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Research Article

Impact of Bio- Socio demographic characteristics on the Quality of life of Breast Cancer Patients

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Abstract: Breast cancer and its treatment interfere significantly with different spheres of a woman's life and perturb functioning, and can have a deep impact on both short and long-term quality of life (QOL).***Aim of the study:*** To assess the impact of Bio-socio-demographic characteristics on the quality of life of women undergoing surgery as a treatment for breast cancer in Riyadh. ***Materials and Methods:*** A descriptive cross sectional design was utilized in this study. The study was conducted at the outpatient waiting area of the Oncology department of King Abdul-Aziz Medical City's. Also, was conducted at Zahra Association for breast cancer awarenesss in Riyadh. A non-probability convenient sampling technique was used in this study to recruit 120 Saudi Breast-Cancer patients undergone surgery as a treatment for breast cancer. ***Results:*** The results from the present study has strong correlation with the client's activity level with the functional scales (C30 and BR23).The study showcased the quality of life with socio-demographic characteristics among the Saudi perspective. Three quarters (75%) of women comes under the of age group has educated, married, enough family income settled with their own houses. The quality of life of women undergoing surgery as a treatment for breast cancer was highly correlated with the impact of Bio-socio-demographic characteristics on this study.

Keywords: Quality of life, Breast cancer, Surgery, Mastectomy, Bio-socio-demographic characteristics, Impact.

INTRODUCTION

Despite the recent progress in prevention, technology, and treatment, cancer is still being considered one of the maximum health problems of the 21st century. In KSA, breast cancer is one of the most common malignant cancers. Worldwide, approximately 34% of women suffer from breast cancer. In KSA, in 2016, approximately 45% of women had breast cancer as the annual report of the Research Center revealed.

The most used therapeutic modalities for breast cancer are surgery, radiotherapy (for loco regional treatment), hormone therapy and chemotherapy (for systemic treatment).The two popular surgical therapies are Mastectomy (MAS) (removal of the whole breast) and lumpectomy (removal of the tumor and some of the normal tissue that surrounds the breast) which is a possible treatment choice for most patients with early-stage (Chow, *et al.*, 2016; Etchegary, et al, 2017).

Breast cancer and its treatment interfere significantly with different spheres of a woman's life and perturb functioning, and can have a deep impact on both short and long-term quality of life (QOL). Body image is especial an important issue in young women: loss of a breast, surgical scarring, alopecia, weight changes, and lymphedema are all complications that can destroy QOL in general, and body image in women treated for breast cancer (Rosenberg, *et al.*, 2013; He , *et al.*, 2012).

Studies also have detected that lumpectomy and mastectomy procedures have various effects on body image. Mastectomy patients have worse body image than lumpectomy patients, including less satisfaction with breast appearance, texture, and general appearance and feeling of decreased attractiveness and shame after treatment (Romanek, McCaul, & Sandgren, 2005).

These results are visible in patients regardless of the time after treatment completion. For this reason, it is important to study different aspects of quality of life in such patients (Saggu, Zahid, Rehman, & Ansari, 2015). Early detection and rapid attention as an outcome of sufficient knowledge and awareness about

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breast cancer and screening process go a long way in decrease the associated high mortality rate (Olufemi, Omowumni, Ajoke, & Olufemi, 2017).

The quality of life is now considered an important because high prevalence of breast cancer both worldwide about 1.5 million and in KSA 45%. After extensive literature review, we found no study conducted to assess the quality of life in women with breast cancer after surgery in KSA or Riyadh.

