Original Article

The examination of the relationship between health promotion life-style profile and self-care agency of women who underwent mastectomy surgery

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Abstract. Mastectomy is a difficult process that starts with the diagnosis of the illness and requires a long and tiring treatment process which can cause the emergence of physical, psychological, and social difficulties. The patient can face problems regarding the materialization of self-care activities and healthy lifestyle behavior. This study has been performed in order to determine the relation between the healthy lifestyle behavior of women who have undergone mastectomy and their self-care agency.

150 patients who completed three months after mastectomy and who received the first or more than one dose of their radiotherapy, chemotherapy or hormone treatments constituted the sample of this study. In the data collection process which was performed by face-to-face interviews, a questionnaire form which aimed to determine the socio-demographic characteristics of the patients, and the scale of Health Promotion Life-style Profile (HPLP) and the scale of exercise self-care agency (ESCA) were used.

After mastectomy, the average total score in the health promotion life style profile scale is 162.60±13.81 and the total average score in the Scale of Self-care Agency (SCA) is 118.2±12.52.The average scores in the sub-groups of the scale of HPLP are calculated as follows: self-realization: 47.01±4.62; health responsibility 32.63±4.61, interpersonal support: 25.93±2.53, stress management: 23.18±3.62, nutrition: 22.05±2.19, and exercise 11.83±3.63.

It can be claimed that the development of positive health behaviors in the patients who underwent mastectomy increases self-care power. This is why the interventions were made by the nurses with the aim of improving positive health behaviors and they can be considered influential in coping with the disease.

Key words: Breast cancer, mastectomy, nursing, healthy lifestyle behavior, exercise, self-care power

1. Introduction

Breast cancer is the most common cancer type in women (1). In 2008, the number of breast cancer cases in Europe was estimated as 420.845, and this number represented 28% of all cancer cases (excluding non-melanoma skin cancer cases) in women (2).

Breast cancer is a compelling process which requires a long and tiring treatment starting from the diagnosis stage. In this process, physical and social problems can emerge such that the individual can be incapable of fulfilling his/her self-care activities and healthy lifestyle behaviors.

Health promotion life-style profile (HPLP) is the organization of daily activities in a way that is suitable for the individual's health status. All the activities are individual materialized with the belief of being healthy so in this sense it is the control of all behaviors that can affect one's health (3, 4). Self-care is the continuous participation of the individual in her/his own health care (5, 6). Self-care agency (SCA) is the capacity for the fulfillment of self-care. When the health of the individual deteriorates, self-care activities and HPLP can be insufficient (3-6).

In women who underwent mastectomy, the nurse is considered to have an important role in terms of making patients acquire healthy lifestyle and SCA behaviors during the hospitalization and control period. This study is realized in order to determine the relation between HPLP and SCA in women who underwent mastectomy.

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2. Materials and methods

This study was conducted on the women patients who applied to the General Surgery Clinic and Radiation Oncology Clinic of the Faculty of Medicine, Ege University, between April 15th and September 15[th]2001. The 150 volunteer patients who underwent mastectomy at least 3 months ago and who received the first (or more than one) radiotherapy, chemotherapy and hormone treatments were were included in this study. Verbal consent was taken from the women and written consent was taken from the institution that was in the scope of this study. The data were collected with face-to-face interviews by the researcher.

2.1. Data collection tools

In order to collect the data, a questionnaire form about the descriptive characteristics of the patients, the scale of the health promotion life-style profile and the scale of exercise self-care agency were used.

2.1.1. Questionnaire form about the descriptive characteristics of women

The questionnaire form was prepared by the researcher in order to determine the descriptive characteristics of the women. The form was consisted of 14 questions regarding the patients' age, marital status, education level, occupation of their spouses, economical status, the most-lived place, number of children, family types, and receipt of treatment after mastectomy surgery. The questionnaire form can be applied within 3-5 minutes.

