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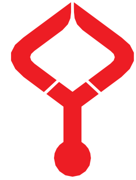

Research Article

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Comparison of anxiety, depression, and quality of life of husbands of women with and without breast cancer

Fatemeh VİZESHFAR *, Fereshteh DEHGHANRAD , Mahboobeh MAGHAREİ

Department of Nursing, Shiraz University of Medical Sciences, Community Based Psychiatric Care Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

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Abstract

The aim of this study was to compare the anxiety, depression, and quality of life of husbands of women with breast cancer referred to the chemotherapy clinic with husbands of non-affected wives. This was a case-control study, with purposive-convenience sampling method. 190 husbands of patients with or without breast cancer participate in this study. Data collection tools included a four-part questionnaire, consisted of demographic characteristics, shortened form of quality of life questionnaire, Beck depression inventory, and Beck anxiety inventory. In the areas of social relations and living environment (QolD3, QolD4), a statistically significant difference was found between the two groups in quality of life (p-value < 0.001). Pearson correlation coefficient showed a statistically significant difference in the case group between the history of chemotherapy and mean anxiety score (p-value < 0.001), and quality of life with number of children (p-value < 0.002). The findings of this study showed that in addition to giving attention to the patients, attention to health needs and quality of life of their spouses is also a priority.

Keywords: anxiety, breast cancer, depression, quality of life

1. Introduction

Cancer is one the most common health problems worldwide. (1) It is the third leading cause of death in Iran after cardiovascular diseases and accidents. Breast Cancer is the most common cause of cancer death in women. (2) It is one of the most common malignancies in the world and unfortunately has been increasing in Iranian women. (3, 4) Diagnosis and treatment of breast cancer have a significant impact on the lives of patients and their families. Women with breast cancer experience a lot of psychological disorder . Psychologic distress affects various aspects of the quality of life of women with breast cancer, especially anxiety and self-image (5). The spouses of such woman become more influential because of their active role in choosing treatments and providing their wives with comprehensive support (6). Studies have shown that spouses who care for their partner with cancer are subject to a wide range of physical, psychological, and social attenuation (7). Couples have an interactive effect on each other's quality of life, mental health, and well-being (6). All members of the family are affected by the illness of a family member, but the supportive role of spouses is much more important than the supportive role of friends or other family members. (5, 6) Feeling good about one spouse affects another. Family members, especially spouses who are the main caregivers to the patient with cancer are directly and indirectly affected by changes in the patients' condition. (7) Qualitative studies on husbands of women with breast cancer described their major experiences as unpleasant experiences of cancer and changes in their mutual connections. The spouses of such patients share that "the world on which we had built our lives and our regular daily lives were destroyed when cancer was diagnosed (8-9) They were trying to do something to support their spouses. (8) Studies have shown that husbands of women with breast cancer experience a lot of stress and are unprepared for the challenges of caring for their spouses. (9) Husbands have increased stress and distress, affecting their well-being and decreasing their quality of life (10). Symptoms of distress, such as anxiety and depression, have a negative effect on the quality of life of such women and their husbands (13,14) Thus, this study was designed to compare anxiety, depression, and quality of life of husbands of women with and without breast cancer referred to the chemotherapy clinic.

2. Materials and Methods

2.1. Research design and sample

This case-control study was performed on married men referred to Shahid Motahari Clinic, affiliated to Shiraz University of Medical Sciences. This clinic is a central clinic, located in Shiraz, southwestern Iran, and has several sections in 6 floors and is referred for clients with different kinds of health problems or diseases from all levels of the community. According to similar studies[4,9], and considering α=0.05 and 90% power (β=1.0) the sample size by using MedCalc

*Correspondence: f.dehghanrad@outlook.com

software was estimated as 190 subjects (each group 95).

$$n=\frac{z_{1-\alpha/2}+z_{1-\beta})^2[p_1(1-p_1)+p_2(1-p_2)]}{d^{*2}}$$

Purposive-convenience sampling method was used and 95 husbands of women with breast cancer who referred for chemotherapy were included in the case group, and 95 husbands of healthy women who referred to the clinic for other reasons were included in the control group. Inclusion criteria for the control group were the presence of husbands and in both groups were the willingness to complete the questionnaire and lack of any physical or mental illness to interfere with their ability to answer the questionnaire. The exclusion criterion was reluctance to complete the questionnaire.

