

Title: Breast Cancer Awareness, Risk Perception, and Screening Practices Among Undergraduate Female Students in Peshawar, Pakistan: A Cross-Sectional Study.

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ABSTRACT:

Background: Breast cancer is the most common cancer worldwide and the second leading cause of cancer deaths in women. Awareness of the disease is necessary for timely diagnosis and treatment to prevent high mortality rates linked to the disease at a later stage.

Aims and Objectives: We conducted this study to assess knowledge of breast cancer symptoms, risk factors, screening practices, and barriers to detection among both medical and non-medical students in Peshawar.

Methodology: It was a 3-month cross-sectional study conducted at Khyber Girls Medical College (KGMC), Islamia College Psychology Department, Peshawar, and the Human Nutritional Department of the Agricultural University, Peshawar, from February 2024 to June 2024. We used the BCAM questionnaire to assess knowledge, screening practices, and barriers. The sample size was 376, with a 95% confidence level.

Results: The study showed that medical students had more knowledge ($M = 39.98$, $SD = 6.74$) about breast cancer than non-medical students ($M = 34.88$, $SD = 6.42$). However, there was a poor screening practice in both groups, with medical students showing poorer practice in breast screening than the non-medical students. The main barriers that prevented the participants from consulting the doctor were ‘worrying about other things (21.01%)’, ‘embarrassment about making visits to the doctor (18.35%)’, and ‘being too scared to go and see the doctor (16.76%).’

Conclusion: The study proved that medical students had greater knowledge about breast cancer than non-medical students. However, both students showed poor screening practices. Given the insufficient comprehension among non-medical students, there is a compelling need to enhance their knowledge. Furthermore, the public and private sectors should encourage university students to screen for the disease.

Keywords: Breast Neoplasms, Early Detection of Cancer, Universities, Risk Factors, Students, Medical

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INTRODUCTION:

Breast cancer is the most prevalent disease globally and ranks as the second leading

cause of cancer-related deaths among women worldwide (1). There are various forms of the disease, depending on its

morphology, and its prognosis depends on both early detection and early treatment. In 2022, it caused 670,000 deaths worldwide, accounting for 2.3 million diagnoses (1). Although the precise etiology is unknown, several factors contribute to the development and progression of the disease. These include: 'having a family history of condition', 'early onset of menstruation (less than 12 years of age', 'late onset of menopause (greater than 55 years)', 'advanced age', 'having first pregnancy at advanced age (greater than 30 years)', 'lack of breastfeeding', 'tobacco smoking', 'oral contraceptives use', 'consumption of fat-rich diet', 'long term hormone replacement therapy (HRT)', 'obesity (usually postmenopausal)', 'a sedentary lifestyle', 'high dose x-ray exposure to the chest' and 'BRCA1 and BRCA2 genetic mutations' (2,3).

Breast self-examination (BSE) and mammography are frequently employed as screening modalities, whereas Breast Clinical Examination (BCE) and biopsy are for diagnostic purposes (4,5). BSE serves as a primary method for the preliminary identification of cancer (5). It is free of charge and helpful in promptly treating cancer, in its early stages, prolonging the patient's five-year survival rate. Professionals can use mammography for screening and diagnosis, but practitioners primarily use BSE as a screening technique (6). Recent studies have shown that 'Digital breast tomosynthesis (DBT)', also known as '3D mammography', achieves higher breast cancer detection rates than conventional mammography methods (7).

Despite a recent rise in the disease's frequency, wealthy nations have seen a significant decline in breast cancer deaths (8). The increasing number of programs designed to encourage people to undergo early breast cancer screening through BSE, mammography, and early treatment

explains the profound decline in the death rates (8). Unlike the developed nations, rates of sickness and death in emerging Asian countries are strikingly rising (9, 10). With one in nine women in Pakistan reported to have the condition, the homeland has the highest incidence rate in Asia (8). In 2020, the nation reported "25,928 cases of breast cancer", which comprised '14.5%' of all cancer cases (10). The disease causes high fatality rates in Pakistan because healthcare professionals identify the condition at an advanced stage, when there are few treatment options. This issue may arise from a limited understanding of risk factors, inadequate screening protocols, and limited public awareness. People have conducted a few studies in Pakistan on the issue. A survey conducted among female medical and non-medical students in Southern Punjab found that "there was a lack of breast cancer awareness and associated risk factors" (11). Studies conducted in hospitals showed that although healthcare professionals possessed satisfactory knowledge, the scope of breast cancer screening practices was not sufficient and needed special attention (12, 13). Awareness is essential for prompt diagnosis and intervention to mitigate associated risk factors and illness advancement. For this purpose, digital media, print media, and campaigns can achieve it.

