



## **Breast Self Examination: Knowledge and Practice of Young Female Students towards Breast Self Examination and Breast Cancer**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author MPS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AA and FJS managed the analyses of the study. Authors SHS and ZS managed the literature searches. All authors read and approved the final manuscript.*

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## ABSTRACT

Objective of the study is to assess the knowledge towards breast self-examination (BSE) of breasts among young adults in various districts of Sindh province in Pakistan. Descriptive cross sectional study design was used to conduct the study at Larkana. A total of 171 young female students participated in the study including students of matric, intermediate, undergraduate and postgraduate level. Participants were given a self-administered questionnaire designed to assess the knowledge of students towards SBE and Breast cancer. Data was analyzed using descriptive and inferential statistical tests in SPSS (Statistical Package for Social Sciences version 23.0). A total 171 young adults participated in the study. Only a 2.33% were married. Most of the participants (47.36%) had intermediate level education, 43.85% were undergraduate, 8.18% had a family member with breast cancer, 38.6% of the respondents didn't know that breast cancer is the most fatal cancer in women all over the world. A 43.8% considered that family history as a risk factor for the breast cancer, 61.4% considered that pain in the breast is symptom for the breast cancer, 83.63% of participants didn't know how to perform breast self-examination, 88.3% of the participants were not practicing self-breast examination. It was concluded that most of the young students in various districts of Sindh province in Pakistan do not have reasonable knowledge towards Self-breast examination and do not practice the same in routine life.

*Keywords: Breast cancer; self-breast examination; female students; Sindh province.*

## 1. INTRODUCTION

Cancer is a leading cause of death worldwide in countries of all income levels [1]. The International Agency for Research on Cancer (IARC) estimates that in 2018, there would be 18.1 million new cases and 9.6 million deaths linked to cancer worldwide [2]. Breast cancer typically produces no symptoms when the tumor is small and most easily treated, which is why screening is important for early detection. The most common physical sign is a painless lump. Sometimes breast cancer spreads to underarm lymph nodes and causes a lump or swelling, even before the original breast tumor is large enough to be felt. Breast cancer is typically detected either during a screening examination, before symptoms have developed, or after a woman notices a lump. Most masses seen on a mammogram and most breast lumps turn out to be benign (not cancerous), do not grow uncontrollably or spread, and are not life-threatening. When cancer is suspected, microscopic analysis of breast tissue is necessary for a diagnosis and to determine the extent of spread (stage) and characterize the type of the disease [3]. Meanwhile incidence and mortality rates for most cancers (including lung, colorectum, female breast, and prostate) are decreasing in the United States and many other western countries, same are increasing in many developing countries as an outcome of the trends to adopt western unhealthy lifestyles of smoking, physical inactivity and consumption of calorie-dense food. In developing countries, the

incidence of new cancers which was 56% reported in 2008, has been projected to 60% by year 2030 [4]. According to the American Cancer Society estimated deaths due to female breast cancer cases were more than 40,000 in the US in 2017 [3]. Historically, Asian breast cancer incidence has been lower than the Europe and North America but in recent decades incidence of the same seems significantly increasing in Asian countries. Statistically a significant rise in mortality rate was shown in less developed countries like Malaysia and Thailand [5]. Global Cancer Statistics 2018 revealed that the incidence of breast cancer was top second around the globe after lung cancer. In 2018, total new cases of the lung cancer were 2,093,876 while the total new cases of breast cancer reported only around five thousand short of the aforementioned having a figure 2,088,84 causing 626,679 number of deaths. This suggests 11.6% of the newly reported cancers and 6.6% of deaths occurred in 2018 [6]. Breast cancer is the most commonly diagnosed cancer in women (24.2%, i.e. about one in 4 of all new cancer cases diagnosed in women worldwide are breast cancer), and the cancer is the most common in 154 of the 185 countries included in GLOBOCAN 2018. Breast cancer is also the leading cause of cancer death in women (15.0%), followed by lung cancer (13.8%) and colorectal cancer (9.5%), which are also the third and second most common types of cancer, respectively; cervical cancer ranks fourth for both incidence (6.6%) and mortality (7.5%) [7]. Cancer is an issue of higher magnitude in both developed and

emerging countries, especially breast cancer. In Pakistan, breast cancer is one of the leading cancers. Lack of proper facilities and most importantly the awareness among the patients in Pakistan, there is progress and prevalence of breast cancer. Moreover there is plenty of data available on breast cancer worldwide to estimate survival of breast cancer patients but unluckily there is no such study in Pakistan. There are several reasons for that too, inability of reaching out to those cancer patients who do not seek medical treatment. Higher costs of cancer treatment and fewer hospitals especially designed for cancer treatment [8]. The incidence of breast cancer in Pakistan is highest in Asians after Jews in Israel and 2.5 times higher than that in neighboring countries like Iran and India, accounting for 34.6% of female cancers. The Pakistani population is deficient in information regarding breast cancer etiology and epidemiology [9]. Among Asian countries especially in Pakistani population there has been an alarming increase in the incidence of breast cancer. Out of total 213,377 surgical specimens registered during the above mentioned period 53,012 specimens were breast cancers, according to the data published by Karachi Cancer Registry in 2000, for population of the Karachi South district during 1995-1997 [10]. Breast cancer is more common in middle aged women of average age 48 years in Pakistan, whereas, in the western countries, the breast cancer is more common in older age after 60 years. Other factors include overexposure to estrogen due to early periods of 12 years, late menopause after 55 years, late childbirth at 30 years or no childbirth, short time period of postpartum, breastfeeding for less than two years, previous breast benign lesion of one breast that have metastasized to another non-diseased breast and previous chest radiations mostly at the time of adolescence are at a higher risk, due to continuous growth of breast [11]. Performance of specific BSE components may reduce the risk of death from breast cancer. It is very important to early detect and start the treatment of breast cancer. Periodic screening mammography with or without clinical breast examination reduces rates of death from breast cancer for women aged 50 to 69 years. Breast self-examination (BSE), is self-administered and inexpensive to become aware of any visible changes in breast [12]. The purpose of breast self-examination is for a woman to learn the topography of her breast, know how her breasts normally feel and be able to identify changes in the breast should they occur in the future. In fact,

whether breast self-examination alone can reduce the number of deaths from cancer is currently a source of controversy [13].

