

Quality of life and symptom burden among socioeconomically underprivileged breast cancer survivors in Bangladesh

Abstract

Background: Breast cancer survival rates have improved globally, yet post-treatment quality of life (QoL) remains underexplored in low-resource settings. This study assessed QoL and symptom burden among socioeconomically underprivileged breast cancer survivors in Sirajganj, Bangladesh.

Methods: A cross-sectional descriptive study was conducted from May 2023 to October 2024 at Shaheed M. Monsur Ali Medical College Hospital. One hundred histologically confirmed breast cancer patients completed validated Bangla versions of the EORTC QLQ-C30 and QLQ-BR23 questionnaires. Descriptive and multivariate analyses identified predictors of impaired QoL.

Results: The mean participant age was 42±8 years; 48% were stage II, 42% stage III. The mean functional domain scores were: physical (64%), emotional (56%), cognitive (52%), role (49%), and social (50%). Fatigue (66%), pain (63%), and financial difficulty (57%) were the most reported burdens. Regression analyses indicated that lower educational attainment ($p<0.01$), unemployment ($p<0.05$), and advanced disease stage ($p<0.05$) independently predicted poorer QoL.

Conclusion: Underprivileged women in rural Bangladesh experience substantial physical and psychosocial distress post-treatment. Integrating financial, psychological, and social support into survivorship care is crucial to achieving holistic cancer recovery.

Keywords: breast cancer, quality of life, survivorship, Bangladesh, EORTC QLQ-C30, underprivileged women

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Introduction

Breast cancer is the most common malignancy among women globally and remains a major cause of cancer-related mortality in low- and middle-income countries. In Bangladesh, late presentation, limited treatment access, financial hardship, and inadequate survivorship services contribute to persistent physical, psychological, social, and financial distress after treatment. Quality of life (QoL) therefore represents an important survivorship outcome beyond clinical remission.¹⁻⁷

Evidence from Bangladesh has largely focused on clinical outcomes, while rural and socioeconomically disadvantaged survivors remain underrepresented. This study aimed to assess health-related quality of life and symptom burden among socioeconomically underprivileged breast cancer survivors attending a district-level oncology service in Sirajganj, Bangladesh, and to identify sociodemographic and clinical factors independently associated with global quality of life.

In low- and middle-income countries, improving cancer survival without addressing the long-term physical, psychosocial, and financial consequences of treatment may leave important survivorship needs unmet. Quality-of-life assessment can therefore provide information relevant to health-system planning, resource allocation, rehabilitation, psychosocial support, and financial protection. Identifying modifiable socioeconomic and clinical factors associated with poorer quality of life may help inform feasible survivorship strategies within resource-constrained health systems.

Study design and setting

This cross-sectional descriptive analytical study was conducted in the Department of Oncology, Shaheed M. Monsur Ali Medical College Hospital, Sirajganj, Bangladesh, from May 2023 to October 2024. Eligible participants were women aged ≥ 18 years with histologically confirmed breast carcinoma who had completed primary treatment, were clinically disease-free, and provided written informed consent. Patients with recurrence/metastasis, serious comorbidity or cognitive impairment, or refusal to participate were excluded.

A single-proportion sample-size calculation using a 95% confidence level, 10% margin of error, and an assumed prevalence of 50% yielded 96.04 participants; after 5% non-response allowance, 100 participants were included using purposive sampling. Data were collected through interviewer-administered structured questionnaires and verified clinical information from medical records.

QoL was assessed using Bangla, back-translated versions of the EORTC QLQ-C30 and QLQ-BR23. The QLQ-C30 assesses physical, role, cognitive, emotional, and social functioning, symptom scales, and global health status/QoL; the QLQ-BR23 assesses breast-cancer-specific functional and symptom domains. Scores were linearly transformed to 0–100 according to the study protocol, with higher functional scores indicating better functioning and higher symptom scores indicating greater burden. Pilot testing in 10 participants yielded Cronbach's $\alpha=0.82$.¹⁻⁴

Data were analyzed using SPSS version 26.0. Categorical variables were summarized as frequencies and percentages and continuous

variables as means and standard deviations. Independent t-tests and ANOVA compared global QoL across groups; Pearson correlation was used for continuous relationships; and multivariable linear regression identified independent predictors. Statistical significance was defined as $p < 0.05$.

The study received Institutional Review Board approval from Shaheed M. Monsur Ali Medical College Hospital (Ref: SMMAMCH/ONC/2023/017), and written informed consent was obtained from all participants.