The primary purpose of the study is to determine and compare the level of understanding and screening behavior related to the disease among medical and non-medical students in Peshawar, and also to identify the barriers that hinder the timely diagnosis of the disease. Our study will provide essential knowledge about the disease and its associated measures.

Objectives:

1. To determine and compare the level of knowledge regarding breast cancer

- between medical and non-medical students.
2. To determine and compare screening practices between the groups.
 3. To identify the barriers that slow down the diagnosis of breast cancer and prevent students from consulting a doctor.

Hypothesis:

H1: There is a significant difference in knowledge of breast cancer between medical and non-medical students.

H0: There is no significant difference in knowledge of breast cancer between medical and non-medical students.

Materials and methods:

Study design and study setting:

It was a multicenter cross-sectional study conducted at Khyber Girls Medical College (KGMC), the Psychology Department of Islamia College, and the Department of Human Nutrition at the Agricultural University of Peshawar from February 2024 to June 2024. The population consisted of female medical students from KGMC and non-medical students from the Psychology Department of Islamia College and Agricultural University.

Sample size and sampling procedure:

We collected data from medical and non-medical students in Peshawar. We employed simple random probability sampling as our sampling technique in our investigation, randomly recruiting participants using their class roll numbers on attendance sheets. We then employed the lottery method to choose the roll numbers for our investigation. After their selection, they consented and agreed to participate in the investigation. The selected female students who gave their consent participated in our research. Conversely, we excluded the selected female students who did not consent to our

research. We used Epi Info to calculate the sample size. The sample size was 376, with a 95% confidence level, a 5% margin of error, and a predicted frequency of 50%.

Data Collection Procedure:

The Community Medicine Department of KGMC provided ethical clearance and a research approval letter. We also informed our supervisor about our project and obtained consent to continue our study. We utilized the Breast Cancer Awareness Measure (BCAM) questionnaire as the crucial instrument for evaluating the disease's knowledge and its associated barriers. Our team distributed 400 questionnaires to KGMC, the Psychology Department of Islamia College, and the Human Nutrition Department of Agriculture University. Students visited each department to participate in the survey. After obtaining informed consent and explaining the purpose of the study, the team distributed the questionnaires directly to the participants after a waiting period and collected them once they had completed them.

Questionnaire:

We gathered data utilizing the BCAM, developed in 2009 by 'King's College and University London, United Kingdom', and experts approved it on February 9, 2011 (14). The content validity of the tool is '0.93', and internal consistency is '0.964' using the Cronbach alpha coefficient (14). Before data collection, we piloted the questionnaire among 30 students for clarity and comprehension of the items. During piloting, the questionnaire underwent minor adjustments, but no questions were added or removed. We also did not calculate the Cronbach alpha coefficient of the revised questionnaire.

The questionnaire has 40 questions across 7 domains. Domain 1 includes questions about early warning indicators of breast cancer; Domain 2 deals with breast cancer self-examination; Domain 3 comprises a single question related to the urgency of

contacting a doctor when a breast change is detected; Domain 4 asks ten questions regarding the obstacles students face while seeking medical attention; Domain 5 deals with understanding one's age and lifetime risk of developing the disease; Domain 6 covers knowledge of national screening centers; and its risk factors were in the final domain.

Data Analysis:

SPSS version 26 was the program utilized for data analysis. After conducting and double-checking the data entry procedure, we used quantitative analysis to obtain our respective outcomes. For categorical variables, we examined the results using frequency tables and percentages; for continuous variables (age), we utilized the mean and standard deviation. We utilized SPSS to create tables, and we generated figures using both SPSS and Excel 2019. The p-value was 0.05. We applied the Chi-Square Test to analyze categorical data, particularly breast cancer knowledge. Then, we created a new domain with 23 questions by adding questions from domains 1, 5, and 8. Next, we summed the participants' scores in that domain to calculate the mean knowledge score. We then subsequently analyzed the mean knowledge scores between the groups using the unpaired T-test. Afterward, we divided the participants into groups based on their overall knowledge scores. We classified participants having a score between 0 and 21 (0-33%) as 'poor knowledge'; those having a score between 22 and 42 (34-66%) as 'average knowledge'; and those having a score of 43 or above (i.e., 68-100%) as 'good knowledge.' We analyzed the difference between these categories using the chi-square test.

