were 28.14 ± 12.47 and 3.48 ± 1.15 . And the score for self-esteem was 26.29 ± 3.97 . The preoperative group had a statistically significantly higher depression compared to other groups ($F = 11.687$, $p < .001$). The preoperative group had a statistically significantly higher stress compare to the chemotherapy group ($F = 7.953$, $p = .001$). Self-esteem did not show statistical differences among the groups. Depression showed significant correlation with stress ($r = .406$, $p < .001$), self-esteem ($r = -.425$, $p < .001$). Stress showed significant correlation with self-esteem ($r = -.344$, $p < .001$). These results found this study suggest that for the better understanding and help toward the patient of breast cancer. Future nursing research should be directed toward the implementation and evaluation of interventions the increase self-esteem and decrease depression and stress in breast cancer patients.

Keywords: Breast Cancer, Depression, Self-Esteem, Stress

1. Introduction

Breast cancers in South Korea occur second most commonly to thyroid cancers in female patients and tend to increase steadily every year. Because breast cancers in Korean females occur most frequently from the late 40s to the early 50s¹, which is lower age than Western females in comparison, they are exposed to the fear of recurrence and psychosocial adjustment problems during the long survival period². In addition, in the process

of surgery and treatments for the breast cancer patients, due to bodily changes such as physical damages, psychological problems are more serious than other cancers³. Frierson et al. argued that such psychosocial problems are not bodily concept due to changes in the body but similar to post-traumatic stress disorders, and they considered that stress due to such bodily changes is closely related to surgery or treatment duration and the degree of physical deformation of the breast. Accordingly, the present study employed breast cancer patients before surgery, one week

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after surgery, and chemotherapy treatment, which is the time that the stress level is expected to be the highest.

Depression is an emotional disturbance showing anxiety, melancholy, loss, helplessness, sense of failure, and worthlessness by having negative perception of self in the course of adapting to a stressful event⁴, and it not only negatively influence cancer patients in psychosocial adaptation and quality of life but also reduces survival rate by affecting treatment progress⁵. Results of previous studies related to depression of breast cancer patients consider depression either as a result of diagnosis and treatment process of breast cancer⁶ or as a psychological factor. However, this allows us to predict psychosocial adjustment of breast cancer patients³ based on the results of studies that demonstrate the explanatory power of the degree of bodily damage since the rate of breast cancer patients with depression is very low and the stress due to breast cancer does not have regulating mechanism that causes depression⁷. Research comparing the degree of depression by treatment phase for the breast cancer patient is lacking, however.

Self-esteem is a psychological factor that makes people more positive about themselves, and it increase belief in the future and develops oneself into worthier ones. It has a closer relationship with breast cancer stress than socio-demographic and disease related factors⁸. It is also a psychological factor that receives the most attention that can positively influence psychosocial adjustment of breast cancer patients by alleviating stressful situation of breast cancer⁹. That is, physical damages to the breast during surgery and the phase of treatment bring on stress to breast cancer patients. Self-esteem, which is a personal psychological factor, alleviates depression by reducing and controlling such stresses and helps psychosocial adjustment.

Accordingly, the purpose of the present study was to provide baseline data for developing intervention programs for psychosocial adjustment and improving quality of life of breast cancer patients. By finding out their degrees of depression, stress, and self-esteem, and differences in their depression, stress, and self-esteem according to the treatment phase of before surgery, after surgery, and chemotherapy treatment.

2. Purpose of the Study

The purpose of this study was to describe the degree of depression, stress, and self-esteem according to treatment

process of pre-operative phase, post-operative phase, chemotherapy phase patient with breast cancer in Korea. We also investigated the relationships between depression, stress, and self-esteem.

3. Materials and Methods

A descriptive correlational study was used to investigate the relationships between depression, stress, and self-esteem according to treatment phase in patient with breast cancer. Data were collected using self-reported questionnaires from February 2010 to March 2011. The participants were 167 patients with breast cancer at a University Hospital in a metropolitan area (D city) who understood the purpose of this study and agreed to participate.

To determine the sample size, a significant level of 0.05, power of 0.80, and medium effect size of 0.25 were applied using the G-power 3.1 program. The required sample for this study was 159 participants. We recruited 169 participants using a convenient sampling method. Two participants did not answer the final questionnaire. Thus, the final participants were 167 participants.

3.1 Instruments

Instruments of this research were depression, stress, self-esteem.