2.1.2. The health promotion life-style profilescale (HPLP)

HPLP was developed by Walker, Sechrist and Pender in 1987. The adaptation of this method for Turkish society was made in 1997 by Dr. Nihal Esin. This scale whose reliability and validity was proven evaluates the attitudes and behaviors that improve health regarding to the healthy lifestyle of the individual (4, 6).

The scale consists of 48 parameters and has 6 sub-groups (self-realization, health responsibility, exercise, nutrition, interpersonal support and stress management). Each sub-group can be used independently. The total score of the scale gives the score of healthy lifestyle. The scale can be applied within 8-10 minutes.

All the parameters of the HPLP are positive. The marking is made on the likert scale. The scores are attributed as follows: "Never" (1), "Sometimes" (2), "Frequently" (3), "Regularly" (4). In the HPLP, the minimum score is 48, the maximum is 192 (4, 6).

Self-Realization (13 parameters) defines the individual's life objectives and the competence of developing herself, to what extent an individual knows herself and how the individual satisfies herself. The minimum score is 13, the maximum score is 52.

Health Responsibility (10 parameters) defines the level of responsibility of the individual regarding her health and to what extent she is involved in health. The minimum score is 10, the maximum score is 40.

Exercise (5 parameters) shows at which level exercise is performed. The minimum score is 5, the maximum score is 20.

Nutrition (6 parameters) determines the values of the individual regarding her meal selection, organization and food selection. The minimum score is 6, the maximum score is 24.

Interpersonal Support (7 parameters) determines the communication of the individual with her inner circle and its continuity level. The minimum score is 7, the maximum score is 28.

Stress Management (7 parameters) determines the level of recognition of stress sources by the individual and stress control mechanisms. The minimum score is 7, the maximum score is 28(4,7).

2.1.3. Exercise of self-care agency scale (ESCA)

The scale was developed by Kernay and Fleischer in 1979. Its adaptation to Turkish society was made in 1993 by Nahcivan, Ozkan and Tuncel and its reliability and validity was proved (5,6, and 8).

The used self-care agencyscale is a 5 parameter likert scale and made up of 35 parameters. The application can be completed within 7-10 minutes.

The answer and the score for each parameter are as follows: "It defines me very well" (4 points), "It slightly defines me" (3 points), "I have no idea" (2 points), "It does not define me very much" (1 point), "It doesn't define me at all" (0 point).

In the scale translated into Turkish, 8 expressions (3,6,9,13,19,22,26 and 31) are evaluated as negative and the scoring is made inversely (score values changeplace).

The minimum score is 35, the maximum score is 140. As the score rises, self-care agency increases. The scale is established basing on four features: positive or negative response to situations, motivation, the knowledge of health applications, the value that the individual attributed to herself (5, 6, and 8).

Table 1. Descriptive information about women who have undergone mastectomy surgery

Descriptive Features	Number (n=150)	Percentage (%)
Age		
40 and younger	24	16.0
41-50	64	42.7
51-60	33	22.0
61 and older	29	19.3
Marital Status		
Married	116	76.0
Single	34	24.0
Education Level		
Illiterate	8	5.3
Primary School	59	39.3
Secondary School	7	4.7
High School	37	24.7
College/University	39	26.0
Occupational Group		
Officer	41	27.3
Housewives	89	59.3
Liberal Profession	2	1.3
Health Personnel	5	3.3
Other	13	8.7
Financial Situation		
Income and Expense equivalent	110	73.3
	32	21.3
Income lower than Expense	8	5.3
Income higher than Expense		
Family Type	140	93.3
Core	7	4.7
Large	3	5.3
Other		
Longer Living Place	13	8.7
Village	33	22.0
Commune	49	32.7
City	55	36.7
Metropol		
Education Level of Husband	3	2.0
Illiterate	21	14.0
Primary School	12	8.0
Secondary School	21	14.5
High School	59	39.3
College/University	34	22.7
(not married)		

Statistical analysis

In the analysis of the data of this study, SPSS (Statistical Package of Social Sciencesfor Windows software program version15) was used.The data was analyzed using percentage, mean, correlation techniques and "Pillai's Trace", "Wilk's Lambda", "Hotelling's Trace", "Roy's Largest Root" test statistics under the title of"multiple variant tests"in One-sided Multi Variant Variance Analysis (One-sided MANOVA, TYMANOVA).