RESULTS:

A total of 376 students participated in the study. Among them, 188 were medical

students from KGMC and 188 were non-medical students. Among the non-medical participants, 93 (24.7%) students were from the Human Nutritional Department of the Agriculture University, and 95 (25.3%) students were from the Psychology Department of Islamia College. The participants' mean age was 21 years (SD =1.50). Table 1 presents the remaining details.

Table 2 presents details regarding the knowledge of symptoms. Medical students (92.6%) and non-medical students (57.4%) reported lump in the breast or armpit as the most commonly known symptom, respectively. In addition, other symptoms medical students commonly reported were a lump or thickening under the armpit (81.9%) and pain in one of the breasts or armpit (77.7%). Whereas, among non-medical students, the most commonly reported were pain in one of the breasts or armpit (54.3%) and discharge or bleeding from your nipple (53.7%) respectively. The least common reported symptom among medical students was a nipple rash (29.8%), whereas among non-medical students, it was pulling in of your nipple (12.8%). We used Pearson's chi-squared test in this domain. The majority of the symptoms showed statistically significant ($P < 0.05$) findings, except for redness on the breast skin ($P = 0.886$) and nipple rash ($P = 0.450$). Overall, medical students knew more about breast cancer symptoms than non-medical students.

In total, 2.1% of non-medical participants ($N = 188$) and 6.4% of medical participants ($N = 188$) correctly answered the question about the age at which breast cancer has a high chance of occurrence in women i.e., a 70-year-old woman. The remaining details are in Table 3. The results of the breast examination practices of the respondents are shown in Figure 1. Regarding breast examination practices, about 91 (48.4%) non-medical students and 109 (58.0%)

medical students rarely or never check their breasts regularly. On the other hand, about 19 (10.1%) non-medical and 6 (3.2%) medical students did not know how to check their breasts. A total of 41.5% of participants would immediately contact a doctor. I.e., after noticing breast changes, whereas 37.5% of the participants will only contact the doctor if signs and symptoms appear. On the other hand, 3.2% of them won't contact the doctor even after the appearance of signs and symptoms. We present the remaining details in Table 4. These findings suggest that breast inspection practices are generally poor, with the majority of them either unable or unsure of how to identify changes in their breasts. On the other hand, compared with medical students, non-medical students engage in significantly more screening procedures.

Figure 3 shows the details of the barriers. As for obstacles to assessing medical care, the most common problem participants faced was worrying about other things (21.01%), followed by embarrassment from going to the doctor (18.35%), and being too scared to go and see the doctor (16.76%). In terms of confidence in detecting changes in the breast, about 53 (28.2%) non-medical students and 44 (23.2%) medical students reported noticing the changes without any difficulty, whereas 87 (46.3%) non-medical and 106 (56.4%) medical students found it difficult to detect significant changes. On the other hand, 48 (25.5%) non-medical students and 38 (20.2%) medical students were unable to detect significant changes. We present the remaining details in Figure 2. Others included not feeling confident to talk about symptoms with the doctor (14.10%), followed by being too busy to make time to go to the doctor (14.10%), worrying that what the doctor might find out about me would discourage me from

going to the doctor (13.56%) and finding my doctor difficult to talk to (10.37%).

When it comes to the risk factors for development and progression, non-medical students knew of exposure to ionizing radiation (35.1%), having a close relative with breast cancer (31.4%), and doing less than 30 minutes of moderate physical activity (30.9%). However, the majority of them were unaware of some, such as using HRT (58.0%), having late menopause (57.4%), having children later on in life or not at all (45.2%), and being overweight (41.0%). While a small proportion of non-medical students possessed knowledge about specific risk factors, a significant number remained unaware of critical risk determinants that accelerate the progression of diseases. Supplementary Figure 4 shows the remaining details.

Correspondingly, among medical students, the most known risk variables were having a history of breast cancer (47.9%), using HRT (43.1%), and having a close relative of breast cancer (42.0%). Nonetheless, they were unaware of some risk variables such as being overweight (44.7%), later menopause in life (43.6%), having children later in life (36.7%), starting periods at early age (36.2%), and engaging in fewer than 30 minutes of moderate physical exercise (35.6%). Medical students generally knew most of the risk variables. The risk factor common between both groups was having a close relative with breast cancer. Figure 5 shows the remaining information. We then divided the scores into three distinct groups: poor knowledge, average knowledge, and good knowledge. Amongst the medical students, 77 (41.0%) had good knowledge, 110 (58.5%) had average knowledge, and 1 (0.5%) student had poor knowledge. Among the non-

medical students, 27 (14.4%) had good knowledge, 155 (82.4%) had average knowledge, and 6 (3.2%) had poor knowledge. Table 6 shows the categories and their significance.

