Original Article

Assessment of Knowledge About Breast Cancer Screening Among Female Faculty of University of Lahore

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ABSTRACT

Carcinoma of breast is now the most frequent of all cancers, both in male and female malignancies. It is also the fifth leading cause of death from all types of malignancies, and the first among those tumors that kill women. **Objective:** To assess the knowledge about breast cancer screening among female faculty of University of Lahore, Pakistan. **Methods:** This was a cross-sectional descriptive research that used a non-probability purposive sampling technique. After getting permission from the participants, data from 356 female faculty members at the University of Lahore was obtained. SPSS version 22 was used to evaluate and enter the data. **Results:** The findings suggested that female faculty members had a moderate understanding of cancer screening. Even though majority of the participants were aware that mammography is a fundamental and conventional technique for breast cancer screening, they were unaware of when to begin and how frequently it should be done. Respondents also knew what breast self-examination (BSE) and clinical breast examination (CBE) were, but they didn't know when they should begin or how often they should be conducted. **Conclusions:** In summary, female academic staff at the University of Lahore have a moderate level of knowledge. It is suggested that breast cancer screening methods be made more widely known and educated about through frequent conferences and seminars highlighting the proper age and time for starting BSE, CBE, and Mammography, as well as the need of doing these procedures on a regular basis.

INTRODUCTION

Cancer can be defined as the unchecked and aberrant proliferation of cells, which results in mortality as these malignant cells spread throughout the body [1]. Carcinoma of breast has a wide range of characteristics, including differences across tumors from different persons (inter-tumor variance) and alterations between cancer cells [2-4]. Breast cancer is currently the most common of all cancers, including both male and female malignancies. It is also the fifth leading cause of mortality among all types of malignancies, and the top among those tumors that kill women. Asia has the highest breast carcinoma incidence and mortality rates, at 45.4 percent and 50.5 percent,

correspondingly. Cancer of breast has the highest incidence of all malignancies in both males and females in Pakistan, according to WHO. [5,6]. It is also predicted that one out of every nine women may develop breast cancer, with the incidence being 2.5 times greater in Asia than in adjacent nations such as India and Iran. [7]. According to a systematic study undertaken by the American Cancer Society, lower mortality in breast cancer is directly connected to the length of follow-up, and mammography screening can also lead to enhanced life expectancy. Other studies have revealed that the stage at the time of diagnosis might predict survival odds; the earlier the

diagnosis, the better the chances of survival. Furthermore, early identification and detection, particularly with mammograms, may reduce the incidence of advanced breast cancer (stage II B) [8-11]. As a result, screening is critical for illness prevention, early detection, and treatment. Breast self-examination, clinical breast examination, and mammography are all screening modalities. Breast self-examination and clinical breast inspection are no longer advised by the American Cancer Society (ACS), but they are still used in developing nations. The justification for this is because these are non-invasive, non-expensive techniques that don't require any special apparatus and can be done in the privacy of one's own home [12, 13]. Many research have shown that there is a knowledge and awareness gap when it comes to breast cancer and its screening procedures. Among Pakistan, many studies have been conducted to investigate breast cancer awareness and knowledge in various populations of Pakistani females. Khalid A et al., did a research in Lahore in 2018. Only 34% of the recruited girls had known of breast self-examination, 30% had known of clinical breast examination, and 29.5 percent had known of mammography, according to the study's findings. Our research population's awareness of breast cancer, its risk factors, signs and symptoms, and early identification procedures was generally lacking [14]. In a rural part of Lahore, another KAP research on breast self-examination was done. For statistics, 135 rural Lahore women were surveyed. According to the data, 19.3% of people surveyed knew about breast self-examination, 28.9% knew about breast cancer, and only 24.4 percent knew about breast self-examination, while 35.6 percent knew that only physicians may check the breast. The period between breast self-examinations was known by 34.1 percent of research participants, but not by 46 percent. The findings indicated that in rural Lahore, women of reproductive age lack knowledge, attitudes, and behaviours [15]. In 2020, the KAP research was undertaken to determine the frequency of breast self-examination within Pakistani women. There were 385 women in the research, with an average age of 30.09+/- 7.09 years. Overall, 259 individuals indicated they had accurate information, 123 people said they had suitable actions, and 187 people said they had favorable attitudes regarding breast self-examination. But unfortunately, it was discovered that there was a lack of popular knowledge regarding breast self-examination [16]. In Tehran, Iran, a study was designed to assess BSE knowledge, attitudes, and behaviours among females over the age of 20. 40.57 percent of the participants knew something about breast cancer, and 23.03 percent knew something about BSE. While 47.86 percent of the participants were positive, only 11.6 percent of them practiced BSE on a monthly basis.

