ORIGINAL RESEARCH

Quality of Life Among Breast Cancer Patients Attending Hawassa University Comprehensive Specialized Hospital Cancer Treatment Center

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Background: Breast cancer affects the overall quality of life (QOL) among its survivors. Limited evidence is available about the QOL among cases. Therefore, this study was intended to assess the quality of life of breast cancer patients attending the cancer treatment center at Hawassa University Comprehensive Specialized Hospital, Hawassa, southern Ethiopia.
Methods: An institution-based cross-sectional study was conducted among breast cancer patients attending cancer treatment at the Hawassa University Comprehensive Specialized Hospital between April and June, 2019. All breast cancer patients attending treatment the center were included in the study by universal sampling. Data were collected using a structured questionnaire containing demographic data, patient clinical factors and Quality of Life Instrument (WHOQOL)-BREF version 3.0. The collected data were entered into EpiData software version 3.1 and analyzed using SPSS Version 20.0. Descriptive statistics were presented in tables.
Results: A total of 259 respondents with a mean age of (SD) 44.89 (12.56) participated in study. The mean score of overall global health scale was 75.3 (SD±17.1) with the mean health satisfaction was 12.43 (SD±3.98). The highest mean score was observed in environmental domain, 93.31 (SD±19.76), despite social domain being very low, 36.69 (SD±7.62). Most of the participants were highly satisfied with the health care service that was provided, with a mean score of 16.1 (SD±3.1). In contrast, the majority of study participants were disappointed with the need for any medical treatment, body appearance, luxurious activities, and sexual life, with mean scores of 8.93 (SD±3.68), 8.74 (SD±4.26), 9.1 (SD±4.22), and 8.1 (SD±4.14), respectively.
Conclusion: Breast cancer patients in southern Ethiopia suffered from poor social and psychological support that, in turn, highly affected their life value. Therefore, due attention should be given to enhance social and psychological support for breast cancer patients as a whole.
Keywords: breast cancer, quality of life, domains of QOL, Hawassa

Background

Globally, 17.2 million cancer cases and 8.9 million deaths occurred in 2016 with cases increased by 28% from 2006 to 2016. Breast cancer is the most common cancer among women leading to 1.7 million cases and it is the leading cause of cancer deaths among women with 535,000 deaths per year and 14.9 million disability-adjusted life-years (DALYs).[1] Many women who live in low-income and middle-income countries suffer from breast cancer, a largely preventable tragedy for hundreds of thousands of women and their families every year.[2]

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Studies identified that breast cancer is the leading problem (31.5% of all registered cancer cases) for women in Ethiopia because they often ignore indicators of its precursors and usually look for treatment only when symptoms occur.[3–5] Besides, they often access nonhospital primarily, individual physician/a private hospital setting, traditional and religious healers in the first instance and are resistant towards modern treatment, related to their knowledge of the disease and its treatment options, family pressure and preferences[6] for seeking complementary and alternative medicine.[7] Patients definitely reach a worse stage before presenting at the referral hospital.[6] Women with breast cancer face a variety of unique treatment and psychosocial issues at diagnosis and follow-up. Increasing attention to their unique issues may improve outcomes of care, quality of life (QOL) and survival for this vulnerable population. Breast cancer therefore, affects the overall quality of life as well as their survival.[8]

Health-related QOL is a multidimensional, subjective and dynamic concept with four main domains: physical, psychological, social, and environmental functioning.[9] Researchers measure it by identifying patient's perception about his/her treatment and illness that constitutes relevant and alternative management.[7,10] Hence, it had been very difficult to measure QOL of cancer survivors. Many patients need some sort of intervention for their cancer and found it difficult to accept the concept of QOL, but some patients would stop treatment that they opted for initially if it was affecting their QOL.[11–13] Ensuring good QOL of breast cancer patients is deemed as an important outcome of treatment and for making informed clinical and health policy decisions on the care of these patients.[14]