There has been an interview whether mastectomy or lumpectomy outcomes in best quality of life, from January to August 2014, 614 MAS and 801 LUMP patients were accrued. The MAS patients reported a lower QOL in all groups, unless social well-being. There was however no statistical diversity in ESAS results for MAS and LUMP patients with non-metastatic breast cancer. The target of this study was to examine the sign burden and quality of life of both mastectomy and lumpectomy patients. Use general linear regression analysis, four Edmonton Symptom Assessment System (ESAS) scales were significantly unlike between patients with mastectomy and lumpectomy, namely pain, anxiety, drowsiness and appetite loss. Positive coefficients indicated that MAS patients had significantly higher (ESAS) scores: more symptoms of pain, anxiety, drowsiness and appetite loss. Both with analogous survival results (Chow, *et al.*, 2016).

The other study talks about age differences in treatment decision making for breast cancer. The most women in the study pick out lumpectomy, which is consistent with the treatment, recommended for patients with stage I breast cancer. However, younger women were significantly more probable than older women to select lumpectomy treatment. Older women show least likely to choose lumpectomy when they heard the mortality frame (Romanek, McCaul, & Sandgren, 2005).

The lack of pessimism may also play an significant role in breast cancer patients' positive mental health. A reducing in pessimism may be just as significant as an raise in optimism to maintain best mental health when diagnosed and/or therapy for breast cancer (Colby & Shifren, 2013).

Breast conserving therapy has become a possible treatment option for most patients with early-stage breast cancer. A study found that after controlling for pathology and axillary lymph nodes, patients' understanding to Quality of Life (QoL) is affected by their satisfaction with treatment and whether they received breast Conserving Therapy (BCT) or Mastectomy (MAS) (He, *et al.,* 2012).

Most breast cancer patients suffer from psychological distress due to reverse effects and lifelong bodily deformity. Breast cancer status is a separate contributing factor to the general psychopathological profile. Breast cancer patients should be given special counseling and care to relieve their psychological distress (XF, *et al.,* 2014).

Aim of the study

To assess the impact of Bio-socio-demographic characteristics on the quality of life of women undergoing surgery as a treatment for breast cancer in Riyadh.

MATERIALS AND METHODS

Study Design

A descriptive cross sectional design was utilized in this study.

Study Setting

The study was conducted at the outpatient waiting area of the Oncology department of King Abdul-Aziz Medical City's. Also, was conducted at Zahra Association for breast cancer awarenesss in Riyadh.

The Oncology Department at King Abdulaziz Medical City – Riyadh is dynamic and progressive entity in the field of comprehensive cancer care. It currently has five medical divisions: Adult Hematology, Adult Medical Oncology, Gynecology Oncology, Pediatric Hematology/Oncology, and Palliative Care. A division of Radiation Oncology is soon to be established, as part of the planned comprehensive cancer center. It also is establishing patient-focused, multidisciplinary supportive care services to meet the complex needs of patients and their families.

However, Zahra Association for breast cancer awareness in Riyadh is a non- governmental association, it's mission is to enable the clients to develop their business through innovative ideas, advice and quality of service. And to build a great place to work for, that develops and retains great people. Zahra Association was inaugurated in Riyadh in 2007 his is where the success story of Zahra started. Their awareness program for breast cancer started with an idea from Dr. Suad bin Mohammed bin Amer in early 2001, by organizing workshops and awareness seminars in a number of universities, schools and women's centers in Riyadh. Then the expansion of the awareness and development activities of the formation of the Committee of the National Program for Breast Cancer Awareness in 1424H / 2003.

Study Subjects

Sample Size

A non-probability convenient sampling technique was used in this study to recruit 120 Saudi Breast-Cancer patients undergone surgery as a treatment for breast cancer in Riyadh.

Sample size was calculated using the G-Power 3.0.3 (Faul, 1992) with power of 0.95, a medium effect size of 0.30, and alpha 0.05, Spearman's correlation test. A total sample of 120 patients was needed. And 130 were invited to participate in the study in order to compensate for the expected incomplete questionnaires (non-response rate was 7.7%)

Inclusion criteria

1. Saudi women.
2. Patient undergone breast surgery as a treatment for breast cancer.
3. Age between 20 and 75 years old.
4. Arabic language speaking.
5. Agree voluntarily to participate in the study.

