Original Article

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Breast Cancer Screening Behavior and its Contributing Factors among Women of Pokhara, Nepal

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ABSTRACT

Introduction: Breast carcinoma is the most prevalent cancer in both industrialized and developing nations among women. Early screening play a vital role in cancer identification and prevention, potentially decreasing mortality due to breast cancer. The study's primary goal was to find out breast cancer screening behavior and factors related to it among women of Pokhara.

Methods: A survey was carried out among the 269 women residing in ward number 33, Pokhara using systematic sampling. Pokhara University Institutional Review Committee provided approval for the the study. Data were gathered through the use of validated questionnaire. Chi-square test has been applied to analyze the relationship between variables.

Results: Out of 269 women, only 15.6% ever heard of breast cancer screening measures. Among those who are informed about breast cancer screening only 12.3% of women screened at least once in their life for carcinoma of breast. Breast self-examination, clinical breast exam, mammography, and breast ultrasound were practiced once in a life by 1.9%, 6.8%, 3.3% and 0.3% of women, respectively. Women educational level, ever heard of breast cancer screening programs, institutional factors, pain, concern of cost, availability of female doctor were associated with breast cancer screening.

Conclusion: Overall, cancer screening behavior was poor in women of this location. Educational level, breast cancer screening information and health professional recommendation were identified as important factors for breast carcinoma screening behavior.

Keywords: *Breast neoplasms, Early detection of cancer, Female, Pokhara, Screening measures*

INTRODUCTION

Breast cancer is a type of cancer that develops in breast tissue, the more commonly the innermost layer of breast ducts. Breast carcinoma is the prevalent cancer among female, as well as fourth leading cause of death from cancer in Asian women.[1] Globally day by day the rate of mammary carcinoma is rising; it is the second most frequent cancerous growth among Nepalese women; however early detection of cases increases the survival of clients.[2] According to latest WHO data 2020, Breast cancer deaths in Nepal reached 1,049 or 7.7 percent.[3] Early screening and detection of breast cancer increases survival rate, however, there is no formally addressed breast cancer screening program exist in Nepal.

Furthermore, the different screening measures can be used to early identification of cancer methods like Breast Self-Examination (BSE), Clinical Breast Examination (CBE) and Mammography.[2] Poor awareness, lack of information, poverty, lack of education are the some of the attributes that make it difficult to women from seeking treatment and increased the burden.[4] A study from Nepal showed that (68%) of women were unaware about CBE and (56%) were unfamiliar to mammography, very few (10%) had undertaken breast cancer testing in the previous two years. Factors associated with screening were counseling during medical visit, high economic status, education, Buddhism and a family background of breast malignancy.[5] There were less researches regarding malignancy of breast, its testing methods among women in Nepal. Identification of women's screening status and its associated factors will give an opportunity to health care worker and local governance to plan and create resources to this areas. The key focus of this research was to find out the women's breast cancer screening behavior and risk factors in Pokhara Nepal.

METHODS

A cross sectional survey was carried out to identify breast cancer screening behavior and contributing factors in females residing of ward number 33, Pokhara. This area has consisted of diverse population group with various geographic terrains, also comprised of approximate 5,453 female. Further, the area has connection with city

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by various routes, however, there was not well equipped health facility center, only had primary level facilities. The sample size was computed using formula given for cross sectional study with a proportion of 0.239, as reported in previous study with confidence interval of 95%. The calculated minimum sample was 269. Women aged 30 to 69 took part in the research project. The women who had undergone mastectomy, diagnosed breast cancer and exposure to breast cancer related training within 1 month period were excluded from the study. Face-to-face interviews were used to obtain data after getting ethical approval from Institutional Review Committee, Pokhara University Research Center. The data collection tool was first prepared in English and then translated into Nepali, thereafter, retranslated back into English. The survey questions were pretested on 10% of entire sample size at place different from exact site to ensure simplicity and clarity. Participants gave their signed informed consent, voluntary participation was ensured by any time withdrawal from study if they not feel good or not want to continue study, data was collected in separate room or space, code was used instead of name. The obtained data was screened for clarity, keyed, and entered into a database MS-Excel with validated command. SPSS -16 was used for analysis. In present study, if a women performed BSE within last 3 months, undertaken CBE within 3 years, mammography within 5 years and any other method of screening within 1 year were considered as ever had screened for breast cancer.

