BREAST CANCER AWARENESS AMONG FEMALE SCHOOL TEACHERS OF SELECTED SCHOOLS OF GOKARNESWOR MUNICIPALITY, KATHMANDU

Jyotsana Pokharel,[1] Prajjwal Pokharel,[2] Krishna Dhakal,[3] Pratima Pathak,[4] Sujita Baidya[1]

[1]Department of Nursing, Nepal Medical College Teaching Hospital, Attarkhel, Gokarneshwor-8, Kathmandu, [2]Health Foundation Nepal, Gorahi, Dang, [3]Department of Anesthesia, Nepalese Army Institute of Health Science, Syanobharyang, [4]Department of Nursing, Maharajgunj Nursing Campus, Maharajgunj, Kathmandu, Nepal

ABSTRACT

Breast cancer (BC) has become the most diagnosed cancer globally, in the year 2020. It has emerged as major global health challenge affecting women in low- and middle-income countries including Nepal. Teachers play an effective role in communication and motivation of young students, assessment of their awareness is essential to reduce the risk of breast cancer among future young generations Therefore, this study was carried out to find out breast cancer awareness among female school teachers of selected schools of Gokarneswor Municipality, Kathmandu. A descriptive cross-sectional study was conducted among 220 female school teachers of conveniently selected 9 different government and private schools of Ward 4, 8, 9 of Gokarneswor Municipality from July 2023-October 2023. Total enumerative census sampling technique was used to collect the data, SPSS version 16 was used for data entry and analysis. Descriptive statistics such as median, frequency and inferential statistics such as chi-square tests were used. The study revealed majority (72.8%) of respondents were below age group of 40 years. Nearly half (45.9%) of the respondents had bachelor degree of education. Majority (80.1%) of the respondents were working in the private schools and nearly half (59.1%) had teaching experience more than 10 years. Nearly half (46.8%), were aware that obesity, use of oral contraceptives (43.6%) were risk factors and more than half (60%) knew that not breast feeding was risk factors for breast cancer. Most of the respondents (92.7%), were aware that presence of breast lump is the sign/symptoms of breast cancer. Level of awareness was high in (53.2%) of respondents. Significant association was found between level of awareness and level of education (p=0.007) and type of school (p=0.014). Level of awareness was found to be low in nearly half (46.8%) of the respondents. In the present study awareness about breast cancer among the study participants is still needed to be increased. The magnitude of breast cancer disease burden is expected to increase without awareness and preventive interventions. Intense health education campaign should be conducted at regular intervals regarding the importance of screening methods for the prevention of breast cancer.

KEYWORDS

Awareness, breast cancer, female school teachers

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CORRESPONDING AUTHOR

Ms. Jyotsana Pokharel
Lecturer,
Department of Nursing,
Nepal Medical College Teaching Hospital,
Attarkhel, Gokarneshwor-8, Kathmandu, Nepal
Email: pokhareljyotsana@gmail.com
Orcid No: https://orcid.org/0000-0002-3416-4543
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INTRODUCTION

In 2020, breast cancer (BC) accounted for nearly 12% of all new cancer cases diagnosed in 7.8 million women worldwide and has become the fifth leading cause of mortality. BC accounted for 6.9% of all cancer-related deaths globally in 2020.[1] Asia and Africa shared 63% of the 685,000 BC-related deaths in 2020.[2]

In Nepal, breast cancer is the second most common malignancy which is commonly diagnosed at late stages creating a remarkable burden on the healthcare system. Risk factors associated with breast cancer includes early menarche (before the age of 12), late menopause (after 55 years of age), nulliparity or first child birth after the age of 30 years.[3-6] The adoption of the westernized lifestyle of delayed childbearing, reduced breastfeeding and other westernized dietary and lifestyle patterns has a significant impact on breast cancer risk and prognosis among Asian women.[7] Family history, excessive alcohol intake, smoking and exposure to radiation are associated with an increased risk of breast cancer in Nepalese women.[8-10] Knowledge about the disease (including screening methods and warning signs) plays an important and effective role towards developing and employing screening programs in a community. This can effectively improve the chances of early detection of BC.[11] Nepalese women demonstrated poor awareness of warning signs like a breast lump, lump under the armpit, bleeding or discharge from the nipple, pulling of the nipple, changes in the position of the nipple, nipple rash, redness of the breast skin, changes in the size of the breast or nipple, changes in the shape of the breast or nipple, pain in the breast or armpit, and dimpling of the breast skin.[12] Teachers can change the mindset, create awareness, motivate students, and spread the positivity in the community, assessment of their awareness is essential to reduce the risk of breast cancer among future young generations. However, the practice of any of these screening methods is dependent on the awareness about breast cancer. If this knowledge is poor among those who should teach others, there will be difficulty in promoting these life saving methods. Therefore, this study is designed to evaluate the awareness of breast cancer among female teachers.

