Assessing the Quality of Life in Breast Cancer Women: A Cross Sectional Descriptive Study

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Abstract

Background: To assess the quality of life in Iraqi breast cancer women with regard to different Sociodemographic and medical variables. Methods: A cross sectional study was conducted on 150 women diagnosed with breast cancer and being treated in Iraq. The evaluation was done by using European Organization for Research and Treatment of Cancer Quality of Life Questionnaire- Core- 30 (EORTC QLQ-C30) and QOL_BR23 Questionnaire. All data were conducted directly via handwriting by the patients at the Oncology Teaching Hospital/Medical City complex in Baghdad. When the questionnaire questions were completed by each participant, they were checked up to ensure their suitability for data insertion and then followed by the scoring manual of the EORTC questionnaire. All the data were analyzed by using SPSS. Results: Most of the patients undergoing this study were at the age of ≤ 50 (52.66%), and when they were diagnosed with breast cancer, they were younger than 50 (58.66%). The global health status was high in the case of working participants compared with those who are unemployed, i.e., (p=0.035). However, the emotional status appeared to be significant in the case with the working participants (P= 0.027). Also, the global status appeared to be high in the participants receiving radiation, while it showed insignificant values with the other data. The physical functioning, on the other hand, showed significant results in many places, as in the case with the patients present with no health problems, and high results in radiation, herceptin and hormonal therapy. As for the role functioning, it showed significant results in patients without health problems, patients who underwent radiation, and patients who were free of disease for less than five years. Conclusions: The results of this study will help identify gaps in all areas in which patients need additional support. Since the negative effects of the disease and related treatments influenced the patient’s quality of life, it has become necessary for health care providers to focus on designing social and psychological interventions to support cancer patients throughout their illness and treatment in a way that it leads to a better adaptation to their disease and improve their emotional status.

Keywords: Quality of life- breast cancer- EORTC questionnaire

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Introduction

One of the most common cancer-associated deaths are related to breast cancer (Daher et al., 2017). Randomly, about 50% of the incidence and 60% of deaths occurred in developing countries (GLOBOCAN, 2018). According to the Iraqi International Agency for Research on Cancer, breast cancer ranked first, with 7,515 new cases, 3019 deaths and 20354 five-year prevalence (GLOBOCAN, 2020). There are many risk factors associated with breast cancer: estrogens, early menarche, obese postmenopausal, late menopause, in addition to high level of endogenous estradiol (Key et al., 2001). There are big challenges to prevent such an obstinate disease, although early detection is still the best way to contain it (Sun et al., 2017). Nonetheless, after cancer diagnosis and treatment, many breast cancer survivors still experience negative consequences, like physical and mental health issues even decades thereafter. After cancer diagnosis, there are multi factorial long-term health effects that comprise chronic diseases such as, hypertension, heart failure, diabetes, dementia and osteoporosis (Maurer et al., 2021). Modern oncology is keen on improving the quality of life (QOL) of cancerous patients (Quinten et al., 2009). Clinical cancer trials considered QOL as the most important goal that might be a prognostic consideration to evaluate the treatment options for cancerous patients. QOL can also be valuable in assessing breast cancer patient’s status due to disease incidence (Montazeri et al., 1996). The intense attention of the quality of life that overcame the long-term organ toxicities began through following specific strategies to obtain disease free remission (Rashid and Albasry, 2020). There is limited information about QOL in Iraqi females with breast cancer, the limited
obtained data cause difficulties for clinicians to introduce new interventions and treatment approaches (Daher et al., 2017). In breast cancer females, QOL has many effects that intertwine with interdependent and complex interactions, such as age, disease stage, socioeconomic status, type of surgery, body image, psychological factors and fear of disease coming back (Carmona-Bayonas et al., 2021). The present study aims at assessing the QOL in breast cancer women with regard to different Sociodemographic and medical variables.

Materials and Methods

A cross sectional study was conducted on 150 women diagnosed and treated with breast cancer in Iraq in a period from September 2019- April 2021. The study was approved by the ethical committee of Pharmacy College/ Mustansiriyah University /Baghdad /Iraq.

A written consent was obtained from all participants after clarifying the purpose of the study. The evaluation was done by using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire- Core- 30 (EORTC QLQ-C30) and QOL_ BR23 Questionnaire (Aaronson et al.,1993). All the data were directly given to be hand written by the patients at the Oncology Teaching Hospital/Medical City complex in Baghdad. The participants included females aged 18 years or older who were diagnosed with breast cancer and underwent treatment or follow up.