3. Results

When we look at the age interval of the 150 patients participated in the research; we saw that 42.72% were between 41-50 years old (mean; 49.9) and 22% were between 51 and 60 years old. It was determined that 76% of the patients were married,39% of the participant women were graduated from primary school and 59% were housewives. In 73.3% of the patients, the income and expenses were observed as equivalent (Table 1).

When the treatment type in the post-operation period was analyzed, it was seen that 52% of the patients received dual treatment (chemotherapy and radiotherapy or chemotherapy and hormone treatment), 15.3% received triple treatments (Figure 1).

The mean of total score of HPLP in patients involved in the study was found as 162.60±13.81, which is a quite high number. When the subgroups in the HPLP were examined, the highest mean value was determined as 47.01±4.62 and the lowest mean value was determined 32.63±4.61. These values were respectively for self-realization and health responsibility. For interpersonal support, stress management and nutrition were analyzed. These values were respectively 25.93±2.53, 23.18±3.62 and 22.05±2.19. The minimum score belonged to the subgroup of exercise with the score of 11.83±3.63 (Table 2).

When time elapsed after mastectomy was analyzed, it was determined that 30% of the patients underwent the operation 1-3 years ago, 25.3% of the patients was operated 3-6 months ago and 24.7% of the patients was operated more than 3 years ago. If we look at the minimum and maximum limits of the operation time, we see that the minimum limit was 3 months, the maximum limit was 72 months, and the mean was 26.77 months (Table 3).

When the education level of the patients included in the study was compared to the total scores regarding the six dimensions of the HPLP, there was not a statistically significant difference between the mean scores belonged to the groups (F= 1.489, p>0.05). However, when each parameter in the HPLP was considered separately, a significant difference was obtained between "Nutrition subgroup" and the total mean score (F=2.829, p<0.05). In this sense, the
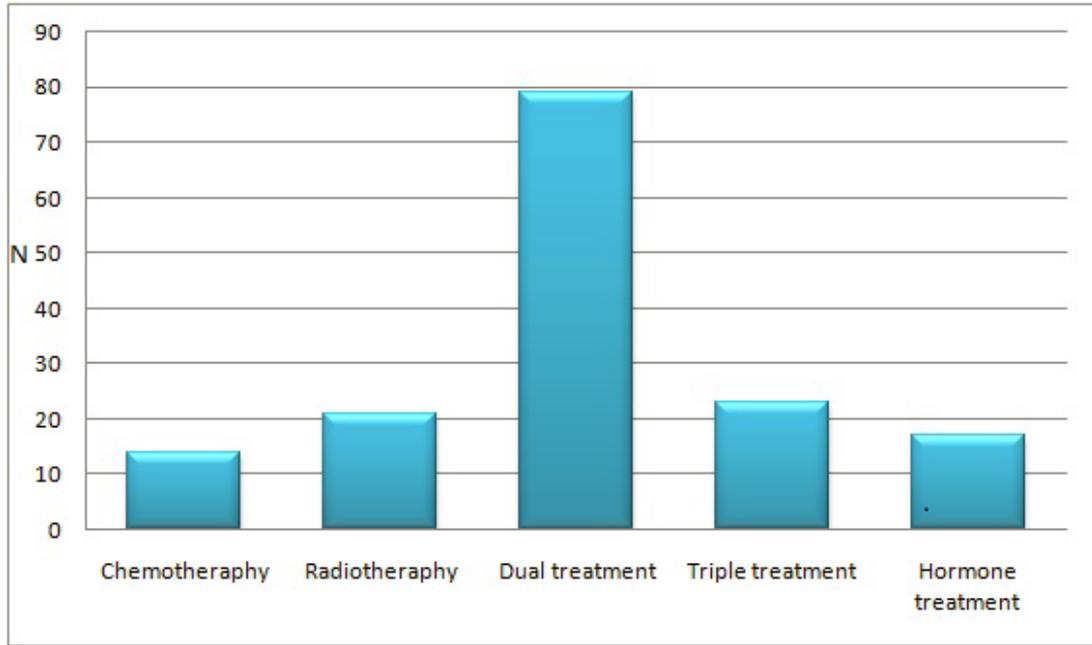
Fig. 1. Distribution of post mastectomy treatment types.