However, the Ethiopian Federal Minster of Health had taken up its accountability to ensure a better quality of life for people living with cancer.[15] As cancer incidence is expected to increase in the future, detailed knowledge on the burden of cancer or level of QOL is needed for allocation of resources for cancer prevention, early diagnosis, and curative and palliative care.[1] Management of breast cancer patients extended to regional hospitals in Ethiopia and there were considerable improvements in the overall approach to the disease by encouraging a positive approach, even in poor resource environments.[16] However, more information is needed on QOL of breast cancer patients to ascertain the sort of services that are required to improve their QOL; no specific study was conducted in our study area in this regard. Therefore this study was intended to identify the QOL among breast cancer patients in Hawassa University Comprehensive Specialized Hospital Cancer Treatment Center.

Method and Materials

The institutional-based cross-sectional study was conducted among breast cancer patients attending the cancer treatment center in Hawassa University Comprehensive Specialized Hospital (HUCSH) between April and June, 2019. HUCSH is one of the teaching and referral hospitals providing cancer treatment for the southern nation's nationalities and peoples of Ethiopia and is under Hawassa University. The hospital was established in 1998 GC and accommodates about 400 beds for inpatient service of which 316 are functional. A total of 120,949 cases attended this hospital during the 2018/19 financial year. Of these, 12,891 were admitted to an emergency ward. Nearly 1200 cases were registered in the oncology ward. All patients diagnosed with breast cancer and attending for treatment at the Hawassa University Comprehensive Specialized Hospital were included in the study. While those with previous neoplastic disease were excluded.

Sampling Procedure and Sample Size

All eligible patients who attended the cancer treatment center in the hospital during the study period were enrolled into the study. All breast cancer patients coming to the treatment center within the study period were included in this study. Currently 259 breast cancer patients were involved in the study following their management in this hospital.

Data Collection Tools and Procedure

Data was collected by using a structured questionnaire, containing demographic data, patient clinical factors that included socioeconomic characteristics:- age, sex marital status, place of residence, educational status, occupation, monthly income, gravidity and parity, clinical features of comorbidity, blood pressure, duration of illness after diagnosis, type management including surgeries and Quality of Life Assement Instrument (WHOQOL-BREF version 3.0) which has a 26-item ordinal scale that measures the QOL of a breast cancer patient by focusing on four domains (physical, psychological, social, and environmental).[17,18] The data collection was accomplished by four data collectors who have a first degree in nursing/midwifery. All the data collectors and the supervisor had been adequately trained in the purpose of

88

Breast Cancer: Targets and Therapy 2020:12

the study, patient recruitment process and data collection techniques in two days.

Data Management and Analysis

The collected data were entered into a computer on an ongoing basis using the software EpiData version 3.1. To minimize data entry errors, the data was double-entered by two independent data entry clerks. After all data are double-entered into EpiData, the two independent datasets were compared using the "validate duplicate files" facility of EpiData and discordant entries were corrected by comparing the entered data with the hard-copy questionnaire. The data was then exported to IBM SPSS version 20 (IBM Corporation, Armonk, NY, USA) for further processing and analysis. Before data analysis the data were explored for outliers and to see normal distribution. Means below the average value were classified as poor and those values greater than the mean were considered as good. In addition, data analysis consisted of descriptive statistics. Variable of the study including frequencies of demographic and clinical variables as well the QOL items were computed. One-sample t test was used to compare means and identify P-values. The finding of study presented by mean, median scores and SD of the QOL items.

The minimum and maximum values of four identified domains were calculated using the guide of WHOQOL-BREF. According the guideline, each domain includes a specified number of questions of the WHOQOL-BREF questionnaire. Physical health domain has seven; psychological domain incorporate has six; social domain has three and environmental domain includes eight questions. The first two questions have been taken as indicators of overall quality of QOL, so that, taken independently. It is stated that as the percent of a given domain increases, the quality/satisfaction rate also increases.[17]

Ethical Consideration

This study was conducted in accordance with the Declaration of Helsinki. It was approved and verbal informed consent was acceptable by the Institutional Review Board of the College of Medicine and Health Sciences of Hawassa University with official letter with reference number of IRB/027/11; and data collection tool for quality of life measurement adapted from WHO (WHOQOL-BREF) that was approved by ID: 337333.