RESULTS

In present study 269 women were interviewed. Out of these 269 women, (38.3%) were aged between the years of 30-39 with an average age of 44.04 ± 9.7. With regard ethnicity and religion, (66.2%) were upper caste group and (97.4%) were Hinduism. Majority of women of present study (95.2%) were married. Regarding to educational status, (42.4%) were literate. Regarding breast cancer screening measures (15.6%) of respondents were ever heard at least one method of breast screening. Among those who knew about breast carcinoma detection methods, 12.3% of women ever had screened for breast cancer.

Table 1: Breast carcinoma screening rate among women

n =269

Variables	Frequency (f)	Percentage (%)
Ever done breast cancer screening		
Done	33	12.3
Not done	236	87.7
Screening test		
Breast Self-Examination (BSE)	05	15.2
Clinical Breast Examination (CBE)	19	54.5
Mammography	09	27.3
Breast Ultrasound	01	3.0

According to the study, only 12.3% of women have ever undergone for breast cancer screening. They performed either BSE (15.2%), CBE (54.5%), Mammography (27.3%) and, breast ultrasound (3.0%).

Table 2: Association of breast cancer screening with different variables

n=269

Variables	Breast cancer screening		χ2 value	p-value
	Screened	Not Screened		
Educational Status				
Illiterate	4 (4.2%)	91(95.8%)	8.85	0.003*
Literate	29 (16.7%)	145 (83.3%)		
Heard about breast cancer screening				
Yes	33(78.6%)	09(21.4%)	203.297#	0.001*
No	0	227(100.0%)		
Health Insurance				
Yes	20(15.7%)	107(84.3%)	2.708	0.100
No	13(9.2%)	129(90.8%)		
Visit to health care service center for breast problems				
Yes	16(55.2%)	13(44.8%)	55.594	0.001*
No	17(7.1%)	223(92.9%)		
Health care professional's recommendation				
Yes	19(95.0%)	1(5.0%)	137.408	0.001*
No	14(5.6%)	235(94.4%)		
Advertisement regarding breast cancer				
Yes	27(81.8%)	6(18.2%)	169.057	0.001*
No	6(2.5%)	230(97.5%)		

Fischer's Exact Test, *statistically significant at p <0.05.

Present study found that those women who learned about breast carcinoma detection methods seem to be more likely to undergo testing than those who did not. Significantly higher proportions of women visited to health care service center for breast problems were performed breast cancer screening than others those not visited to health care service center breast problems. Recommendation by health care professionals was significantly associated with breast cancer screening performance. Also, women who had seen advertisement of carcinoma of breast demonstrated the higher proportion of screened for breast cancer than who does not seen any advertisement.

Table 3: Association of psychological factors with breast cancer screening

n=269

Variables	Breast cancer screening		χ^2 value	p-value
	Screened	Not Screened		
Embarrassing				
Agree	12(8.1%)	137(91.9%)	5.511	0.024*
Disagree	21(17.5%)	99(82.5%)		
Painful for screening				
Agree	15(20.8%)	57(79.2%)	58.190	0.001*
Disagree	18(9.1%)	179(90.9%)		
Concerned about cost of breast cancer screening				
Agree	13(8.2%)	146(91.8%)	6.048	0.014*
Disagree	20(18.2%)	90(81.8%)		
Early detection of breast cancer by screening measures				
Agree	32(14.9%)	183(85.1%)	6.810#	0.005 *
Disagree	1(1.9%)	53(98.1%)		
Availability of female health care practitioner				
Higher extent	08(6.6%)	113(94.6%)	6.54	0.011*
Lower extent	25(16.9%)	123(83.1%)		

Fischer's Exact Test, *statistically significant at p <0.05.

Larger proportion of women who were having feeling of embarrassment significantly not screened than those who not feel embarrassment to do breast cancer screening. As well, higher proportion of women those disagree that breast cancer testing is painful, not performed any screening test than those who thought of painful. Also, cost of breast cancer screening matters to performed screening, so, higher proportion of women agree with the statement were statistically significant and not performed screening measures. Those women who agree that breast cancer screening measures were very useful for early detection of breast cancer cases, significantly performed any breast cancer screening measures than who disagree for the statement.

There were total 5 statements that hinder women to complying with screening practiced related to breast cancer. It was evaluated based on extent women agreed or disagreed with statement regarding distance to reach health facility, transportation cost, doctor fee/health service charge, waiting time and availability of female doctor or health care practitioners. Availability of female health care practitioners hinder the complying to breast cancer screening, as it significantly associated. Other variables like waiting time for doctor, distance to reach health care facilities, doctor fee/health service charge, transportation cost was not association with breast cancer screening.