According to these findings, there was a substantial knowledge gap ($p < 0.001$) between students studying medicine and not, with medical students having more information overall.

Table 1: Demographics of the participants

Demographic		Frequency (%)	Mean	Maximum	Minimum
AGE		280 (100%)	21	25	18
name of the institute	KGMC	188 (50.0%)			
	AGRICULTURE UNIVERSITY OF PESHAWAR	93 (24.7%)			
	ISLAMIA COLLEGE PESHAWAR	95 (25.3%)			
degree	Medical	188 (50.0%)			
	non medical	188 (50.0%)			
marital status	single	366 (97.3%)			
	married	10 (2.7%)			

Table 2: Knowledge of symptoms among medical and non-medical students

Serial number	questions	responses	Degree		significance
			Medical N=188 (%)	non medical N=188 (%)	
1	change in position of nipple	yes	107 (56.9%)	42 (22.3%)	<0.001*
		no	45 (23.9%)	101 (53.7%)	
		dont know	36 (19.1%)	45 (23.9%)	
2	pulling in of your nipple	yes	97 (51.6%)	24 (12.8%)	<0.001*
		no	53 (28.2%)	103 (54.8%)	
		dont know	38 (20.2%)	61 (32.4%)	
3	pain in one of your breast or armpit	yes	146 (77.7%)	102 (54.3%)	<0.001*
		no	25 (13.3%)	56 (29.8%)	
		dont know	17 (9.0%)	30 (16.0%)	
4	puckering or dimpling of your breast	yes	115 (61.2%)	72 (38.3%)	<0.001*
		no	22 (11.7%)	56 (29.8%)	
		dont know	51 (27.1%)	60 (31.9%)	

5	discharge or bleeding from your nipple	yes	141 (75.0%)	101 (53.7%)	<0.001*
		no	25 (13.3%)	46 (24.5%)	
		dont know	22 (11.7%)	41 (21.8%)	
6	a lump or thickening in your breast	yes	174 (92.6%)	108 (57.4%)	<0.001*
		no	9 (4.8%)	38 (20.2%)	
		dont know	5 (2.7%)	42 (22.3%)	
7	a nipple rash	yes	56 (29.8%)	53 (28.2%)	0.45
		no	83 (44.4%)	75 (39.9%)	
		dont know	49 (26.1%)	60 (31.9%)	
Serial number	question	responses	Degree		significance
			Medical N=188(%)	Non medical N=188(%)	
8	redness in your breast skin	yes	66 (35.1%)	63 (33.5%)	0.886
		no	76 (40.4%)	75 (39.9%)	
		dont know	46 (24.5%)	50 (26.6%)	
9	A lump or thickening under your armpit	yes	154 (81.9%)	81 (43.1%)	<0.001*
		no	21 (11.2%)	55 (29.3%)	
		dont know	13 (6.9%)	52 (27.7%)	
10	changes in the size of your breast or nipple	yes	126 (67.0%)	64 (34.0%)	<0.001*
		no	37 (19.7%)	79 (42.0%)	
		dont know	25 (13.3%)	45 (23.9%)	
11	changes in the shape of your breast or nipple	yes	127 (42.0%)	79 (42.0%)	<0.001*
		no	31 (16.5%)	59 (31.4%)	
		dont know	30 (16.0%)	50 (26.6%)	

Table 3: Age at which women have likelihood of breast cancer

variable		degree	
		Medical N=188 (%)	Non medical N=188 (%)
Who is likely to get breast cancer next year	A 30 year old woman	59 (31.4%)	37 (19.7%)
	A 50 year old woman	40 (21.3%)	33 (17.6%)
	A 70 year old woman	12 (6.4%)	4 (2.1%)
	A woman of any age	65 (34.6%)	75 (39.9%)
	Dont know	12 (6.4%)	39 (20.7%)

Table 4: shows how soon will you contact the doctor if you found a change in your breast

Responses	Frequency n=376 (%)
dont know	39 (10.4)
immediately	156 (41.5)
if signs and symptoms appear	141 (37.5%)
weeks to months after lump appearance	19 (5.1%)
months to years after lump appearance	9 (2.4%)
wont contact the doctor at all	12 (3.2%)