Table 2. Analysis according to the HPLP and SCA score average distribution of the women

HPLP and SCA Score Averages	N	Min	Max	Average	Sd
Age (year)	150	25	77	49.94	10.52
Elapsed time from mastectomy surgery (month)	150	3	72	26.77	22.82
Total Score for HLB Scale	150	129	192	162.60	13.81
Self-Realization	150	35	52	47.01	4.62
Health Responsibility	150	17	40	32.63	4.61
Physical Activity	150	5	20	11.80	3.63
Nutrition	150	15	24	22.05	2.19
Inter Individual Support	150	16	28	25.93	2.53
Stress Management	150	14	28	23.18	3.62
Total Score for SCA Scale	150	76	140	118.52	12.52

Table 3. Distribution of elapsed time for post mastectomy operation

Time	Number	Percent %
Between 3-6 months	38	25.3
Between 7-12 months	30	20.0
Between 1-3 years	45	30.0
More than 3 years	37	24.7
Total	150	100.0

minimum score belonged to the illiterate persons. The low education level negatively affected the nutrition habit (Table 4).

When the financial status of the patients included in the study was compared to the total scores regarding the six dimensions of the HPLP, there was not a statistically significant difference between the mean scores belonged to the groups.

However, it was determined that there was a statistically significant difference between self-realization and stress management subgroups of the HPLP (F=3.157, $p<0.05$, F=3.768, $p<0.05$). As income level increased, the mean scores of self-realization and nutrition increased. Similarly, the mean score of exercise subgroup showed an increase. However this difference was not accepted as statistically significant (Table 4).

A significant difference was seen between time elapsed after mastectomy and the total score of the HPLP (F=3.039, $p<0.05$). As time elapsed after mastectomy increased, the mean score for the HPLP also increased. The women included in the research, developed their healthy lifestyle behaviors in the course of time. When we look at the subgroups of the HPLP, a significant relationship between health responsibility and

time elapsed after the operation was determined. As elapsed time increased, the mean score of the health responsibility showed a significant increase. Even if the women included in this study was not found statistically significant (p=0.08), they had a better stress management as time elapsed (Table 4).

Table 4. Inter group comparison of sub scales of healthy life behavior

Descriptive Features	Inter Group comparisons of HPLP Sub Scales		F	p
Delay elapsed from Mastectomy	Health Responsibility Sub Scale Total Score (32.63±4.61)			
Surgery	X±SD	N	5.074	0.002
6 months and less	30.58±4.69	38		
7-12 months	33.83±4.53	30		
Between 1-3 years	32.27±4.53	45		
More than 3 years	34.19±3.91	37		
The longest	Nutrition Sub Scale Total Score (22.05±2.19)		2.640	0.052
living place	X±SD	N		
Village	21.23±2.74	13		
Commune	22.55±1.52	33		
City	21.53±2.47	49		
Metropol	22.40±2.02	55		
Financial	Stress Management Sub Scale Total Score (23.18±3.62)		3.768	0.025
Situation	X±SD	N		
Income and expense equivalent	23.65±3.32	110		
Income lower than expenses	22.00±4.01	32		
Income higher than expenses	21.38±4.78	8		
Financial	Self Realization Sub Scale Total Score (47.01±4.62)		3.157	0.045
Situation	X±SD	N		
Income and expense equivalent	47.18±4.46	110		
Income lower than expenses	45.69±5.23	32		
Income higher than expenses	50.00±2.14	8		
Education level	Nutrition Sub Scale Total Score (22.05±2.19)		2.829	0.027
	X±SD	N		
Illiterates	19.75±1.28	8		
Primary school	22.34±2.05	59		
Secondary school	21.57±1.90	7		
High school	22.30±2.12	37		
College/University	21.92±2.43	39		
Delay elapsed from Mastectomy	Stress Management Sub Scale Total Score (23.18±3.62)		2.212	0.089
Surgery	X±SD	N		
6 months and less	22.05±4.06	38		
7-12 months	23.37±3.57	30		
Between 1-3 years	23.20±3.53	45		
More than 3 years	24.16±3.09	37		
Education level of husband	Inter Individual Support Sub Scale Total Score (25.93±2.53)		2.061	0.074
	X±SD	N		
Illiterates	21.67±5.51	3		
Primary school	26.00±2.92	21		
Secondary school	25.58±2.15	12		
High school	26.60±2.09	20		
College/University	26.17±2.53	59		
Not married	26.17±2.13	35		

