

Original Research Article

Experience and Quality of Life Following Breast Cancer Surgery at Rajshahi Medical College Hospital, Bangladesh

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Received: 09.04.2021

Accepted: 22.05.2021

Published: 27.05.2021

Journal homepage:<https://www.easpublisher.com>**Quick Response Code**

Abstract: Background: Bangladesh is facing a high burden of breast cancer. Late presentation with advance stage is the common feature of breast cancer patient in Bangladesh, when it is extremely difficult to manage this deadly disease. It is easily understandable that the incidence and mortality of breast cancer is growing at a fast rate. But as we do not have any cancer registry along with relevant data it is difficult to say the exact situation in Bangladesh the rate of breast cancer occurrence is estimated to be 22.5 per 100000 females of all ages; In case of Bangladeshi women, aged between 15-44 years, breast cancer has the highest prevalence 19.3 per 100000 compared to any other type of cancer. However, this figure is far more less than the real figure, simply because very few cases is diagnosed and reported. Many patients die with unnoticed cancer. There may be many reasons behind this, but studies in many other countries show that poor or no knowledge, ignorance, lack of awareness and misbelieve is one of the leading causes of this fastest silent killer. **Methods:** This prospective quasi-experimental study was conducted in the Department of Surgery, Rajshahi Medical College Hospital, Bangladesh from August 2014 to July 2019. Samples were collected in non-randomized basis with stage IB–IIIB breast cancer in female (n=1156) with the age group of 35-65 years and their mean age was 48.16 years. Diagnosis was performed with history, clinical examinations and investigations. Types of surgery were depending upon the TNM staging of the disease and the mean post-operative hospital stay was 4 days. The follow up time was 5 years and the mean follow up time 4.61 months. Outcomes variables are satisfaction (Surgical site pain, Post radiation scar pain, Local relapse of disease, Nodal metastasis, Distance metastasis and response to chemo-radiation), communications and the quality of life (Systemic therapy side effects, fatigue, sleep disturbance, and arm symptoms). Questionnaire was made according to the treatment protocol of breast Cancer. The study was performed for the research purpose of experience and quality of life following breast cancer surgery, **Results:** Studies from experience generally noted that, with the wide local excision, lobectomy & mastectomy with or without axillary dissection. Advanced surgical treatment generally had an effect on long-term outcomes. In contrast, the processes of care, such as choosing therapy, good patient-physician communication, participants had completed primary treatment (surgery and radiation and/or chemotherapy. Mean time from initial surgical treatment to completion of the questionnaire was 24 months Mean number of symptoms reported, with the most common symptom scales being Surgical site pain (10 %), Post radiation scar pain (10%), Local relapse of disease (2%), Nodal metastasis (30%), Distance metastasis (2%), No response (HER-2 Positive) to chemo-radiation (0.5%), The systemic therapy evokes its side effects (100%), fatigue (22%), Sleep disturbance (18%), And arm symptoms (8%). Younger age and poorer health status at diagnosis were associated with worse symptoms. Fatigue had the greatest impact on QOL, with significant differences between those with high and low fatigue across 7 QOL dimensions. Socio demographic, prior health status, clinical, And treatment/diagnostic factors explained only 9%–27% of the variance in QOL outcomes. Adding symptom

experience increased the variance explained to 18%–60%. **Conclusions:** Despite the above limitations, it is recommended that Bangladeshi peoples need up-dated information about breast cancer in order to improve their practice. More attention to the reduction and management of disease and treatment-related symptoms could improve QOL among women with breast cancer.

Keywords: Breast Cancer, Treatment, Surgery, Rajshahi Medical College Hospital.

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INTRODUCTION

Cancer is a group of diseases characterized by abnormal proliferation of cells, usually in a random, disorderly manner. Through the uncontrolled growth of these malignant cell's tumours are usually formed. These crowd out healthy tissue and eventually interfere with the vital functioning of affected organs. Malignant cells tend to spread from their site of origin by travelling through the blood stream or lymphatic system (American Cancer Society, 2012) [1-3], Breast cancer in women is a major health burden both in developed and developing countries. It is the second leading cause of death in women worldwide as well as in Bangladesh. Recent global cancer statistics shows that global incidence is rising at a faster rate especially in developing countries like Bangladesh. But still breast cancer is not on the top of the priority list for the policy maker's donors and health professionals. But the prevailing situation can be more devastated if early attention is not given [4,5], To concentrate on this fast-growing health problem, we need to know the overall situation concerning incidence, prevalence, risk group, diagnostic and treatment status survival and mortality rate first to make a comprehensive policy to cope with breast cancer situation in Bangladesh (Mia, 2007).