A self-administered Arabic language questionnaire was utilized in the study, the beginning of the questionnaire contained information of demographic data that contained 17 questions. The second section contained a validated Arabic version of QLQ-C30 that included Global scales, functional scales (physical, role, emotional, cognitive and social functioning) and symptoms scales (fatigue, pain, nausea and vomiting, appetite loss, dyspnea, insomnia, diarrhea, constipation and financial difficulties). The third section contained a validated Arabic version of EORTC QLQ BR-23 that had two domains; functional that included body image, sexual functioning, sexual enjoyment, and future perspectives), while the second domain was associated with symptoms (side effects of systemic therapy, arm symptoms, breast symptoms, upset for hair loss). For both questionnaires, the higher scores for functional scales indicated a higher quality of life, while the high scores for symptoms indicated bad responses. After it was completed by each participant, the questionnaire was checked to ensure its suitability for data insertion then followed by the manual scoring of the EORTC questionnaire.

All the data were analyzed by using SPSS (version 24). Percentages were used to describe the variables of the study, while means and standard deviations (SD) were utilized to describe the differences in scores for both EORTC QLQC30 and QLQ BR-23. A T-test was used to compare the score means between groups; a statistical significance was considered if p< 0.05.

Results

The study was conducted on 170 patients. Twenty patients were excluded because they have not filled the questionnaire correctly. Hence, only 150 patients were included in this study. Most of the patients aged ≤ 50 (52.66%). Table 1 shows the sociodemographic data that include age, menopausal status, type of treatment and surgery, in addition to the patients’ marital status and whether they had children or not. Table 2 shows the comparison between sociodemographic and the medical data and global and functional scales in QLQ-C30. The global health status was only high in the case of working participants compared with the unemployed ones (p=0.035), while the emotional status appeared to be only significant with unemployed participants (p=0.027). As for the cognitive functioning, it appeared to be high in patients aged ≤ 50 years (P=0.009). However, the global status appeared to be high in the radiation-receiving participants. Besides, while the global status showed insignificant values with other data. The physical functioning, on the other hand, showed significant results in many places such as with the patients who suffered no health problems. The physical functioning also showed high

Table 1. Sociodemographic Data

| Characteristics          | Number | Percentage % |
|-------------------------|--------|--------------|
| Age now(years)          |        |              |
| ≤50                     | 73     | 47.33        |
| >50                     | 77     | 52.66        |
| Material status         |        |              |
| Married                 | 104    | 69.33        |
| Single                  | 34     | 22.66        |
| Divorced                | 6      | 4.0          |
| Widowed                 | 6      | 4.0          |
| Do you have children   |        |              |
| Yes                     | 107    | 71.33        |
| No                      | 43     | 28.66        |
| Are you working         |        |              |
| Yes                     | 45     | 30.0         |
| No                      | 105    | 70.0         |
| Health problem          |        |              |
| Yes                     | 64     | 42.7         |
| No                      | 86     | 57.3         |
| Menstrual status        |        |              |
| Pre-menopausal          | 18     | 12.0         |
| Post- menopausal        | 132    | 88.0         |
| Cancer operation        |        |              |
| Mastectomy              | 106    | 70.7         |
| Lumpectomy              | 38     | 25.33        |
| No surgery              | 6      | 4.0          |
| Radiation               |        |              |
| Yes                     | 83     | 55.33        |
| No                      | 65     | 43.3         |
| No answer               | 2      | 1.3          |
| Chemotherapy            |        |              |
| Yes                     | 145    | 96.7         |
| No                      | 5      | 3.3          |
| Herceptin               |        |              |
| Yes                     | 43     | 28.66        |
| No                      | 107    | 71.33        |
| Hormonal therapy        |        |              |
| Yes                     | 85     | 56.7         |
| No                      | 65     | 43.3         |
| If you recover from the disease | | |
| How many years          |        |              |
| are you free of         |        |              |
| disease                 |        |              |
| < 5                     | 82     | 54.7         |
| > 5                     | 5      | 3.3          |
| Still have disease      | 63     | 42.0         |
results with radiation, herceptin and hormonal therapy. Role functioning showed significant results in patients who suffered no health problems (P=0.001) and patients who underwent radiation. In table 3, the comparison is made between the sociodemographic and medical data and symptomatic scale in QLQ-C30 in which there were insignificant changes in parameters except for fatigue which appeared to be higher in divorced women; diarrhea was present in higher rates in patients aged ≤ 50 years, patients who had no children, as well as patients who had jobs. Significant changes were shown for patients with health problems in regard to symptoms like fatigue, pain and constipation. Diarrhea was mostly present in patients with present cycle. Pain and fatigue were mostly present in patients who did not undergo any surgeries. Most significant readings were high for symptoms in association with radiation in comparison with other treatments. Table 4 compares the variables of participants with BR 23 scales in which the functional scale for body image was higher for patients who aged > 50, premenopausal women and patients with health problems. Both the sexual functioning and sexual enjoyment appeared to be higher in females who had no health problems and who were married. Future perspectives were higher in women aged > 50 years; those who had no health problems or those who underwent no surgeries. It has been recognized that the systemic therapy side effects were higher in the case of women who had no health problems, present cycle, radiotherapy, and hormonal therapy. Breast symptoms were significant only for women with hormonal therapy, while arm symptoms were higher in females with present cycle and hormonal therapy. Upset by hair loss was significant for women aged ≤ 50 and in those with hormonal therapy.