The mean score in the scale of self-care agency for the patients participated in this study was determined as X=118.2±12.52. When the Pearson coefficient of correlation between the total scores in the HPLP and its subgroups, and the scale of self-care agency were examined, it was observed that there was a significant relation between the HPLP scores and the ESCA scores(r =0.38, p<0.05).

4. Discussion

In this study which is performed to determine the relation between healthy life behavior and self-care agency in women who underwent mastectomy, the total mean score of HPLP is found as 162.60±13.81, which was a quite high number. When we look at the mean scores of HPLP in different studies in the literature, we see that the scholars found the mean scores of HPLP as follows: Esin (115.19±11.36), Sayan (122.50±14.57), Akca (133.29±18.16), Erci et al. (121.9±19.0), Cıkrık (123.82±15.78), Ardahan and Temel (124.54±8.62), Kucukberberet al. (127.45±20.51), and Kaya et al. (129.12±17.76) (3, 6,9,10,11,12,13,14).

When the subgroups in the HPLP are considered, the scores are determined respectively as follows: self-realization with the mean of47.01±4.62, health responsibility with the mean of 32.63±4.61, interpersonal support with the mean of 25.93±2.53, stress management with the mean of 23.18±3.62, and nutrition with the mean of 22.05±2.19. The minimum score belonged to exercise subgroup with the mean of 11.83±3.63. The minimum score in the studies of Esin, Sayan, Akca and Kaya is seen also in the exercise subgroup (4,9, and 14).

Self-realization takes place at the top of Maslow's hierarchy of needs and enables the individual to lead an active and a happy life. A self-realized person knows herself, accepts herself as the way she is and does not complain about herself. She leads a life in the direction of her objectives and targets. In all of the resources that we have, self-realization has the maximum mean score. This is supposed to be a positive result (4,15, and 16).

In the study of Ardahan and Temel, it is determined that the treatment type (surgery, chemotherapy, surgery and then chemotherapy, only radiotherapy, radiotherapy and then chemotherapy) affects the healthy lifestyle behavior (12). In our study, no significant result is found confirming that the healthy lifestyle behavior is influenced by the treatment type.

When the financial status and the level of education of the patients included in the study are compared to the total scores regarding the six dimensions of the HPLP, there is not a significant difference between the mean scores belong to groups. However, when each parameter is considered separately, a significant difference is obtained between "Nutrition subgroup" and total mean scores (F=2.829, p<0.05).The minimum score belongs to the illiterate ones. The low education level negatively affects the nutrition. A significant difference is observed between self-realization and stress management which are the subgroups of the HPLP and financial status of the patients (F=3.157, p<0.05, F=3.768, p<0.05). As the income level increases, the mean scores of self-realization and nutrition significantly increases. Also, the mean score of exercise subgroup increases depending on the level of income. However, this difference is not found statistically significant.

In Esin's study, it was determined that healthy behaviors increased depending on the education level and financial status (3).In the studies of Kucukberber et al. which evaluated the factors affecting HPLP and quality of life in cardiac patients, it was claimed that male patients, married patients, the ones who had undergraduate and graduate degrees, who had a good socioeconomic statues, who worked, who did not have an additional illness and who got training related to the illness had a high mean score of HPLP (13).