- Depression was measures by the Beck depression inventory-Korean version developed by Hahn¹¹. The instrument consists of 21 items, a measure is a 0–4 point scale. Evaluation of depression in women, 17–20 points is depressive trend, 21–24 points is depression, and above 25 points is severe depression. Reliability of this study was Cronbach's alpha 0.947.
- Stress was measure by the Brief Encounter Psychosocial Instrument-Korean version developed by Yim et al¹². The instrument consists of 5 items, a measure is a 1–4 point scale. Evaluation of stress, above 2.8 point is severe stress, 1.8–2.6 point is moderate stress, below 1.6 point is low stress. Reliability of this study was Cronbach's alpha 0.933.
- Self-esteem was measured by the Self-esteem Scale developed by Rosenberg¹³, and translated by Jeon⁽¹⁷⁾. The instrument consisits of 10 items, a measure is 1–4 point scale. Reliability of this study was Cronbach's alpha 0.858.

4. Results

4.1 General Characteristics according to Treatment Phases in Patients with Breast Cancer

As presented in Table 1, total subjects of this study was 167, treatment course was classified preoperative, postoperative, and chemotherapy groups. There were subjects, preoperative group 48, postoperative group 58, chemotherapy group 61. The average age of the subjects was 47.69 ± 8.09 , the most common age of 40–59. Education level of more than a high school was above 80%. The mean score of body mass index was 23.14 ± 2.77 , higher score more than 23 points. The patients doing exercise was 74.9%.

4.2 Depression, Stress, and Self-Esteem in Breast Cancer Patients

As presented in Table 2, the mean score of the depression was 28.14 ± 12.47 , depressive trend (17–20 points) 1.2%, depression (21–24 points) 11.4%, and severe depression

(above 25 points) 69.9%. 82.5% of the total subjects is depressed. The mean score of the stress was 3.48 ± 1.15 , 74.9% of the total subjects were classified as a severe stress group (above 2.8 points). The total scores of the self-esteem was 26.29 ± 3.97 .

4.3 Depression, Stress, and Self-Esteem by General Characteristics

As presented in Table 3. There were no significant difference in the depression, stress and self-esteem according to general characteristics.

4.4 Comparison of Depression among Groups

As presented in Table 4, there was statistically significant difference in depression between preoperative group, postoperative group, and chemotherapy group ($F = 11.687, p < .001$). Sheffe test result was that preoperative group was meaningfully higher than postoperative group and chemotherapy group.

Table 1. General characteristics according to treatment phases in breast cancer patient

Characteristics	Category	Total (n = 167)	Pre op.(n = 48)	Post op. (n = 58)	Chemotherapy (n = 61)
		N(%) or M($\pm$ SD)			
Age		47.69 $\pm$ 8.09			
	21–39	24(14.4)	7(14.6)	7(12.1)	10(16.4)
	40–59	130(77.8)	39(81.3)	44(75.9)	47(77.0)
	≥ 60	13(7.8)	2(4.2)	7(12.1)	4(6.6)
Education	$\leq$ Middle school	43(25.7)	13(27.1)	17(29.3)	13(21.3)
	High school	82(49.1)	22(45.8)	23(39.7)	37(60.7)
	$\geq$ College	42(25.1)	13(27.1)	18(31.0)	11(18.0)
Body Mass Index		23.14 $\pm$ 2.77			
	Normal weight (18.5–22.9)	69(56.1)	3(27.3)	40(75.5)	26(44.1)
	Overweight (≥ 23)	54(43.9)	8(72.7)	13(24.5)	33(55.9)
Marital status	Married	153(91.6)	44(91.7)	54(93.1)	55(90.2)
	Others	14(8.4)	4(8.3)	4(6.9)	6(9.8)
Religion	Yes	106(63.5)	29(60.4)	41(70.7)	36(59.0)
	No	61(36.5)	19(39.6)	17(29.3)	25(41.0)
Exercise	Yes	125(74.9)	29(60.4)	47(81.0)	49(80.3)
	No	42(25.1)	19(39.6)	11(19.0)	12(19.7)

Pre op.: preoperative group *Post op.*: postoperative group *Chemotherapy*: chemotherapy group

Table 2. Depression, stress, and self-esteem in breast cancer patients

Variables	Range	Min	Max	M±SD	N(%)
Depression	0-84	0.00	61.00	28.14±12.47	167(100)
	17-20 (Depressive tendency)				2(1.2)
	21-24 (Depression)				19(11.4)
	≥25 (Severe depression)				116(69.9)
Stress	1-5	1.00	5.00	3.48±1.15	
	≥2.8 (Sever stress group)				125(74.9)
Self-esteem	10-50	16.00	39.00	26.29±3.97	