Discussion

Determining the factors that deal with the QOL of women suffering from breast cancer can suggest many directions related to the activities that provide adequate rest for sick women.

This study shows high score for physical and role functioning scales with moderate global functioning. The emotional functioning was the lowest among the functional scales. Most symptomatic scales were low or moderate with higher readings related to financial difficulties, fatigue, and insomnia. While the lower distressing symptoms were associated with dyspnea and diarrhea. All these findings were similar to the Malaysian study that came up with a lower value for the emotional functioning and higher scores for financial difficulties, fatigue, and insomnia respectively (Ganesh et al., 2016). It is worth saying that the results reached by our study were similar to those reached by an Indian study regarding the emotional functioning being present with lower scales than the other functional scales (Safaee et al., 2008).

According to the results this study has shown, it was found that the financial status has played an important role in determining the patients’ quality of life, taking into account that suffering from chronic diseases, such as cancer, requires additional expenses that may affect the individuals’ income (Safaee et al., 2008; Pandey et al., 2005; Almutairi et al., 2016).

The functional scales for QLQ-BR23 questionnaire showed a better scale for body image and future perspectives, whereas the sexual enjoyment and sexual functioning have scored lower readings that cope with those reached by a Saudi (Imran et al., 2019) and a Bahraini study (Jassim and Whitford, 2013). Suggested causes of disturbed sexual function may include low self-esteem, sudden menopause, hair loss, vaginal dryness, and difficulty to understand the changes that take place in the patients’ bodies by their partners (Fobair et al., 2006; Mols et al., 2005). Better scores for sexual functioning and enjoyment were associated with married women (Jassim and Whitford, 2013). Most of the sampled unmarried women felt embarrassed to answer the questions about their sexual function due to the fact that our society adheres to conservative traditions of being an Islamic society.

The higher score of the symptomatic scale in QLQ-BR23 questionnaire was related to upset by hair loss that may represent the most distressing effect on body image. These scores were similar to the results obtained from Lemieux et al study (Lemieux, 2008). Many studies
suggested insignificant relationship between age and emotional and physical functioning among patients with breast cancer, while other studies suggested insignificant changes between age and global functioning (Avis et al., 2005; Lu et al., 2007; Gokgos et al., 2011). This study also found insignificant relationship between age and global and functional scales except for the cognitive functioning that showed a significant relationship with women aged ≤ 50 years. For instance, Iraqi younger women enjoy better ability to understand and deal with the disease than older women who have restricted information about cancer and treatment.

Perception of body image was lower in females aged > 50 years and upset by hair loss was higher in comparison with younger females, this is due to the fact that the external appearance is more important for young women than for older ones, and that the change that occurs as a result of hair loss or surgical interventions can negatively affect them and makes them feel frustrated and reluctant to participate in social activities.
|    | No operation | Lumpectomy | Mastectomy | Cancer surgery |
|----|--------------|------------|------------|----------------|
| 0.498 | 0.014 | 0.021 | 0.987 | 0.04 | 0.03 |
| 66.667±51.6398 | 22.935±27.7191 | 30.173±38.0714 | 7.540±17.9667 | 12.881±22.9579 | 46.442±39.2314 |
| 33.333±51.6398 | 30.173±38.0714 | 22.935±27.7191 | 12.881±22.9579 | 46.442±39.2314 | 22.985±27.9357 |
| 38.867±44.2886 | 27.750±27.2016 | 53.650±27.5644 | 13.206±24.9635 | 14.264±23.7659 | 21.688±29.8710 |
| 5.550±13.5947 | 8.763±18.4584 | 23.226±28.8698 | 9.250±19.1313 | 12.275±23.3375 | 44.417±40.3558 |
| 55.533±29.1954 | 24.056±31.9247 | 18.500±28.4910 | 13.586±25.1073 | 14.363±23.3375 | 26.650±35.9106 |

