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Knowledge and Practice of Breast Self-Examination among Female Community Health Volunteers in Dharan Sub-Metropolitan City, Province No. 1, Nepal

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Abstract

Background: Regular breast self-examination is the most cost-effective method for the early detection of breast cancer. Female community health volunteers (FCHVs) could play an important role in teaching the community about breast self-examination (BSE). We aimed to assess the knowledge and practice of breast self-examination among FCHVs.

Methods: Descriptive cross-sectional study was conducted using the census sampling method to select FCHVs from all 20 wards of Dharan sub-metropolitan city. Face-to-face interview was conducted using a semi-structured questionnaire to collect information related to the knowledge of BSE from consenting participants. The practice of BSE was assessed through direct observation of BSE by using a checklist. Descriptive and inferential statistical analysis was done using SPSS version 10.0. The level of significance was set at 0.05.

Results: A total of 95 FCHVs (out of 107) were enrolled in the survey. The mean age (SD) of the study participants was 42.45 (8.97) years; 85.3% were married and majority (64.2%) had completed secondary level of education. The majority of the FCHVs, 65 (68.4%), earned monetary income less than NPR.7000.00 per month. The majority, 82 (86.3%), of the FCHVs had adequate knowledge but only 21 (22.2%) respondents had ever practiced BSE. No significant association was found between the knowledge and practice of BSE with the selected demographic variables such as age, marital status, educational level, age at menarche, and menopause.

Conclusion: The FCHVs had adequate knowledge but poor practice regarding BSE. Training should be emphasized to improve their practice of BSE.

Keywords: Breast Self-Examination; Female community health volunteer; Knowledge; Practice

Declarations

Ethics approval and consent to participate: Ethical approval obtained from the Institutional Review Committee, B. P. Koirala Institute of Health Sciences (Ref, No – IRC/0789/016). Written informed consent was taken from all the participants.

Consent for publication: Not applicable.

Availability of data and materials: The datasets used and/ or analyzed during the current study are available from the corresponding author on reasonable request. All relevant data are within the manuscript.

Competing interest: None

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Breast cancer is a global health concern and the leading cause of morbidity and mortality among women which is considered a major public health problem in both developed and developing countries [1]. Breast cancer is the second most common cancer among females in Nepal. Regular breast self-examination (BSE) is the most cost-effective methods for early detection of breast cancer [2].

Breast cancer is the most prevalent cancer and the fourth leading cause of cancer-related mortality among women in Asia [3]. A total of 2068 new cases were diagnosed in Nepal where the number of deaths was 1018, ranking the 5th place with a rate of 5.2% in the number of deaths occurred by cancer in women [4]. There is a lack of properly registered data on cancer and cancer-related programs including awareness and measures for control. Various factors such as inadequate funding, lack of proper distribution of resources, and poor condition of health-care equipment make breast cancer management more challenging [5].

The breast cancer situation in Nepal is a little different than in developed countries due to socioeconomic status, lack of education, and lack of facilities. BSE, screening, and early detection are the key elements to influence the diagnosis, treatment and prognosis of breast cancer in Nepal [6].

According to a study done by Sah et al., the majority (89.1%) of Female Community Health Volunteers (FCHVs) did not practice BSE regularly. The reasons for practicing it among the remaining respondents included preexisting breast problems (34.5%), aiming early detection (28%), family history of breast cancer (19.1%) and having a high risk (18.2%) [7]. FCHVs are the essential key persons for providing door-to-door health services in the community setting as they can further counsel and motivate the women for BSE. Hence, early recognition of the breast problem can be done and referred to the appropriate health center for further diagnosis and management. This study aims to assess the knowledge and practice of BSE among the FCHVs working in different wards of Dharan sub-metropolitan city, Province 1, Nepal.

METHODS

A descriptive cross-sectional study design was adopted to conduct this study. All the FCHVs working in all wards of the Dharan sub-metropolitan city was approached for an interview. Total population sampling technique was used to enroll the FCHVs in the study. Face-to-face interview in person was conducted by a trained interviewer. The participants performed the BSE on a dummy and practices were observed on the pre-prepared checklist. Data collection was carried out from March to June 2017. Ethical approval was obtained from Institutional Review Committee, B. P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal before enrolment. A written informed consent was obtained from participant before starting the interview.