According to the findings, the participants in this study had inappropriate BSE understanding, attitudes, and behaviours [17]. In the year 2020, Sachdeva S et al., published a KAP research on BSE in Indian women. A total of 1000 women aged 30 or older from all around India took part in this study. 54.4 percent, 15.1 percent, 21.3 percent, and 9.2 percent of the respondents came from Northern, Southern, Western, and Eastern India, respectively. The cumulative KAP score was 70 out of a potential 110, as per the data. Out of a maximum of 30, 52, and 28, the scores for the knowledge, attitude, and practices categories were 22.0 (5.0), 36.0 (7.0), and 13.0 (8.0), accordingly. [18]. The study had been carried out on the female faculty members to know their level of knowledge on breast screening. The assessment of knowledge on breast cancer screening among female faculty members had importance in context that teachers are associated with the students and they can play an important part in educating their students about breast cancer screening methods. So, first, there is need to assess their level of knowledge. Assessing how much people know about breast cancer screening and how they do it would assist not just to raise awareness about it, but also to identify the need for ongoing health education initiatives to enhance people's understanding of the illness and routine screening procedures.

METHODS

It is a descriptive cross sectional study conducted at University of Lahore, Lahore, Pakistan including 356 participants. The study duration was nine months. After reviewing literature questionnaire had been formed. The validity of research instruments were determined by consulting the educational experts by researchers, the reliability of instrument was evaluated by use of pilot testing. Pilot testing was done on 30 participants who were not a part of study and reliability was determined through Cronbach Alpha which was 0.78. There were total 38 questions related to knowledge about breast cancer and breast cancer screening methods. One point is given for a correct answer and zero for an incorrect or no answer. Knowledge had a maximum score of 38 (100%) and a lowest value of 0 (0 percent). The knowledge level was graded as "poor" for scores ranging from 0 to 49%, "moderate" for scores ranging from 50 to 79%, and "high" for scores ranging from 80 to 100% [19,20]. Data were collected after approval from Ethical Review Board of University of Lahore. Data were analyzed by utilizing SPSS version 25.0. Categorical data were presented as frequency distribution tables. Chi-Square was used to determine the association of knowledge level and sociodemographic variables. P value of less than or equal to 0.05 (P ≤ 0.05) was taken as significant.

R E S U L T S

The total number of participants were three hundred and fifty six. Among them 175 (49.2%) participants were between the age of 24 to 30 years while 181 (50.8%) were above the age of 30 years up to 47 years. Out of them 159 (44.7%) females were unmarried, and 197 (55.3%) were married. Most of the participants' have M.Phil. / PhD degree i.e. 239 (67.1%) and 101 (28.4%) hold Masters/Graduation degree, the remaining participants 16 (4.5%) have Professional/Technical qualification. And most of the respondents i.e. 258 (72.5%) were lecturers and senior lecturers while 78 (21.9%) of them were assistant professors, however 20 (5.6%) of the respondents did not reply to this question. Out of total 93 (26.1%) were from diet and nutrition sciences department, and there were 73 (20.5%) were from pharmacy department and 55 (15.4%) belonged to nursing department and 45 (12.6%) were from physical therapy department, while 36 (10.1%), 30 (8.4%) belonged to medical lab technology and health professional technologies respectively, on the other hand only 13 (3.7%) and 7 (2.0%) female faculty members participated from public health and from radiological and imaging technology respectively. Remaining 4 (1.1%) participants did not respond to this question. Results showed that all of the respondents, 356 (100%) have heard of breast cancer. Most common source of information 271 (76.1%) regarding breast cancer was Media (TV, Radio, Internet etc.) followed by books 251 (70.5%), hospital or any health care person 215 (60.4%), conferences/seminars 188 (52.8%), friends or family members 175 (49.2%), lecture 143 (40.2%). All the faculty members 347 (97.5%) knew that breast cancer is one of the most common cancer among females, only 9 (2.5%) had no knowledge. 260 (73.0%) of respondents thought that only females are effected by breast cancer or they don't know about this, while 96 (27.0%) gave correct answer to this question. Majority of the female faculty members 332 (93.3%) answered that breast cancer cannot be transmitted from one person to another person, while 24 (6.7%) participants did not give correct answer or don't know about this. According to this table that 258 (72.5%) female faculty members women below 30 years of age can get breast cancer while 98 (27.5%) don't think or don't know about this. Most commonly mentioned signs and symptoms of breast cancer were lump in breast 334 (93.8%), pain in breast 288 (80.9%), lump under the armpit 270 (75.8%) and change in size, shape or color of breast 255 (71.6%). On the other hand, 220 (61.8%), 187 (52.5%), 177 (49.7%), 173 (48.6%) participants responded nipple discharge, weight loss, dimpling of breast and ulceration of breast as the signs and symptoms of breast cancer respectively. Positive family history of breast cancer was identified as a main risk factor by 327 (91.9%) of