METHODS

For the purposes of this review, quality of life outcomes associated with breast cancer care are defined as the net effects of the health care structure and process on the health and well-being of women diagnosed with this disease. As such, quality of life is a multidimensional construct encompassing clinical, financial, functional, and psychosocial domains affected by treatment and its interactions with baseline co morbidity and circumstances (Figure 1) We use the term quality of life to be synonymous with the expression 'health-related quality of life'. To identify relevant articles for this review, we conducted a search of published. To capture literature encompassing a broad set of domains that might be affected by breast cancer or its treatments, we included the following terms in our searches: "breast neoplasm's" and "aged" or "elderly" with "quality of life," "pain," "fatigue," "mental health," "adjustment," "body image," "satisfaction," "sexuality," "social support," "function," "communication," "cognition," or "economics." We also examined the bibliographies of retrieved articles for

additional relevant citations; we only included sentinel articles pertinent to older women. We confined our review to original reports of randomized trials and cohort studies to examine data by age group and domain of quality of life. We excluded methodological articles, reviews, case series, and case reports, and non-English language articles. Articles were reviewed for inclusion of older women and data were abstracted on post treatment quality of life or other outcomes for this age group. It should be noted that most observational studies to date have only examined short-term side effects and symptoms of treatment and future research is need on long-term side effects of treatments in older breast cancer survivors. We confine citations of data to results that were statistically significant, highlighting findings that are controlled for key confounding variables, such as baseline functioning. We present a qualitative summary of these results. We did not attempt to conduct a meta-analysis of results since each study was conducted using varying time horizons, used different measurement tools and definitions of quality of life domains, included heterogeneous populations with a variety of tumor stages, and was conducted in different countries and cultural perspectives. Results Overall, few randomized trials or cohort studies measured quality of life after treatment and focused exclusively on older women. With rare exceptions, studies involving breast cancer outcomes were conducted in non-minority populations.

RESULTS

Studies involving breast cancer outcomes were conducted in non-minority populations. Processes of Care and Satisfaction with breast cancer treatment is primarily a function of the process of care, and not the actual treatment received. A summary of these processes of care issues is found in Table 1. As one example, women who felt their surgeons initiated a conversation about treatment concerns reported higher satisfaction six months post-treatment than women who felt their surgeons communicated less, controlling for treatment and other factors. Of note, surgeons who received additional training in surgical oncology have been noted by their older patients to bring up a discussion about patient concerns 60% more often (95% CI 1.02–2.56) than surgeons without specialty training. Older patients may prefer and rely on physician-initiated quality of life discussions and may prefer that

Stages and survival of Breast cancer

Stages are the process physician use to assess the size and location of a patient’s cancer. This information is required for the determining the optimal form of treatment. Like other cancer, breast cancer also stages from 0 to stage IV. Breast cancer is divided into 0 to stage IV according to the size and nature of spread (Metastasis) (<http://imaginis.com/breasthealth>, 2007) [6, 7],

Stage 0 (Carcinoma in Situ)

Carcinoma in situ is very early breast cancer. In this stage cancer has not invaded into the normal breast tissue and is contained in either the breast duct (ductal carcinoma in situ) or the breast lobule (lobular carcinoma in situ). By definition, this type of cancer is not invasive and is not able to travel to the lymph nodes or other parts of the body.

Stage 1: In this stage the tumour size is not more than 2 cm in diameter and has not spread to distant parts of the body.

Stage II: In this stage the tumour is larger than the stage I that means 2-5 cm in diameter. Like stage I it indicates that it has not spread to distant parts of the body but it may or may not be spread to axillaries lymph nodes.

Stage II (a) Tumour size is >5 cm in diameter but has not spread to axillary lymph nodes

Stage II (b) Tumour size is <2cm in diameter but has spread to less than 4 axillary lymph nodes.

Stage III (Locally advance cancer): in this stage cancer spread to axillary lymph nodes.

Stage III (a) Tumour size is >5cm and spread to axillary lymph nodes.

Stage III (b) tumour size is <2cm in diameter but the cancer has spread to axillary lymph nodes above the collar bones.

Stage IV: Tumour spread distant parts of the body like bones, liver an kidney [Source of information about stage is taken from US national Cancer Institute (<http://imaginis.com/breasthealth>, 2007).