The data were collected by using a well-structured and pretested questionnaire in the English version. The questionnaire consisted of three parts, of which part 1 was about socio-demographic data, part 2 was about knowledge regarding BSE (19 items) and part 3 consisted of observational checklist for assessing practice of BSE (17 items). The correct response for nine or more (≥ 50%) questions related to knowledge was considered as adequate knowledge and less than that was considered as inadequate knowledge. Similarly, at least 10 correct steps (≥ 60%) in the checklist for practice was considered as good practice and less than that was considered as poor practice. The association between knowledge among FCHVs and their practices on performing the BSE was also assessed.

The data collection tool was developed by the

Table 1: Socio-demographic characteristics of the participants (n = 95). Values are presented as number (%).

Demographic characteristics	Categories	Frequency
Age (y) (Mean ± SD = 42.45 ± 8.97)	20-30	9 (9.5)
	31-40	37 (38.9)
	41-50	30 (31.6)
	51-60	19 (20.0)
Marital status	Unmarried	14 (14.7)
	Married	81 (85.3)
Level of education	Basic (2 - 8 class)	28 (29.5)
	Secondary (9 - 12 class)	61 (64.2)
	University	6 (6.3)
Ethnicity	Dalit	3 (3.2)
	Janajati	64 (67.4)
	Bramhin, Chhetri	24 (25.0)
	Others (Bhujel, Giri)	4 (4.2)
Type of family	Nuclear	62 (65.3)
	Joint	33 (34.7)
Monetary income per month (NPR)	< 7,000	65 (68.4.)
	7,000 - 20,000	25 (26.3)
	> 20,000	5 (5.3)

researcher herself for use in the department by consulting with the experts from the department and literature review [8]. The content validity of the tool was established by consulting with experts in related fields.

Data was entered in Micorsoft Excel, coded and exported into Statistical Package of Social Sciences version 10. Descriptive statistics, i.e., frequency, percentage, mean, standard deviation, and range, and inferential statistics, i.e., chi square test, continuity correction, Fisher's exact test and likelihood test were used. The level of significance was set at p-value < 0.05.

RESULTS

A total of 95 FCHVs were enrolled in the survey. The majority of the FCHVs (38.9%) belonged to the age group of 31 - 40 years with the mean (SD) age of 42.45 (8.97) years; and 85.7% were married. The majority (64.2%) had completed the secondary level of education. The majority of the FCHVs (68.4%) earned monetary income less than NPRs. 7000.00 per month **(Table 1)**.

The majority (62.1%) of the participants had adequate knowledge of the methods of BSE i.e., inspection and palpation of the breast **(Table 2)**. Very

Table 2: Participants' knowledge regarding technique of breast self-examination (n = 95). Values **are presented as number (%).**

Items	Response	Options	Frequency
Method of examination of breast	Incorrect response	Inspection only	3 (3.2)
		Palpation Only	29 (30.5)
		Auscultation	2 (2.1)
	Correct response	Inspection and palpation	59 (62.1)
	Unfamiliar		2 (2.1)
BSE Inspection finding related to breast cancer	Incorrect response	No change in size of the breast	10 (10.5)
		No inverted nipple	2 (2.1)
		No dimpling	2 (2.1)
	Correct Response	Discharge from nipple, inverted nipple and dimpling	81 (85.3)
Best method for inspection	Incorrect response	While taking bath	16 (16.8)
	Correct response	Standing in front of the mirror	73 (76.8)
	Unfamiliar		6 (6.3)
Areas of palpation	Incorrect response	Areola only	3 (3.2)
		Entire breast	15 (15.8)
	Correct response	Entire breast and axilla	76 (80.0)
	Unfamiliar		1 (1.1)
Motion of fingers	Incorrect response	Vertical	8 (8.4)
		Horizontal	3 (3.2)
		None of the above	5 (5.3)
	Correct response	Circular	78 (82.1)
	Unfamiliar		1 (1.1)
Ways of moving fingers during palpation	Incorrect response	1	38 (40.0)
		5	2 (2.1)
		7	2 (2.1)
	Correct response	3	27 (28.4)
	Unfamiliar		26 (27.4)
Most common site for breast cancer	Incorrect response	Upper inner quadrant	31 (32.6)
		Lower outer quadrant	3 (3.2)
		Lower inner quadrant	7 (7.4)
	Correct response	Upper outer quadrant	29 (30.5)
	Unfamiliar		24 (25.3)

Table 3: Practice of Breast self-examination (n = 95). Values are presented as number (%).