participants. Other commonly identified risk factors by female faculty members were increasing age 236 (66.3%), obesity 216 (60.7%), and never having breastfed a child 207 (58.1%). On the other hand less commonly considered risk factors were early menarche 162 (45.5%), smoking 154 (43.3%), late menopause 147 (41.3%), first child above 30 years of age 136 (38.2%) and 55 (15.4%) of participants considered large breasts as a risk factor of breast cancer. 166 (46.6%) female faculty members knew about the stage of breast cancer which can be cured, while 190 (53.4%) had no knowledge about it. 320 (89.9%) female faculty members knew that early detection of breast cancer increases the chances of survival, while 36 (10.1%) did not have knowledge about this. Among all of the respondents mostly, i.e. 293 (82.3%) of them knew that mammography is one of the screening methods of breast cancer, while 271 (76.1%) and 231 (64.9%) of them considered BSE and CBE as screening methods respectively. Regarding breast self-examination shows that majority of the respondents 293 (82.3%) do not know about the best time to do BSE. Similarly most of the respondents 233 (65.4%) also do not know how often BSE should be done, and more than half of the respondents 183 (51.4%) do not know the age at which BSE should be started. However, many participants 245 (68.8%) knew that BSE should be done by whom. Regarding clinical breast examination (CBE) shows that majority of the respondents 250 (70.2%) do not know how often CBE should be done. Similarly, most of the respondents 240 (67.4%) also do not know at what age CBE should be started and 214 (60.1%) do not know the method of CBE. However, many participants knew that who will perform CBE. All most all of the respondents 333 (93.5%) knew that mammography is the basic and standard screening procedure and 300 (84.3%) knew that very small lump can be detected by mammogram. On the other hand, small number of participants 154 (43.3%) knew about starting age of mammography similarly, less participants 131 (36.8%) knew that how often mammography should be performed. Level of knowledge of the participants according to the correct responses given by participants. Results shows that 68% of the participants were having moderate level of knowledge while 21.6% of the participants had low level of knowledge and only 10.4% of the participants had high level of knowledge. (Table 1) There is a borderline association between "Age" of the respondent and level of knowledge as p-value = 0.05. (Table 2)

Level of Knowledge categories	Age Categories		Total	Chi-Sq	p-value
	24 – 30 Years	30.5 to 47 Years			
"Low" 0 – 49%	44	33	77		
	25.1%	18.2%	21.6%		
"Moderate" 50 – 79%	119	123	242	6.106	0.05
	68.0%	68.0%	68.0%		
"High" 80 – 100%	12	25	37		
	6.9%	13.8%	10.4%		
Total	175	181	356		
	100.0%	100.0%	100.0%		

Table 1: Cross tab of Age with level of knowledge

Significant association between the "Designation" of the respondent and knowledge level of respondents was found as P-value is 0.019. (Table 2)

