

RESEARCH ARTICLE

Investigating the Quality of Life and the Related Factors in Iranian Women with Breast Cancer

Fatemeh Homae Shandiz¹, Fatemeh Zahra Karimi^{2*}, Zahra Khosravi Anbaran², Mahbubeh Abdollahi³, Nafiseh Rahimi⁴, Mina Ghasemi²

Abstract

Introduction: Nowadays breast cancer is the most important factor concerning the women's health which can affect the quality of life (QOL). This study was performed with aim to investigate the QOL and the related factors in Iranian women diagnosed with breast cancer in 2014-2015. **Methods:** This cross-sectional study was performed on 94 women with breast cancer who were selected by convenience sampling in Mashhad, Iran from 2014-2015. The data were collected through Demographic and Clinical Questionnaire and EORTC QLQ-C30.V3 Standard Questionnaire. Data was analyzed by SPSS software (version 18) and also descriptive statistics and linear regression analysis. $P < 0.05$ was considered statistically significant. **Results:** The mean of total score for the quality of life was 71.45 ± 22.28 . In the area of the symptoms of disease, the highest score belonged to insomnia (22.73 ± 14.89) and fatigue (19.81 ± 14.42). In the functional area, physical and emotional scales accounted for the highest (91.35 ± 9.67) and lowest (78.55 ± 2.84) scores, respectively. The results of multiple regression analysis showed that the variables of age, social status, radiotherapy, and hormone therapy are effective factors in the QOL. **Conclusion:** Breast cancer can affect the women's QOL. Therefore, efforts to promote the QOL in breast cancer patients is considered as one of the most important topics in women's health care. This requires more attention to identify various aspects of life and find effective ways to promote and improve the QOL in these patients.

Keywords: Quality of life- Iranian women- breast cancer

Asian Pac J Cancer Prev, **18** (8), 2089-2092

Introduction

Breast cancer is one of the most common cancers in the world, with the highest mortality rates. So that, as many as 502,000 women die annually due to the disease (Ranjesh et al., 2017; Salmaninejad et al., 2017). According to available statistics, breast cancer accounts for about 33% of women's cancers and its prevalence in the general population in different countries are estimated to be 8 to 10%. In Iran also, breast cancer is the first common cancer among women, accounting for 24.4% of all cancers. According to recent studies in Iran, the incidence of breast cancer has been reported to be 17.81%, which has increased dramatically in recent years (Ranjesh et al., 2017; Shayan et al., 2016).

Today, reducing mortality and increasing survival rates in breast cancer patients is due to the development of more appropriate methods for screening and early diagnosis and regular and scientific treatments. But most of these treatments are complicated and have serious side effects that affect the physical, psychological and social aspects of the patients' life and can significantly reduce

the quality of life in these patients (Bahreinian et al., 2017; Homae-Shandiz et al., 2016; Haghghat, 2013)

Breast cancer can have a major impact on QOL and can impair physical, mental, social, and spiritual well-being. Therefore, in recent years, investigating the QOL has been considered as an important subject in health care, especially in breast cancer studies. The QOL provides a degree of physical, emotional, and social functions, so, assessing the QOL gives valuable information to health professionals, enriches health interventions, and improves the quality of health services. Also, access to information about the QOL in breast cancer patients can lead to more effective health interventions and promote the QOL in these patients (Heravi-Karimi and Poor- Dehghan, 2006; Fasihi Harandy et al., 2012; Heravi-Karimooi et al., 2006). Today, cancer is one of the major and important health issues in Iran (Karimi et al., 2017). The main problems which affect the QOL in cancer patients include mental and emotional effects caused by the disease, diagnostic and therapeutic procedures, stress, pain, depression, the effects on family relationships, marital and social relationships, economic problems, nutritional deficiencies,

¹Department of Radiotherapy, Ghaem Hospital, Radiation Oncology Center Reza, ²Department of Midwifery, School of Nursing and Midwifery Mashhad University of Medical Sciences, Mashhad, ³Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, ⁴Birjand University of Medical Sciences, Birjand, Iran. *For Correspondence: karimifz@mums.ac.ir

and complications caused by treatment (Montazeri et al., 2004). Given that cancer affects all aspects of QOL with varying degrees of influence, and also high prevalence of breast cancer in Iran, and prolonged survival of these patients which more involve them with complications and consequences of cancer, identifying the factors which affect the quality of life seems to be necessary. Therefore, this study was performed with aim to investigate the QOL and the related factors in Iranian women with breast cancer.

