

Awareness of Breast Self-Examination among Female Community Health Volunteers of Pokhara

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ABSTRACT

Background: Breast self-examination is a simple, inexpensive and effective method of examining the breast by woman herself after 20 years of age in order to detect a breast lump in the early stage. Women should have this knowledge for early detection and treatment of breast cancer. So, the present study aimed to assess awareness of female community health volunteers regarding breast self-examination and the effect of a teaching program.

Methods: One group pre-test post-test study was conducted among 145 female community health volunteers selected from eight wards of Pokhara Metropolitan using convenient sampling technique. Data was collected using a self-administered questionnaire from 27 March to 23 April 2022. Descriptive and inferential statistics were used for data analysis.

Results: Before intervention, around two third of respondents (67.6%) had inadequate and only 1.4% had adequate level of awareness. But after the intervention, 68.3% had adequate level of awareness. The post-test mean awareness score (23.87 ± 4.7) was higher than pre-test mean awareness score (12.97 ± 3.93). Test of significance revealed that increment in the awareness due to a structured teaching program was highly significant ($p < 0.001$). This study also found that there was difference in the mean pretest awareness score according to educational level of the respondents only. Based on the mean score, the score was significantly higher among women with higher level of education ($p < .001$).

Conclusions: Around two thirds of female community health volunteers have inadequate level of awareness regarding breast self-examination before the intervention. Educational intervention program was found to be effective in improving their awareness.

Keywords: Awareness; breast; self-examination

INTRODUCTION

Breast cancer is the commonest cancer in the world¹ and in Nepal, it is the second common cancer after cervical cancer.² Its burden is greatest in lower income countries and predicted that such countries will have the greatest relative increase in cancer incidence by 2040.³ Early detection is vital to improve breast cancer outcomes and survival.^{4,5}

Breast Self-Examination (BSE) is a simple, effective, economical, and noninvasive screening method for the early detection of breast cancer in low resource settings like Nepal.⁶ Studies have shown that knowledge and practice of BSE are inadequate among women of Nepal.^{7,8} Female community health volunteers (FCHV) can link families to health facilities and can be utilized

in prevention and early detection program.⁹ Their awareness should be good so as to deliver effective health education in the community. Therefore, the current study aimed to assess the effectiveness of a structured educational session on FCHV's awareness level regarding BSE.

METHODS

A quantitative pre-experimental one group pre-test post-test design study was conducted among female community health volunteers of Pokhara metropolitan of Gandaki province in Nepal. The targeted population consisted of all FCHVs of Pokhara whose total number was 654. Pokhara consist of 33 wards and each ward had different number of FCHVs ranging from 8 to 46 which was obtained from the list provided by the health

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section of the metropolitan. The sample size was 142 which was calculated using the formula Z^2pq/E^2 taking prevalence of 31.1% with knowledge about BSE among women in Nepal from a study conducted by Marahatta and Sharma⁷ (2018) at a 95.0% confidence level, 8.0% allowable error and 10.0% non-response rate.

Sampling technique was simple random sampling for the selection of wards and convenient sampling for the selection of the sample. At first, a ward i.e. ward no 31 was selected by using lottery method from where 14 FCHVs out of 27 attended the program were considered as sample in the study. Then, further wards were selected consecutively until the desired number of sample size was achieved. In this way, sample were collected from the eight wards of the metropolitan using convenience sampling. The number of participants were 14, 18, 18, 15, 10, 30, 22 and 18 from ward no 31, 27, 30, 8, 9, 25, 26, 32 respectively. In this way, a total of 148 samples got included in the study. Out of them, three had not responded to the questionnaire completely. So, they were not included in the analysis; thus, the final sample size was 145.

Data were collected using a self-developed structured questionnaire which was organized into two parts. Part I consisted of questions related to socio-demographic and health-related characteristics. Part II consisted of questions to assess awareness of BSE, which was prepared based on the research objective and extensive literature review. It consisted of 17 structured questions, including 12 multiple choice questions and 5 multiple response questions. It was constructed in English language first and then translated into Nepali language with the help of a bilingual translator. Each correct answer carried a score of one mark and the wrong answer was scored zero. Scoring of the level of awareness was classified as adequate (>75%), moderate (50% -75%) and inadequate level of awareness (<50%).¹⁰

The validity of the instrument was maintained by an extensive review of related literature. Content validity of the tool and educational package was done by the Gandaki Medical College nursing faculty. Pretesting of the tool was done among 14 FCHVs of ward-27 to identify the accuracy and clarity of the tool in administration.