Table 3. Depression, stress, and self-esteem by general characteristics

Characteristics	Category	Depression		Stress		Self-esteem	
		M±SD	t or F (p)	M±SD	t or F (p)	M±SD	t or F (p)
Age	21-39	29.42±11.40	0.16 (.856)	3.49±1.15	0.87 (.4200)	26.33±3.24	1.26 (.286)
	40-59	27.97±12.76		3.51±1.17		26.45±4.04	
	≥60	27.46±12.21		3.07±0.90		24.62±4.43	
Education	≤Middle school	28.88±9.14	0.48 (.622)	3.63±1.06	1.96 (.144)	25.30±3.91	1.86 (.158)
	High school	28.57±14.29		3.30±1.21		26.72±4.30	
	≥College	26.52±11.70		3.67±1.09		26.45±3.20	
Body Mass Index	Normal weight (18.5-22.9)	25.35±12.07	0.88 (.351)	3.33±1.14	0.14 (.705)	26.12±4.48	1.23 (.271)
	Overweight (≥23)	27.50±13.37		3.41±1.23		26.96±3.84	
Marital status	Married	27.76±12.38	1.70 (.194)	3.50±1.17	0.38 (.541)	26.44±3.83	2.89 (.091)
	Others	32.29±13.18		3.30±0.89		24.57±5.11	
Religion	Yes	29.13±12.92	1.85 (.175)	3.52±1.10	0.36 (.550)	26.25±4.33	0.02 (.889)
	No	26.41±11.56		3.41±1.23		26.34±3.28	
Exercise	Yes	27.05±11.85	3.86 (.051)	3.49±1.12	0.06 (.808)	26.38±3.95	0.25 (.620)
	No	31.38±13.81		3.44±1.25		26.02±4.08	

Table 4. Mean difference on depression among groups

Characteristics	Preop. ^a	Post op. ^b	Chemotherapy ^c	F	P	Scheffe test
	M(±SD)			11.687	<.001	a>b, a>c
Depression	34.88 ± 9.58	26.62 ± 11.81	24.28±13.12			

Pre op.: preoperative group *Post op.*: postoperative group *Chemotherapy*: chemotherapy group

4.5 Comparison of Stress among Groups

As presented in Table 5, there was statistically significant difference in stress between preoperative group, postoperative group, and chemotherapy group ($F = 11.687$, $p < .001$). Sheffe test result was that preoperative group was meaningfully higher than chemotherapy group.

4.6 Comparisons of Self-Esteem among Groups

As presented in Table 6, the scores of self-esteem were, preoperative group 26.21 ± 3.07 , postoperative group 25.55 ± 4.40 , chemotherapy group 27.05 ± 4.10 , but there was no meaningful difference in self-esteem among groups ($F = 2.156$, $p = .119$).

Table 5. Mean difference on stress among groups

Characteristics	<i>Preop.^a</i>	<i>Post op.^b</i>	<i>Chemotherapy^c</i>	<i>F</i>	<i>P</i>	<i>Scheffe test</i>
	M(±SD)			7.953	.001	a > c
Stress	3.92 ± 0.85	3.54 ± 1.06	3.08 ± 1.30			

Pre op.: preoperative group *Post op.:* postoperative group *Chemotherapy:* chemotherapy group

Table 6. Mean difference on self-esteem among groups

Characteristics	<i>Preop.^a</i>	<i>Post op.^b</i>	<i>Chemotherapy^c</i>	<i>F</i>	<i>P</i>	<i>Scheffe test</i>
	M(±SD)			2.156	.119	-
Self-esteem	26.21 ± 3.07	25.55 ± 4.40	27.05 ± 4.10			

Pre op.: preoperative group *Post op.:* postoperative group *Chemotherapy:* chemotherapy group

Table 7. Correlations between the depression, stress and self-esteem

Variables	Pearson Correlation Coefficient		
	Depression	Stress	Self-esteem
	R		
Depression	1		
Stress	.406**	1	
Self-esteem	-.425**	-.344**	1

***p* < .001,

4.5 Correlations between the Depression, Stress and Self-esteem in Patients with Breast Cancer

As presented in Table 7, there were significant positive correlation between stress and depression ($r = .406$), and significant negative correlations between stress and self-esteem ($r = 0.344$), and depression and self-esteem ($r = -.425$).

5. Discussion

The present study was performed to find out breast cancer patient's degree of depression, stress, and self-esteem. And relationships among these variables were investigated according to the treatment phase of before surgery, one week after surgery, and application of chemotherapy after surgery.

