Predictors of Quality of Life among Female Breast Cancer Survivors at Hospital Kepala Batas, Penang: A Pilot Study

Adamu Ahmad Rufai, Aishah Knight Abd Sattar, Sanjeev Chandra Joshi and Hassan Muhammad Yankuzo

School of Health Sciences, Universiti Sains Malaysia, Kelantan, Malaysia
Advanced Medical & Dental Institute, Universiti Sains Malaysia, Penang, Malaysia
Mahkota Medical Centre, Melaka, Malaysia
Department of Chemical Pathology, School of Medical Sciences, Universiti Sains Malaysia, Kelantan, Malaysia

Abstract: Background and aim: Breast cancer survivors are increasing due to improvement in the diagnosis and treatment. This study aimed to evaluate the health-related quality of life (HRQOL) and its correlates among female breast cancer survivors. Design: Cross sectional study. Setting: Hospital Kepala Batas, Penang. Sample: A random sample of female breast cancer survivors (n = 50) Materials and Methods: The subjects were interviewed by means of European Organization for Research and Treatment of Cancer quality of life questionnaire (EORTC QLQ-C30 version 3). Relationships between functional and symptom scales of HRQOL with age of the subjects and overall QOL scores were evaluated using Pearson’s correlation analyses. Results: Data indicated that the mean functional scale scores were above average except “role functioning”. The mean symptom scale scores were below average and fatigue (39.4±24.5), pain (24.7±22.3) and financial difficulties (34.7±38.3) were the highest. Age had a weak relationship with cognitive functioning (p < 0.05) and an inverse relationship with all the symptom scale score, but diarrhea had a weak linear relationship that was significant. The overall QOL was significantly related to physical functioning, role functioning, emotional functioning and cognitive functioning (p < 0.05). It was also significantly but inversely related to fatigue, nausea and vomiting, pain, dyspnoea, insomnia and appetite loss. Conclusion: The overall QOL was found to be above average and only social functioning was not significantly correlated with the overall QOL.

Key words: Breast Cancer Survivors · Quality of Life · Health-Related Quality of Life · Cancer · Quality of Life Predictors

INTRODUCTION

Breast cancer is the commonest cancer and the second leading cause of cancer-related deaths (after lung cancer) in the women worldwide with estimated 1.4 million new cases and 459,000 deaths in the year 2013 [1, 2]. In Malaysia breast cancer is also the main killer affecting women mostly within the age of 40-49 years, with estimated exposure risk of 1 out of every 20 women [3]. Breast cancer therefore constitutes a major public health burden to the society, healthcare providers and policy makers all over the world. However despite increasing trend of diagnosis, breast cancer patients are the most frequent survivors in clinical practice due to the improvement in early diagnostic facilities and treatment modalities [4]. Unfortunately for many breast cancer survivors (BCS) and their families, from the time of diagnosis through the balance of patients’ life, several issues related to their physical and psychosocial well-being have not been addressed comprehensively. It is therefore imperative for medical and public health professionals to continuously search for the unique issues affecting the quality of life (QOL) of BCS and devise alternative approaches of solving them in order to

Corresponding Author: Adamu Ahmad Rufai, School of Health Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kota Bharu, Kelantan, Malaysia.
help them to lead a long, productive and healthy life. It is well-known that BCS are at higher risk for adverse late outcomes due to the long-term treatment effects that affect their physical, behavioral and functional roles in different perspectives such as developing limited arm range of motion, lymphoedema, impaired cognitive function, reduced cardiovascular function, muscle weakness and atrophy, difficulty in sleeping, fatigue, nausea, vomiting, pain and other symptoms that decreases QOL in BCS [5-8].

Assessment of health-related QOL (HRQOL) in BCS is important as it provide standard criteria for evaluating the results of health care interventions. It allows objective comparisons to be made between the experiences of BCS and what is obtainable in their healthy counterparts [9]. HRQOL assessment involves multidimensional approach that covers inter-relation-ship of physical, material, psychological, social and spiritual domains of life [10]. However in developing countries including Malaysia, very few studies have been conducted on the assessment of HRQOL in BCS. Hence the aim of this study was to identify the predictors of HRQOL among female BCS at Hospital Kepala Batas, Penang, in order to update their awareness on the importance of maintaining productive and healthy lifestyle post diagnosis and treatment.