2.2. Data collection and instruments

Data collection tool was a four-part questionnaire. In the first part of the questionnaire, the demographic characteristics of the women's and their spouses, and the status of the women's disease were asked. The second part was the shortened form of the Quality-of-Life Questionnaire. The third part was the Beck Depression Inventory II, and the fourth part was the Beck Anxiety Inventory. The World Health Organization Short Form Quality of Life Questionnaire is a short form of the World Health Organization's 100-question Quality of Life Questionnaire, which measures the quality of life in four health-related domains: physical health, psychological, social relations, and living environment domains. This questionnaire contains 26 questions, which the first and second questions examine the quality of life and health status, respectively. The next 24 questions assess the quality of life in the four areas mentioned above. This questionnaire has been validated for the Iranian population with a validity of 0.7 to 0.9 (15,16). The Beck Depression Inventory II includes 21 questions. These questions vary with the Likert scale from 0, which indicates the absence of the symptoms to 3, which indicates the severe symptoms. The final score of this questionnaire varies from 0 to 63. The scores of 0-15 indicate normal state, 16-31 mild depression, 32-47 moderate depression, and 48-63 severe depression. (11, 12)

The Beck Anxiety Inventory has 21 items on a 4-point scale from 0 to 3. The score varies from 0 to 63, with scores of 0-7 indicating low or no anxiety, scores of 8-15 mild anxiety, scores of 16-25 moderate anxiety, and scores of 26-63 with severe anxiety. The validity and reliability of Beck Anxiety Inventory and Beck Depression Inventory II have been reported and used in many studies in Iran (16-18) Beck Anxiety Inventory with 0.72 validity and 0.83 reliability, and Beck Depression Inventory with 0.93 validity and 0.89 reliability have been confirmed (18).

The questionnaire was completed by husbands who met the inclusion criteria and were assigned to either the case or control group according to whether their spouses had breast cancer or was healthy. Data were analyzed using SPSS version 22.0 software, and the descriptive statistics including mean and standard deviation were utilized. Analytical tests including chi-square for comparison two group, Pearson correlation coefficient was used to investigate the relationship between variables, and ANOVA to evaluate the relationship between independent variables (breast cancer) and dependent variables (quality of life, anxiety, and depression).

3. Results

All the participants, including the case and control groups, lived with their spouses at the time of the study. Duration of chemotherapy in spouses of case group varied from 3 months to 144 months. The mean age of the participants in the study was 41.2±10.2, with most common level of education of bachelor's or higher 79 (41.8%), 85 (45%) with freelance jobs, and the average of having two children. 31 (16.4%) of the spouses participating in the study were government employees. The highest level of education was high school diploma in 68 (36.0%) subjects. Demographic variables differed only in age between the two groups, and the mean age of the case group was higher, and for the other variables the two groups were matched. Table 1 shows the demographic characteristics and variables of the two groups.

Table 1. Comparison of demographic characteristics of case and control groups

Group		p
Job	**Case**	0.72
	Control	
Education	**Case**	0.27
	Control	
Marital status	**Case**	0.45
	Control	
Child	**Case**	0.31
	Control	
Wife job	**Case**	0.24
	Control	
Wife education	**Case**	0.51
	Control	

Overall mean score for quality of life in the case group was 84.5%±14.1 and in the control group was 87.2%±12.6, which did not show a significant difference. In the areas of social relations and living environment (QolD3, QolD4), there was a statistically significant difference between the two groups. Table 2 compares the scores of different domains of quality of life and its overall score in the case and control groups.

Anxiety was higher at all levels in the case group. In the case group 16.8% (n=17) had severe depression but in the control group only 9.6% (n=10) had severe depression. Table 3 compares the anxiety and depression scores in the two groups. One-way analysis of variance (ANOVA) showed that there was no significant difference between total score of quality of life and level of anxiety, and between total score of quality of life and depression in case and control groups. Table 4 shows the comparison of the mean scores of anxiety and depression in the case and control groups.

Table 2. Comparison of scores of Qualities of Life Questionnaire in case and control groups

Variable	Group	Mean	S.D.	p-value
Quality of life dimention 1	**Case**	26.0737	4.26575	0.815
	Control	27.8191	4.11648	
Quality of life dimention 2	**Case**	21.4000	3.87408	0.574
	Control	22.1596	3.66120	
Quality of life dimention 3	**Case**	25.6842	7.13288	0.000
	Control	11.2553	1.93405	
Quality of life dimention 4	**Case**	11.3158	4.11087	0.000
	Control	26.1702	5.21297	
Quality of life total score	**Case**	84.5789	14.18763	0.172
	Control	87.2872	12.68275	

Table 3. Comparison of the mean frequency distribution of anxiety in the case and control groups

Anxiety					
Group	**Low No (%)**	**Weak No (%)**	**Moderate No (%)**	**Severe No (%)**	**Total No (%)**
Case	51 (53.7)	31 (32.6)	11 (11.6)	2 (2.1)	95 (100)
Control	64 (68.1)	11 (11.7)	11 (11.7)	9 (8.5)	95 (100)

Table 4. Comparison of the frequency distribution of depression in case and control groups

Depression					
Group	**Low No (%)**	**Weak No (%)**	**Moderate No (%)**	**Severe No (%)**	**Total No (%)**
Case	30 (32.6)	18 (38.3)	30 (31.6)	17 (16.8)	95 (100)
Control	34 (36.2)	29 (30.9)	22 (23.4)	10 (9.6)	95 (100)

One-way ANOVA showed that there was no significant difference between total score of quality of life and level of anxiety and between total score of quality of life and depression in case and control groups. Table 5 shows the comparison of the mean scores of anxiety and depression in the case and control groups.