Practice characteristics	Frequency (%)	
	Yes	No
Inspection		
Stand in front of mirror	59 (62.1)	36 (37.9)
Inspected breast	43 (45.3)	52 (54.7)
Looked for change in size	68 (71.6)	27 (28.4)
For shape or symmetry	62 (65.3)	33(34.7)
Dimpling	35 (36.8)	60 (63.2)
Inverted nipples	26 (27.40)	69 (72.6)
Redness, swelling	23 (24.2)	72 (75.8)
Discharge from nipple	18 (18.9)	77 (81.1)
Puckering	21 (22.1)	74 (77.9)
Raised arms and looked for the same changes	36 (37.9)	59 (62.1)
Palpation		
Lying down position	43 (45.3)	52 (54.7)
Appropriate technique of using hand during palpation	54 (56.8)	41 (43.2)
Use of circular motion of fingers	61 (64.2)	34 (35.8)
Use of middle 3 fingers	57 (60.0)	38 (40.0)
Use of either 3 methods for palpation	51 (53.7)	44 (46.3)
Palpation of both axilla and breasts	41 (43.2)	54 (56.8)
Squeezing nipple discharge	0 (0.00)	95 (100)

few (10.5%) of the respondents mentioned the size of the breast to be inspected during BSE and the majority mentioned that inspection to be done on a standing position in front of the mirror. Most of the respondents (80%) mentioned the methods correctly that the entire breast and axilla should be palpated during BSE and most of them (82.1%) also mentioned that circular finger motion is used in BSE. About one-fourth (28.4%) of the respondents had adequate knowledge about the way of moving the finger in a correct motion while doing BSE. Less than one-third (30%) mentioned correctly the most common site for breast cancer as the upper outer quadrant of the breast.

The majority (62.1%) of the participants sat in the proper position for inspection of breasts i.e. standing in front of the mirror with their shoulders straight and arms on the hips **(Table 3)**. The majority (71.6%) of the participants observed the change in the size of the breasts and only 22.1% of the respondents observed discharge from the nipple. Around 45.0% of the participants had performed BSE in a lying position. Regarding the practice of palpation, less than half (45.3%) of the participants had palpated their breasts and axilla in a lying down position and slightly more than half (56.8%) used an appropriate technique of their hand. During the palpation of the breast, almost equal portion of FCHVs (64.2% and 60%) had used the circular motion of their finger correctly and used middle three fingers respectively. More than half (53%) of the participants didn't use any three of circular methods and more than half (56.8%) of the participants didn't palpate breast and axilla while performing BSE. None of the participant squeezed the nipple to check the discharge while performing the BSE.

Knowledge categorization had no significant association with age ($p = 0.86$), marital status ($p > 0.99$), education ($p = 0.10$), religion ($p = 0.57$), ethnicity ($p > 0.99$), income ($p > 0.99$), menarche ($p = 0.50$) or menopause ($p = 0.5$) **(Table 4)**. Similarly, adequate knowledge was not significantly associated with good practice ($p = 0.32$) **(Table 5)**.

DISCUSSION

This study showed that the majority of the respondents belonged to the age group of 31 - 40 years, which is in contrast to the study done by Adhikari et al. in which majority of respondents belong to 40 - 60 age group [8].

The finding of this study showed that the majority (92.3%) of the participants had adequate knowledge of BSE which is similar to the study done by Shrestha et al. in which the majority of respondents had an average level of knowledge [9]. This finding is supported by a study from Ghana where, 88.3% of the participants were aware of breast cancer, and 64.9% of the participants had good or sufficient knowledge of breast cancer [10]. This finding is in contrast with the study findings of Marahatta et al. conducted in Butwal sub-metropolitan city, where only 31.1% of the participants had ever heard about BSE [11].

Regarding the practice of BSE, 24.4% of the participants had ever practiced BSE and their practice was not good even in the participants who practice BSE. This finding is consistent with Marahatta et al. which revealed that only 19.2% women had ever practiced BSE [11]. This is also consistent with study from Ghana where more than 50% of the participants did not know how to perform BSE [10]. Regarding the association between knowledge and socio-demographic variables, there was

Table 4: Association of the level of knowledge with selected socio-demographic characteristics of the participants (n = 95). Values are presented as number (%).