Results

All 100 participants completed both questionnaires. The mean age was 42.3 ± 8.4 years; 76% lived in rural areas, 86% were married, 38% had no formal education, 72% were housewives, and 48% reported monthly family income below BDT 10,000. At diagnosis, 10% had stage I, 48% stage II, and 42% stage III disease (Figure 1). Modified radical mastectomy was performed in 82%, chemotherapy was received by all participants, radiotherapy by 92%, and hormonal therapy by 60%. Forty-six percent had completed treatment 1–2 years before assessment.

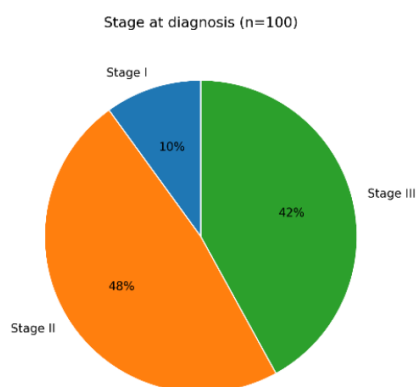


Figure 1 Stage at diagnosis.

Global QoL was 46.3 ± 13.8 . Physical functioning was 64.2 ± 14.3 , role functioning 49.6 ± 16.7 , emotional functioning 55.8 ± 18.1 , cognitive functioning 51.9 ± 15.9 , and social functioning 49.7 ± 17.2 (Figure 2). Fatigue, pain, insomnia, appetite loss, constipation, nausea/vomiting, and financial difficulty had mean scores of 65.8, 61.3, 54.4, 47.6, 38.7, 29.2, and 68.9, respectively (Figure 3). At least moderate symptoms were reported for fatigue by 66%, pain by 63%, insomnia by 50%, appetite loss by 42%, constipation by 33%, nausea/vomiting by 22%, and financial difficulty by 57%.

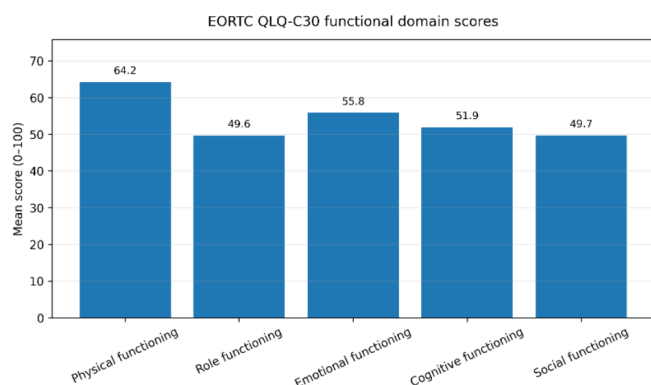


Figure 2 EORTC QLQ-C30 functional domains.

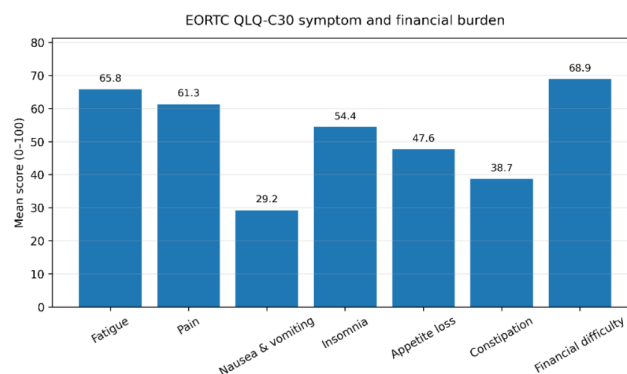


Figure 3 EORTC QLQ-C30 symptom and financial burden.

QLQ-BR23 scores were 53.7 ± 18.4 for body image, 41.6 ± 16.3 for sexual functioning, 39.4 ± 15.7 for sexual enjoyment, 57.1 ± 17.9 for systemic therapy side effects, 44.2 ± 14.2 for breast symptoms, and 49.1 ± 15.8 for arm symptoms (Figure 4).

