Problems of Breast Cancer Survivors: A Comparative Study

Sapkota A,[1] Shrestha S,[2] Manandhar S,[3] Sedhain A,[4] Koirala S,[5] Kafle P[6]

[1]Department of Nursing, Nepal Medical College, Kathmandu, Nepal, [2]Department of Medical Oncology, Nepal Cancer Hospital and Research Center, Lalitpur, Nepal, [3]Department of Preventive Oncology, Nepal Cancer Hospital and Research Center, Lalitpur, Nepal, [4]Department of Nephrology, Chitwan Medical College, Bharatpur, Nepal, [5]Department of Nursing, B.P. Koirala Memorial Cancer Hospital, Bharatpur, Nepal, [6] Department of Community Medicine, Nepal Medical College , Kathmandu, Nepal.

Corresponding Author: Abja Sapkota, Department of Nursing, Nepal Medical College, Attarkhel, Jorpati, Kathmandu, Nepal ; E-mail: abjasapkota@nmcth.edu

ABSTRACT

The treatment of breast cancer is multidisciplinary and different modalities can lead to different problems. A cross sectional, comparative study was done to compare problems of breast cancer survivors with that of women without cancer. Ninety women were included with 45 in each group. The participants in the breast cancer survivor group completed treatment 6 months to 10 years before enrollment. The survivors were identified from the registry at Nepal cancer support group and women in the control group were selected from the community. Breast cancer prevention trial symptoms (BCPT) scale was used to collect the information. The socio-demographic variables were also obtained and the analysis was done using chi-square and Man Whitney-U test. The two groups were similar in terms of age and marital status. There was no significant difference between the participants in caste, employment status and comorbidities, however, the groups were significantly different in terms of their education level. Breast cancer survivors had significantly greater score in problems like fatigue(p=0.01), hot flushes (p=0.004), cognition (p=0.03), sexual interests (p=0.007), weight problems (p=.01) and swelling of the arm (p=0.005) than the comparison group. These findings indicate that breast cancer survivors need continuous monitoring of these symptoms in their follow up visits.

Keywords: Breast cancer, breast cancer survivor, problems

INTRODUCTION

Breast cancer is the second most common cancer in women worldwide, with the annual incidence of 1.67 million in the year 2012. It is the most common cancer among women in both developed and developing countries. Breast cancer is the most common cause of cancer deaths among women worldwide (522, 000) and is the most frequent cause of cancer deaths in less developed regions. Despite the fact that incidence is high (96 per 100, 000), mortality rate is less due to higher survival rates among patients with breast cancer (6 per 100, 000 in Eastern Asia). In India, the estimated incidence is about 145, 000 in year 2012 and the estimated mortality is 70, 000 and the estimated 5-year prevalence rate is 397, 000.[1] There is a lack of population based cancer registry in Nepal. A multi institutional, hospital based survey done in seven institutions including two cancer centers revealed that breast cancer is the second most common cancer among women, irrespective of groups and is the top most cancer in women with younger age group. The common age of diagnosis of breast cancer ranges from 40-50 years in Nepal.[2] Treatment of breast cancer is multidisciplinary, for early stage disease surgery plays a crucial role, followed by radiation therapy and/or chemotherapy.[3] Different treatment methods led to increased survival rate of breast cancer patients. In the UK, there is an estimated two million people living with or beyond cancer, and this number is expected to rise every year by more than 3%.[4]Breast cancer management in Nepal is a little different when compared to that of the centers in developed countries because of different socioeconomic status, lack of education and lack of facilities. Despite these facts, the cancer care center in Nepal is on the rise. The breast cancer conserving surgery plays a remarkable role in woman's physical, emotional and psychological recovery from breast cancer. However, breast conserving surgery is rarely performed in Nepal. Majority of the cases undergo total mastectomy with axillary lymph nodes dissection.[5] Based on the annual health report of the oldest cancer center (B.P Koirala Memorial Cancer Hospital), out of the total, 209 operated cases in 2010, one hundred and seventy (81%) cases underwent modified radical mastectomy, twenty-five breast conserving surgery and 14 underwent breast reconstruction surgery. Most of the breast cancer patient were treated with adjuvant chemotherapy, radiotherapy and hormonal therapy.[6] Breast cancer patients, even after the completion of the surgery face various problems like infection, pain, lymphedema, hematoma, seroma, paresthesia, pain of axilla and arm, impaired mobility of arm.[7] Research on long term breast cancer survivors