Methods and Materials

This cross-sectional study was performed on 94 women with breast cancer who were selected by convenience sampling in Mashhad, Iran from 2014-2015. The study was approved by the Ethic Committee of Mashhad University of Medical Sciences. All participants gave written informed consent. All Women with non-metastatic breast cancer that underwent chemotherapy in adjuvant setting were recruited from the Imam Reza Center, Mashhad University of Medical Sciences between January 2014 and January 2015. The sample size was calculated as 94 patients. The sampling method was non-probability convenience method. So that the researcher attended in Imam Reza Center and selected the qualified patients who had consent to participate in the study. The inclusion criteria were: being Iranian and resident in Mashhad, being married, at least elementary education, at least two months have passed from diagnosis of the disease, no other disease or malignancies in addition to breast cancer, and no use of psychiatric drugs or opium.

Data were collected using Demographic and Clinical Questionnaire and EORTC QLQ-C30.V3 Standard Questionnaire. Demographic and Clinical Questionnaire consisted of 3 sections: the first section was demographic features, the second section was the history of pregnancy and childbirth, and the third section was clinical information.

EORTC QLQ-C30.V3 Standard Questionnaire which belongs to the European Organization for Research and Treatment of Cancer is generally used to assess the QOL in cancer patients. The EORTC QLQ-C30 measures five functional areas (physical, playing role, cognitive, emotional, and social); nine symptoms areas (fatigue, nausea and vomiting, pain, asthma, insomnia, loss of appetite, constipation, diarrhea and financial problems); and one total area of QOL (Safaei et al., 2008). The validity and reliability of EORTC QLQ-C30.V3 Standard Questionnaire have been assessed in the study which was conducted by Safaei et al., 2008. that had desirable validity and reliability. Data was analyzed by SPSS software (version 18) and using descriptive and inferential statistical tests including central and dispersion parameters (mean and Standard deviation) and frequency. Linear regression and backward elimination procedure were used to evaluate the relationship between demographic variables as independent variable and general health score as well as the relationship between symptoms areas as independent variables and general health score. Confidence coefficient of 95% was considered in all tests

and $P < 0.05$ was considered statistically significant.

Results

The mean age of patients who participated in this study was 45.20 ± 8.63 years. The highest frequency (25.5%) belonged to the age group of 46-50 years. Most patients (41.5%) had diploma or higher level of education. Most women (63.8%) were housewives. 58.5% of patients were in moderate and 41.5% in high social class. All the women underwent chemotherapy. Then, 48.9% ($n=46$) during surgery underwent mastectomy. After that, 69.1% patients continued treatment with radiotherapy and 52.1% underwent Hormone Therapy. The mean number of delivery was reported 2.95 ± 1.83 (Table 1). The mean total score of the quality of life among breast cancer patients was 71.45 ± 22.28 . The results of Table 2 indicated that in the area of symptoms, the highest score belonged to insomnia (22.73 ± 14.89) and fatigue (19.81 ± 14.42) and the lowest score was related to diarrhea (91.35 ± 9.67). In the functional area, physical and emotional areas accounted for the highest (91.35 ± 9.67) and lowest (78.55 ± 2.84) scores, respectively. Multiple linear regression was used to assess the relationship between demographic variables and total score of QOL. The results of multiple regression analysis by backward elimination method showed that among demographic variables, age, social status, radiotherapy, and hormone therapy were effective on the QOL, so that higher socio-economic levels and doing hormone therapy for the patient increased QOL. In contrast, radiotherapy had a negative effect on QOL. Moreover, increasing age of patients declined QOL. The variables of educational level, type of surgery, job, and number of deliveries had no effect on QOL (Table 3).