DISCUSSION

The current study examines the breast cancer screening and its contributing factors among women who residing in ward number 33, Pokhara. The rate of breast screening counts to only 12.3% which was less than the study conducted in Mosocho, Kenya, which showed that 44. 10% had undertaken breast cancer screening[6] and the study conducted in Metro-Detroit found that 63.8% of respondents adhere breast cancer screening[7] and similar study conducted in Korea revealed that 30.43% of the respondents complied with breast cancer screening.[8]

In this study, among the 33 respondents who had undergone screening measures, 54.5% of the respondents had undergone Clinical Breast Examination (CBE) followed by mammography 27.3% and BSE 15.2% which was contradictory to a study conducted in KIST medical college and teaching hospital, Nepal which revealed that among 26 respondents who had undergone screening; 73 percent undergone BSE, mammogram by 11.5% and breast ultrasound by 15.4%.9 A study conducted in Iran found that 7.5% of respondents had BSE on a monthly basis, and 14. 3% of women aged 40 and above had one mammogram in their lifetime that was similar to this study.[10]

This study showed that the educational level (p=0. 023) was significantly associated with breast cancer screening which was almost similar to a study conducted in Mosocho, Kenya that showed a significant association between age, marital status and educational level with breast cancer screening.[6] This study showed that health insurance didn't have any association with breast cancer screening which was inconsistent with a study conducted in Metro-Detroit which stated that occupation (p=0.004) and insurance status (p<0.001) were significantly associated with breast cancer screening.[7] This may be due to the reason that majority of the respondents were employed and had insurance services in Metro-Detroit.[7] A study done in Izmir, Turkey showed that women's socio demographic factors had no significant impact on their ability to performing regular BSE and CBE significantly.[11]

In this research, 15.6% of participants had ever heard of breast cancer screening which was inconsistent with the research performed in KIST medical college which found that 26% of respondents had heard about breast screening.[9] This study showed significant association between ever heard status of breast cancer screening with breast cancer screening similarly a study conducted in UAE revealed that 34.1% had never heard of BSE and didn't perform regular BSE.[12]

In this study, visit to health care service for breast problems, health care professional's recommendation and advertisement regarding breast cancer were significantly associated with breast cancer screening. Similarly, a study conducted in Mosocho, Kenya demonstrated similar result showing signification positive correlation of breast health education at hospital (p=0.002), nurses' guidance and follow up (p=0.005) and breast screening advertisement (p=0.003) with breast screening uptake.[6] Study done in Metro-Detroit also supports the above point.[7] On contrary, a study conducted in Egypt showed least influences of doctor and media on undergoing mammography.[13]

A study conducted in Korea showed association between self-reported health status, limitation in daily activities, alcohol intake, smoking, activity level with breast cancer screening by univariate analysis.[8] On contrary, this study didn't have association of these factors with breast cancer screening except exercise (p=0.007). Similarly, a study conducted among Israeli women was consistent with the present study which showed association of physical activity(p=0.03) and no any association of self-rated health status with breast screening.[14]

Similarly, this research revealed that the belief on breast cancer screening was embarrassing, painful, concern about cost of screening methods and screening for breast cancer is useful for detecting cancer early were strongly linked to breast cancer screening. The study conducted in Mosocho, Kenya resemble that fear, pain, stigma, embarrassment, cost of screening were associated with breast cancer screening.[6] Likewise, the study conducted in Metro-Detroit showed association between pain, fear and usefulness of breast cancer screening to detect breast cancer early with breast cancer screening.[7] Both these studies showed significant association of fear which was inconsistent with the present study which didn't show significant association of fear with breast screening.

In this survey, limited availability of female health practitioner was found to be important hindering factor for breast cancer screening. It was significantly associated (p=0.011)with breast screening whereas the research conducted in Metro-Detroit didn't show any association between availability of female health practitioner with breast cancer screening.[7] Furthermore, conjoint analysis done in Japan revealed that respondents preferred screening by female staff members that is similar to this study.[15]

CONCLUSION

Overall number of women practicing breast screening measures in the study area was very low. Educational status, heard about breast cancer, having breast problems, health care professional recommendations were the factors that associated with screening behaviors. The collaboration among different local health sector is needed to increase community awareness and practice of different breast screening measures by women.

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