Table 4. Comparison of Sociodemographic and Medical Data of Participants to Symptomatic Scales in QLQ-C30

| Health problems | No | Yes | Widowed | Married | Divorced | Widowed |
|-----------------|----|-----|---------|---------|----------|---------|
| P-value         | 0.245 | 0.889 | 0.080 | 0.001 | 0.021 | 0.212 |
| Pain | 0.03 | 0.003 | 0.03 | 0.003 | 0.03 | 0.003 |
| Dyspnea | 0.343 | 0.164 | 0.245 | 0.164 | 0.343 | 0.164 |
| Nausea & vomiting | 0.406 | 0.142 | 0.261 | 0.142 | 0.406 | 0.142 |
| Pain | 0.084 | 0.084 | 0.084 | 0.084 | 0.084 | 0.084 |
| Dyspnea | 0.453 | 0.453 | 0.453 | 0.453 | 0.453 | 0.453 |

Assessing the Quality of Life in Breast Cancer Women
Characteristics

Fatigue
Nausea & vomiting
Pain
Dyspnea
Insomnia
Appetite loss
Constipation
Diarrhea
Financial

Types of treatments
Radiation
Chemotherapy
Herceptin
Hormonal therapy

Variables

Age
≤ 50
64.105±39.1061
34.830±38.8558
31.297±37.8286
37.814±35.0254
47.3914±22.02793
15.8643±27.52921
25.807±30.1566
94.143±22.3176
< 50
78.387±35.4979
24.404±38.6020
26.894±40.0124
58.747±38.4381
44.2921±20.56845
10.7364±21.67215
20.232±26.1785
82.888±33.7774
P-value
0.02
0.118
0.517
0.001
0.374
0.206
0.228
0.018

Age during investigation
≤ 50
63.988±39.3969
36.257±40.0935
32.960±39.5045
37.205±35.0215
47.7086±21.67912
14.0566±25.73723
24.079±28.6213
93.938±22.1191
< 50
79.097±34.8165
22.696±36.8145
24.989±38.0192
60.249±37.9478
43.8301±20.82632
12.4325±23.89037
21.825±28.0138
82.642±34.3011
P-value
0.014
0.041
0.24
0.001
0.266
0.69
0.627
0.017

Menstrual status
Present
74.608±36.2007
28.321±38.7988
28.471±38.6979
48.965±38.0650
44.2111±20.72547
11.9848±24.50416
20.143±25.9553
87.622±29.8208
Discontinued
47.389±42.2761
37.235±40.1889
33.318±40.8146
44.422±39.5993
57.6278±22.21517
22.6628±25.51832
43.800±35.8387
94.444±23.5372
P-value
0.004
37.325±10.1889
98.18±6.9238
47.967±4.3215
49.183±4.0215
57.6278±22.21517
22.6628±25.51832
43.800±35.8387
94.444±23.5372

Table 4. Continued

Table 5. Comparison of Variables of Participants to BR24 Scales
### Assessing the Quality of Life in Breast Cancer Women

#### Variables

**Functional scales in BR23**
- Body image
- Sexual functioning
- Sexual enjoyment
- Future perspective

**Symptomatic scales in BR24**
- Systemic therapy side effects
- Breast symptoms
- Arm symptoms
- Upset by hair loss

| Health Problem | Yes (%) | No (%) | p-value |
|---------------|--------|--------|---------|
| Arm problems  | 100.0  | 0.0    | 0.005   |
| breast problems | 100.0  | 0.0    | 0.005   |
| sympotms | 100.0  | 0.0    | 0.005   |

#### Type of surgery

| Type of surgery | Mastectomy | Lumpectomy | No operation |
|-----------------|------------|------------|-------------|
| 85.6% | 36.8% | 33.3% |

#### Types of treatment

| Type of treatment | Radiation | Chemotherapy | Herceptin | Hormonal therapy |
|-------------------|-----------|--------------|-----------|-----------------|
| 72.1% | 48.0% | 57.8% | 73.5% |

#### Material status

| Material status | Single | Married | Divorced | Widowed |
|----------------|--------|---------|----------|---------|
| 72.1% | 48.0% | 57.8% | 73.5% |

#### Types of clincial

| Clinical type | No operation | Radiation | Hemotherapy | Hormonal therapy |
|---------------|--------------|-----------|-------------|-----------------|
| 70.6% | 40.7% | 53.9% | 73.5% |