Table 5: Mean knowledge score of medical and non- medical students

Variable	Medical		Non medical		Total		significance
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Score	39.98	6.74	34.88	6.42	37.43	7.05	<0.001*

Table 6: Knowledge categories of medical and non-medical students

knowledge categories	Degree		significance
	Medical	non medical	
poor knowledge	1 (0.5%)	6 (3.2%)	<0.001*
average knowledge	110 (58.5%)	155 (82.4%)	
good knowledge	77 (41.0%)	27 (14.4%)	

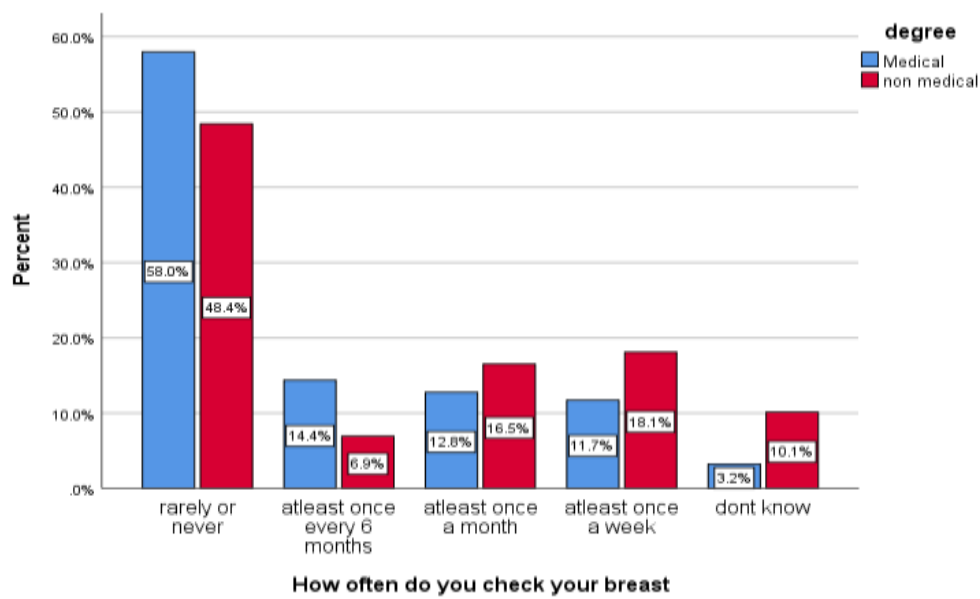


Figure 1: How often do medical (N=188) and non-medical students (N=188) check their breasts.

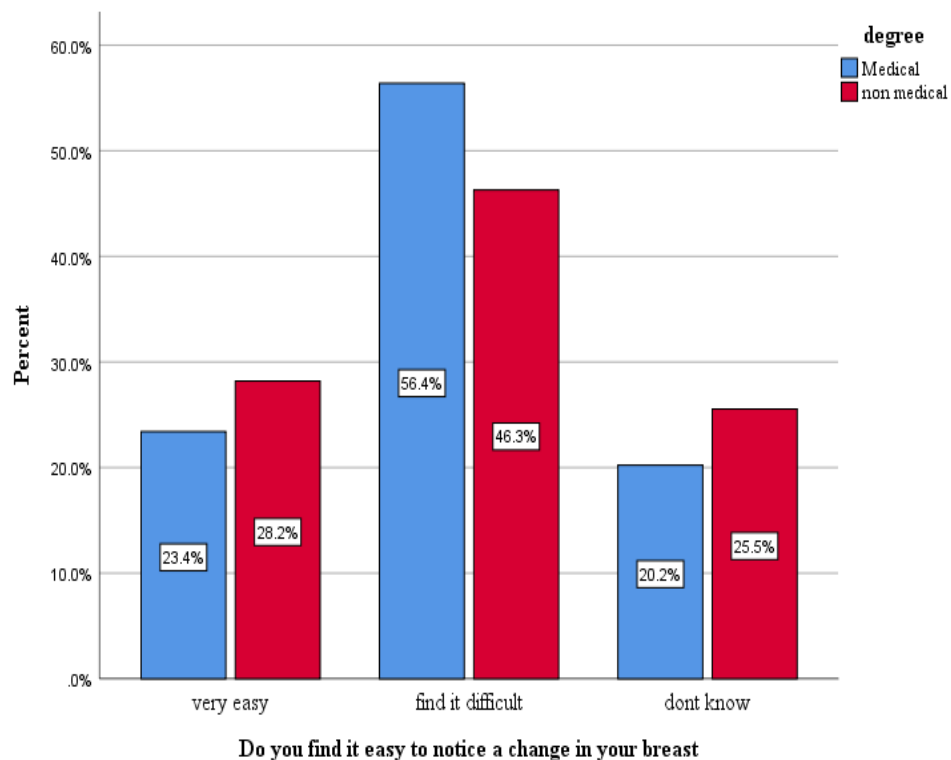


Figure 2: Do medical (N=188) and non-medical students (N=188) find it easy to notice change in their breast