Level of Knowledge categories	Age Categories		Total	Chi-Sq	p-value
	24 – 30 Years	30.5 to 47 Years			
"Low" 0 – 49%	52	18	70		
	20.2%	23.1%	20.8%		
"Moderate" 50 – 79%	186	46	232	7.892	0.019
	72.1%	59.0%	69.0%		
"High" 80 - 100%	20	141	34		
	7.8%	7.9%	10.1%		
Total	258	78	336		
	100.0%	100.0%	100.0%		

Table 2: Cross Tab of Designation with level of knowledge

Highly significant association between "Marital Status" "Education Level" and "Department" of the respondents and Level of Knowledge as P-values are 0.001, 0.001, 0.0001 respectively, (Table 3,4,5).

Level of Knowledge categories	Age Categories		Total	Chi-Sq	p-value
	24 – 30 Years	30.5 to 47 Years			
"Low" 0 – 49%	36	41	77		
	22.6%	20.8%	21.6%		
"Moderate" 50 - 79%	117	125	242	13.58	0.001
	73.6%	63.5%	68.0%		
"High" 80 - 100%	6	31	37		
	3.8%	15.7%	10.4%		
Total	159	197	356		
	100.0%	100.0%	100.0%		

Table 3: Cross Tab Marital Status with level of knowledge

Level of Knowledge categories	Age Categories		Professional/ Technical	Total	Chi-Sq	p-value
	Graduation – Masters	M.Phil. – PhD.				
"Low" 0 - 49%	18	55	42	77		
	17.8%	23.0%	5.0%	21.6%		
"Moderate" 50 - 79%	59	174	95	24	30.783	< 0.001
	58.4%	72.8%	6.3%	268.0%		
"High" 80 - 100%	242	10	31	37		
	3.8%	4.2%	8.8%	10.4%		
Total	101	239	16	356		
	100.0%	100.0%	100.0%	100.0%		

Table 4: Cross Tab Educational Level with level of knowledge

Level of Knowledge categories	Age Categories							Total	Chi-Sq	p-value
	Diet and Nutrition sciences	Health Professional Technologies	Medical Lab. technology	Nursing	Pharmacy	Physical therapy	Public Health	Radiological and imaging technology			
"Low" 0 - 49%	18	62	92	0	21	23	0	0	77		
	17.8%	0.0%	5.0%	0.0%	28.8%	51.1%	0.0%	0.0%	21.9%		
"Moderate" 50 - 79%	59	248	277	213	51	22	13	7	238	214.69	<0.0001
	58.4%	0.0%	5.0%	8.2%	69.9%	48.9%	100.0%	100.0%	67.6%		
"High" 80 - 100%	242	0	0	34	1	0	0	0	37		
	3.8%	0.0%	0.0%	61.8%	1.4%	0.0%	0.0%	0.0%	10.5%		
Total	101	30	36	55	73	45	131	7	352		
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	00.0%	100.0%	100.0%		

Table 5: Cross Tab of Department with level of knowledge

DISCUSSION

The average age of the female faculty members in our study was 31.56+/-4.7 years, whereas the average ages of academics in previous studies were 36.27+/-7 years, 39.02+/-8.7 years, and 44.79+/-7.6 years [21-23]. In this survey, all 356 participants (100%) had heard of breast cancer, and the most prevalent source of knowledge was the media (TV, radio, Internet) with 271 (76.1%), followed by books with 251 percent (70.5 percent). During medical school, the most often cited information source was books and literature, according to a study of physicians and nurses in Punjab and Sindh. [24]. Breast cancer was the most frequent female malignancy, according to almost all of the responders (347, or 97.5 percent). While according to another study cancer of breast is the most frequent malignancy among Pakistani women, according to the findings of a Punjab study of medical and non-medical students. 73 percent of non-medical students and 80 percent of medical students understood this [25]. Positive family history of breast cancer was indicated as a key risk factor by 327 (91.9%) of participants when it came to breast cancer risk factors. Likewise, surveys done in Karachi in 2019 and Ghana in 2019 found that 270 (70.9%) and 236 (83.9%) of participants

