Quality of Life among Breast Cancer Women in a Tertiary Cancer Hospital in Nepal: A Descriptive Cross-sectional Study

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Abstract

Introduction: Breast cancer is the most commonly diagnosed cancer in women worldwide, and improved survival has elevated health-related quality of life as a critical patient-centered outcome. This study was conducted to determine the mean health-related quality of life among breast cancer patients receiving treatment at a tertiary care hospital in Nepal.

Methods: A descriptive cross-sectional study was conducted among 230 breast cancer patients attending the outpatient department of medical oncology, enrolled by non-probability convenience sampling. The Quality of Life Instrument; Breast Cancer Patient Version (QoL-BC), a validated 46-item tool across four domains, was used for data collection. Ethical clearance was obtained from the Institutional Review Committee. Point estimate at 95% Confidence Interval was calculated along with mean and standard deviation for continuous data, and frequency and percentages for binary data.

Results: The median age of participants was 50 years. Half of the respondents (50.0%) had fair quality of life while the remaining half (50.0%) had poor quality of life (median score: 226.5; possible score: 46–446). Spiritual well-being recorded the highest median percentage score (65.71%), while psychological well-being recorded the lowest (44.09%). Patients in stages III and IV demonstrated poorer quality of life (50.5%) compared to those in stages I and II (47.5%).

Conclusions: Half of the breast cancer patients had poor overall quality of life. Psychological well-being was the most severely impaired domain, while spiritual well-being was relatively preserved, suggesting an important role of spiritual belief in coping. Holistic care addressing all dimensions of quality of life is essential for this population.

Keywords: breast cancer, quality of life, women

Introduction

Breast cancer is the most commonly diagnosed cancer in women worldwide,[1] with approximately 2.3 million new cases annually, projected to rise by over 40% by 2040.[2-4] Over half of new cases now occur in low- and middle-income countries (LMICs), and improved survival has elevated health-related quality of life (HRQoL) as a critical patient-centered outcome.[3,5]

Despite treatment advances, patients face persistent physical, psychological, body-image, and socioeconomic burdens impairing HRQoL.[6,7] Clinical factors like surgery type, systemic therapy, and radiotherapy affect body image and functional capacity,[8,9] while sleep disturbance, cancer-related fatigue, and depression are key quality of life (QoL) determinants during active treatment.[10,11] Financial toxicity, high out-of-pocket costs, and employment disruption further compound HRQoL decline,[12,13] with impairments often persisting beyond treatment.[14,15] Visible bodily changes and psychological distress additionally disrupt daily functioning.[16,17] In Nepal, high direct care costs and limited health infrastructure render international evidence only partially applicable.[10]

This study was conducted to determine the mean

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HRQoL among breast cancer patients receiving treatment at a tertiary care hospital in Nepal.

Methods

A descriptive cross-sectional study was conducted to determine the quality of life (QoL) among breast cancer patients attending the outpatient department of medical oncology at a tertiary care hospital in Nepal. Participants were enrolled using a non-probability convenience sampling technique. Data were collected through face-to-face interviews from Bhadra 2082 to Magh 2082.

Ethical clearance was obtained from the Institutional Review Committee. Written informed consent was obtained from each participant prior to data collection, and confidentiality was maintained throughout the study period.

Patients diagnosed with breast cancer attending the outpatient medical oncology department who provided written informed consent were included. Those with a concurrent second primary malignancy or who were too ill to participate in an interview were excluded.

Sample size was calculated using the Cochran (1977) formula:[18]

$n = Z^2Pq / d^2$

Where:

- n = minimum sample size required
- $Z = 1.96$ (at 95% confidence level)
- $P = 0.272$ (estimated proportion based on prior study)[19]
- $q = 1 - P = 1 - 0.272 = 0.728$
- $d = 0.05$ (allowable error at 5%)

$$n = (1.96)^2 \times 0.272 \times 0.728 / (0.05)^2 = 3.8416 \times 0.198016 / 0.0025 = 0.7607 / 0.0025 = 304.28 \approx 304$$

Since the total number of breast cancer patients meeting eligibility criteria at the study site was 702,[20] finite population correction was applied:

$$n = n_0 / [1 + (n_0 - 1) / N] = 304 / [1 + (304 - 1) / 702] = 304 / [1 + 0.4316] = 304 / 1.4316 = 212.35 \approx 212$$

The minimum required sample size was 212. A total of 230 participants were enrolled, exceeding the minimum required sample size.