**MATERIALS AND METHODS**

**Study Design:** Cross sectional

**Setting:** Hospital Kepala Batas, Penang, Malaysia

**Sample:** A random sample of 50 female breast cancer survivors (aged 33-74 yrs). Inclusion criteria include absence of underlying psychiatric illness or a known serious medical condition and women that have completed or were undertaking adjuvant treatment. BCS outside the above age range, those with other malignancies besides breast cancer and those with known underlying psychiatric illness were excluded from this study.

**Assessment Tool:** Version 3 of the European Organization for Research and Treatment of Cancer quality of life questionnaire (EORTC QLQ-C30) was used for the data collection [11]. The questionnaire has been translated and validated from English to Malay language [12]. It has been recommended for use during routine clinic session to aid in the detection of physical and psychosocial problems, and to improve the delivery of care and QOL in cancer patients. The questionnaire comprises of three HRQOL scales that measure functional performance (physical, role, cognitive, emotional and social), symptom scales (e.g. fatigue, pain and nausea and vomiting) and a global health status of cancer patients.

**Ethical Issues and Clearance:** The study was approved by the Ethical Committee of University Sains Malaysia (USM) and the Ethical & Medical Research Committee, Ministry of Health, Malaysia. The subjects were mobilized through the attending physicians and staff nurses. They were properly counselled on the nature and purpose of the study and a written informed consent was obtained from them for documentation and legal purposes. Privacy of the subjects was ensured during the interview and/or physical examination (where necessary) throughout the study period.

**Data Collection:** The participants were selected by simple random sampling from the hospital case records. Each Participant was contacted on individual basis while waiting for her follow-up appointment with the oncologist. The EORTC QLQ-C30 questionnaires were distributed to the subjects and the protocol of the study was again highlighted to them by a healthcare professional that was not directly involved with the patient’s care. In addition the researcher and a trained nurse were available at the hospital for any question/clarification by the participants. Measures of each of the 3 HRQOL scales and their sub-scales were scored from 0-100. An average of 11 minutes was required to complete the questionnaire. The socio-demographic data consist of only patient initials and age.

**Statistical Analysis:** Data was analyzed using SPSS Version 16.0 (IBM Corp) and results were expressed as mean and standard deviation (SD). Computation of the results was done according to the guidelines of EORTC QLQ group. The mean (SD) age, QOL score, functional and symptom scales scores were summarized. Pearson’s correlation analyses were used to determine the relationships between age and functional scores or symptoms scores of the respondents and between QOL scores and functional or symptoms scores of the respondents. Comparisons with $p < 0.05$ were considered to be statistically significant.
RESULTS

A total of 50 BCS (aged 33-74 yrs) with mean age of 50.3±9.6 yrs were enrolled in this study. Summary of the mean values for the 3 HRQOL scales (including sub-scales) of EORTC QLQ that measure functional performance, symptoms scale and global health status of BCS was shown in Table 1. Out of the five variables of functional performance scale, physical functioning appeared to have the highest score (84.5±16.5) while role functioning had the least score (46.9±27.0). Fatigue (39.4±24.5) and the concern about financial difficulties (34.7±38.3) were more significant variables of the symptoms scale of measurement compared to the experience of pain (24.7±22.3) or other clinical symptoms.

Assessment of relationship between age of the participants and variables of the functional or symptoms scales indicated an inverse relationship in most of the variables except for the cognitive functioning and diarrhea that showed significant linear relationship with the age of respondents as depicted in Table 2.

