ORIGINAL ARTICLE

ASSESSMENT OF AWARENESS AND PRACTICES REGARDING BREAST CANCER AND ITS SCREENING METHODS AMONGST SCHOOL TEACHERS OF A RURAL DISTRICT IN PAKISTAN

Mahnoor Ahmed[1], Bibi Fatima[1], Waqar Ali[2], Nida Amin[1], Hadiqa Gul[1], Muhammad Hussain[1] Ahtishamul Haq[1], Syeda Fatima[1]

[1]North-west General Hospital and Research Center, Peshawar - Pakistan

[2]Associate Professor, North-West School of Medicine, Peshawar - Pakistan

ABSTRACT

Objectives: This survey was aimed to assess the knowledge and practices regarding breast cancer and its screening method among school teachers of district Swabi, Khyber Pakhtunkhwa, Pakistan

Materials and methods: This was a cross-sectional survey using 22 items of self-designed, validated, and translated questionnaire distributed amongst 177 public school female teachers distributed in February 2020 in the district of Swabi, Khyber Pakhtunkhwa (KP) province of Pakistan by using a purposive sampling method. Private school teachers and incomplete questionnaire responses were excluded. Baseline information about the age, educational status, marital status, and questionnaire was recorded on a printed proforma and was analyzed using SPSS-23.

Results: All 177 participants were females with an age range of 22-60 years and a mean age of 36 $^{+}_{-}$9.37. Qualification of participants ranged from masters to Ph. D, while the number of married teachers was about 2 times that of unmarried. Most of the respondents (95%) were aware of breast cancer due to varied sources like news, media, the internet, books, or via friends and family. Almost half of the respondents had heard about BSE and about 64% were aware of its significance. About 40% were aware that BSE should be started from puberty to age 30. About 70% of participants were perceiving BSE as a good practice to prevent breast cancer. About 60% had heard of mammography and most of them considered it a useful tool to prevent breast cancer.

Conclusion: Most of the participants of the study had knowledge of breast cancer gained via electronic and print media and 70 % were aware of BSE, while a small number of them were aware of mammography. This indicates that female school teachers, having better educational status, have enough knowledge and practice in breast cancer detection and prevention.

Keywords: Breast cancer, Breast Cancer Screening (BSE), Mammography.

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INTRODUCTION

Breast cancer is one of the most common cancers among women in both developed and developing countries. [1] According to WHO report in 2007, the total number of new cases of breast cancer diagnosed annually in the world exceeded one million. [2] Early detection of breast cancer plays a leading role in reducing mortality rates and improving the patient's prognosis. [3] Pakistan is one of the developing countries where this deadly disease is accelerating at a rapid pace. [4] The most important strategy is to detect and treat this cancer at an earlier stage. Ways of early detection include breast self-examination (BSE), breast clinical examination, mammography, and other ultrasonographic and radiological investigations. Mass campaigns about BSE are needed to achieve this purpose. [5] For this reason, there is a need to find out the awareness level and practices amongst different people and populations to enhance awareness levels in society. [6]

The objective of this research was to assess the awareness and practices regarding breast cancer and its screening methods amongst school teachers of district Swabi, Khyber Pakhtunkhwa, Pakistan. Our study is intended to answer the following question; what is the awareness level of school teachers about breast cancer and its screening methods in a rural district of KP, Pakistan? The answers to the question will help the stakeholders in strategizing the breast cancer prevention approaches in the population.

Correspondence
Dr. Mahnoor Ahmed
House Officer, North-west General Hospital and Research Center, Peshawar
Cell: +92-340-0908618
Email: ahmadmahnoor008@gmail.com
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MATERIALS AND METHODS

This was a cross-sectional survey conducted in the Swabi district, which is considered to be a rural district of KP having a population of about 2 million and consisting of more than 50 villages. About 500 female school teachers in public sector teaching institutes are working in the district. Data was collected from 8 government-run schools belonging to female students. A self-designed questionnaire, which was validated by having 22 items was distributed initially among 200 female teachers (although the sample size calculated via the WHO calculator was 177) to take care of the dropout cases. Some of the items were having "yes and no" responses while some were having 3-point Likert scale responses. We used a convenient sampling method and selected female school teachers in district Swabi (KP) to reveal the perceptions, knowledge, and practices of female school teachers regarding breast cancer, BSE, and its screening methods. This approach was applied due to the short time we had to complete our research project and also, due to the prevailing conditions of the COVID-19 pandemic. The questionnaire (Urdu version) was distributed in February 2020 by visiting the schools and personally explaining the methods of filling out survey forms to the teachers, and responses were collected on the spot. All female school teachers belonging to district Swabi who were willing to participate in the survey were included. Private school teachers were excluded from the study. The incomplete questionnaire was also excluded. Validation of the survey tool was done using the following steps:

The guidelines given by Siny Tsang in the article titled "Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine" were used for developing and translating our instrument. [7] Initially, a thorough literature search was conducted with relevant prior research and theory, which helped us identify four specific domains where problems and issues existed in screening for breast cancer and BSE. These domains included knowledge of breast cancer prevention, screening, BSE, and mammography. Secondly, one senior clinician and medical educationist were involved to develop an initial draft of 31 questions after detailed deliberation about the topic. After deliberation with the said expert, the questions were reduced to 25.In the next phase, the questionnaire was discussed with the supervisor and the subject expert, and he advised reducing these to 22. These 22 questions were translated with the help of an Urdu-versed colleague and a senior school teacher. The Urdu-translated version was backward translated to English with the help of a subject expert to improve the validity of the questionnaire. The next step was to pilot-test the questionnaire and continue collecting validity evidence. It was done among 11 teachers at a private school in Swabi before distributing the final questionnaire among the participants. The results of the pilot test have not been included in the original study. As a result of pilot testing, no changes were brought to the questionnaire. Data were collected through the questionnaire distributed among the teachers already described, during the official duty hours. Issues regarding the questionnaire was explained to participants personally to make the questions clear and get proper response. In the end, the questionnaires were collected personally from each teacher. Data were entered into SPSS version 23 and information was recorded with suitable codes. Wherever it was necessary for analysis, some of the variables were re-coded into new variables and relevant information was extracted. Demographic data including age, educational status, and marital status was recorded. The frequencies and percentages of response rates were described in tabulated form. Permission for conducting this research was obtained from the Ethical Review Committee of the North-West School of Medicine, Peshawar. Permission from the respective schools was taken in writing before the survey questionnaire was distributed.

RESULTS

A total of 177 participants responded to the survey questionnaire with a response rate of 88.5% (a total of 200 questionnaires were distributed). All were females with an age range of 22-60 years and a mean age of 36 ($^{+}_{-}$9.37) that ranged from 22 to 60 years. Qualification of participants ranged from masters to Ph. D, while the number of married teachers was about 2 times that of unmarried (see table-1). Table 2 shows the responses of participants to the first 4 questions. Most of the respondents (95%) were aware of breast cancer due to varied sources like news, media, the internet, books, or via friends and family. Many of them had experienced breast cancer in their families and close ones.

Almost half of the respondents had heard about BSE (see table-3) and about 64% were aware of its significance. But 80% of the participants never knew the method of BSE as they were never taught about it. About 40% were aware that BSE should be started from puberty to age 30. More than half of the participants did not know how often BSE should be performed. About 70% of participants were perceiving BSE as a good practice to prevent breast cancer. About 60% had heard of mammography (see table-4) and most of them considered it a useful tool to prevent breast cancer. Only 12 responders (6.8%) ever underwent mammography. Twenty participants were advised mammography but could not be performed due to non-availability or due to financial reasons. The mean knowledge score of all the participants was 2.83 (SD: 1.590), with a minimum of zero and a maximum of 7 scores. Knowledge scores of different groups based on their qualification was compared using ANOVA (Analysis of Variance). The knowledge score of those having MPhil degrees was slightly higher than the other groups, however, the difference was statistically not significant (p-value= 0.704). Moreover, the knowledge of participants was also compared based on their marital status and age. The results show a significant association of marital status with knowledge of school teachers regarding breast cancer and screening methods (P=0.005) showing that married school teachers were more likely to have good knowledge

regarding breast cancer and screening methods compared to single and widowed school teachers. The data is shown in Table 5.

Table 1: Educational qualification and marital status of participants

Variable	Level of education	Frequency	Percentage
Educational Qualification	Graduate	34	19.2
	Masters	126	71.2
	M.Phil.	15	8.5
	Ph. D	2	1.1
	Total	177	100
Marital status	Single	66	37.3
	Married	109	61.6
	widowed	2	1.1
	Total	177	100

Table 2: Knowledge of participants about breast cancer

Questions	Variables	Frequency	Percentage
Have you heard of breast cancer?	Variables	Frequency	Percentage
	Yes	169	95.5
	No	8	4.5
	Total	177	100
Source of information	Books	37	20.9
	Hospital	27	15.3
	Friend	30	16.9
	Internet	73	41.2
	Any other source	10	5.6
	Total	177	100
Has any of your family members been diagnosed with breast cancer?	Yes	38	21.5
	No	138	78.0
	Total	176	99.5
If yes, then what is your relation?	Mother	2	5.2
	Sister	3	8
	Cousin	14	36.8
	Others	19	50
	Total	38	100