The data collection instrument comprised two parts: Part I included sociodemographic and disease-related questions; Part II used the Quality of Life Instrument–Breast Cancer Patient Version (QoL-BC).[20] The QoL-BC contained 46 items across four domains: physical well-being, psychological well-being, social well-being, and spiritual well-being. Items were scored on a 0–10 scale (0 = worst outcome; 10 = best outcome). Negatively worded items (items 1–7, 9, 10, 17–29, 31, 33–39, and 43) were reverse-scored; for example, a circled response of 3 was recorded as 7 (10 − 3 = 7). The tool has an overall test-retest reliability of 0.89.

Collected data were checked, reviewed, and organized for completeness, consistency, and accuracy prior to analysis. Data were analyzed using the Statistical Package for the Social Sciences version 21.0. Point estimate at 95% Confidence Interval was calculated along with mean and standard deviation for continuous data, and frequency and percentages for binary data.

Results:

Table 1 socio-demographic characteristics of the respondents

n=230

Variable	**Frequency**	**Percent**
Age group		
Young adult (21-39)	29	12.6
Middle adult (40-59)	157	68.3
Old >60	44	19.1
Median- 50 years, (Q3-Q1) (55-43), min-34, max-78		
Education		
Illiterate	54	23.5
Basic	66	28.7
Secondary	94	40.9
Bachelor and above	16	7.0
Occupation		
Employed	62	27.0
Unemployed	168	73.0
Marital status		
Married	221	96.1
unmarried	9	3.9
Family type		
Nuclear	4	1.7
Joint	226	98.3
Family history of breast cancer		
Yes	17	7.4
No	213	92.6
Personal history of breast cancer		
Yes	14	6.1
No	216	93.9
Caretaker		
Only Husband	102	44.3
Family member	110	47.8
Friends	18	7.8

Table 1 shows that majority of respondents (68.3%) were middle-aged women. Less than half of the respondents (40.9%) had completed secondary level education. In terms of occupation, most of the women (73.0%) were unemployed. Most of the respondents (96.1%) were married. All most all (98.3%) lived in joint family. Most of the participants (92.6%) and (93.9%) had no family history and personal history of breast cancer respectively. Less than half of the participants (47.8%) had family members as their care taker followed by only husband (44.3%).

Table 2: Comorbidities and treatment related information of the respondents

n=230

Hypertension	**Frequency**	**Percent**
Yes	29	12.6
No	201	87.4
Diabetes		
Yes	23	10.0
No	207	90.0
Hypothyroidism		
Yes	15	6.5
No	215	93.5
Depression		
Yes	13	5.7
No	217	94.3
Menopause		
Yes	32	13.9
No	198	86.1
Metastasis		
Yes	52	22.6
No	178	77.4
Chemo		
Yes	205	89.1
No	25	10.9
Radiation		
Yes	93	40.4
No	137	59.6
Surgery		
Yes	177	77.0
No	53	23.0
Stage of cancer		
Stage 1 and 2	40	17.39
Stage 3 and 4	190	82.60

Table 2 shows that in terms of comorbidities, 12.6% of the respondents had hypertension, 10.0% had diabetes, 6.5% had hypothyroidism and 5.7% had depression. In regards to menopause, 13.9% participants had reached menopause. Around one-fourth of the participants (22.6%) had metastasis. Regarding treatment modalities, the majority of the respondents (89.1%) had received chemotherapy followed by surgery (77.0%) and radiation (40.4%). Similarly, the majority of the respondents (82.60%) of the respondents had 3rd and 4th stages of cancer.

Table 3: Overall Quality of life of respondents

Level of QOL	Number	Percent
Fair ≥median	115	50.0
Poor<median	115	50.0
Total	**230**	**100**

Possible score:46-446, Median-226.5

Table 3 shows that half of the respondents (50.0%) had fair quality of life, while remaining half of the participants (50.0%) had poor quality of life.

Table 4: Respondents' quality of life on different domains

Subscale and Items	**Possible score**	**Median**	**Q3-Q1**	**Median %**
Physical well-being (8 items)	80	45.5	52-36	56.85
Psychological wellbeing (22)	220	97.0	107-85	44.09
Social well-being (9)	90	42.0	49-34	46.66
Spiritual well-being (7)	70	46	52-40	65.71

Table 4 shows that quality of life varied across subscales, with spiritual well-being scoring highest (65.7%) and psychological well-being lowest (44.09%).