Characteristics	Categories	Knowledge, frequency (%)		p-value
		Inadequate	Adequate	
Age (y)	20-40	6 (13.0)	40 (87.0)	0.86*
	41-60	7 (14.3)	42 (85.7)	
Marital status	Unmarried	2 (14.3)	12 (86.4)	> 0.99**
	Married	11 (13.6)	70 (28.4)	
Level of education	Basic	5 (31.3)	11(68.8)	0.10***
	Secondary	8 (65.7)	53 (86.9)	
	University	0	6 (100)	
Religion	Buddhism	3 (9.4)	29 (90.6)	0.57**
	Hindu	10 (15.9)	53 (84.1)	
Ethnicity	Janajati	9 (13.4)	58 (86.6)	> 0.99*
	Bramhin/ chhetri	4 (14.3)	24 (85.7)	
Per-capita income (NPR)	< 7,000.00	9 (13.8)	56 (82.2)	> 0.99 **
	7,000.00 - 20,000.00	4 (13.3)	26 (86.7)	
Menarche (y)	10-15	11 (13.9)	68 (86.1)	> 0.99*
	16-20	2 (12.5)	14 (87.5)	
Menopause (y)	40-50	4 (13.8)	25 (86.2)	0.50*
	51-60	1 (25.0)	3 (70)	

** Pearson chi square test ** Continuity correction *** Fishers' exact test*

Table 5: Association between knowledge and practice of breast self-examination. Values are presented as number (%).

Characteristics	Categories	Practice		Total	p-value
		Poor (< 60%)	Good (≥ 60%)		
Knowledge	Inadequate (< 50%)	12 (92.3%)	1 (7.7%)	13 (13.7%)	0.32
	Adequate (≥ 50%)	62 (75.6%)	20 (24.4%)	82 (86.3%)	
Total		74 (77.8%)	21 (22.2%)	95 (100%)	

no significant association in knowledge with age (p = 0.86), marital status (p > 0.99), education (p = 0.10), religion (p = 0.57), ethnicity (p > 0.99), income (p > 0.99) and menarche (p = 0.5) and menopause (p = 0.5). These findings are in contrast with the study findings of Marahatta et al. which revealed that marital status, monthly household income and level of education were independent factors influencing the knowledge of BSE while the performance of BSE was influenced by monthly household income, level of education, and history of breast disease [11]. There was no significant association between knowledge and practice of BSE. The study findings showed the gap between knowledge and practice of BSE among FCHVs in the study areas.

The demographic findings of the study revealed that the majority (85.3%) of the participants were married. 38.9% of the participants were in the age group of 31 - 40 years and the mean age of the participants was 42.45 years, this is consistent with the findings of a study done in Ibadan, Nigeria [12].

Our study shows that 65.3% of the participants had adequate knowledge about the importance of BSE. A study done in Kayseri, Turkey showed that of 52.4% who reported practicing BSE, only 48.4% of them were deemed to have an effective BSE technique, 40.2% was the frequency of women doing BSE and 28.5% of them performed BSE at an appropriate time [13]. In contrast to the result of this study, a study done in Aydin, Turkey found that none of the participants correctly answered the item about the BSE technique and more than half of the participants performed BSE at an appropriate time [14]. Also, a study done by Akpinar et al. in Corum Province, Turkey found that 55.6% of the participants knew that BSE should be done within 5-7 days of the

menstrual cycle [15]. A study reported that all nurses in Aminu Kano University Teaching Hospital, Nigeria, were aware of BSE; however, only about two-fifths of them practiced BSE regularly. Female health workers, especially nurses who have longer contact time with clients, in addition to carrying out BSE on themselves, are expected to educate and encourage clients to practice BSE.

This study has conducted with a small sample size and limited settings in Dharan sub-metropolitan city. A similar type of study can be undertaken with a large sample size representing the various communities that helps the generalization of the findings and will give comparative results. Therefore, it is necessary for a developing country like Nepal, to disseminate knowledge regarding the early screening and prevention of breast cancer through different campaigns and programs focusing on women's health. Public awareness, mass media, and distribution of charts and booklets about the BSE would be helpful.

The study was limited only to the selected FCHVs working at Dharan sub-metropolitan city, for a short period, so result drawn from the study may not be generalized to the larger population which is one of the limitations of this study.