Exclusion criteria

1. Patient planned for or taking radiotherapy or chemotherapy.
2. Patient with severe physical, cognitive or psychiatric illnesses.

Tools of the study

After extensive literature review, two tools used to collect data in this study:

***<u>Tool 1:</u>* Bio-socio-demographic structured interview schedule**. *This tool consists of 2 parts, developed by the researchers to collect data about the following information*:

***<u>Part A-</u>* Soci-demographic data**

It includes questions about; Age, educational level, occupation, family income, crowding index, place of residence.

***<u>Part B</u>*- Health data**

It includes questions about; medical and surgical history, health complaints and using of medications during the 12 month period before the time of the study, assessment of weight, height, type of current medication or therapy.

<u>Tool 2:</u> Quality of life interview schedule: A package of two self-reported questionnaires

Part A.

(QLQ-C30) was originally developed by the European Organization for Research and Treatment of Cancer (EORTC) to provide an instrument for the self-evaluation of health realted qulaity of life of patients with cancer (The Core Quality of Life Questionnaire of The European Organization for Research and Treatment of Cancer) (version 3.0) with 30 questions (Aaronson *et al.,* 1993). The questionnaire consists of five functional scales: Physical functioning; Role functioning; Emotional functioning Cognitive and Social functioning; and three scales of symptoms: pain, nausea/vomiting, Dyspnoea, Insomnia, Appetite loss, Constipation and Diarrhoea. According to EORTC QLQ-C30 Scoring Manual –"all scales and single-item measures are ranged score of 0-100. Higher scores in the rankings are the result of presenting a higher level of response. Such a high score with a functional scale represents a high/healthy level of functioning; a high score for the global health status/QOL represents a high quality of life-QOL, as well as a high score for a symptom scale/item that represents a high level of symptoms/problems (Fayers *et al.,* 2001). A higher score represents a higher ("better") level of functioning, or higher ("worse") level of symptoms (De Haes, Von Knipperg, & Neijt, 1990). Criteria for inclusion in the study were: persons aged from 20-75 years, members of associations and voluntary participation.

Part B.

Along with this questionnaire about quality of life another was used: a questionnaire about assessment of quality of life of those suffering from breast cancer QLQ-BR23 (Quality of Life Questionnaire Breast Cancer) with 23 questions (survey questionnaire added in attachment). Those 23 questions were divided into functional scales such as: body image, image of sexuality, future perspectives, symptoms of scale and one notion for assessment of systematic side-effects, symptoms of hand, chest and hair loss (Fayers *et al.,* 2001). Group for the quality of life of the European Organization for Research and Treatment of Cancer (EORTC Quality of Life Group), the questionnaire was translated into 55 languages, and their psychometric properties have been studied in different cultures (De Haes, Von Knipperg, & Neijt, 1990).

Data Management and Analysis Plan

Statistical Package for the Social Science was used for data entry and data analysis (SPSS, version 22). Descriptive statistical analysis (frequency count, percentage, mean, median and standard deviation) were used to describe the research sample and the items of the questionnaires. Spearman's correlation coefficient (r) was used to examine the relationship between the variables.

Data security and ethical considerations

Participants who met the inclusion criteria and voluntary agreed to participate in the study received the survey. Researchers were present at the time of data collection to answer any question. A cover letter that includes information about the purpose of the study, what is expected from the study participants, and that all responses are anonymous was distributed with the questionnaire. In addition, the cover letter will included contact information of the principal investigator for any further information and for answering the questions related to the study. The interested participants were asked to sign the consent sheet in which a statement made at the end of the cover letter says explicitly that their participation in the study was voluntarily and their decision was of their own choice without any direct or indirect influence. To assure privacy of collected data, no names or contact details were attached to the questionnaires. Data were coded and the completed questionnaires were kept in a locked cabinet till the end of the study and would be destroyed after study publication. A private computer with password was used for data analysis and management.