consider family history to be a major risk factor, respectively, and also another research performed on community pharmacists discovered that 81.8 percent of pharmacists consider family history to be a main indicator of risk [26,27,28]. As per our research, the most often stated signs and symptoms of breast cancer were a lump in the breast (334%), discomfort in the breast (288%), a lump beneath the armpit (270%), and a change in the size, shape, or colour of the breast (255%). (71.6 percent). While a survey of pharmacists found that the majority of respondents thought that pain is the most prominent sign of breast cancer (70.3%), and that nipple discharge and skin edema are common manifestations (54.3%). [28]. Mammography is one of the screening procedures for breast cancer, according to 293 (82.3%) of the respondents, whereas BSE and CBE are regarded screening methods by 271 (76.1%) and 231 (64.9%) of the respondents, respectively. Breast self-examination (60.5%), mammography (42.5%), and ultrasound (40.5%), according to a research done in China, were the most often utilized procedures for disease identification (41.4 percent). Similar research in Ethiopia found that self-breast inspection was recognized by 88.9% of women who knew about breast cancer screening, with 61.8 percent clinical breast examination, 40.9 percent mammography, 17.3 percent ultrasound, and 2.2 percent biopsy being the most common. [29,30]. The results suggest that 68 percent of the participants had a moderate level of knowledge, 21.6 percent had a poor level of knowledge, and just 10.4 percent of the subjects had a high level of knowledge. When compared to the findings of a research conducted on Walailak University female employees, 35 percent had strong understanding of breast cancer screening, 7.6 percent had acceptable knowledge, and 7.4 percent had poor knowledge. [31]. Another research was undertaken in Iraq in 2021, with 51.2

percent of the people demonstrating a satisfactory level of understanding [32]. Surprisingly, according to the results of an Egyptian rural women's study, only 46.9% of the participants possessed a moderate or high level of knowledge [33]. I furthermore, a survey of female employees at Mosul University in Iraq found that 57.3 percent of them had a low or inadequate level of expertise [34]. When it comes to breast self-examination, the percentage of the participants (293 or 82.3%) had no idea when is the optimum time to conduct it. Likewise, the number of respondents (233, or 65.4%) had no idea how often BSE should be done, and more than half of the respondents (183, or 51.4%), have no idea when BSE should be begun. Conversely, many participants (245, or 68.8%) were aware of who should do BSE. In a research of Debre Berhan University female students, 143 (35.8%) of those who participated knew how to do BSE. Furthermore, three out of ten people (30.5%) were aware of when BSE should be performed [35]. The most of the 250 respondents (70.2 percent) do not know how often they should get a clinical breast examination (CBE). Similarly, the majority of participants, 240 (67.4%), do not know when CBE should begin and 214 (60.1%) do not know how CBE should be conducted. Many participants, on the other hand, were aware of who would be performing the CBE. In a study of female tertiary health care workers, it was discovered that the majority of survey participants had no idea how CBE is performed, with 30 (18.8%) believing it is performed using ultrasound, 47 (29.4%) believing it is performed using a mammography machine, and another 35 believing it is performed using a mammography machine (21.9 percent). Another research conducted at Riyadh Hospital found that just 26.6 percent of people are aware that CBE should be done once a year [36]. In our analysis, 333 (93.5%) of the respondents recognized that mammography is a fundamental

and standard screening technique, and 300 (84.3%) of the respondents knew that mammography may detect extremely tiny lumps. On the other hand, only 154 (43.3%) of participants were aware of the beginning age for mammography, and only 131 (36.8%) were aware of how often mammography should be conducted. The findings are comparable to those of a study of tertiary health care personnel, which found that 86.3 percent of them were aware that it may be used as a technique for early diagnosis of diseases. Additionally, 41.9 percent of respondents recognized that mammography should begin at the age of 40, and 40.0 percent of respondents knew that mammography should be done on an annual basis[37].

CONCLUSION

Finally, while the majority of the participants were aware that mammography is a fundamental and standard method for breast cancer screening, the majority were unaware of the age at which mammography should be initiated or how frequently it should be conducted. Similarly, they were aware of CBE and BSE but did not know when they should be begun or when they should be conducted. Age and amount of knowledge had a borderline association, while marital status, level of education, designation, and department were all very significantly associated with level of knowledge.

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