In regards to relationship between quality of life, anxiety score, and depression with demographic variables, Pearson correlation coefficient showed that in the case group, there was a statistically significant difference between the history of chemotherapy and mean anxiety score (p-value < 0.001), and quality of life with number of children (p-value < 0.002). There was no statistically significant difference between demographic variables, anxiety, depression, and quality of life in the control group.

Table 5. Comparison of anxiety and depression in two case and control groups

	Case Mean ± S.D.	**Control Mean ± S.D.**	**p-value**
Anxiety	8.50± 6.81	7.63± 8.36	0.123
Depression	9.4± 8.09	7.2± 6.76	0.0495

4. Discussion

Based on the results of this study, the diagnosis and treatments of breast cancer in women influence the mental health and quality of life of their spouses. A study by Götze et al. found that sexual partners of patient with cancer in regards to the physical dimension of quality of life, had no statistically significant difference with the rest of society, but there was a significant difference in mental and social dimensions (22).

The distress created for couples as a patient and caregiver, indicates the need for psychological and supportive interventions (8). Longitudinal studies of the effects of cancer on the quality of life and mood of couples whose one of their partners has cancer diagnosis, have contradictory findings (20,21).

In this study, the level of anxiety in the case group was higher than the control group. Symptoms of depression in caregivers of patients in terminal stages of the disease should not be considered as normal, but require attention and intervention. (13)

Reducing the level of anxiety and depression improves the quality of life in sexual partners of patients with cancer. A study aimed to assessing distress and quality of life in patients with cancer and their caregivers during home care showed that 33% of the caregivers of patients with cancer experience high levels of anxiety and 28% experience depression. Compared with other caregivers, spouses of patients requiring palliative care experience more distress (19). Results of a study by Bigatti and co-workers with title of "Depression in Husbands of Breast Cancer Patients: Relationships to Coping and Social Support" showed that the rate of depression in husbands of patients with breast cancer was higher than control group (23). A review study by Li et al. analyzed 25 articles published from 2000 to 2012 with the aim of examining spouses' experience of caring for patients with cancer. According to the results of that study, the spouses of patients with cancer experienced more negative emotions, such as decreased mental health and quality of life (24). Diagnosis of cancer and the death caused by it have a

negative impact on different aspects of caregivers' lives, especially their spouses. Most partners experienced severe symptoms of depression and poorer health soon before and right after their spouse's death (25). Women diagnosed with breast cancer and their spouses experience specific issues regarding illness, treatment, response, and coping. The disease affects the whole family. Among these experiences are adaptation to changes in the role and negative emotions such as decreased quality of life, depression, and anxiety associated with the patient and treatment of the disease (26).

In the case group, there was a statistically significant difference between the history of chemotherapy and the mean score of anxiety and quality of life with the number of children. A study by Sun et al. aimed to investigate the effectiveness of interdisciplinary palliative care intervention for home caregivers in patients with lung cancer showed that there was no statistically significant difference between caregivers' demographic characteristics and other variables including quality of life (27). The results of another study examining the quality of life of home caregivers of patients with cancer in Korea and Albania did not show a statistically significant difference between the demographic characteristics of the subjects and their quality of life (14). Other studies of patients with cancer in other parts of the world also confirm these results and are different from the results of this study. (15-17) This difference could be resulted from cultural differences and the burden of childcare.

Describing health problems and their effects on different aspects of health and quality of life is the first step toward considering the dimensions and solutions of the problem. In this descriptive study, the effects of breast cancer treatment on quality of life, anxiety, and depression of spouses were investigated. The impact of diagnosis and treatment of different types of cancer on the dimensions of family life, especially spouses, is a complex issue with hidden angles and other socio-cultural factors need to be examined for a better understanding. In addition, future evidence-based studies of this group's specific needs and appropriate methods of training and support should be examined and tested.

Findings of this study comparing the effects of diagnosis and treatment of cancer on quality of life and distress of spouses of women with and without breast cancer showed that besides patient, attention to health needs and quality of life of their spouses is also a priority, because they have the key role in supporting their sick wives. Nurses should enhance their ability to design and implement programs and be able to empower patients and their spouses to reduce stress or anxiety and possible depression. There seems to be a need for an appropriate framework to work with such patients and their spouses. The creation of strong social networks and support groups have been mentioned in some studies.

Ethical statement

Ethical approval will be sought in accordance with Vice-Chancellor for Research Affairs of Shiraz University of Medical Sciences and all participant completed the informed consent form (IF.SUMS.NUMIMG.REC.1400.007.2021.06.19).

Conflict of interest

The authors declared no conflict of interest.

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None to declare.

Authors' contributions

Concept: F.W., F.D., Design: F.W., F.D., Data Collection or Processing: M.M., Analysis or Interpretation: M.M., F.D., Literature Search: F.W., M.M., Writing: M.M., F.D.

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