Data collection was done after obtaining approval of the research proposal from the Institutional Review Committee of Gandaki medical college (Ref no: 147/079/080). A verbal and written permission was taken from the chairperson of respective wards after briefing about the objective, process and importance of the study. Then researcher coordinated with the

chief of the health center of each ward where FCHV used to have monthly reporting. The chief of health center were requested to gather FCHVs on their proposed place, date and time. Data were collected by researchers themselves. Informed verbal and written consent were obtained from each respondent after giving information about the nature of the study and the use of the data. Then they were given clear instruction about how to fill the questionnaire. Approximately 20-30 minutes were given to each respondent for pre-test. A structured teaching program of one-hour duration as an intervention was provided on the same day to the pre-tested respondents in the same setting by the researcher herself. Then, post-testing was done on the same day immediately after the intervention using the same questionnaire. Data was collected from 8 training sessions during the period of four weeks from 27 March to 23 April, 2022. Mostly, Nepali language was used for training and evaluation except for some technical terminology.

Collected data were edited, coded and entered into IBM Statistical Package for Social Science (SPSS) version 22. Data were analyzed by using descriptive statistical method (frequency, mean, percentage and standard deviation) to analyze demographic data as well as awareness of BSE. In the case of inferential statistics, paired sample t-test was used to find the differences in scores before and after the intervention after checking for normality of data at a 95.0% confidence level (p -value <0.05). In addition, the independent sample t-test and one-way ANOVA were used to find the difference in pre-test scores according to selected variables.

RESULTS

This study was conducted among 145 FCHVs of Pokhara metropolitan. The mean age of the respondents was 42.7 ± 8.8 years ranging from 23 to 59 years. The majority of the participants were hindus (93.8%), married (93.1%) and from the upper caste group (80%). Regarding education, all of them were literate with more than two-thirds (68.9%) having secondary and above level of education. Nine respondents (6.2%) had a history of breast problems and the problems were breast abscess, lump in breast and sore nipple. Three of them had a history of breast surgery for lump in their breast. Regarding the family history of breast cancer, 3.4% of them had the history and it was present among their mother, sister, mother's sister and daughter-in-law. Nearly, one in five respondents (17.9%) had history of any other type of cancer in their family. The demographic and health related characteristics of respondents are shown in Table 1.

Table 1. Socio-demographic and health-related characteristics of respondents.

Variables	Frequency	Percentage
Age (in years)		
20-30	16	11.0
31-40	43	29.7
41-50	55	37.9
51-60	31	21.4
Ethnicity		
Dalit	8	5.5
Janajati	21	14.5
Brahmin/Chhetri	116	80.0
Marital status		
Married	135	93.1
Unmarried	6	4.1
Widow	4	2.8
Education level		
Can read and write only	10	6.9
Basic education	35	24.1
Secondary level	73	50.3
Bachelor level and above	27	18.6
Past history of breast problem		
Yes	9	6.2
No	136	93.8
Family history of breast cancer		
Yes	5	3.4
No	140	96.6

Table 2 shows the frequency and percentage of correct response of each question regarding BSE before and after the intervention. In the pretest, the majority (90.3%) of respondents knew the meaning of breast lump as the thickened abnormal mass in the breast. This knowledge increased to 93.8% in the post-test. Likewise, a woman herself can also detect breast lumps. This knowledge was known by around two-thirds of the respondents (63.4%) in the pre-test whereas it rose to 87.6% in the post test. Similarly, BSE as the simplest method for breast examination was known by 57.9% in the pre-test and 82.1% after the intervention. Regarding the appropriate age to begin BSE, this was known by only 24.8% of the respondents before the intervention, and 95.9% knew it after the intervention. Regarding the ideal time of BSE for women, around one-fifth only knew before the intervention which is increased after the program.

Table 2. Awareness regarding breast self-examination.