MATERIALS METHODS

A descriptive cross sectional study was conducted among 220 female school teachers of conveniently selected nine different government and private schools of Ward 4, 8 and 9 of Gokarneswor Municipality from July 2023-October 2023. Ethical approval to conduct study was taken from Nepal Medical College - Institutional Review Committee. Formal permission for data collection was taken from different selected schools. Female teachers of age 18-50 years, not diagnosed with breast cancer, who were present and those willing to participate were included in the study. Total enumerative census sampling technique was used to collect data. Research instrument consisted of section A, B and C. *Section A:* questions related to socio-demographic and questions regarding school related information and family history of breast cancer. *Section B:* questionnaire related to general information on breast cancer *Section C:* questionnaire related to awareness on risk factor, sign symptoms screening methods of breast cancer. Section A was self-constructed by the researchers, while sections B, C were constructed by doing extensive literature review and consultation with subject experts. The total score was calculated by adding sum of each correct answer of questions related to general awareness and questions regarding awareness on risk factors, sign symptoms and screening methods .The total score was 28 and each correct response for awareness regarding breast cancer were scored as 1. The incorrect responses and "don't know" responses were scored as 0. The levels of awareness were further categorized as: adequate wareness: >50% of mean value and inadequate awareness as ≤50% mean value. Pretesting was done in 10% of the total sample in different two schools (government and private) of Gokarneshwor-8. Both verbal and written consent was taken from the participants who were under the inclusion criteria and only after explaining the purpose of the study, face-to-face interview was done with each respondent using interview schedule. Approximately 15-20 minutes was taken to collect data from each respondent. Confidentiality and anonymity of the data was maintained. Data was analyzed using the SPSS-16.0.

RESULTS

Table 1 shows that, out of 220 respondents 78.2 % of respondents were below 40 years of age. Concerning the religion of respondents most of them 88.3% were *Hindu*. Out of the 220 respondents, 70% had bachelor and above level of education status. Similarly, more than half of the respondents 59.1% had teaching experience of more than 10 years. Regarding the family history of breast cancer only 6.8% of respondents had positive family history.

Table 1: Socio-demographic characteristics of the respondents (n=220)

Variables	n	%
Age group (in years)		
<34	103	46.8
≥34	117	53.2
Median (M d)=34, IQR=14		
Religion		
Hindu	179	81.36
Non-*Hindu*	41	18.63
Education status		
≤ Intermediate level	66	30.0
Bachelors level and above	154	70.0
Teaching experience		
≤10 yrs	90	40.9
>10 yrs	130	59.1
Type of school		
Government	47	21.4
Private	173	78.6
Family history of breast cancer		
Yes	15	6.8
No	205	93.2

Table 2: Respondents' awareness regarding general information on breast cancer (n=220)

Variables	n	%
Breast cancer is commonest cancer in Nepal among females		
Yes	164	74.5
No	16	7.3
Don't know	40	18.2
Male can be affected with breast cancer		
Yes	62	28.2
No	73	33.2
Don't know	85	38.6

Table 2 depicts that out of 220 respondents, 74.5% answered breast cancer as the commonest cancer in Nepal among females. The minority of the respondents 28.2% identified that male can be affected with breast cancer.

Table 3 illustrates awareness of respondents on different risk factors of breast cancer where 43.2% of respondents answered that exposure to the radiation is a risk factor of breast cancer. Similarly regarding the other risk factors, 63.2%, 51.8%, 40.5%, 40.9%, 44.1%, 47.3% 59.1%, 46.8% answered family history of breast cancer, personal history of breast cancer, smoking, environmental pollution, intake of alcohol, high fat intake, no physical exercise, obesity respectively as the risk factors of breast cancer. Concerning late menopause and early menarche as the risk factor, 41.4% and 42.8% answered as "don't know". More than half of the respondents 60% answered not adequate breast feeding as risk factor of breast cancer.