Results

Sociodemographic Characteristics of Study Participants

A total of 259 survivors of breast cancer participated in the study. As provided in Table 1, the age of respondents ranged from 24 to 85 years with a mean (SD) of 44.89 (12.56). Of all participants, 96.5% were female; 74.9% were married; 52.1% had no formal education; 50.6% were housewives; 84.2% stayed active after the disease was identified until the study period; their average monthly income was 3868.78ETB ($96.72) with a range of 400–

Table 1 Sociodemographic Characteristics of Study Population

Sociodemographic Variables	Frequency N=259	Percent
Age		
<50	189	73
≥50	70	23
Sex		
Female	250	96.5
Male	9	3.5
Marital status		
Single	6	2.3
Married	194	74.9
Separated	7	2.7
Divorced	28	10.8
Widowed	24	9.3
Education		
No formal education	135	52.1
Elementary	31	12
Secondary	27	10.4
Tertiary	66	25.5
Employment before disease		
Housewife	131	50.6
Daily worker	7	2.7
Merchant	25	9.6
Employed	96	37.1
Employment after disease		
Actively employed	218	84.2
Homemaker/retired	41	15.8
Monthly income		
<1500ETB (<$37.5)	133	51.4
1500–4500ETB ($37.5- $112.5)	65	25.1
>4500ETB (>$112.5)	61	23.6
Residence		
Rural	115	44.4
Suburban	52	20.1
Urban	92	35.5

16000ETB ($10–400); 84.2% were actively engaged in their daily activities and nearly half (44.4%) of respondents reside in a rural community.

Frequency of Obstetric Variables and Chronic Diseases Among the Respondents

Table 2 illustrates the obstetric characteristics of respondents. Among participants 250 (96.5%) of the respondents were female, of which 4.4% reported that they never get pregnant. Besides, 15.8% stated they practiced abortion and 24.8% undergone abdominal surgery. However, the majority (45.2%) of participants had given birth to four or more children.

In addition comorbidity of participants is assessed. Among all participants, 61 (23.5%) had comorbidities of which hypertension accounts the majority (73.7%) of chronic diseases facing the participants (Table 3).

Clinical Characteristics of Study Population

More than half of the respondents (56%) reported that they were diagnosed within six months after the onset of symptoms of breast cancer. About 91.5% of respondents had sought treatment during the six months postdiagnosis of breast cancer. The majority of the patients (79.6%) were diagnosed at stages III and IV while only 0.4% patients

Table 2 Frequency of Obstetric Variables of Study Population

Obstetric Variables	Frequency	Percent
Gravidity		
0	11	4.4
1–3	105	42
4–7	99	39.6
>7	35	14
Parity		
0	13	5.2
<3	124	49.6
4–7	92	36.8
>7	21	8.4
Abortion		
No	218	84.2
≤2	30	15
≤3	2	0.8
Any obstetric surgery		
Yes	72	27.8
No	187	72.2

Table 3 Presence of Chronic Diseases Among Study Population

Chronic Disease	Frequency	Percent
Diabetic		
Present	11	4.2
Absent	248	95.8
Hypertension		
Present	45	17.4
Absent	214	82.6
Asthma		
Present	5	1.9
Absent	254	98.1

were diagnosed at stage 0. Among all participants 74.1% had undergone breast surgery of which nearly two-third of the patients (65.6%) underwent mastectomy and the remainder breast conserving surgery. The majority of the respondents (89.2%) had received chemotherapy and 29.5% had received radiography. Only 3.5% had previous history of breast cancer. Table 4 summarizes the clinical characteristics of the sample population.

Reasons for Delay Before Diagnosis Among Study Population

However, the duration of delays in diagnosis varies among participants for different reasons. As presented in Table 5, three-quarters of the participants (73%) reported that they delayed seeking diagnosis due to feeling no pain, two-thirds of the participants (62.7%) described that they were seeking cultural and/or religious treatment, even though they felt pain. Nearly two-fifths (60.6%) of respondents said that they did not seek medical diagnosis because of lack of money.