Also, multiple linear regression model was used to evaluate the relationship between the related factors in the area of symptoms and total score of QOL. The results of Backward elimination method showed that fatigue and shortness of breath were effective on total score of QOL,

Table 1. The Characteristics of the Participants

Variable	Category	Frequency (Percent) No. (%)
Education	Illiterate - Elementary	36 (38.3)
	Secondary	19(20.2)
	Higher	39(41.5)
social status	Medium	55(58.5)
	High	39(41.5)
Surgery	Conservative	46(48.9)
	Mastectomy	48(51.1)
Radiotherapy	Yes	65(69.1)
	No	29(30.9)
Endocrine therapy	Yes	49(52.1)
	No	45(47.9)
Occupation	Housewife	60(63.8)
	Employed	34(36.2)
Family income level (according to self-judgment)	Less than sufficient	39(41.5)
	Sufficient	55(58.5)

Table 2. Description of the Symptom and Functional Scales in Patients

	Variable	sd ± mean
Functional scales	fatigue	14.42 ± 19.81
	Nausea and vomiting	5.67 ± 13.06
	pain	12.41 ± 15.25
	dyspnea	8.16 ± 15.98
	insomnia	14.89 ± 22.73
	Appetite loss	7.80 ± 19.81
	constipation	10.28 ± 20.17
	diarrhea	2.84 ± 10.55
Symptom scales	Physical functioning	91.35 ± 9.67
	Role functioning	86.7 ± 18.38
	emotional	78.55 ± 18.51
	cognitive	81.56 ± 17.19
	Social functioning	89.18 ± 16.16

Table 3. The Effect of Demographic Factors on the Total Score of Quality of Life Using Multiple Linear Regression Model with Backward Elimination Selection Procedure

variable	B	95% CI	Beta
Age	-0.69	(-1.18,-0.19)	-0.27
Social status			
Medium	reference	-	-
High	10.22	(1.65,18.79)	0.23
Radiotherapy			
No	reference	-	-
Yes	-14.23	(-24.13,-4.33)	-0.3
Endocrine therapy			
No	reference	-	-
Yes	12.39	(3.25,21.55)	0.28

so that both had a negative impact on QOL (Table 4).

Discussion

The results of present study showed that most women were 56-50 years old. In the study which was conducted by Hayati (2009) on the quality of life in women with breast cancer, most patients aged 49-50 years. In the present study, among demographic and social variables, age and social status were correlated with QOL. Similar to other studies conducted in this field, a negative relationship was found between age and QOL score in this study, so that the results of the studies conducted by Monfared (2013), Rezaee (2011) and Tahmasebi (2007). showed that increased age declines QOL. While in the studies of Miller (2002), Smith (2009) and Radwan (2008) QOL score was higher in older patients; in other words, increased age improved QOL. The consistency of this study with the results of Monfared (2013), Rezaee (2011) and Tahmasebi (2007). is likely due to the fact that these studies were conducted in Iran, and increasing age in Iran dramatically affects the one's understanding of health and disease.

Table 4. The Effect of Symptom Scales Factors on The Total Score of Quality of Life Using Multiple Linear Regression Model with Backward Elimination Selection Procedure

variable	B	95% CI	Beta
fatigue	-0.21	(-0.42,0.01)	-0.18
Dyspnoea	-0.48	(-0.75,-0.21)	-0.35

Other findings of the present study showed significant relationship between total score of QOL and social status in women, so that higher socio-economic level improved women's QOL. This result was consistent with the results of the studies conducted by Hayati (2009) and Monfared (2013). In these studies, higher level of income was associated with higher QOL, so that the results of the study conducted by Monfared (2013). also showed significant relationship between psychological comfort and economic condition for women with breast cancer; so that those with better economic condition had better psychological comfort. Other studies also indicated that psychological comfort is relatively associated with level of income and social class (Hayati et al., 2009; Monfared et al., 2013). May be it can be said that higher socio-economic level of patients lead to easy access to better health and medical services; as a results, these patients will have less problems.