Table 3: Respondent's awareness regarding risk factors of breast cancer (n=220)

Variables	n	%
Exposure to high doses of radiation		
Yes	93	42.3
No	32	14.5
Don't know	95	43.2
Family history of BC		
Yes	139	63.2
No	39	17.7
Don't' know	42	19.1
Personal history of BC		
Yes	114	51.8
No	40	18.2
Don't know	66	30
Smoking		
Yes	89	40.5
No	74	33.6
Don't know	57	25.9
Environmental pollution		
Yes	90	40.9
No	72	32.7
Don't know	58	26.4
Alcohol Intake		
Yes	97	44.1
No	63	28.6
Don't know	60	27.3
High fat intake		
Yes	104	47.3
No	44	20.0
Don't know	72	32.7
No physical exercise		
Yes	130	59.1
No	38	17.3
Don't know	52	23.6
Obesity		
Yes	103	46.8
No	48	21.8
Don't know	69	31.4
Late menopause (ending periods after the age of 55 years)		
Yes	78	35.5
No	51	23.2
Don't know	91	41.3
Use of combined oral contraceptives		
Yes	96	43.6
No	38	17.3
Don't know	86	39.1
Delivery of first child after 30 years of age		
Yes	62	28.2
No	72	32.7
Don't know	86	39.1
Old age		
Yes	77	35
No	62	28.2
Don't know	81	36.8
Early menarche (before 12 years old)		
Yes	43	19.5
No	83	37.7
Don't know	94	42.8
Not adequate breast feeding		
Yes	132	60
No	32	14.5
Don't know	56	25.5

Table 4: Respondent's awareness regarding sign/symptoms and screening methods of breast cancer (n=220)

Variables	n	%
Presence of breast lump		
Yes	204	92.7
No	7	3.2
Don't know	9	4.1
Lump under armpit		
Yes	155	70.5
No	27	12.3
Don't know	38	17.3
Changes in the position of nipple		
Yes	135	61.4
No	34	15.5
Don't know	51	23.2
Changes in the size of breast or nipple		
Yes	157	71.4
No	20	9.1
Don't know	43	19.5
Presence of nipple rash		
Yes	147	66.8
No	29	13.2
Don't know	44	20
Redness of breast skin		
Yes	135	61.4
No	27	12.3
Don't know	58	26.3
Bleeding or discharge from nipple		
Yes	173	78.6
No	12	5.5
Don't know	35	15.9
Pain in breast or armpit		
Yes	164	74.5
No	22	10.0
Don't know	34	15.5
Dimpling of breast skin		
Yes	113	51.4
No	18	8.1
Don't know	89	40.5
Pulling of nipple/ inversion of nipple		
Yes	82	37.2
No	33	15.0
Don't know	105	47.8
Aware about Breast self examination		
Yes	151	68.6
No	54	24.5
Don't know	15	6.8
Aware about Clinical breast examination		
Yes	141	64.1
No	68	30.9
Don't know	11	5.0
Aware about Mammography		
Yes	82	37.3
No	89	40.5
Don't know	49	22.3

Table 5: Respondent's level of awareness regarding breast cancer (n=220)

Variables (levels)	n	%
Adequate (>50% of mean value)	117	53.2
Inadequate (≤50% mean value)	103	46.8

Table 4 shows that, out of 220 respondents, majority (92.7%) were aware about presence breast lump as sign and symptom of breast cancer. Similarly, 70.5%, 61.4%, 71.4%, 66.8%, 61.4%, 78.6 %, 74.5% were aware that lump under armpit, changes in position of nipple, changes in size of breast, presence of nipple rash, redness of breast skin, discharge from nipple, pain in breast as sign & symptoms of breast cancer respectively. Regarding the dimpling of breast skin and inversion of nipple as sign and symptom nearly half 40.5% and 47% answered as "don't know". Concerning the awareness on screening methods more than half i.e 68.6% & 64.1% were aware about breast self examinations and clinical breast examination respectively and only 37.3 % were aware regarding mammography as screening methods of breast cancer.

Table 5 depicts that, out of 220 respondents 53.2% had adequate level of awareness and 46.8% i.e. near about half of the respondents had inadequate level of awareness regarding breast cancer.

Table 6 shows, the association of level of awareness with selected socio-demographic variables. The above table shows that there is significant association of level of awareness of breast cancer with education status (p=0.007) and type of school (p=0.014) whereas there is no association of level of awareness with other socio demographic variables

DISCUSSION

In this study most of the respondent, 74.5% identified breast cancer as the most common cancer among females which is similar with the findings of study done by Liu *et al*,[13] in China where 72.8% identified breast cancer as common cancer among females. The minority of the respondent 28.2% identified that male can be affected with breast cancer. In this study exposure to the high dose of radiation was identified as risk factor of breast cancer by 43.2% of respondents which is in contrast with the findings of study done by Al-Ismaili *et al*,[14] where 80.5% identified exposure of high dose radiation as a risk factor, whereas presence of family history as a risk factor was answered by more than half of the respondents in this study i.e 63.2% which is in line with the study findings done by Al-Ismaili *et al*,[14] i.e 71.5% and with the study done in China by Liu *et al*,[13] i.e 63.3%. Similarly this finding is in contrast with the study done in India 24.7%.[15] In this study inadequate breast feeding as a risk factor was identified by 60% of the respondents which is in contrast with the findings of study done by Al-Ismaili *et al*,[14] where 5.6% identified