The 5 years survival rate for breast cancer is calculated based on average. Each patient’s individual tumours characteristics, state of health, genetics background etc impact the survival. Some other factors like level of stress, immune functions, will to alive and other immeasurable factors play a significant role in a patient survival (<http://www.cancer.gov/cancertopics>, 2007) [8,9], Breast cancer survival also decline after 5 years. Survival even after 10 years depends on stages. Early stage breast cancer is associated with high survival rates than late stage cancer [10,11], (<http://www.cancer.gov/cancertopics>, 2007).

Preferences for Treatment: In the studies conducted to date, older patients are able to state their preferences, and generally want to be fully informed about their treatment options. Preferences are important considerations in treatment choices. For example, in two studies, older breast cancer patients were willing to select a risky treatment option (chemotherapy with major toxicity) for a small increase in life expectancy (e.g., 7 months) In another study, 80% of older women indicated that chemotherapy would be worthwhile if they could live an additional two years, but others have found that women in this age group would accept aggressive chemotherapy for as little as a 1% increase in survival. Overall, these results suggest that older women are willing to trade-off short-term physical well-being, such as occurs with chemotherapy, for increased survival.

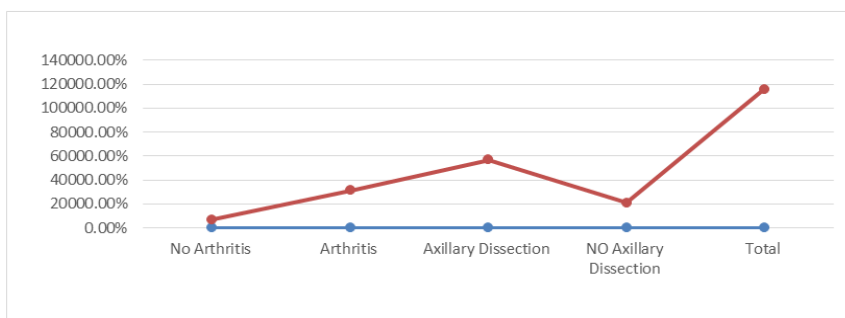


Fig-3: Percent of older women reporting arm problems after axillary dissection: Relationship to presence of arthritis

Physical Function and Pain

While many have hypothesized that breast conservation will result in better post-treatment functioning than mastectomy, in reviewing the literature we found that adjusted physical function scores were not significantly different by treatment group, but rather, largely related to women’s general pre-morbid level of illness. The physical function outcome of treatment relates to use of axillary node dissection. In

one series, the cumulative risk of having arm problems two years post-treatment were three times higher (95% CI 1.94–4.67) among women who underwent axillary surgery compared to women without axillary surgery, controlling for covariates. Arm problems after axillary dissection were reported by up to 60% of women and had a consistent negative impact on long-term functional abilities. Of note, one study reported that the effects of having axillary dissection and arthritis were

multiplicative two years post-surgery. The expected benefit of having fewer concerns about recurrence after axillary dissection has not been demonstrated. Using a decision analytic approach, Parmigiana and colleagues also noted that axillary dissection had an overall negative impact on the quality-adjusted survival of 60-year-old women. Other researchers have noted that long-term decrements in physical function can affect activities of daily living that are critical to an older woman's ability to live independently. Thus, in a

Medicare population, the risks of axillary surgery may outweigh any benefits in guiding adjuvant therapy or of more detailed knowledge of prognosis. Sentinel node biopsy has been shown to have lower morbidity than axillary dissection, and may be particularly useful in older patients, especially those with arthritis or other pre-existing mobility limitations. Final conclusions about the value of axillary dissection will rest on the accuracy of sentinel biopsy and women's preferences.