RESULTS

Table I. Socio-demographic characteristics of the study sample

Socio-demographic characteristics		**No.**	**%**
Age (yrs)	Min	30	
	Max	75	
Education	Middle school and below	50	41.7
	High school and above	70	58.3
Occupation	Manual	31	25.8
	Professional	2	1.7
	Retired or does not work	87	72.5
Marital status	Married	85	70.8
	Single/Divorced/Widow	35	29.2
Family income	Enough and save	18	15.0
	Enough	69	57.5
	Not enough	33	27.5
Family Housing	Owned	76	63.3
	Rent	44	36.7

Table I depicts the quality of life with Socio-demographic characteristics among the Saudi perspective. Almost three quarters (75%) of the women comes under the of age group has educated, married, enough family income settled with their own houses. Table 1shows that the majority women (70%) comes under the age group. While the education is concerned, number of women who completed their high school and above are more (58.3%) than half of those who finished middle school and below 50 (41.7%).At the same time, three quarters of the women do not work or retired 87 (72.5%) and around one quarter work manually 31(25.8%).With regard to marital status more than three quarters (70.8%) of the women were married whereas only one third of them (29.2%) were single/divorced/widow. There was a remarkable increase with owned housing and enough income 76(63.3%) 69(57.5%) respectively, on the other hand only one third were notified that those income not enough 33(27.5%) and two fifth were rented family housing 44(36.7%).

Table II. Clinical characteristics of the study sample

Clinical characteristics		**%**
Breast cancer stage before surgery	First/Second	70.9
	Third/Fourth	29.1
Tumor condition before surgery	Topical	79.2
	Mobile	14.2
	Unknown	6.7
Client's activity level	Fully active	24.2
	Restricted activity	48.3
	Self-care but not active	11.7
	Limited self-care/ or immobile	15.8
Time period between diagnosis and surgery	Less than 1 year	82.5
	More than 1 year	17.5
After surgery treatment	Radiation	48.3
	Chemotherapy	36.7
	Others/No treatment	15.0

After surgery medication	Yes	62.5
	No	37.5
Medication type (N=75)	Hormonal	68.0
	Others	32.0
Medical problem after surgery	Yes	69.2
	No	30.8
Type of after surgery medical problem type (N=83)	Cancer	15.7
	Others	84.3
Family history for chronic illness	Yes	53.3
	No	46.7
Family history of Cancer (N=64)	Yes	45.3
	No	54.7

Table II mentions the clinical characteristics of the study sample which is evident that more than three quarters of respondents who underwent surgery less than a year (82%) after the diagnosis were more than that of the women who had breast cancer initial stages, tumor condition before surgery, medication after surgery and medical problem after surgery. At the same time, first and second stages of cancer before the surgery shows almost three quarters (70.9%) when compared to the other stages. The topical condition of tumor before surgery showed nearly three quarters of 79.2% than the other conditions. Regarding the clients, those who had restricted activity had slightly less than half (48.3%) than that of the others which is equally shared by those who received radiation after the surgery as a treatment. On the contrary the clients who received hormonal medication showed maximum response(68%) than one quarter of others(32%).In spite of that, those involved in medication after surgery(62.5%),who had medical problems after surgery(69.2%) were more than half of the population. Family history of chronic illness and those without any family history of cancer showcased half of the respondents (53.3%) (54.7%) respectively.

Table III: Correlation between quality of life and socio-demographic characteristics of the study group