treated with adjuvant therapy have suggested that adjuvant therapy is associated with poorer physical functioning and more severe symptoms like fatigue, neuropathy, pain.[8-10] Recently published longitudinal study by Ganz showed that adjuvant chemotherapy treatment was associated with significantly more severe symptoms, including musculoskeletal pain, vaginal problems, weight problems and nausea. However, symptoms improved significantly in the year after primary treatment ended irrespective of the exposure with chemotherapy.[11] In addition, women treated with tamoxifen were more likely to experience vasomotor symptoms (i.e., hot flashes, cold sweats, and night sweats), vaginal discharge, and genital itching than those with placebo treatment.[12,13] Several published studies shows that the breast cancer survivors who had received adjuvant therapy experienced higher level of fatigue and cognitive problems, hot flashes in comparison with the woman in healthy group.[14-16] There are several studies in cancer survivors in developed countries. However, in countries like Nepal there are only few studies that have been conducted to address a survivor's problem. So this study was conducted to compare the problems of the breast cancer survivor to that of woman without breast cancer. Comparisons of the problems between these two groups gives a clear understanding of the differences in existing problems between these two groups.

MATERIALS AND METHODS

This cross sectional study was done to compare the problems of breast cancer survivor to that of woman without history of breast cancer. The woman included in this study were 25 years and above and less than 65 years. The woman in breast cancer survivor should have completed primary cancer treatment six months prior to study and had not experiencing relapse. An institutional review board approval was taken from Research Ethical Subcommittee (RESc) of Nepal Medical College prior to study. The woman in breast cancer survivor groups were recruited purposively through the Nepal Cancer Support group which is a not-for-profit non-government organization established in 2010. The list of women registered to the group who meet the eligibility criteria and those who wish to participate voluntarily were interviewed from July to December 2014.

Prior to collection of information regarding problems Nepal cancer support group followed the records of the total 196 breast cancer patients and found only 150 were in six months post treatment phase. When contact number was searched among 150, 65 could not be either contacted or too far from research setting. Out of the remaining 85 women, only fifty four responded and out of 54 three of them have incomplete information. Out of 51 women, 6 had undergone hysterectomy before/after the diagnosis of breast cancer and hence excluded from the study. Therefore, the final sample consisted of 45 breast cancer survivors without history of hysterectomy.

We collected information about problems from a group of healthy women forming a comparison group by matching the age and marital status. Women included in the comparison group were taken from the community, school teachers, hospital staff, one-day visitors at hospitals by matching the aforementioned criteria by convenience sampling technique. Exclusion criteria of women in both the groups were women who were pregnant, had a history of recurrent cancer diseases at the time of survey, and were hospitalized within the last one month before the data collection, had severe cognitive or psychiatric difficulties. Women who were too ill to give interview were also excluded from the study. The woman with hysterectomy or woman with any other medical conditions like thyroid problems, COPD, asthma , or hospitalized within last months were excluded.

Women screened for breast cancer survivor groups were interviewed in a separate room of the outpatient department maintaining the privacy and confidentiality using the purposive sampling technique. The final sample consisted of 45 breast cancer survivors and 45 age and marital status matched healthy comparisons groups.

Instrument

Breast cancer prevention trial symptoms scale with twenty-five everyday problem having high internal consistency (reliability exceeding 0.70 for most of the symptoms scale) with some additional problems was used to assess severity of problems.[11]This tool was used to assess the majority of physical and cognitive symptoms.[12] This instrument has a well-documented reliability, validity and internal consistency. In this scale, women were asked to rate how much they were bothered by each symptom/problem during the last four weeks on a five point rating scales from 0 (not at all) to 4 (extremely/very much). There are altogether 25 items in the scale from which one item (decreased range of motion in arms of surgery side) was not included as this item could not be comparable to the woman with no cancer history.The tool was translated to local language and then to English. The reliability coefficient was checked and it was 0.84 for the translated tools after pretesting it in a small number of five samples (five) and the information obtained was included in the final study.

Ethical Considerations

The breast cancer survivors were explained about the purpose and other details of the study through phone call. Those who wished to participate were called to the hospital and verbal consent was obtained. For the comparison group the woman in aforementioned groups were explained about the purposes of the study and if permits assessed for the characters for matching and the information collected by staying on the separate room maintaining the privacy of each respondent.