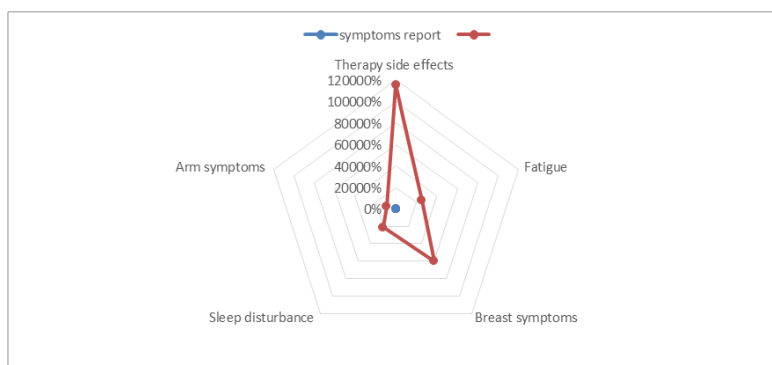


Fig-4: Breast cancer shownumber of symptoms report

REVIEW OF LITERATURE

The thesis about breast cancer show that a person's response to their own health problems is directly related to their perceptions about the actual threat to their health and about whether or not any action they take regarding such problems will be worth the effort and will benefit them (Becker, 1978) [13,14]. In the 1950s, Hochbaum, Leventhal, Kelege, and Rosenstock introduced four concepts pertaining to health related behaviour: (1) "susceptibility" assesses a person's perceived personal exposure to a health condition; (2) "seriousness" measures how much a person believes their health issue will truly cause them personal harm; (3) "benefits" pertains to a person's conviction as to whether the treatment they undertake for their health problem will actually help them; and (4) "barriers" assesses the patient's perceived negative ideas or beliefs which might prevent them from seeking or following through on treatment to improve their health issue (Rosenstock et al., 1988) [15,16],

A woman's risk of breast cancer is doubled if a mother or sister is diagnosed with breast cancer. Most women with a family history, approximately 10% of all female breast cancer are attributed to a genetic mutation (Pherson et al., 2000) [17,18]. However, will not go on to develop breast cancer. Women with a genetic mutation are more likely to have a strong family history of breast cancer and to be diagnosed at a younger age than the general population (Pherson et al., 2000) [19,20]. Some studies found it was not the mastectomy that altered a woman's body image, but the adjuvant treatment that she required, in particular chemotherapy and the resultant hair loss experienced (Richer and Ezer, 2002) [21,22].

Most cases (approximately 80%) of breast cancer occur in women over the age of fifty years. Breast cancer is the commonest cancer in women in the UK, accounting for 31% of all cancers in women. In 2008 47,693 women were diagnosed with breast cancer in the UK (Cancer Research UK, 2010) [23, 24].

DATA COLLECTION

Patients have been selected from those attending in Rajshahi Medical College and Hospital. After selecting patients, a written informed consent has been taken from each patient before his / her participation in the study from August 2014 to July 2019. Then History taking, Clinical examination and necessary investigations have been done. Findings of observation has been recorded in prescribed data collection among 1156 patient.

Symptoms

Symptoms, such as hot flashes on tamoxifen treatment, have been noted to decrease general quality of life in older women, either directly, or through associated disturbed sleep and fatigue. Fatigue from treatment, especially in association with pain or other symptoms, can increase anxiety and depression. In a cross-sectional study of 1156 patients, pain, fatigue, and insomnia were significantly related to losses in physical functioning, even after controlling for cancer treatment and co morbid conditions. In a one-year follow-up of the same cohort, chemotherapy was related to reports of fatigue in the short-term, but not at one-year post-treatment. A recent randomized controlled trial of exercise training. Suggests that overall quality of life, as measured by the FACT-B scale, increases significantly in the postmenopausal breast cancer survivors who

exercise regularly. Reductions in fatigue and improvements in mood were also reported, indicating

that further testing of exercise interventions in older breast cancer survivors is warranted.

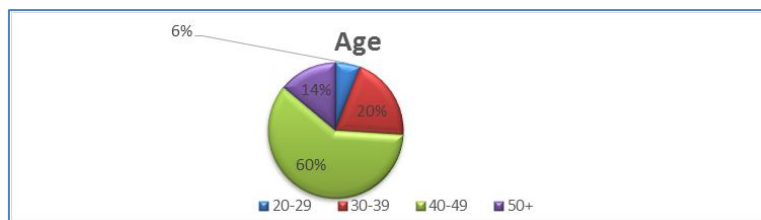


Fig-5: Age distribution of the total participant

Special Considerations in Quality of Life Measurement

To date, quality of life assessments in older women have employed a wide variety of methods and tools to assess outcome. Some limitations of prior evaluations include use of a limited number of domains, lack of standard agreement on the appropriate comparison groups (e.g., other cancer patients, women without cancer) or failure to compare results to any control group, and inclusion of narrow segments of the breast cancer population (e.g., only well-educated, non-minority women). Furthermore, few prior studies were designed to specifically evaluate outcomes for older women, particularly to assess the interactions of decrements in function or well-being associated with treatment with co morbid conditions. For example, mild treatment related peripheral neuropathy might significantly impair ambulation in an older diabetic woman with pre-existing neuropathic changes. Visual problems associated with tamoxifen could be especially detrimental to older women with underlying visual impairment. Lack of control for baseline function may also over-estimate the magnitude of treatment related decrements in quality of life. Certain domains of quality of life may be more salient to older women than other groups of breast cancer patients. For instance, for older women, ambulation and mobility impairments may make the difference between independent living and assisted living. Likewise, mild fatigue may have a multiplicative effect in impairing activities of daily living in a frail older woman, while only being bothersome to a younger woman. Presence of co morbid conditions may also limit discussion of treatment options or complicate delivery of treatment such as chemotherapy. Conversely, it is important to recognize heterogeneity in elderly women such that special subsets will have few chronic diseases and greater functional status; such patients will be able to