According to time elapsed after mastectomy, the difference between the total mean scores in the HPLP is found as significant (F=3.039, p<0.05). As time elapsed after mastectomy increases, the mean scores in the HPLP also increases. The women included in the study develop their HPLP in the course of time. When it is looked at the subgroups of the HPLP, a significant relationship is determined between health responsibility and time elapsed after mastectomy. As elapsed time increases, the mean score of health responsibility significantly shows an increase. Even if the women included in the study is not found statistically significant (p=0.08), it is determined that their stress management improves in time.

In this study, the mean score of the SCA was calculated as X=118.52±12.52, which was a high score. In Sayan's study regarding working women, the mean score was found as 79.0±14.05 and in Yazıcı's study regarding mothers, the mean score of self-care agency was determined as 103.23±12.28 (4,17).

In the study of Balcioglu and Yetkin the mean score of self-care agency was found as 98.9±20.1.In the study of Ozgur et al. in which

the authors examined the self-care agency of women who werein their menopause period (n=120) and analyzed the factors that affected self-care, the mean score of SCA was determined as 50.47±14.39. In the study of Kara and Albayrak, the mean score of self-care agency was calculated as 100.77±19.00 and in the study of Ozer, this score was found as 96.59±15.10 (18, 19, and 20).In the study of Savasen in which the relationship between anger and self-care agency was analyzed in patients with hypertension, the mean score of SCA was indicated as 103.87±19.31 (20). In the study of Duzoz which conducted with the aim of evaluating self-care agency of the patients with hypertension, the mean score of SCA was determined as 100.04±17.62 (22).

In the study of Yesilbalkan, it was found that the mean scores of SCA in the male and female patients with type II diabetes were 104.49±13.35 and 102.15±10.42, respectively (23). In the study of Findikin which the author examined self-care agency of patients who underwent amputation, the mean score for self-care agency was determined as 80.91±14.33 before the training (24).

As a result of the literature review that was made, it was seen that the mean score of SCA of patients involved in this study was higher than all of the averages obtained (4, 20, 25-30). Self-care potential is the ability that the individual had in terms of reinforcing and developing her functions at a certain activity level. The individual needs the determination of her self-care agency, self-care level and self-care short comings and accordingly needs knowledge. Knowledge is a component of self-care agency (4). Orem also explained the importance of using knowledge and the necessity of learning in order to apply self-care. Mullin, who applied the theory of self-care in medical-surgical patients, also pointed out that the main responsibility of nursing were encouraging self-care agency and developing individual's self-care agency (31).

The individuals in the scope of this research are still under the treatment and control and this is considered as the reason for the high means in the total scores of the HPLP and the ESCA and also as a factor that leads to more careful and rigorous HPLP. The consultant nurses in the Radiation Oncology Clinic in the Faculty of Medicine, Ege University, regularly visit the patients and give consultancy and training services. These services are supposed to increase healthy lifestyle behaviors and self-care agency of women having treatment. Support from breast care nurse can significantly reduce psychological morbidity, as measured by self rating scales, in women undergoing breast cancer surgery (32).

5. Conclusion

According to the findings of this study, the relationship between HPLP and SCA found significant in women underwent mastectomy. It was identified that as HPLP increased, SCA increased and as SCA increased, HPLP significantly increased.

When the relationship between the subgroups of HPLP and SCA was examined in the women involved in the study, it was determined that the relationship between SCA and self-realization was significant. In addition to this, SCA was in a significant relationship with all of the subgroups of HPLP.

It was found that the ones who were illiterated had the lowest nutrition level. As the income level got better, self-realization and stress management scores showed a significant increase. It was determined that the ones who resided in metropolises and cities had a significantly better nutrition in comparison to ones who lived in villages (F=12.260, p<0.05). As the time elapsed after the surgery increased, a significant increase in health responsibility scores was observed (F=5.074 p=0.002).

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