Statistical Analysis

Statistical analysis was done with SPSS (V16). All categorical variables are expressed as frequency and percentage. Symptoms were presented in the form of frequency and percentage. For continuous variables, data were checked for normality using Kolmogorov-Smirnov test, which showed that some of the variables were not normally distributed; suggesting the use of non-parametric test. As descriptive statistics mean, median, standard deviation, minimum values and maximum values was used. Chi-Square test and Man Whitney was used to compare the socio demographic variables and to compare the problem scores between the two groups. Two tailed p values less than ($p < 0.05$) was considered statistically significant.

RESULTS

The women in breast cancer survivor groups and women with no cancer history were similar in terms of age and marital status. Table 1 is about the socio demographic characteristics of women in two groups. The mean age of women in both the groups were almost similar 47.22±8.5 years and 47.16±8.4 years. The two groups were not different in terms of casts, employment status and presence of comorbidities (hypertension, diabetes or both).However, comparisons between the two groups displayed significant differences for education level (p=0.04) which was higher in comparison groups. Similarly, the significant number of the breast cancer survivor (84.4%) were at postmenopausal state (p=0.005).

Table 2 reveals the clinical profile of the survivors which depicts that more than half of the women (66.6 %) in the survivor group, were diagnosed at stage 2-3 breast cancer. Thirty five women (77.8%) had completed a year since treatment. The average length of time since the treatment is 2.9±2.3 years (range-1/2 years to 10 years).Seventeen (37.7%) of the women are currently on hormonal medication mainly on tamoxifen. Thirty nine (86.7%) women with breast cancer had received all the three forms of cancer treatment.

Table 1. Characteristics of breast cancer survivor and women without breast cancer

Characteristics	Breast cancer survivor	Women with no cancer history	p-value
	n = 45	n = 45	
	n (%)	n (%)	
Age at interview (years)			
≤ 50	30 (66.7)	30 (66.7)	1
> 50	15 (33.3)	15 (33.3)	
Mean age ± SD	47.22 ± 8.5	47.16 ± 8.4	
Casts			
Upper casts	30 (66.7)	25 (55.6)	0.38
Janajatis	15 (33.3)	20 (44.4)	
Education level			
≤ SLC	24 (53.3)	34 (75.6)	0.04
≥ plus 2	21 (46.7)	11 (24.4)	
Employment			
Employed	16 (35.6)	25 (55.6)	0.09
Unemployed	29 (64.4)	20 (44.4)	
Marital status			
Single	4 (8.9)	4 (8.9)	1
Married	41 (91.1)	41 (91.1)	
Menopausal status			
Premenopausal	7 (15.6)	20 (44.4)	0.005
Peri to Postmenopausal	38 (84.4)	25 (55.6)	
Co-morbidities			
HTN/DM/HTN & DM	7 (15.6)	4 (8.9)	0.522
No	38 (84.4)	41 (91.1)	

Table 2. Clinical profile of breast cancer survivors

Characteristics	Breast cancer survivor n (%)
Stage	
Zero-stage 1	15 (33.3)
Stage 2-Stage 3	30 (66.6)
Treatment	
Surgery	1 (1.1)
Sur +Chemo / Sur+ Radio	5 (11.1)
Sur + Chemo + Radio	39 (86.7)
Time since completion of treatment	
< 1 year	10 (22.2)
≥ 1 year	35 (77.8)
Average length, mean	2.9±2.3 years
Average length, median	2.33 years
Current hormonal medicines	
Yes	17 (37.7)
No	28 (62.3)

Problems between breast cancer survivors and women with no cancer history was compared using the breast cancer prevention trial symptoms scale (BCPT)

Table 3 shows that there was no significant statistical difference in problems like nausea, bladder control, vaginal problem and musculoskeletal problem. Breast cancer survivors reported significantly higher score with problems like fatigue (0.01), hot flashes (0.004), cognitive problem(0.03), sexual interest (0.007), weight problems (0.01) and arm swelling (0.005) than in comparison group. The problems that score high in BCPT scales in both the groups were musculoskeletal problem, fatigue, hot flashes and cognitive problem.