tolerate more intensive therapy (i.e. "fit elderly"). Administration of quality of life evaluations for older patients may also be difficult and can compromise the quality of data obtained. For instance, visual or hearing problems may lead to miscomprehension of survey items, and memory impairments may lead to obtaining inaccurate data, especially about more distal events. Older women also may telescope time and discount the importance of health events that are in the future versus those in the present. Thus, as indicated by the pathways depicted, consideration of co morbidity data is essential for future outcomes research among older women. Exclusion of older women with multiple co morbidities from clinical trials may result in less representative samples of breast cancer patients and interfere with improving understanding of the impact that such conditions have on quality of life. Specialized tools and methodologies may need to be developed and applied to research with older female populations to fully capture non-cancer influences on outcomes. Examples could include the multiple informants approach when working with cognitively impaired women or the Comprehensive Prognostic which is created by combining indices of co morbidities that impact breast cancer survival with age and cancer stage.

FUTURE DIRECTIONS

This review is intended to highlight key outcomes among older women surviving breast cancer. Our results can be used to inform clinical decision-making and design interventions to improve quality of care and optimize functioning in this growing population (Table 2). Additional research is needed to understand dynamic interactions between cancer survivorship, comorbidities, aging per se, poverty, ethnicity, and the processes of interaction with the medical care system in producing the observed outcomes of care.

Table-2: Recommendations for Future Research with Older Breast Cancer Patients

Area of research	Recommendations
Methodological issues	<ul style="list-style-type: none"> • Long-term follow-up needed • Increase sample sizes • Integrate quality of outcomes into clinical and observation trials
Body image and sexuality	<ul style="list-style-type: none"> • Include reliable and valid measures of body image and sexuality concerns • Discuss preferences
Effects of comorbid conditions	<ul style="list-style-type: none"> • Design studies to specifically evaluate interactions of decrements in function or wellbeing associated with treatment of comorbid conditions. • Use of multiple informants' approach with cognitively impaired women.
Cognitive effects of treatments and evaluation of fatigue	<ul style="list-style-type: none"> • Examine long-term cognitive effects of adjuvant treatment using validated neuropsychological batteries • Evaluate fatigue prior to and after surgery, and adjuvant therapy
Interventions to improve quality of life	<ul style="list-style-type: none"> • Educate medical staff on older women's unique concerns and needs • Develop interventions to improve patient-physician communication • Use decision aides to elicit preferences and enhance shared decision making • Tailor interventions to account for cultural factors
Caregiver burden	<ul style="list-style-type: none"> • Examine caregiver sleep problems and their role in depression • Increase social support • Assess quality of the dying experience for patient and caregiver.

DISCUSSION

During the vulnerable period of transitioning to survivorship, it is apparent that women continue to experience multiple symptoms. Over half of the women in our study reported symptoms related to fatigue, hot flashes, sleep disturbance, general pain, and breast discomfort [25, 26]. In another multisite study, Ganz *et al.* reported similar findings on the symptom experience of women at the end of primary treatment: 60% reported aches and pains, 60% reported hot flashes, and 56% reported breast sensitivity [27, 28]. In general, sleep disturbance has been noted in cancer patients¹⁷ but seems to be particularly problematic for breast cancer patients, with 38%–61% reporting sleep difficulties. Findings from other studies show variation in the persistence of these symptoms. King *et al.* [30, 31] found that women reported significant improvements in fatigue, pain, and chest and breast symptoms between 3 months and 1 year after breast cancer surgery [29, 30]. However, Hartl *et al.* surveyed women with breast cancer an average of 4.2 years after treatment using the EORTC QLQ-C30 and found that the most frequent complaints continued to be sleep disturbance, fatigue, and pain. Our findings suggest that sociodemographic characteristics generally do not help define women who will have greater or lesser symptom experience following breast cancer treatment. The only clinically meaningful exception was present when comparing younger and older women. Independent of other baseline health status and treatment-related factors, younger women had worse symptom experience. The finding that breast cancer has a disproportionate negative impact on younger women (45 years of age) has been reported by others. Although we controlled for treatment in our analyses, approximately 46% of women 45 years of age were treated with chemotherapy [32, 33]. Menopausal transition for younger women has been associated with