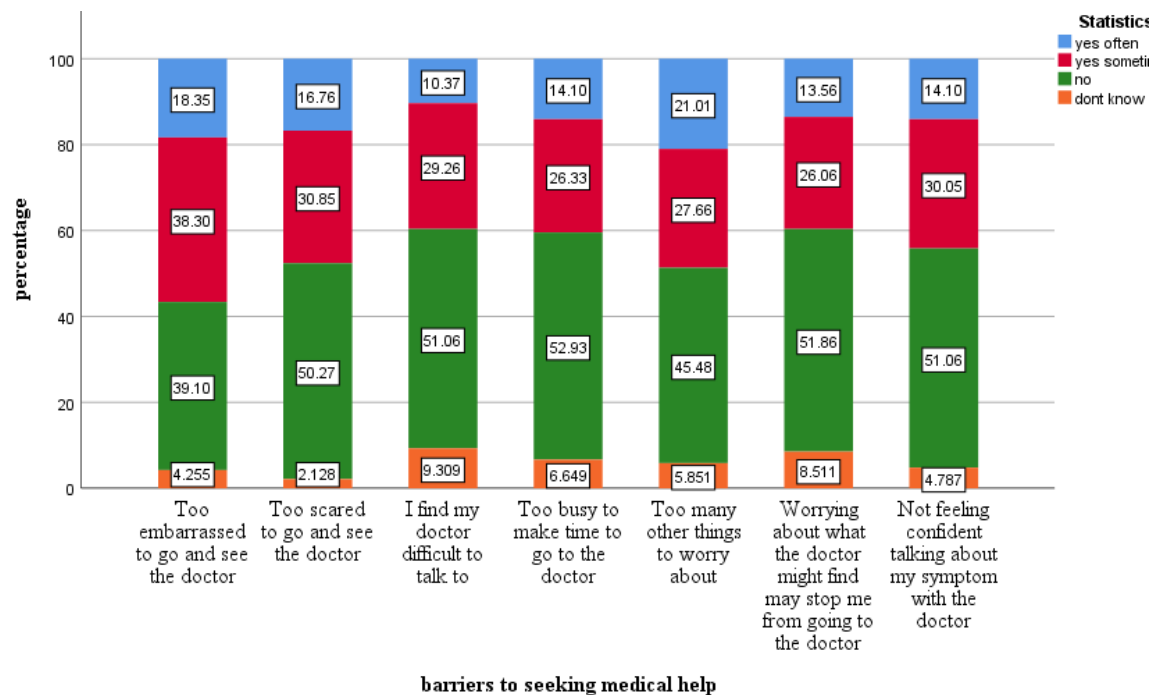


Figure 3: Barriers to seeking medical help (n=376)

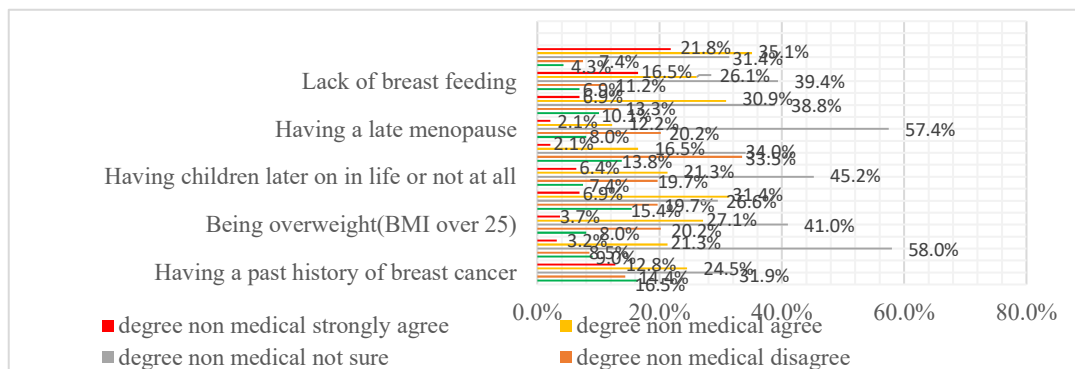


Figure 4: Knowledge about breast cancer risk factors among non-medical students (N=188)