However, this study tries to identify the knowledge gaps and their practice on BSE among the FCHVs who are the ambassadors of health program at the community level. Strengthening the knowledge and practice of FCHVs on BSE definitely improves early screening of breast cancer in the community. The findings of this study can be used as the baseline information for the policymakers and program managers to plan the health promotional and screening activities for breast cancer.

CONCLUSION

The knowledge of BSE among FCHVs of sub-metropolitan city, Dharan was found to be adequate, but the practice of BSE was still poor. Policymakers and program managers should consider the health promotional activities targeting the FCHVs in breast cancer awareness programs.

References

1. World Health Organization (WHO). Cancer prevention and control in the context of an integrated approach. WHO Press [Internet]. 2017;22(December):1–9. Available from: http://www.who.int/nmh/events/2015/technical-note-en.pdf?ua=1
2. Shallo SA, Boru JD. Breast self-examination practice and associated factors among female healthcare workers in West Shoa Zone, Western Ethiopia 2019: a cross-sectional study. BMC Res Notes. 2019;12(1):637. DOI: 10.1186/s13104-019-4676-3
3. Youlden DR, Cramb SM, Yip CH, Baade PD. Incidence and mortality of female breast cancer in the Asia-Pacific region. Cancer Biol Med. 2014 Jun;11(2):101-15. DOI: 10.7497/j.issn.2095-3941.2014.02.005
4. WHO. The Global Cancer Observatory: Nepal factsheet. Int Agency Res Cancer [Internet]. 2021;505:2020–1. Available from: https://gco.iarc.fr/today/data/factsheets/cancers/10_8_9-Colorectum-fact-sheet.pdf
5. Ohuchi N. [Current status of breast cancer screening]. Nihon Rinsho. 2007;65 Suppl 6:213-9. Japanese. PMID: 17679200.
6. Singh YP, Sayami P. Management of breast cancer in Nepal. JNMA J Nepal Med Assoc. 2009;48(175):252-7. PMID: 20795469.
7. Sah SK, Pradhan A, Neupane N, Shah S, Shrestha P, Paudel A. Knowledge, attitude and practice regarding prevention and screening of breast cancer among reproductive age women. Arch Cancer Res. 2019;8(1):1. DOI: 10.36648/2254-6081.8.1.1
8. Junu A. Knowledge & practice of breast self examination among female community health volunteers [Internet]. Vol. 2012. 2019. Available from: https://elibrary.tucl.edu.np/handle/123456789/11943
9. Shrestha Pradhan S, Shrestha R, Parajuli P, Khagi RB, Bhandari B. Knowledge, attitude and practice regarding breast self examination among female health personnel. Journal of Kathmandu Medical College. 2018; 6(4):156-60. DOI:10.3126/jkmc.v6i4.20121
10. Dadzi R, Adam A. Assessment of knowledge and practice of breast self-examination among reproductive age women in Akatsi South district of Volta region of Ghana. PLoS One. 2019;14(12):e0226925. DOI: 10.1371/journal.pone.0226925.
11. Gore S, Yelake V, Dudhe M. Knowledge and practice of breast self-examination among women in Yavataml, India, a cross-sectional study. Asian Pacific Journal of Cancer Care. 2022;7(1):61–4. DOI 10.31557/APJCC.2022.7.1.61-64
12. Balogun MO, Owoaje EO. Knowledge and practice of breast self-examination among female traders in Ibadan, Nigeria. Annals of Ibadan Postgraduate Medicine. 2005;3(2):52-6. DOI: 10.4314/aipm.v3i2.39067
13. Guleser GN, Unalan D, Akyldz HY. The knowledge and practice of breast self-examination among healthcare workers in Kayseri, Turkey. Cancer Nurs. 2009;32(5):E1-7. DOI: 10.1097/NCC.0b013e3181a2dbd2.
14. Demirkiran F, Balkaya NA, Memis S, Turk G, Ozvurmaz S, Tuncyurek P. How do nurses and teachers perform breast self-examination: are they reliable sources of information? BMC Public Health. 2007;7:96. DOI: 10.1186/1471-2458-7-96.
15. Akpinar YY, Baykan Z, Naçar M, Gun I, Çetinkaya F. Knowledge, attitude about breast cancer and practice of breast cancer screening among female health care professionals: a study from Turkey. Asian Pac J Cancer Prev. 2011;12(11):3063-8. PMID: 22393990.