decreases in QOL. Previous studies have offered potential explanations for why younger women may report greater declines in QOL. These include that younger women may feel more vulnerable, experience more emotional distress, have greater fear of death, have more disruptions in their daily activities and finances, and possess fewer coping strategies. Results from this study lend support to research suggesting that sociodemographic, prior health status, clinical, and treatment/diagnostic factors explain only a modest amount of the variance in QOL among women following completion of primary treatment. Additionally, we found that women's symptom experience had a significant impact across a number of dimensions of QOL. In particular, higher levels of fatigue were associated with substantial reduction across multiple domains of QOL. The important contribution of fatigue to QOL has been documented previously. Baron *et al.* found that persistent fatigue following breast cancer treatment interfered with functioning and had a negative effect on physical, mental, and psychological well-being. A recent study reported that after adjusting for age, severity of fatigue explained approximately 30%–50% of the variability across functional areas. In addition, Bower *et al.* reported that approximately one third of breast cancer survivors had severe fatigue, which was associated with significantly higher levels of depression, pain, and sleep disturbance [34, 35]. Other symptoms that contributed substantially to QOL after primary treatment included sleep disturbance, pain, and systemic therapy side effects. In addition to fatigue, Arndt *et al.* found that pain, systemic therapy side effects, and arm symptoms were the symptoms most highly correlated with QOL. Others have reported that Symptoms and quality of life following breastcancer1156 breast cancer patients with significant sleep problems have reduced ability to perform work and accomplish physical tasks. Although we did not find a clinically important relationship

between pain and type of surgical treatment, others have suggested that the pain secondary to surgery or radiation can be a strong predictor of fatigue and, if it persists, can cause considerable disability and psychological distress. Finally, our results on the impact of symptoms on QOL are consistent with those of a study conducted by Ganz *et al.*, which concluded that the severity of symptoms experienced by women after primary treatment was significantly related to physical and mental well-being [36]. Several previous studies have noted that women report difficulties with sexual functioning and sexual enjoyment following completion of primary treatment for breast cancer. Our results suggest that symptoms do not play a major role in understanding changes in sexual functioning. It is important to note that some symptoms, such as vaginal dryness, were not measured in this study [37,38]. Previous studies have reported that lack of desire, greater body image problems, difficulty with arousal, and partner related issues are important contributors [39, 40]. In a recent review of the literature for breast cancer survivors 5 years or more post diagnosis, Mols *et al.* concluded that although most women reported good QOL, one of the problems that could persist was difficulties with sexual functioning [41, 42].

CONCLUSION

The findings of this study have implications for clinical practice and future research. The fact that breast cancer symptoms accounted for a significant amount of the variability in QOL dimensions suggests

that reducing the symptom burden should have a positive effect on QOL. Upon completion of primary treatment, women experience reduced contact with healthcare providers at a time when they are still in need of support and are at risk for adjustment difficulties.²⁶ Systematic documentation of the presence and severity of symptoms at the end of primary treatment would be a reasonable first step. At present, follow-up visits are often focused on detecting symptoms of recurrence even though recurrence is uncommon in the early post treatment period. For some women, acknowledgment of their symptoms, counseling about common post treatment symptoms and their natural history, or teaching behavioral self-management skills to deal with symptoms that persist may be all that is required. An assessment to determine if symptoms are worsening, stable, improving, or resolved seems warranted by the findings of our study. For women experiencing more significant symptoms at the completion of primary treatment, further therapy to control persistent symptoms may be required. For example, pain and stiffness as a result of axillary surgery can be improved with physical therapy, and hot flashes can be reduced with low-dose antidepressants.⁴⁸ Fatigue has multiple potential etiologies, but persistent severe fatigue should prompt an evaluation for anemia and depression. Treating anemia-related fatigue with hemoglobin has been found not only to improve fatigue but also to lead to improvements in physical and emotional well-being

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Cite This Article: Istiak Ahmed *et al* (2021). Experience and Quality of Life Following Breast Cancer Surgery at Rajshahi Medical College Hospital, Bangladesh. *East African Scholars J Med Sci*, 4(4), 104-113.