Quality of Life Among Respondents

Table 6 represents the mean score and percent of the QOL scales of WHOQOL-BREF Breast Cancer-specific-BR23 questionnaires among the respondents (20). Mean score of overall global health scale was 75.3 (SD±17.1) and their mean health satisfaction was estimated to be 12.43 (SD±3.98). Among four domains of WHOQOL-BREF the highest mean score was observed for environmental domain: 93.31 (SD±19.76), followed by physical health domain: 88.26 (SD±21.61) whereas, psychological domain: 68.2 (SD±19.07), and social domain: 36.69 (SD±7.62). Regarding individual questions, most of participants were highly satisfied by the health care service provided with a mean score of 16.1 (SD±3.1). In contrast, the majority of

Table 4 Clinical Characteristics of Study Population

Clinical Characteristics	Frequency	Percent
Delays before diagnosis		
<6 months	154	56
6–24 months	96	37.1
>24 months	18	6.9
Delays before treatment		
<6 months	237	91.5
6–24 months	21	8.1
>24 months	1	0.4
Stages at diagnosis		
Stage 0	1	0.4
Stage I	7	2.7
Stage II	45	17.4
Stage III	104	40.2
Stage IV	102	39.4
Type of breast surgery done (192)		
Breast conserving surgery	60	31.3
Mastectomy	126	65.6
Breast reconstructive surgery	6	3.1
Radiotherapy done (259)		
Yes	53	20.5
No	206	79.5
Chemotherapy		
Yes	231	89.2
No	28	10.8
Chemotherapy started (231)		
Before surgery	64	27.7
After surgery	167	72.3
Previous history of breast cancer		
Present	9	3.5
Absent	250	96.5
Duration of recurrence (9)		
<5 years	3	33.3
5–10 years	4	44.4
>10 years	2	22.2

Table 5 Reasons for Delay Before Diagnosis of Study Population

Reasons for Delay Before Diagnosis	Frequency	Percent
Painless symptoms		
Yes	189	73
No	70	27
Seeking cultural treatment		
Yes	96	37.1
No	163	62.9
Seeking religious treatment		
Yes	66	25.5
No	193	74.5
Lack of money		
Yes	102	39.4
No	157	60.6
Do not know where to go		
Yes	20	7.7
No	239	92.3
Other reasons		
Yes	2	0.8
No	257	99.2

satisfied with health care services that they received with a mean score of 16.1 (SD±3.1). However, most of them were disappointed with the need for any medical treatment, body appearance, luxurious activities and sex life. Diagnosis at late stages and delayed diagnosis were realized in most (45.6%) of the breast cancer patients,[19] which are lower than the findings of this study. However, in studies conducted in northern Ethiopia about 85% of cases were diagnosed at stages III and IV[20] consistent with our findings which reported that almost 80% of breast cancer patients diagnosed at stages III and IV, could in turn affect the treatment outcome. In this study only 6.9% of participants came to seek care after 24 months of symptoms but in one Malaysian study, 18.8% breast cancer patients were diagnosed after 24 months of onset of cancer symptoms.[19]

However, the duration of delays for diagnosis varies among participants because of different reasons. Seventy-three percent of the participants reported that they delayed seeking diagnosis due to feeling no pain which is in line with finding of study conducted on breast cancer in an Ethiopian population, Addis Ababa,[21] 62.7% described that they were seeking cultural and/or religious treatment, even though they felt pain. Nearly two-fifths of respondents said that they did not seek medical diagnosis due to

study participants were disappointed with their need for any medical treatment, feelings of their body appearance, enjoying luxurious activities and satisfaction with their sex life were predicted as very poor 8.93 (SD±3.68), 8.74 (SD±4.26), 9.1 (SD±4.22), and 8.1 (SD±4.14) accordingly, because these values were very low in relation to the mean value.