Item	**Functional scale**						**Symptom scale**									
	PF	**RF**	**EF**	**CF**	**SF**	**Total**	**FA**	**NV**	**PA**	**DY**	**SL**	**AP**	**CO**	**DI**	**FI**	**Total**
Age																
r	0.368**	0.122	0.010	0.048	0.100	0.118	0.027	-0.125	0.081	0.048	0.022	0.059	-0.042	-0.012	0.005	-0.025
Sig.	0.000	0.184	0.918	0.599	0.278	0.203	0.773	0.174	0.378	0.601	0.811	0.523	0.646	0.895	0.954	0.786
Education																
r	-0.326**	-0.178	0.128	0.106	0.072	0.004	-0.007	0.159	-0.003	-0.003	0.159	0.006	0.230*	-0.046	0.151	0.188*
Sig.	0.000	0.052	0.164	0.250	0.435	0.966	0.939	0.077	0.976	0.976	0.082	0.949	0.011	0.617	0.099	0.041
Occupation																
r	-0.105	-0.063	-0.087	-0.097	-0.039	-0.088	-0.083	-0.002	-0.025	-0.100	0.036	-0.121	0.139	-0.018	-0.131	-0.014
Sig.	0.253	0.493	0.344	0.291	0.674	0.341	0.370	0.985	0.788	0.279	0.694	0.187	0.130	0.847	0.153	0.877
Marital status																
r	0.422**	0.317**	0.048	0.224*	0.037	0.245.0.**	0.215*	-0.027	0.2830.**	0.208*	0.023*	0.150	0.050	-.075	0.082	-0.026
Sig.	0.000	0.000	0.606	0.014	0.690	007	0.019	0771	002	0.023	0.804	0.101	0.590	0.416	0.371	0.780

Family income																
r	0.311**	0.290**	0.096	-0.008	0.191*	0.321**	0.267**	0.183*	0.438**	0.221*	0.209*	0.225*	0.187*	-0.020	0.317**	0.153
Sig.	0.001	0.001	0.298	0.934	0.036	0.000	0.003	0.045	0.000	0.015	0.022	0.013	0.041	0.832	0.000	0.096
Family Housing																
r	0.078	0.008	0.112	0.095	0.229*	0.199**	0.230**	0.144	0.139	0.116	0.192*	0.086	0.277**	-0.087	0.133	0.360**
Sig.	0.400	0.935	0.222	0.301	0.012	0.030	0.012	0.117	0.131	0.207	0.036	0.352	0.002	0.348	0.146	0.000

*. Correlation is significant at the 0.05 level (2-tailed).

Functional scale: PF=physical functioning, RF=role functioning, EF=emotional functioning, CF=cognitive functioning, SF=social functioning. Symptom scale: FA=fatigue, NV=nausea & vomiting, PA=pain, DY=dyspnea, SL=insomnia, AP=appetite loss, CO=constipation, DI= diarrhea, FI=financial difficulties.

Table III indicates the correlation between quality of life of functional scale and symptom scale and socio-demographic characteristics (age, education, marital status, family income and family housing). The Correlation between quality of life (functional scale) and age. The moderated correlation at the level of 0.05 states that there was statistically significant difference between the age and physical functioning (p=0.000, r =0.368). The other components had no correlation and not statistically significant difference in Role functioning (p=0.184, r =0.122), Emotional functioning (p=0.918, r =0.010), Cognitive Functioning (p= 0.599, r = 0.48), Social functioning (p= 0.278, r = 0.100) and total (p= 0.203, r = 0.118). The Correlation between quality of life (symptom scale) and age. There is no correlation at the level between the age and Fatigue (p = 0.773, r = 0.027), Nausea & vomiting (p = 0.081, r = -0.125), Pain (p = 0.378, r = - 0.081), Dyspnoea (p = 0.601, r = 0.048), insomnia (p = 0.811, r = 0.022), Appetite loss (p = 0.523, r = 0.059), Constipation (p = 0.646, r = - 0.042), Diarrhea (p = 0.895, r = - 0.012), Financial difficulties (p = 0.954, r = - 0.005), and total (p = 0.786, r = - 0.025).