Table5: Cross tabulation between Stage of Cancer and Quality of Life among Respondents

n=230

Stage of Cancer	**Quality of life**	
	Poor **N. (%)**	**Fair** **N. (%)**
Up to 2nd stage	19(47.5)	21(52.5)
Stage 3 and 4	96(50.5)	94 (49.5)

Table 5 shows that patients who had 3rd and 4th stages of breast cancer (50.5%) have a poorer quality of life than those with up to 2nd stages of breast cancer (47.5%).

Discussion

In the present study, the majority of respondents (68.3%) were middle-aged women with a median age of 50 years. This finding is consistent with a study by Pandey et al. in India, where the median age of breast cancer patients was 47 years.[21]

Regarding educational status, less than half of the participants (40.9%) had completed secondary education, while a significant proportion were illiterate (23.5%). A study by Kaur et al. in India similarly reported that 22.0% of respondents were illiterate.[22] Lower educational attainment may limit awareness, early detection, and health-seeking behavior.

Regarding occupational status, the majority of participants (73.0%) were unemployed, consistent with findings by Kaur et al. in India, where 85.0% of respondents were housewives.[22] Most respondents (96.1%) were married, nearly all (98.3%) resided in joint families, and less than half (47.8%) identified family members as their primary caregiver.

Regarding clinical characteristics, the prevalence of comorbidities such as hypertension (12.6%) and diabetes (10.0%) was noteworthy. A study by Asad et al. reported comorbidities in 36.2% of participants.[23] Comorbid conditions can worsen breast cancer treatment outcomes and negatively influence overall health and quality of life (QoL).

In terms of treatment modalities, the majority of participants (89.1%) received chemotherapy, followed by surgery (77.0%) and radiation (40.4%). This is consistent with findings from a study conducted in Iraq, where 53.0% of participants received both chemotherapy and radiotherapy.[24] Approximately one-fourth of respondents (22.6%) showed signs of metastasis, which aligns with findings by Asad et al. in India, where 18.9% of participants exhibited signs of metastasis.[23]

The psychological well-being domain recorded the lowest median score (44.09% of the possible score), indicating considerable emotional distress, encompassing fear of recurrence, anxiety, depression, and body image concerns among participants.[23,25] The median physical well-being score was 56.85%, reflecting moderate physical functioning. Breast cancer treatments such as chemotherapy and radiotherapy frequently cause pain and fatigue, which reduce physical well-being. The median social well-being score was 46.66%, indicating moderate impairment in social functioning, likely attributable to effects of breast cancer on body image, interpersonal relationships, and participation in social activities.

Patients in stages III and IV of breast cancer (50.5%) demonstrated poorer QoL than those in stages I and II (47.5%). This is supported by El Fakir et al. (2016), who reported that patients diagnosed at stages III and IV experienced significantly worse health-related quality of life due to increased symptom burden and reduced functional capacity.[26]

Across all QoL domains, spiritual well-being recorded the highest median score (65.71%), suggesting that spiritual faith plays a vital role in coping with illness in this population. This finding is corroborated by Sah et al., who conducted a study among cancer patients at the same tertiary care hospital in Nepal and reported that more than half of participants (59.2%) expressed spiritual or religious concerns, underscoring the prominence of this dimension within the Nepali cancer care context.[27]

This study had several limitations. The use of a non-probability convenience sampling technique limits the generalizability of findings to the broader population of breast cancer patients in Nepal. Being a single-center study conducted at one tertiary care hospital, the results may not be representative of patients receiving care at other institutions or at the community level, where access to treatment and support systems may differ substantially. The cross-sectional design precludes any assessment of how quality of life (QoL) changes over the course of treatment or during survivorship. Data were collected through face-to-face interviews, which, despite facilitating participation among less literate respondents, may have introduced social desirability bias. Furthermore, the absence of a comparison group limits the ability to contextualize findings relative to disease-free women or patients with other chronic conditions.

Conclusion

Based on the result of this study, it can be concluded that half of the respondents have fair overall quality of life. Among four domains of quality of life, spiritual wellbeing is slightly higher than other domains. It indicates that spiritual belief may an important role in improving the quality of life. As half of the respondents have poor quality of life, it highlights the importance of providing holistic care that address all needs of breast cancer patients in order to improve their overall quality of life.

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