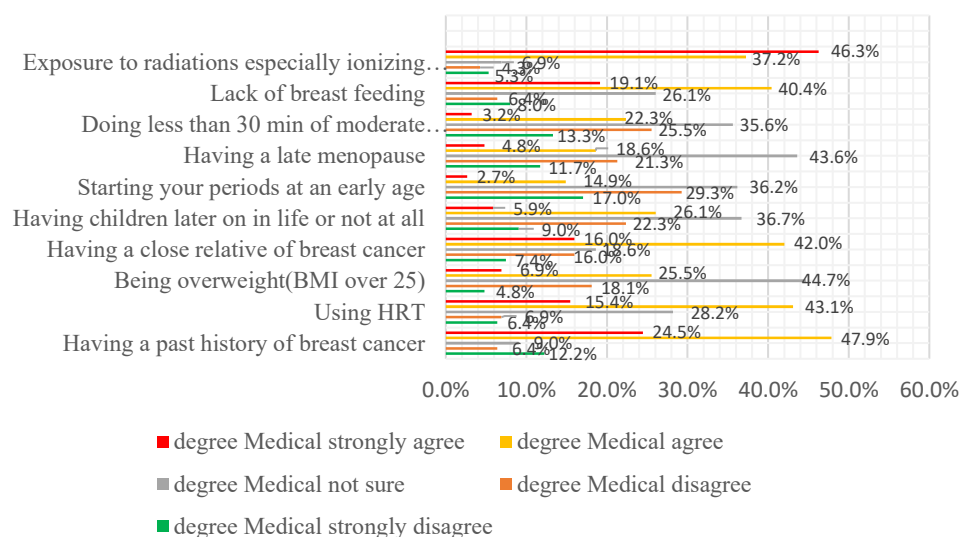


Figure 5: Knowledge about breast cancer risk factors among medical students (N=188)

The mean knowledge score of the participants was 37.43 (SD = 7.05). There was a significant difference in knowledge ($p < 0.001$) between the groups, in which medical students had significantly more knowledge ($M = 39.98$, $SD = 6.74$) than non-medical students ($M = 34.88$, $SD = 6.42$). The details of the mean knowledge score are shown in table 5.

DISCUSSION:

The study aimed to determine procedures, obstacles, and evaluate breast cancer awareness between both groups of participants. Based on the findings, medical students demonstrated greater understanding than their non-medical counterparts. It also disclosed that, despite their increased awareness, neither the medical nor the non-medical students had an understanding of the screening processes, and the screening methodologies of both groups were inadequate.

The comprehension of symptomatic symptoms exhibited by medical and non-medical students differed markedly, with medical students displaying much more familiarity with clinical indicators than their non-medical counterparts. The most prevalent symptoms were 'breast lumps', 'breast or armpit discomfort', and 'nipple discharge', with medical students being

more aware of these symptoms. These results are in line with research conducted at Oman Teaching Hospital, which revealed that the majority of female patients named 'breast lump (74.7%)', 'breast or armpit discomfort (44.0%)', and 'change in nipple position (36.2%)' as primary symptoms of breast cancer (15). The results also align with a study at a Syrian private medical college, which demonstrated that 'a lump in the breast (99.0%)' and 'a mass in the armpit (92.0%)' were the most commonly known symptoms among both male and female medical students (16). Furthermore, an additional investigation carried out in Sylhet City, Bangladesh, revealed that "medical students exhibited a higher level of awareness regarding signs and symptoms compared to their non-medical counterparts" (17). As for the variables that increase breast cancer chances, medical students had a better understanding of these variables than non-medical students. The

most commonly reported risk factor was 'having a close relative with breast cancer'. These results are in line with research conducted at 'King Saud University' in Riyadh, Saudi Arabia, which found that "the most commonly recognized risk factor for breast cancer, as reported by the majority of female university students, is family history (36.7%)" (18).

Medical students possess a deeper understanding of breast cancer, likely due to their curricular exposure. The findings corroborate the recent research conducted at 16 Pakistani institutions, which found that medical students had greater knowledge than non-medical students (19). Similarly, Md. Ashraful Islam et al. also reported a substantial knowledge difference ($p < 0.001$) between the two groups of students (20).