DISCUSSION

In this study, problems of breast cancer survivors were compared with that of women with no cancer history. Breast cancer survivors and women with no cancer history differed in their problem scores in fatigue. This finding is consistence with prior research, [14, 15, 16, 17] that reported high fatigue score in breast cancer survivor as compared to women with no history of cancer. Among these was the study by Kluthcovsky (2015) in Brazil, which showed breast cancer survivors experienced significantly greater total and subscale fatigue scores ($p< 0.05$).[17] The findings of our study is in support with another study by Von AH in USA (2012) on African American breast cancer survivors and healthy group, which also showed that fatigue ($p=0.001$) is higher in survivors as compared to that of healthy woman.[16] The group here is 62 Africian American breast cancer survivors and 78 comparison groups controlled in age and numbers of years of education. Similar findings were seen in Von's study which reported significantly higher levels of hot flashes noted in breast cancer survivor as compared to that of the healthy group.Our study did not elicit any relationship between chemotherapy and presence of musculoskeletal pain, vaginal problems, and nausea. However, a study by Ganz showed significant relationships between these problems with the use of adjuvant chemotherapy.[11] Ganz's study revealed that breast cancer survivors included completed their treatment four weeks proior and were followed up within a year of their primary treatment completion. The comparison was done between women with adjuvant chemotherapy and a group was formed including a group of women with breast cancer but without any adjuvant chemotherapy. In the previous study, the respondents were older than the women in this study (52.4 study 47.22 ± 8.5 years).[11]

Table 3 Comparisons of problems in breast cancer survivors and woman with no cancer history using BCPT scale

Problems	Range	Breast cancer survivor		Women with no H/O cancer		p value
		n=45		n=45		
		Mean (SD)	Median (Range)	Mean (SD)	Median (Range)	
Nausea	0-8	.13 (.50)	0 (0-3)	.22(.70)	0 (0-4)	0.49
Hot flashes	0-8	1.55 (1.87)	1 (0-6)	.60 (1.07)	0 (0-4)	0.004
Bladder control	0-8	.51 (1.01)	0 (0-4)	.40 (.78)	0 (0-3)	0.876
Vaginal problem	0-16	1.0 (1.28)	0 (0-4)	.75 (1.1)	0 (0-4)	0.357
Musculoskeletal pain	0-12	1.66 (1.82)	1 (0-8)	1.55 (1.56)	1 (0-6)	0.95
Cognitive problem	0-12	1.33 (1.33)	1 (0-6)	.82(1.1)	1 (0-6)	0.03
Weight problem	0-8	.88 (1.30)	0 (0-5)	.26 (.49)	0 (0-2)	0.01
Arm swelling	0-4	.53 (.81)	0 (0-3)	.13 (.40)	0 (0-2)	0.005
Fatigue	0-8	1.57 (1.52)	1 (0-6)	.95 (1.39)	0 (0-5)	0.01
Sexual interest	0-12	1.26 (1.44)	1 (0-5)	.48 (.81)	0 (0-2)	0.007

H/O-history of

Our findings are very similar to the findings of the study conducted by Ganz, which showed significant association of adjuvant chemotherapy with problems like hot flashes and cognitive problems between two groups. However, in contrast to his study, findings in our study showed that there was significant difference in arm swelling among women in the two groups.[11] The study by the faculties of nursing at Vanderbilt University from USA on healthy women and women who were breast cancer survivors found a significant difference in complains of arm swelling between the two groups.[18]Similar to this study, our study also reported significant arm swelling in breast cancer survivor as compared to that of women with no history of breastcancer. This study showed decreased sexual interests among breast cancer survivors as compared to that of women with no cancer history. These findings are consistent with that of previous studies that showed decreased sexual desire and sexual satisfaction and increased pain during intercourse in comparison to that of the healthy group.[19, 20] Breast cancer survivors in Sepidehand Somayeh were all aged less than 50 years of age.[19] In addition, those studies reported that women who had received chemotherapy had reduced sexual interests as compared to women with no cancer history. Long term breast cancer survivors had problems like lack of interest in sex, and an inability to enjoy sex.[20] The reason may be due to postmenopausal status of survivor group, as a result of treatment with adjuvant chemotherapy. Study revealed that amenorrhea as a result of breast cancer treatment was associated with decreased sexual interest.[19]The findings of this study will be helpful for health care workers in planning proper management problems of breast cancer survivors. There are several limitations of this study, as this study covered only a small portion of breast cancer survivors and this study is restricted to an urban area of Nepal. The other limitation of this study was that the groups were different in terms of their education level. As the Nepal cancer support group is a group of cancer survivors only, the healthy group for this study were enrolled from the other setting.

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CONFLICT OF INTEREST: None

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