Table 6: Association of respondents' selected socio-demographic variables with level of awareness on breast cancer (n=220)

Socio-demographic characterstics	Total	Awareness on breast cancer		P value
		Inadequate n (%)	Adequate n(%)	
Age				
<34 years	103	49 (47.5)	54 (52.5)	0.833
≥34 years	117	54 (46.2)	63 (53.8)	
Religion				
Hindu	179	82 (45.8)	97 (54.2)	0.531
Non-*Hindu*	41	21 (51.2)	20 (48.8)	
Education status				
Below bachelor level	66	40 (60.6)	26 (39.4)	0.007*
Bachelor level and above	154	63 (40.9)	91 (59.1)	
Teaching experience				
≤10 years	130	63 (48.5)	67 (51.5)	0.557
>10 years	90	40 (44.4)	50 (55.6)	
Type of school				
Private school	172	73 (42.4)	99 (45.0)	0.014&
Government school	48	30 (62.5)	18 (37.5)	

inadequate breast feeding as risk factor. Late menopause, aging and delivery of child after the age of 30 years were answered as risk factors by 35.5%, 35% and 28.2% respondents in this study respectively which is supported by the study findings done by Al-Ismaili *et al,*[14] where 36.6% answered late menopause 24.7% answered delivery of child after 30yrs and 35.4% answered as aging as risk factor. Similarly only 19.5% were aware about early menarche as risk factor in our study which is similar to the findings of study done by Sathian *et al,*[12] in Pokhara where 12.8% identified early menarche as risk factor. Alcohol intake, smoking, obesity, environmental pollution were identified as the risk factors of breast cancer by 44.1%, 40.5%, 46.8%, 40.9% of the respondents respectively which is not supported by the study findings done by Al-Ismaili *et al,*[14] and by Alharbi *et al,*[16] respectively. Similarly use of oral contraceptives was recognized by 43.6% of respondents in this study.

Concerning the sign/symptoms in this study majority 92.7% answered breast lump as sign and symptom of breast cancer which is in line with study findings done by Al-Ismaili *et al,*[14] i.e 82% and by Alharbi *et al,*[16] i.e 88% respectively. Similarly 78.6%, 74.5%, 71.4%, of the respondents in this study identified bloody discharge from nipple, breast pain, changes in the size of breast or nipple were the sign/ symptoms respectively which is supported by the study findings done by by Al-Ismaili *et al,*[14] where discharge from nipple were identified by 76.2%, breast pain as 70.9%, of respondents. Nipple retraction as a sign and symptom was identified by only 37.2% of respondents in this study which is supported by the study findings done by Liu *et al,*[13] in China where 26.5% identified it as sign/symptom. In this study other sign and symptom identified were changes in the position of nipple, presence of nipple rash and dimpling of breast skin by 61.4%, 66.8% and 51.4 % of respondents, respectively.

Regarding the awareness on screening methods in our study, breast self examination was identified by more than half of the respondents i.e 68.6%, clinical breast examination was identified by 64%, and mammography was identified by less than half of the respondents i.e 43.6%. These results are not consistent with the results of the study findings done by Al-Ismaili *et al,*[14] where Breast self examination was identified by 88.1%, clinical breast examination 71.1% and mammography by 68% of respondents. Similarly this results is in contrast with the study findings done by Sathian *et al,*[12] in Pokhara where 100% of the respondents were aware about breast self examination, clinical breast examination and mammography respectively whereas the finding is in line with study done in India[15] where 59.43% identified breast self examination as the screening methods. The variation in the findings may be due to the variation in the education status of the respondents.

Our study revealed that overall level of awareness on breast cancer was adequate among 53.2% of respondents and inadequate

in 46.8% of respondents. The findings of the study are not supported by the study done by Al-Ismaili Z *et al*,[14] where the majority of respondents 80% had adequate knowledge. This study result found significant association of level of awareness of breast cancer with education status (p=0.007) and type of school (p=0.014), respectively.

Though the level of awareness is found to be high in this study among the female school teachers but still it is needed to be increased. This finding gives a message that there is an urgent need for prompt educational interventions to raise awareness about Breast cancer its risk factors, signs and symptoms and the screening methods among females. Healthcare providers need to continue educating at the different levels in community about BC. Breast cancer awareness should be included as a part of teacher training programmes / inservice education at schools and colleges. The media, including TV and newspapers, also need to be involved in raising BC awareness. Further studies involving a larger sample size and respondents from different sectors are recommended.

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