Table 3: Knowledge and practices of BSE

Questions	Variables	Frequency	Percentage
Have you heard of Breast Self-Examination?	Yes	90	50.8
	No	87	49.2
	Total	177	100
Do you know that BSE is a useful tool for early detection of breast cancer.	Yes	113	63.8
	No	63	35.6
	Total	177	100.0
Have you been taught how to do BSE?	Yes	34	19.2
	No	141	79.7
	Total	175	98.9
If the answer to the question above is yes, who taught you?	Nurse	4	11.7
	Doctor	10	29.5
	Others	20	58.8
	Out of 34	34	100
At what age should BSE be started?	At the age of puberty	48	27.1
	Between 20-30 years	30	16.9
	After 40 years	16	9
	No idea	83	47
	Total	177	100
How often should BSE be done?	Daily	8	4.5
	Weekly	13	7.3
	Monthly	39	22.0
	Yearly	16	9.0
	No idea	101	57.1
	Total	177	100
BSE should be done by:	Doctor	141	79.6
	Nurse	6	3.4
	Self	24	13.6
	Any other person	6	3.4
	Total	177	100
If you discover any abnormality during BSE, what will you do?	Laboratory tests	39	22.0
	Appointment with a doctor	134	75.7
	Nothing	4	2.3
	Total	177	100
Do you practice BSE?	Yes	44	24.9
	No	133	75.1
	Total	177	100
If yes, then how often?	Weekly	9	20.5
	Monthly	21	47.7
	Sometimes	11	25
	Rarely	3	6.8
	Out of 44	44	100
Do you think BSE is a good practice?	yes	127	71.8
	no	49	27.1
	Total	176	100

Table 4: Knowledge about Mammography

Questions	Variables	Frequency	Percentage
Have you heard of mammography	Yes	69	39.0
	No	106	59.9
	Total	175	98.9
Is mammography is a useful tool for the early detection of breast cancer?	Yes	100	56.5
	No	71	40.1
	Total	171	96.6
Have you ever undergone a mammography?	Yes	12	6.8
	No	163	92.1
	Total	175	98.9
If no to question above (despite being advised by the doctor), then why not?	Financial constraints	4	20
	Mammography was not available	16	80
	Total	20	100

Table 5: Comparison of Means and SD of Knowledge Scores among different Demographic Groups

GROUP	N	MEAN (+ SD)	P- VALUE	95% CI
All Participants	177	2.83 (1.590)		
Educational Qualification				
Masters	126	2.76 (1.627)	0.704	2.48 – 3.05
M.Phil.	15	3.27 (1.387)		2.50 – 4.03
Ph.D.	2	3.00 (2.828)		-22.41 – 28.41
Graduate	34	2.88 (1.513)		2.35 – 3.41
Marital status				
Married	109	3.11 (1.493)	.005	2.83-3.39
Single	66	2.42 (1.655)		2.02-2.83
Widowed	2	1.00 (.000)		1.0 -1.00
Age				
<30years	66	2.79	0.962	2.42 – 3.16
30-50 years	95	2.85		2.52 – 3.19
>50 years	16	2.88		1.96 – 3.79

*95% CI: 95% Confidence Interval, SD: Standard Deviation

DISCUSSION

Breast cancer is considered to be one of the most prevalent cancers in females even in our country. So far, the awareness level amongst our population is limited. [8] We presumed that female teachers will be more aware of this deadly disease and will be knowing preventive strategies like BSE and mammography. With this intent, we selected the population of a rural district to identify the awareness level and knowledge about the prevention of breast cancer. Media, like TV, the internet, social media, and newspapers are considered to be the main source of dissemination of knowledge about breast cancers. This was apparent from the results of our study, that more than 95% of participants were aware through these sources. Similar mass media campaigns have raised awareness levels amongst many South Asian women. [9] Nowadays, society is becoming more aware of BSE due to these sources. [10] A study conducted in Turkey revealed that 98% of school students were not aware of BSE. [11] This is in contrast to our study, where 19% of school teachers knew the techniques and significance of BSE. [12] The reason for this difference between the other 2 studies and ours is probably due to the age and educational status difference. The other studies included only students while our study participants belong to different ages (from young to old).

Regarding perceptions about the utility of BSE in preventing breast cancer, our study revealed that 70% of participants thought that it is a method of early detection of breast cancer. This is in contrast to another study in the Iranian population, where half of the study participants revealed that BSE can detect and prevent breast cancer. [13] Regarding the level of awareness about mammography, our study revealed that 60% of participants have some knowledge about it. It ranges from 5% to 80% in Asian and North African countries. [14-17]

Some of the limitations of our study are sampling from a single district and limited survey items. The awareness could have been more explicitly explained with in-depth analysis through qualitative research. Further large-scale studies in multiple centers are needed to quantify the magnitude of the problem effectively.

CONCLUSION

Most of the participants of the study had knowledge of breast cancer gained via electronic and print media and 70 % were aware of BSE. Although, a few were aware of the technique. About 1/3rd of participants were aware of the age of the start of BSE. A small number of participants were aware of the mammography. This indicates that female school teachers, having better educational status, have enough knowledge and practice in breast cancer detection and prevention.

The relevant agencies belonging to the government and private organizations should attempt to utilize the services of female school teachers in creating awareness among the general public, particularly in rural setups. There is a need to train this population to educate females of different ages of rural as well as urban backgrounds

about BSE, clinical examination, and mammography. This will go a long way in the early detection and prevention of breast cancer in the country.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

Ahmed M:	Data Collection, Writing, SPSS
Fatima B:	Data Collection, Review
Ali W:	Concept, Review, Statistical Analysis
Amin N:	Review, Writing
Gul H:	Review, Writing
Hussain M:	Data Collection
Haq A:	Review, Writing
Fatima S:	Review, Writing

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.