The Correlation between quality of life (functional scale) and education. There was a moderated correlation between the education and PF (p=0.000, r =0.326) and low correlation in RF (p=0.052, r =0.178). The other components had no correlation and not statistically significant difference in Emotional functioning, Cognitive Functioning, Social functioning and total. The Correlation between quality of life (symptom scale) and education. There was a low correlation at the level between the education and Constipation (p = 0.011, r = 0.230) and total score (p = 0.041, r = 0.188). The other components had no correlations Fatigue, Nausea & vomiting, Pain, Dyspnoea, insomnia, Appetite loss, Diarrhea, and Financial difficulties.

With regard to occupation, there was no correlation and there is no statistically significant difference in both the sub-scales measured. At the same time, correlation between QOL(functional scale) and marital status showed a moderate correlation at the level of 0.05. There was statistically significant difference between the sub-scales Physical functioning (PF) (p=0.000, r=0.422) and Role functioning(RF)(p=0.000,r=0.317), where the cognitive functioning(CF) showed that there is significant difference as there is low degree of correlation(r=0.224,p=0.014). Similarly, only two of the sub-scales from Symptom scale namely Fatigue (FA) and Dyspnea (DY) showed low correlations (p=0.019,r=0.215 &p=0.023,r=0.208) respectively.

As the family income is concerned, there was a moderate correlation between the Functional scale components PF(p=0.001,r=0.311), RF(p=0.001,r=0.290) ,SF(p=0.036,r=0.191) and the total which was moderately correlated(p=0.000,r=0.321). Besides that, the symptom scale components PA (p=0.000,r=0.438) and FI(p=0.000,r=0.317) showed a moderate correlation at the level of 0.05 and there was statistically significant difference. The other sub-scales like FA(p=0.003,r=0.267),NV(p=0.045,r=0.183),DY(p=0.015,r=0.221),SL(p=0.022,r=0.209),AP(p=0.013,r=0.225) , and CO(p=0.041,r=0.187) showed low correlation at the level of 0.05.The family housing with respect to functional scale was correlated at the low level between SF(p=0.012,r=0.229) and the total (p=0.03,r=0.199), whereas the symptom scale total was moderately correlated at the level of 0.05 that there was statistically significant difference p=0.000,r=0.360. Other areas like FA, SL, CO had very low correlation with regard to family housing.

Table IV: Correlation between clinical characteristics, Q30 and Q23

Clinical characteristics		**Q30**	**Q23**
Tumor stage	r	0.144	0.118
	Sig.	0.118	0.200
Tumor condition	r	0.273**	0.290**
	Sig.	0.003	0.001
Activity level	r	0.477**	0.282**
	Sig.	0.000	0.002
Time period between diagnosis and surgery	r	-0.273**	-0.203*
	Sig.	0.003	0.026
Type of treatment	r	0.243**	0.198*
	Sig.	0.008	0.031

Table IV presents the clinical characteristics when compared with Q30 and Q23 assessment scales, there is a strong correlation found with the client's activity level (r=0.477). Apart from that majority of the characteristics were statistically significant with tumour condition before surgery, time period between diagnosis and surgery which is also negative low correlation.

DISCUSSION

The study was done to assess the impact of Bio-socio-demographic characteristics on the quality of life of women undergoing surgery as a treatment for breast cancer in Riyadh, KSA. A descriptive cross sectional design was used for the study. The study was conducted at the outpatient waiting area of the Oncology department of King Abdul Aziz Medical City's. Also, the study was conducted at Zahra Association for Breast cancer awareness in Riyadh. A non-probability convenient sampling technique was used in this study to recruit 120 Saudi Breast-cancer patients undergone surgery as a treatment for Breast cancer in Riyadh. A standard/self-reported package of two self-reported questionnaires of which one with 30 questions (QLQ-C30) consists of five functional scales: Physical functioning; Role functioning; Emotional functioning; cognitive and social functioning; and three scales of symptoms: pain, nausea/vomiting, Dyspnoea, Insomnia, Appetite loss, constipation and Diarrhoea. Along with this questionnaire about QOL, an another questionnaire about assessment of quality of life of those suffering from Breast-Cancer and another (QLQ-BR23) with 23 questions which are divided into functional scales such as: Body image, image of sexuality, future perspectives, symptoms of scale and one notion for assessment of systematic side-effects, symptoms of hand, chest and hair loss.