In terms of screening procedures, the findings suggest that students generally have poor practice in breast examination, as the majority have either difficulty noticing breast changes or do not know how to detect them. However, there are comparatively more screening practices among non-medical students than among medical students. This finding is inconsistent with the results from female graduating students in 'Debre Tabor, Northcentral Ethiopia', which showed that university students in health-related fields had 2.1 times more practice than students in non-health-related fields (21). Another study at Lahore University demonstrated that there was poor screening practice among both groups, with medical students (20%) having a comparatively higher screening practice than non-medical students (22). Women should perform BSE every month after the age of 20 years, especially on the days following their menstrual cycle (23).

Regarding barriers to screening, the most common problem participants faced was 'worrying about other things (21.01%)', followed by 'embarrassment about being

admitted to the doctor (18.35%) and being too scared to go and see the doctor' (16.76%). A meta-analysis research done by İlknur Özkan & Seçil Taylan showed the number of barriers that prevented women from screening and diagnosis of breast cancer (24). They categorized the barriers into three groups: 'personal barriers' (e.g., fear, embarrassment), 'social barriers' (e.g., culture and stigma), and 'systemic barriers' (e.g., health insurance coverage, the attitude of a healthcare professional, etc.) (24). They compared the results among the studies conducted in various countries, which showed that even though there was a difference in race, religion, and culture, fear was the most common barrier that prevented women from breast cancer screening and diagnosis (24). 'Emotional barriers', such as "embarrassment, fear, and worry about what the doctor would find" were the most common barriers preventing women from seeking medical advice, according to a survey conducted among female patients in Gaza hospitals and high schools (25). The most frequently cited obstacle among adults (50.6%) was fear, while the most commonly mentioned barrier among teenagers was embarrassment from visiting the doctor (62.8%) (25). These barriers might be due to the lack of female breast surgeons or female oncologists. Increasing the number of female doctors in these specialties might reduce the fear and embarrassment among women. Another reason could be that since concealing the breasts is part of modesty, women show reluctance to exposure in front of male physicians (26). In South Asia, women face difficulty in discussing breast-related problems with male physicians (26). A study in Pakistan showed that many women feel unprotected while discussing their breast problems with male physicians (26). Consequently, we must confront the obstacles when informing women about the disease, and they should be motivated to seek medical consultation promptly for early identification and treatment.

Because non-medical students had poor knowledge regarding breast cancer, our study can open the gateways to the latest researches that aim to determine the reasons for their lack of understanding and provide recommendations accordingly. Our analysis can also ascertain the number of barriers that prevent screening and diagnosis among students and provide recommendations to reduce such barriers. Moreover, researchers should conduct further studies on the factors contributing to poor BSE practice among university students. They should also develop methods to increase awareness, screening methods, and the potential dangers that can arise due to a lack of understanding.

Our study has a few limitations. First, a more comprehensive evaluation of understanding and barriers to diagnosis was not feasible due to limited sample size, restricted time frame, and limited departments. The study results only pertain to female university students from Peshawar and do not represent the general public. Additionally, we could not control potential confounding variables such as previous breast cancer education or its campaigns, which led to a significant difference in knowledge between the groups.

CONCLUSION:

The study's findings provide important insights into the disease and its level of awareness. It demonstrated that medical students have greater knowledge than non-medical students. However, there were poor screening practices in both groups. There is a critical need to raise awareness about the disease among non-medical students because of limited knowledge. To reduce future cases in the country and promote screening, the government should educate individuals about breast cancer through electronic and print media. The government should also organize various seminars and awareness campaigns to promote

appropriate knowledge and prompt identification of the illness. In this way, we will notice a profound decrease in the prevalence and incidence of the disease.

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Conflict of Interest:

No conflicts of interest

Author contributions:

Concept of the study: Soha Shahid Khan, Dr Raheelah Amin Manuscript writing: Ridah Ijaz, Soha Shahid Khan, Mehak Saeed, Fizza Habib, Aiman Hafeez Data collection, Participant recruitment: Ridah Ijaz, Soha Shahid Khan, Mehak Saeed, Fizza Habib, Aiman Hafeez Data Analysis and interpretation: Ridah Ijaz, Dr Fatima Zulfiqar, Dr Raheelah Amin Manuscript Editing and review: Dr Raheelah Amin, Ridah Ijaz, Dr Fatima Zulfiqar, Nisrine Liyakat Nimachwala, MD Final manuscript approval: Dr Raheelah Amin, Nisrine Liyakat Nimachwala, MD

Ethics Statement:

Ethical approval was taken from the Hospital Research and Ethical Committee (IREB) of Hayatabad Medical Complex, Peshawar before proceeding with the study.

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