Discussion

In this study, mean age (SD) of participants was 44.89 (12.56). The study found that participants were highly

Table 6 Mean and Median Score of WHOQOL-BREF Cancer Breast Cancer-Specific-BR23 Questionnaires Among Study Population

Variables (N=259)	Min	Max	Mean	SD	P-value
Rate your quality of life	1	5	12.23	4.29	<0.00
Are you satisfied with your health	1	5	12.43	3.98	<0.00
Does pain prevent you from doing things	1	5	10.19	3.92	<0.00
Do you need any medical treatment	1	5	8.93	3.68	<0.00
Do you enjoy life	1	5	11.20	4.19	<0.00
Do you feel life is meaningful for you	1	5	12.77	4.06	<0.00
Are you able to concentrate	1	5	12.31	3.75	<0.00
Do you feel safe in daily life	1	5	12.11	3.72	<0.00
Is physical environment safe for you	1	5	11.71	3.67	<0.00
Do you have enough energy	1	5	11.63	3.97	<0.00
Do you accept your body appearance	1	5	8.74	4.26	<0.00
Do you have enough money	1	5	9.56	4.22	<0.00
Do you find available information	1	5	10.01	4.05	<0.00
Do you have time for leisure activities	1	5	9.10	3.50	<0.00
Are you able to get around	1	5	11.88	4.40	<0.00
Are you satisfied with sleep	1	5	12.74	4.12	<0.00
Are you satisfied with your ability to perform your daily living activities	1	5	12.20	3.80	<0.00
Are you satisfied with ability to performance	1	5	10.93	3.72	<0.00
Are you satisfied with your personality	1	5	11.54	3.66	<0.00
Are you satisfied with your personal relationship	1	5	13.67	3.44	<0.00
Are you satisfied with your sex life	1	5	8.05	4.14	<0.00
Are you satisfied with the support you get	1	5	14.98	2.70	<0.00
Are you satisfied with living place	1	5	14.78	2.74	<0.00
Are you satisfied with your access to health service	1	5	16.05	3.08	<0.00
Are you satisfied with your transport access	1	5	10.01	3.90	<0.00
Have you negative feelings	1	5	11.64	4.25	<0.00
Physical health domain	28	124	88.26	21.61	<0.00
Psychological domain	24	108	68.2	19.07	<0.00
Social domain	12	60	36.69	7.62	<0.00
Environmental domain	52	140	93.31	19.76	<0.00
Mean Global health quality of life	35	116	75.34	17.07	<0.00

Notes: Copyright ©2004 WHO. Adapted from WHO. The World Health Organization Quality of Life (WHOQOL)-BREF. Geneva: WHO; 2004:1–5.[17]

lack of money. The study conducted on breast cancer patient navigation in Ethiopia identified similar findings of delay seeking early treatment.[22] Likewise, another study done on experience of initial symptoms of breast cancer and triggers for action in Ethiopia, identified that many women face significant delays for more than a year from noticing symptoms to accessing care through health care systems and with limited resources that increased the chances that their disease progressed significantly before initiating care.[6]

Among all participants 74.1% underwent breast surgery. This finding is in line with the that of a study conducted in Saudi Arabia (74%).[23] However, this finding is higher than findings of some studies conducted in Malaysia (68.4%), Panama (65.3%), and Ethiopia (68% and 45.5%).[19,20,23-25] The most probable reasons for the variation of results could be the level of service, the duration and stage of breast cancer at which patients seek care. In this study, most dominating management of breast cancer is chemotherapy (89.2%) which is consistent with the results of study conducted in Northern Ethiopia (96%).[20] Alternatively, it is very high from the findings of studies conducted in Malaysia (72%), eastern China (47.4%), Saudi Arabia (43.8%), Sri Lanka (34.5%), Turkey (16.4%), and Iranian end-line finding (4.4%).[19,23,26–28] However, 29.5% of the patients had received radiotherapy which is lower than finding of a Saudi Arabian study.[23] But it is at a better level in comparison to findings ofstudies in Turkey and northern Ethiopia where the service is not available at all.[20,28] Only 3.5% had an earlier history of breast cancer. Previous history was excluded in Saudi Arabian and Australian studies.[9,23] In contrasta Malaysian study found that 23.9% had a previous history of breast cancer.[19] The probable reasons for the difference in results could the religious and cultural variation among breast cancer patients in different countries and regions.