#### Table 5. Continued

| Type of surgery | Mastectomy | Lumpectomy | No operation |
|-----------------|------------|------------|-------------|
| 85.6% | 36.8% | 33.3% |

#### Health Problem

| Health Problem | Yes (%) | No (%) | p-value |
|---------------|--------|--------|---------|
| Arm problems  | 100.0  | 0.0    | 0.005   |
| breast problems | 100.0  | 0.0    | 0.005   |
| sympotms | 100.0  | 0.0    | 0.005   |
Our findings showed insignificant relationships between the functional scales and the marital status and whether patients had children or not. In regard to the symptomatic scales in QLQ-C30, fatigue was a distressing symptom among divorced women who showed insignificant changes. Many symptoms, such as fatigue and diarrhea, were high in the case of women who did not have children. As for the women with children, they suffered financial burdens that can be explained by their anxiety towards their children and their fear about the effect of the disease on their work and family expenses.

Having children is associated with positive effect on all functional aspects but the change is not significant; such positive result may be related to the fact that women with children may not feel worried about losing fertility. The results obtained according to this scale are similar to the ones reached by an Iranian study that showed significant changes regarding these issues (Kiadaliri et al., 2012).

This study showed that patients with other health problems, such as Hypertension, hyperlipidemia, DM and heart disease, experience lower quality of life, especially in the physical, role, and cognitive functioning. The patients also showed higher symptoms scales with regard to fatigue, pain, and constipation. These results may be similar to some findings reached by a Chinese study, where patients with chronic diseases and diabetes showed significant lower quality of life and higher symptoms than other patients (Tang et al., 2016).

A Dutch study also showed that utility scores were significantly worse for patients with comorbidities versus those without other health problems (Claessens et al., 2020). Regarding the types of treatment, patients treated with radiation showed significant improvement in global, physical, and role functioning, but worse symptoms concerning fatigue, nausea and vomiting, pain, dyspnea, appetite loss, and diarrhoea. Significant improvement was reported by Budischewski et al., (2008) in role functioning from the beginning of radiation to 6 weeks after radiation therapy, but the same study showed insignificant changes with global and physical functioning. A study conducted by Bansal et al., (2004) that evaluated patients with head and neck cancer at three time points, showed improvements in all functional scales after a one month of treatment, except for the role and cognitive functioning that remained high during treatment. Budischewski et al., (2008) and Bansal et al., (2004) have also found that the scores for symptoms scales have increased significantly during the course of treatment. No changes in the quality of life were noted in patients treated with chemotherapy (Adamowicz and Waliszewska, 2020). Also, insignificant changes were obtained in the case of patients who were receiving herceptin and hormonal therapy for functional scales, except for physical functioning. However, this does not mean that these treatments have no effect on the quality of life because different types of treatment cannot be assigned to patients randomly. Besides, sample sizes may be insufficient to draw definitive conclusions to enable the comparison between participants. In addition, there was some overlap between the treatment options (Finck et al., 2018). Regarding the symptoms scales, higher scores have associated with nausea and vomiting, appetite loss and diarrhoea. Nageeti et al., (2019) showed that worsening symptoms like fatigue and insomnia and upset because of hair loss were significantly related to women who were still receiving cancer therapy or on long-term monoclonal antibody therapy.

This study has faced certain limitations including small sample size and being restrictedly localized in a one region (oncology teaching hospital) due to the COVID-19 outbreak, and the difficulty in introducing some sex-related questions due to the conservative nature of an Islamic community.

In conclusion, healthcare professionals should consider the importance of the quality of life of patients with breast cancer in addition to the treatment provided to them in order to improve their health. The results this study has reached will help ease the obstacles faced in all the areas in which patients need additional support. Since there are many negative effects of the disease and its treatment on the patient’s quality of life, it has become necessary for the health care sector providers to focus on designing social and psychological interventions to support cancer patients throughout their illness and treatment. All these life-improving qualities can be realized by providing verbal encouragement, introducing patients to positive models, how to deal with pain, and providing these patients with moral and psychological support.

Author Contribution Statement

Abeer bdulhadi (idea and writing)- Rawaa Abdulzahraa (Data collection)- Noor Wafaa (statistics).

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Approval

The research was approved by scientific committee of clinical pharmacy in college of pharmacy.

Ethical issues

This study was approved by the ethical committee of Pharmacy College/ Mustansiriyah University /Baghdad /Iraq.

Availability of data

Data were obtained from oncology teaching hospital

Conflicts of interest

There are no conflicts of interest.

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