First, the general characteristics of the breast cancer patients in the current study were as follows: the average age was 47.69 ± 8.09 years. The most prevalent subjects was

from 40 to 59 years or less. The most prevalent degree of education was high school graduation. And the average body mass index was 23.14 ± 2.77 , which was in overweight criteria. In terms of marital status, more than 90% were married, and many subjects responded that they have a religion and do exercise. The current study showed similar results to a previous study, which stated that there are more female breast cancer patients in their 40–50s in our country unlike Western countries¹.

Second, examining the degree of depression, stress, and self-esteem of breast cancer patients in the current study, the average score of depression was 28.14 ± 12.47 , which is a very high degree of depression when 25 points or greater is considered to be a severe degree of depression, and among the entire subjects, light degree of depression was 1.2%, depression was 11.4%, and severe depression was 69.9%, which means that 82.5% of the entire subjects had symptoms of depression. The degree of depression of breast cancer patients differs among studies, and the degree found in the current study was higher than the degree found during the study of Choi et al.⁶, which showed 10.2% of their subjects experienced depression, and that of Chae⁴, which showed 6.7% light depression, 21% moderate depression, and 13.3% severe depression, which totals to 41% of the subjects. In addition, no differences were found in the degree of depression according to the general characteristics of subjects such as age, level of education, BMI, marital status, religion, and exercise. The result is different from previous studies that showed the degree of depression was higher when the age was younger^{9,14} and when the level of education and the financial status were lower^{5,15}.

The level of stress was 3.48 ± 1.15 , which was very high for the subjects of the current study when the score of 2.8 or higher is considered a severe stress. Reviewing previous studies of breast cancer patients, instruments that measure body change stress, which include negative thoughts, emotions, and behaviors following bodily changes as a result of breast cancer and mastectomy were used^{3,9} and it appears that a repeat study using a body change stress instrument is needed when a study of breast cancer patients is repeated according to the course of treatment in the future. No significant differences were found in the level of stress according to the general characteristics of subjects, and it corresponds to the findings of the previous study that showed no significant correlations between stress due to bodily changes and socio-demographic factors or duration of cancer⁹. Self-esteem was 26.29 ± 3.97 , which is lower than previous studies that used the same instrument and showed 38.32 ± 7.21 for cancer patients⁸, 27.02 ± 6.93 for breast cancer surgery patients⁶, and 33.02 ± 7.74 for breast cancer patients¹⁰. No significant difference was found in the level of self-esteem according to the general characteristics of subjects.

Third, depression, stress, and self-esteem of patients in different phases of treatments of before surgery, one week past the surgery, and patients receiving chemotherapy were compared. Depression ($F = 11.687, p < .001$) and stress ($F = 7.953, p = .001$) showed statistically significant differences for different phases of treatment. In case of depression, higher level was found in patients before surgery than patients after surgery or patients receiving chemotherapy. The level of stress was also the highest in patients before surgery and the level of stress in patients before the surgery was statistically higher than the patients who were receiving chemotherapy. The result is different from a previous study⁶ that found a higher level of depression in patients receiving chemotherapies, which have high levels of side effects, and the high level of depression in patients before surgery may be closely associated with the uncertainty and anxiety related to the prognosis before the surgery, and another reason may be not due to psychological side effects during the diagnosis and treatment of the breast cancer but because of individual's intrinsic factors⁶. In addition, it can be considered that chemotherapy patients receive the therapy after surgery, and as time passes, they develop coping reactions and psychosocial adaptation processes to stressful situations autonomously, which lowers the degree of depression and stress. Even though such was not statistically significant, this could

be predicted because the self-esteem of chemotherapy patients was measured the highest when the degree of self-esteem was examined according to the treatment process. The self-esteem is an individual's internal nature, which is the most representative factor related to reactions and adaptations in stressful situations. That is, the self-esteem reduces breast cancer patients' stresses and act as a mediator in the process of psychosocial adaptation.

Fourth, correlations among depression, stress, and self-esteem showed that the self-esteem has negative correlations with depression ($r = -.425$) and stress ($r = -.344$), which indicate that the self-esteem needs to be improved to reduce the depression and stress of breast cancer patients.

6. Conclusions

The purpose of this study was to describe the degree of depression, stress, and self-esteem according to treatment phase in patient with breast cancer and to identify the relationships between depression, stress, and self-esteem. This study was attempting to take advantage of as the basis the development of psychological intervention program for breast cancer patients. There were significant from the point, preoperative breast cancer patients have higher depression, high stress and education program and the nursing interventions should be applied preoperative patients with breast cancer.

7. References

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