The study showcased the quality of life with socio-demographic characteristics among the Saudi perspective. Three quarters (75%) of women comes under the of age group has educated, married, enough family income settled with their own houses. Simultaneously, more than three quarters of respondents who underwent surgery less than a year (82%) after the diagnosis were more than that of the women who had breast cancer stage, tumour condition before surgery, medication after surgery and medical problem after surgery.

Various socio-demographic factors were related to quality of life. For example, financial situation seems to be an important causal factor affecting perceived quality of life. The findings display higher scores for quality of life in the wealthy and lower scores in patients who belong to middle and lower class. A family's financial situation can be impacted significantly by the costs associated with treatment and long-lasting therapy, ultimately impacting the socioeconomic conditions. To provide proper social care and to point out other sources of financial support, it is essential to recognize the social and material states of patients and their families. Education is other essential factor in determining the quality of life. The findings suggest that educated patients place high value on their life and cope well within different spheres of life. Quality of life is also dependent on age. The reaction to illness is the result of individual resources, extra affection, and interpersonal contacts (Marta Muszalik *et al.*, 2016).

The result from the present study has strong correlation with the client's activity level with the functional scales (C30 and BR23). Along with it age, education, marital status, and family income in their physical functioning scale whereas no correlation with regard to their occupation status which was found supported by Patsou ED et.al.,(2018) that physical activity was positively associated with self-esteem and QoL. The study also mentioned significant results with Income, educational level, and stage of cancer related to QoL. In contrast, Munirah Fetaini *et al.*,(2020) with regard to the functional scales (C30 and BR23) showed no statistically significant differences between patients who underwent surgery.

But then, the findings of North house et al(1999)., showed no statistically significant correlations between socio-demographic data and the quality of life. It was found no statistically significant correlation between the dimensions and the type of cancer, age, marital status, educational level, occupation, the time passed from cancer diagnosis and the type of cancer treatment. The marital status in the current study showed a moderate correlation at the level of 0.05 and there was statistically significant difference between the sub-scales Physical functioning (PF) (p=0.000,r=0.422) and Role functioning. Fobair *et al.*,(2003) reported a statistical significance in the correlation between the assessment of patients' appearance and marital status, where the unmarried patients after Breast Cancer Therapy assessed their appearance as better to a higher degree than those who were married.

The Correlation between quality of life (symptom scale) and age had no correlation at the level between the age and Fatigue (p = 0.773, r = 0.027). Likewise, Mohaddesi's (2013) study found no such relationships. Besides, having no children had statistically significant correlations with the feeling of pain, fatigue and nausea. Similarly Shahsavari's (2015) study showed a significant correlation between the physical domain of quality of life and age, age at diagnosis, background diseases, religious beliefs, radiotherapy, mastectomy and chemotherapy, but the findings did not show any statistically significant relationship between income level and duration of diseases, number of children, residence, occupation and having social support, and any of the quality of life's dimensions. The results of Saleha *et al.*, (2010) and Blair *et al.*, (2016) showed that the patients older than 50 years old had a higher quality of life compared with the women younger than 50 years old. Also, the women with breast cancer had a higher quality of life.

Limitation

The study had some of the limitations that may have affected the results. For future studies, randomization would be an appropriate sampling methodology to prevent this limitation. Moreover the study can include more number of samples with more settings.

CONCLUSION

The quality of life of women undergoing surgery as a treatment for breast cancer was highly correlated with the impact of Bio-socio-demographic characteristics on this study. High significant correlations were detected between client's activity level of clinical characteristics, QOL with functioning scales and also with most of the bio-sociodemographic variables including: Age, education, marital status, family housing and family income but did not show significant correlation with occupation.

Conflict of interest

The authors report no actual or potential conflicts of interest.

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