The systemic literature review conducted in Africa, stated that many women delay seeking treatment for symptoms, with a large proportion of the diagnosed cancer until it becomes difficult for treatment because of lack of knowledge about cancer diagnosis and treatment, fear of surgery, preferences for alternative care, and challenges to receiving treatment.[29,30] In this study nearly 50% of participants delayed medical care for more than six months related to painless symptom they practiced, seeking cultural and/or religious treatment even though they felt pain and due to lack of money. The guide to cancer early

diagnosis clearly elaborated the above factors of delay in diagnosis and cancer treatment in general.[30]

This study focuses more on four domains and not on symptomatic assessment. As basic standard adopted from WHOQOL-BREF.[17,18] The overall global health scale was 75.3 (SD±17.1) with mean health satisfaction of 12.43 (SD ±3.98), that is in line with studies conducted in Sweden and Iran populations.[31,32] However, it is inconsistent with studies conducted in different countries.[19,25,26,28,34–37] The level of quality of care might vary among care providers and even among institutions where the care was provided. For instance, a study conducted in northern Ethiopia proved that there was no radiotherapy in its area during the study. This might be due to poor development of institutional capacity for management of cancer diseases in the country. Besides, there could be differences in standards of assessment tools used.

The current study revealed that among four domains of the WHOQOL-BREF the highest mean score was observed for environmental domain, followed by physical health domain. Whereas, the psychological and social domains were below the computed mean scale of global health quality of life. This may be due to the cultural view of the community and cancer stigma.[30] Conversely, a Sri Lankan study identified that environmental and social domains had higher mean scores than physical and psychological domains.[27] This could be one indication of variation of cultural, religious and social values, among different countries. Social environment is assumed vital to determine prognosis among breast cancer survivors as it is geared to alter basic physiological processes of patients. Low social environment in breast cancer patients shows increased risk for poor outcomes followed by delays in diagnosis. Inversely, exploitation of protective pathways activated through social engagement as novel therapeutic complements to contemporary treatments.[37] Thus, low mean score of social domain is indicative of poor support or isolation of patients that may in turn lead to psychological problems.[23] Since psychological domain is one of the predictors of quality of life,[38] it might again be correlated with many aspects of life[24] and psychological characteristics are associated with higher levels of health-related QOL impairment.[39]

Regarding individual questions, participants reported as they were very satisfied with the health service provided. This result is in agreement with the findings of studies conducted elsewhere.[27,40] However, their need for medical treatment, feelings of their body appearance,

enjoying luxurious activities and satisfaction with their sex life were predicted as very poor. This finding is in line with a Latvian study.[40]

Conclusion and Recommendation

Most prevalent domains reported in this study were environmental and physical domains. The social and psychological domains of study participants were very low in relation to reference value. Breast cancer patients in southern Ethiopia suffered from poor social and psychological support that in turn highly affected their life value and daily activities. Great attention should be given to enhance social and psychological support for breast cancer patients as a whole. Besides, a community-based longitudinal study is recommended to explore the reasons behind identified gaps.

Abbreviations

CMHS, College of Medicine and Health Science; ETB, Ethiopian birr; HUCSH, Hawassa University Comprehensive and Specialized Hospital; QOL, quality of life; WHOQOL-BREF, World Health Organization Quality of Life for breast cancer questionnaire.

Ethics Approval and Informed Consent

Ethical clearance was obtained from the Institutional Review Board at the College of Medicine and Health Sciences of Hawassa University. Permission was also be obtained from administrative bodies at HUCSH. Patients were enrolled into the study on a voluntary basis after a thorough explanation about the study. They were informed and we obtained verbal consent and interviewed during their visits to the cancer treatment center within 30 minutes. Any information obtained from the patients was kept anonymous.

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Author Contributions

All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; gave final

approval of the version to be published; and agree to be accountable for all aspects of the work.

Disclosure

All authors declare that there is no conflicts of interest in this work.

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