Variables	Pre-test No (%)	Post-test No (%)
Meaning of breast lump	131 (90.3)	136 (93.8)
Women herself can also detect lumps in her breast	92 (63.4)	127 (87.6)
The simplest method for breast examination	84 (57.9)	119 (82.1)
Purposes of BSE[#]		
To observe any abnormal change in breast`	75 (51.7)	113 (77.9)
To detect cyst or other benign breast problems	33 (22.8)	49 (33.8)
For early detection of breast cancer	112 (77.2)	106 (73.1)
Appropriate age to start BSE	36 (24.8)	139 (95.9)
Frequency of BSE	40 (27.6)	133 (91.7)
Ideal time of BSE for women having regular menstruation	40 (27.6)	138 (95.2)
Ideal time of BSE for women having irregular menstruation	36 (24.8)	135 (93.1)
Ideal time of BSE for post-menopausal women	53 (36.6)	135 (93.1)
First step of BSE is to observe the breast	19 (13.1)	115 (79.3)
Positions of BSE[#]		
Standing in front of mirror	80 (55.2)	139 (95.9)
Lying down on bed or floor	44 (30.3)	113 (77.9)
Taking shower	73 (50.3)	105 (72.4)
Position of arms on observation of breasts[#]		
Straight down	80 (55.2)	126 (86.9)
Back of the head	47 (32.4)	117 (80.7)
At the hips	22 (15.2)	126 (86.9)
Number and parts of finger for palpation of breasts	22 (15.2)	126 (86.9)
Place to begin palpation through circular method	37 (25.5)	107 (73.8)
Areas of breast to be covered	97 (66.9)	132 (91)
Abnormal findings[#]		
Change in shape and size of the breast	47 (32.4)	101 (69.7)
Change in skin color or softness of the breasts	21 (14.5)	94 (64.8)
Nipple inversion	23 (15.9)	97 (66.9)
Fluid or bloody discharge from nipple	65 (44.8)	112 (77.2)
Lump in breast	112 (77.2)	122 (84.1)
Lump in underarm	70 (48.3)	98 (67.6)

First thing to be done when abnormality is detected 126 (86.9) 139 (95.9)

#Multiple Responses

Table 3 demonstrates the pretest and posttest level of awareness on BSE which shows that in the pretest almost two-thirds of the respondents had inadequate knowledge, whereas in the posttest similar proportion of respondents had adequate level of awareness.

Table 3. Pretest and posttest awareness level on breast self-examination.

Level of awareness	Score	Before intervention (Pre-test) Number (%)	After intervention (Post-test) Number (%)
Adequate (>75%)	23-30	2 (1.4%)	99 (68.3%)
Moderate (50-75%)	15-22	45 (31%)	40 (27.6%)
Inadequate (<50%)	0-14	98 (67.6%)	6 (4.1)
Total	30	122 (100%)	122 (100%)

Table 4 indicates the significance of test results on the effectiveness of structured teaching program on BSE. Paired t-test was applied to test the significance of the score obtained before and after the intervention program. The observed mean awareness score before intervention was 12.97 with a standard deviation of 3.93; after the intervention, it increased to 23.88 with a standard deviation of 4.71. In the significance test, the t-statistic was obtained as 30.397 for awareness with $p < 0.001$, conforming to the educational intervention programme as highly significant. Thus, the program was effective in improving awareness on BSE among FCHVs.

Table 4. Significance test on effectiveness of structured teaching program on BSE.

Variables	Awareness score Mean (SD)	Paired 't' Test	p-value
Pre test	12.97 (±3.93)	t=30.397 df=144	.000
Post test	23.88 (±4.71)		
Difference	10.9 (4.31)		

Table 5 reveals the difference in the mean awareness score of the respondents according to selected variables before the program intervention were presented using one-way ANOVA and independent samples t-test. There was a difference in the mean awareness score according to educational level of the respondents. Based on the mean score, the score was significantly higher among women with a higher level of education ($p < 0.001$). Conversely, no significant difference in mean score was depicted in relation to age, ethnicity, religion, marital

status, past history of breast problem and family history of breast cancer.

Table 5. Difference in pretest mean awareness score according to selected variables.

Variables	No	Mean ±SD	p-value
Age (in years)			
20-30	16	13.5 ± 3.2	0.071
31-40	43	13.4 ± 4.0	
41-50	55	13.3 ± 3.8	
51-60	31	11.3 ± 3.8	
Ethnicity			
Dalit	8	13.1 ± 3.9	0.328
Janajati	21	14.1 ± 5.0	
Upper caste group	116	12.7 ± 3.7	
Religion			
Hindu	136	12.9 ± 3.8	0.424
Buddhist	5	12.6 ± 3.6	
Others (Islam, Christianity, Bon)	4	15.5 ± 8.0	
Marital status			
Married	135	12.9 ± 3.8	0.743
Unmarried	6	13.8 ± 5.4	
Widow	4	14 ± 3.8	
Education level			
Can read and write only	10	11.9 ± 3.2	0.000
Basic education	35	11.3 ± 3.7	
Secondary level	73	12.9 ± 3.5	
Bachelor and above	27	15.5 ± 4.2	
Past history of breast problem			
Yes	9	14.2 ± 4.1	0.326
No	136	12.8 ± 3.9	
Family history of breast cancer			
Yes	5	14.2 ± 3.1	0.479
No	140	12.9 ± 3.9	