On the other hand, significant correlation (p < 0.05) was observed between the variables of functional and symptoms scales (Table 3) and overall QOL. Strength of linear relationship between overall QOL and the variables of functional scale (except social functioning) was found to be significantly increasing in the order of Physical Functioning > Emotional Functioning > Role Functioning > Cognitive Functioning as depicted in Table 3. However an inverse relationship was observed between overall QOL and the variables of symptom scales. The latter were significantly correlated in BCS with poor QOL, with the strength of relationship in order of pain > dyspnoea > fatigue > nausea and vomiting > appetite loss respectively.

DISCUSSION

This preliminary study was conducted to identify the correlates of HRQOL among selected BCS at Hospital Kepala Batas, Penang, Malaysia. The study used Malay version of the standard questionnaire of EORTC QLQ-C30 for data collection [12]. Components of the questionnaire include variables of functional performance scale and measures of the symptoms scale. Accordingly, a high mean score for any of the variables of functional scale or symptoms scale indicate better level of functioning or high rate of suffering from the symptoms respectively. Our data indicated better physical, emotional, cognitive and social functioning among BCS which corresponds
with similar findings of Jaiyesimi et al. [13] among female BCS in Nigeria. Although our report indicated better social functioning among female BCS in Asia compared to the report of Jaiyesimi et al. [13]. The disparity could be ascribed to cultural differences such as the mode of dressing, partner relationships and body image concerns of BCS in relation to age, social orientation and other environmental factors that limit full participation of women into social responsibilities and other roles at home or working places [14].

It is established that BCS experience different symptoms which varies in terms of nature and intensity due to the psychosocial nature of breast cancer and adverse effect of some of the drugs. Fatigue, pain, insomnia (difficulty in getting to sleep), loss of appetite, constipation and diarrhea were among the symptoms being experienced in BCS [15]. Although high rate of fatigue has been recorded in this study, it appears to have less impact on physical performance probably due to adequate family support. This finding was supported by the report of Brower et al. [16] on the association of fatigue and overall QOL in BCS. Similarly our data showed less concern regarding financial difficulties among majority of BCS possibly due to the Government financial aid system where hospitals waiver significant part of the treatment costs. The observation of good level of pain tolerance in this study varies with relative pain intensity and pain perception among different races. Overall, the mean score of QOL obtained in this study was high and therefore consistent with the results of previous studies on the long-term disease free BCS [10, 14, 15].

Age has been reported to have effect on BCS in relation to the variables of functional or symptoms scales and to the overall HRQOL [17]. In this study however, age does not represent a strong correlate of the function and quality of life among BCS that participated in this survey. This is in agreement with the report of McMillan (1998) that showed low to moderately negative relationship between age and intensity of the symptoms. This implies that as age advances in BCS, less symptoms intensity is often experienced compared to what is obtainable in the younger counterparts. On the contrary, cognitive functioning showed significant direct relationship with age while physical functioning demonstrated weak and inverse relationship.

Therefore in this study, specific domains of QOL among selected BCS have been investigated. The study was intended to serve as a basis for further exploration of the impact of breast cancer on the QOL in women from different backgrounds. The results of this study demonstrated overall QOL of BCS to be above average. However further study that will incorporate demographic and lifestyle factors need to be carried out in a large sample.

Thus we found QOL to be significantly related to physical functioning, emotional functioning, role functioning and cognitive functioning in that order and similar results were reported in a previous study [18] although the perception of QOL may change at a different rate than the functional capabilities. All the functional scale scores were significant correlates of QOL except social functioning. Symptoms that showed significant correlation with QOL in this study were fatigue, nausea and vomiting, pain, dyspnoea and insomnia. Further study to incorporate lifestyle factors should be carried out in larger sample. A comprehensive multidisciplinary team for cancer care where various professionals would contribute their expertise towards the management of cancer patients should be encouraged.

ACKNOWLEDGEMENTS

We thank the Ministry of Health Malaysia for kindly giving us permission to publish this article. The authors would like to sincerely acknowledge the management of Hospital Kepala Batas for their cooperation and the breast cancer patients that voluntarily participated in this study.

Competing Interests: The Authors declare that they have no competing interests.

REFERENCES