In this study, radiotherapy and hormone therapy were determined to be effective in QOL, so that those who received hormone therapy had higher QOL, while those who received radiotherapy had lower QOL. This is associated with the fact that whatever the disease is diagnosed at earlier stages, the prognosis will be better and therapeutic intervention is less invasive, and lead to higher QOL in these patients. This finding highlights the importance of early diagnosis in improving QOL in these patients. Other studies also have indicated that cancer women who undergo some treatments such as radiotherapy experienced unpleasant side effects such as hair loss, nausea, and sexual problems. These treatments threaten their ability to establish social roles or as a housewife or employed women and leads to adverse effects on QOL (Hayati et al., 2009). Monfared (2013) in his study stated that chemotherapy and radiotherapy, which lead to occurrence and intensity of the whole range of physical and psychological symptoms during the active treatment period, affect the QOL in cancer patients.

Other results of this study showed that QOL was lower in emotional area compared to other areas; it is consistent with the findings of other studies conducted by Monfared (2013), Safaee (2008) and VanEsch (2011). which indicates that breast cancer has the highest negative effect in emotional area.

In this study, fatigue and insomnia had the highest mean scores in the area of symptoms. According to the results of linear regression model, fatigue and asthma had a negative impact on QOL. The results of this study were consistent with those of Monfared (2013) and Safaee (2008), so that fatigue accounted the highest score in women diagnosed with breast cancer in the study conducted by Mohadesi (2013). Fatigue was the most

distinctive symptom resulting from the disease itself or the complication of treatment among the patients with breast cancer. These results showed that the symptoms of disease have high effect on QOL. Therefore, the measures to obtain better treatment and use supportive treatments to reduce the symptoms seems to be useful.

Today, survival is not the only aim of living and people are willing for desired quality of life. Therefore, efforts to promote the QOL in breast cancer patients as one of the most important topics in women's health seems to be necessary. This requires more attention to identify various aspects of life and find the effective ways to promote and improve the QOL in these patients. The results of this study can be used as a guideline for planning and performing the interventional measures in order to improve the QOL in breast cancer patients, also obtain accurate information, and optimize treatment, service, and protective system for these group of patients. moreover, social and economic support can be one of the most important steps to increase QOL in breast cancer patients.

The main strength of the present study was the evaluation of QOL and the related factors in women with breast cancer in Mashhad city for the first time. Other researchers are advised to design and implement the educational, counseling and supportive interventions based on the patient, family and treatment team members in order to improve the quality of life in women with breast cancer. In addition to the physical aspect, these programs should also take into account other aspects of women's health to play a more effective role in improving their quality of life. It is also suggested that a study be conducted on the quality of life and its related factors in the family of patients with breast cancer.

In this study, it was tried to control the most important and known factors affecting the QOL. However, there might be other factors which can't be controlled by the researcher. Also, trusting to the accuracy of responses which was done by the subjects was another limitation of the present study that it was tried to provide the explanations and ensure them about the privacy of their information, however they may want to hide some information which leads to wrong answers. Also one of the limitations of this study is the use of convenience sampling that affects the generalizability of the findings.

In conclusion, according to the results of this study, breast cancer affects women's QOL in varying degrees, especially reduces the mental health of cancer women. Therefore, measures are required to promote the QOL in breast cancer patients.