p value significant < .05

DISCUSSION

The present study was designed as a pre-experimental study to assess the effectiveness of a structured teaching program on awareness of breast self-examination among 145 FCHVs of Pokhara metropolitan of Gandaki province of Nepal. Eight wards among the 33 wards were selected by using simple random sampling technique and those who attended the program were selected conveniently as a sample. Awareness of BSE was assessed through a

self-administered structured questionnaire. The average age of the respondents was 42.7 ± 8.8 years, ranging from 23 to 59 years. The majority of the respondents were hindus (93.8%), married (93.1%) and from the upper caste group (80%). Regarding education, all of them were literate with more than two-thirds (68.9%) having a secondary and above level of education.

This study found that around two-thirds of respondents (67.6%) had an inadequate level of awareness, and only 1.4% had an adequate level of awareness before intervention. But after the intervention, only 4.1% of the respondents had an inadequate level of awareness and 68.3% had an adequate level of awareness. These findings are similar to the study conducted by Sapkota, Parajuli and Kafle (2016) among 61 higher secondary school girls of Biratnagar which showed 75.4% had inadequate and only 1.6% had adequate knowledge regarding BSE in pretest and after the intervention, the adequate knowledge was increased to 62.3%.¹⁰ A cross-sectional study conducted in Butwal sub-metropolitan in 2016 also showed that 31.1% of women of reproductive age-group had ever heard of BSE and among those more than half (54.4%) had inadequate level of awareness.⁷

The present study also compared the mean pre-test and post-test awareness scores. Paired t-test was applied to test the significance of the score obtained before and after the intervention program on BSE. The observed mean awareness score before intervention was 12.97 (± 3.93), whereas, after the intervention, it increased to 23.88 (± 4.71). In the significance test, the t-statistic was obtained as 30.397 for awareness with $p < 0.001$, conforming to the educational intervention programme as highly significant. Thus, a structured training program was effective in improving awareness of BSE among FCHVs. Consistent with this finding, Sapkota, Parajuli and Kafle (2016) also showed a significant increment in BSE knowledge scores due to program intervention.¹⁰ A study conducted in Assiut Governorate, Egypt in 2019 among 74 rural community health workers also showed that the mean posttest awareness score (23.59) was significantly higher than the mean pre-test awareness score (6.91), and the mean difference in awareness score was 16.68.¹¹ Similarly, this finding is also consistent with the findings of another study conducted among 42 rural women in India in 2016 which showed that posttest knowledge score (24.9) was significantly higher than pre-test knowledge score (7.6) with the mean difference in awareness score 17.3.¹² The similarity in the result showed that intervention was effective in improving awareness on BSE as evidenced by significant difference in pre-test and post-test mean awareness score.

This study also assessed the differences in the mean awareness score of the respondents according to selected variables before the program intervention was presented using one-way ANOVA and independent samples t-test. There was a difference in the mean awareness score according to the educational level of the respondents. Based on the mean score, the score was significantly higher among women with a higher level of education ($p < 0.001$). Conversely, no significant difference in pretest mean score was depicted in relation to age, ethnicity, religion and marital status. A study in 2016 also showed no significant difference in the score according to age, religion and ethnicity.¹⁰ However, in contrast to our study findings, that study found no significant difference in the mean score according to the level of education. This difference may be due to variation in the sample educational characteristics as that study was conducted among higher secondary level school girls of Biratnagar. In line with the present study findings, a study showed a significant association between level of education and ever heard of BSE by women.⁷ Supporting the current study findings, a study also showed significant difference in the pretest score according to level of education of rural community health workers. The study had also shown no significant difference in the pretest score according to age, occupation, residence, marital status and religion.¹¹ This study also found no significant difference in pretest mean score according to past history of a breast problem, family history of breast cancer and family history of any other cancer. Supporting the current study findings, a study also revealed no association between hearing of BSE with a family history of breast cancer and personal history of a breast problem.⁷ A study conducted among nursing students also supports this finding.¹³ However, in contrast to our findings, a study showed statistically significant difference in the pretest score according to family history of breast cancer.¹¹

CONCLUSIONS

About two-thirds of FCHVs have inadequate level of awareness regarding BSE before the intervention. Educational intervention program was found to be effective in improving their awareness. Among the various socio-demographic variables, only educational level of FCHVs had significant difference with pretest awareness score. Therefore, it is recommended to plan and conduct educational programs for BSE along with focus to increase the level of education among FCHVs.

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CONFLICT OF INTEREST

The authors declare no conflict of interest

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