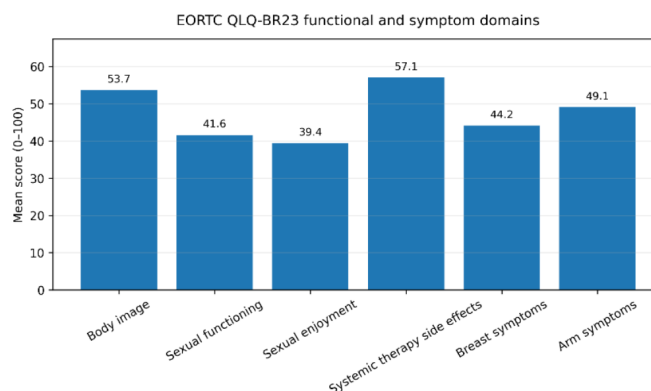


Figure 4 EORTC QLQ-BR23 domains.

Global QoL differed significantly by education ($p = 0.004$), occupation/employment ($p = 0.016$), and disease stage ($p = 0.022$), but not age group ($p = 0.43$) or residence ($p = 0.18$). Mean QoL was 39.9 ± 12.6 among participants with no formal education and 52.7 ± 12.0 among those with secondary education or higher; 44.2 ± 13.7 among housewives and 51.8 ± 13.2 among working participants; and 53.0 ± 11.4 , 47.8 ± 12.6 , and 42.6 ± 14.3 for stage I, II, and III disease, respectively.

Multivariable regression identified education ($\beta = 0.32$, 95% CI 0.11–0.54; $p = 0.004$), employment ($\beta = 0.28$, 95% CI 0.05–0.51; $p = 0.016$), and stage III disease versus stage I–II ($\beta = -0.25$, 95% CI -0.46 to -0.04; $p = 0.022$) as independent predictors. Age and residence were not significant. Model R^2 was 0.31 ($p < 0.001$; adjusted $R^2 = 0.287$) (Figure 5).

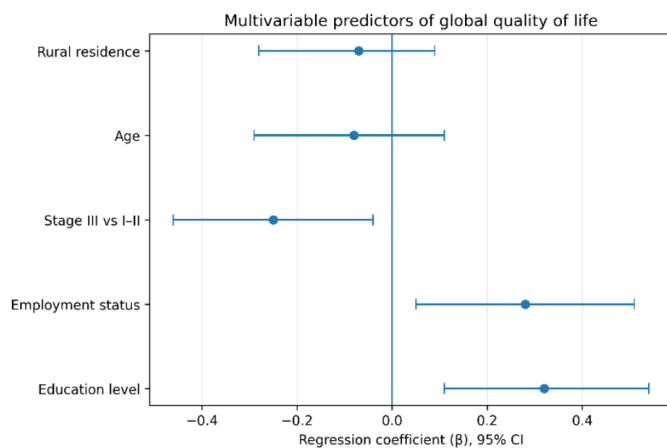


Figure 5 Regression coefficients.

Discussion

In this cohort of underprivileged breast cancer survivors attending a district-level oncology service in Sirajganj, mean global QoL was 46.3 ± 13.8 . Physical functioning was comparatively preserved, whereas role and social functioning were lower. The findings are consistent with the thesis literature review describing QoL after breast cancer treatment as multidimensional and influenced by clinical, socioeconomic, and cultural factors.⁸⁻¹⁶

Fatigue and pain were prominent burdens, while financial difficulty had the highest mean burden score. Breast-specific assessment also identified low sexual functioning and enjoyment and moderate body-image disturbance, systemic therapy side effects, breast symptoms, and arm symptoms. These findings support a survivorship perspective that extends beyond physical recovery.⁸⁻¹⁶

Education, employment, and disease stage remained significantly associated with QoL after multivariable adjustment. The model explained 31% of the variance in global QoL. These associations are consistent with the thesis literature review reporting relationships between socioeconomic conditions, disease characteristics, and QoL in breast cancer survivorship.^{9,11,13,14}

Interpretation is limited by the cross-sectional design, purposive sampling, self-reported measures, and single-center setting. Importantly, the thesis appendix explicitly describes its dataset summary as simulated and anonymized to reflect population characteristics; therefore, no independent raw-data verification should be inferred from the appendix.

Conclusion

Among underprivileged breast cancer survivors assessed at Shaheed M. Monsur Ali Medical College Hospital (SMMAMCH), Sirajganj, global QoL was impaired and substantial symptom, financial, psychosocial, social, and sexual burdens were documented. Education, employment, and disease stage were independent predictors of global QoL. The thesis supports incorporating QoL assessment, psychosocial support, rehabilitation, and financial support into survivorship care, while recognizing the need for longitudinal and multicenter research.

Acknowledgements

None.

Conflict of interest

The authors declare that there are no conflicts of interest.

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