References

- Bahreini A, Radmehr H, Mohammadi H, Bavadi B, Mousavi M (2017). The effectiveness of the spiritual treatment group on improving the quality of life and mental health in women with breast cancer. *J Res Relig Health*, **3**, 64-78.
- Fasihi -Harandy T, Ghofranipour F, Montazeri A, et al (2012). Health-related quality of life in Iranian breast cancer survivors: A qualitative study. *Payesh*, **11**, 65-72
- Haghighat S (2013). Survival rate and its correlated factors in breast cancer patients referred to breast cancer research center. *Iran J Breast Dis*, **6**, 28-36.
- Homae-Shandiz F, Karimi FZ, Rahimi N, Abdolahi M, Khosravi-Anbaran Z (2016). Investigating sexual function and affecting factors in women with breast cancer in Iran. *Asian Pac J Cancer Prev*, **17**, 3583-86.
- Heravi-Karimooi M, Pourdehghan M, Jadid Milani M, Fouroutan SK, Aein F (2006). Study of the effects of group counseling on quality of sexual life of patients with breast cancer under chemotherapy at Imam Khomeini Hospital. *J Mazandaran Univ Med Sci*, **16**, 43-51.
- Hayati F, Shahsavari A, Mahmodi M (2009). Relationship to subjective well being and demographic variables in women with breast cancer referred to hospitals affiliated to medical sciences universities of Tehran city, 1386. *Iran J Breast Dis*, **2**, 23-8.
- Heravi-Karimi M, Poor- Dehghan M (2006). The examining effective of group counseling program to quality of life breast cancer patients. *Daneshvar Med*, **13**, 69-78.
- Karimi FZ, Dadgar S, Abdollahi M, et al (2017). The relationship between minor ailments of pregnancy and quality of life in pregnant women. *Iran J Obstet Gyneocol Infertil*, **20**, 21- 8.
- Miller BE, Pittman B, Case D, McQuellon RP (2002). Quality of life after treatment for gynecologic malignancies: a pilot study in an outpatient clinic. *Gynecol Oncol*, **87**, 178-84.
- Mohadesi H, Ayatollahi H, Hasanzadeh G, Yegansangi M (2013). Quality of life in breast cancer patients: Study in the Omid cancer research center- Urmia. *Iran J Breast Dis*, **5**, 35-43.
- Monfared A, Pakseresht S, Ghanbari A, Atrkar Roshan Z (2013). Health-related quality of life and its related factors among women with breast cancer. *Holist Nurs Midwifery*, **23**, 52-62.
- Montazeri A, Hole DJ, Milroy R, McEwen J, Gillis CR (2004). Does knowledge of cancer diagnosis affect quality of life? A methodological challenge. *BMC Cancer*, **4**, 21-4.
- Ranjekesh M, Fathi Azar F, Ghatreh- Samani F, Tarzamani MK, Vali-Khani E (2017). Evaluation of adjunctive sonography results in screening of women with mammographically dense breasts for early diagnosis of breast cancer. *Iran J Breast Dis*, **10**, 7-19.
- Redhwan AA, Md Idris MN, Zaleha MI, et al (2008). Quality of life among women with breast cancer from university Kebangsaan Malaysia medical centre, Malaysia. *Malays J Commun Health*, **14**, 46-55.
- Rezaei R, Saatsaz S, Haji Hosseini F, Sharifnia S, Nazari R (2011). Quality of life in gynecologic cancer patients before and after chemotherapy. *JBUMS*, **13**, 78-84.
- Salmaninejad A, Kangari P, Shakoobi A (2017). Oxidative stress: development and progression of breast cancer: review article *Tehran Univ Med J*, **75**, 1-9
- Shayan A, Khalili A, Rahnavardi M, Masoumi S Z (2016). The relationship between sexual function and mental health of women with breast cancer. *Iran J Crit Care Nurs*, **24**, 221-8.
- Smith AW, Alfano CM, Reeve BB, et al (2009). Race/ethnicity, physical activity, and quality of life in breast cancer survivors Ashley Wilder Smith, Catherine M. *Cancer Epidemiol Biomarkers Prev*, **18**, 656-63.
- Tahmasebi M, Yarandi F, Eftekhari Z, Montazeri A, Namazi H (2007). Quality of life in gynecologic cancer patients. *Asian Pac J Cancer Prev*, **8**, 591-2.
- Van Esch L, Leontine Den Ouden B, De Vries J (2011). The world health organization quality of life instrument-short form (WHOQOL-BREF) in women with breast problems. *Int J Clin Health Psychol*, **11**, 5-22.