From the available literature it is well evident that the breast cancer the most fatal cancer among women all over the world and there is lack of basic awareness among women about breast self examination. In our study the main objective is to assess the knowledge towards self-examination of the breast among young adults in various districts of Sindh province in Pakistan.

## 2. MATERIALS AND METHODS

A Cross-sectional descriptive study design was used to conduct this study at Larkana Sindh during August 2018. Data was collected from the young female students belonging to districts Larkana, Qambar @ Shahdadkot, Shikarpur, Jacobabad and Kashmore @ kandhkot. A self-administered questionnaire was developed including the questions regarding age, district, academic level, and family history of breast cancer, knowledge regarding breast cancer, knowledge regarding breast self-examination and practice of breast self-examination. The questionnaire was revised and validated by a panel of 6 experts in the medical and teaching field; Cronbach's alpha was used for internal consistency which was 0.80. Before collection of the data, a pilot study was done in a class room of matric and intermediate students where 22 students responded to the questionnaire in presence of the class teacher and researchers. Some of the students questioned the abbreviation of SBE which was later written in full form in the questionnaire for the ease of the students. Few students questioned the various names of diagnostic tests like CT scan and MRI that they did not understand, which the researchers explained to the students during pilot study and later on while data collection. Students took less than 5 minutes to answer the questionnaire. The data was collected at Auditorium hall, Chandka medical College Larkana, during the event of self-assessment test organized by IQRA ETO. Before serving the questionnaires, students were verbally explained about the importance and purpose of the study and a verbal consent was obtained. Students were told that their participation is voluntary and data will be confidential and be used for the sake of research only. Neither the name nor the ID number of any student was asked in the questionnaire.

All the students attending the event were the sampling population for the study, using a total population sampling technique all the students appearing in the event were given with the questionnaire and a cover letter explaining the importance of the study with consent form attached, 180 questionnaires were distributed and 174 questionnaires were returned showing high response rate of more than 97%, 3 questionnaires were discarded by the researchers for having incomplete data. The total sample size for the study was 171. The collected data was entered and analyzed using the SPSS (Statistical Package for Social Sciences version 23.0) and Microsoft Office Excel 2010. Descriptive and Inferential statistical tests were used. Data was analyzed using frequency, percentage.

### 3. RESULTS

There were 171 young adults who participated in the study. Most of them belonged to Larkana, Ghotki, Kashmore and Jacobabad districts. Age of the participants ranged from 15 to 28, where

73% of those were 20 years old or below (Fig. 1).

Out of 171 participants, only a 2.33% were married. Most of the participants (47.36%) had intermediate level education, 43.85% were undergraduate, 5.2% were matric level and rest of the participants were graduate and above (Table 1).

Surprisingly, 38.6% of the respondents didn't know that the breast cancer is most fatal

Responding to the question regarding risk factors of breast cancer, 43.8% considered that family history is a risk factor for breast cancer (Fig. 2).

While answering the question on symptoms of the breast cancer, 61.4% considered that pain in breast is symptom for the breast cancer (Fig. 3).

More than half of the participants (90 respondents, 56.6%) considered the CBE (clinical breast examination) is the method to diagnose breast cancer, while 34% considered mammography as diagnostic tool (Fig. 4).

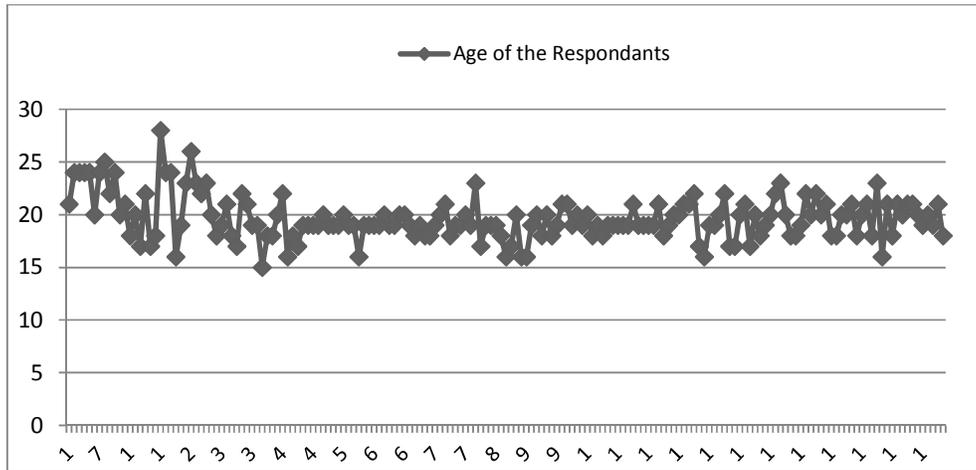
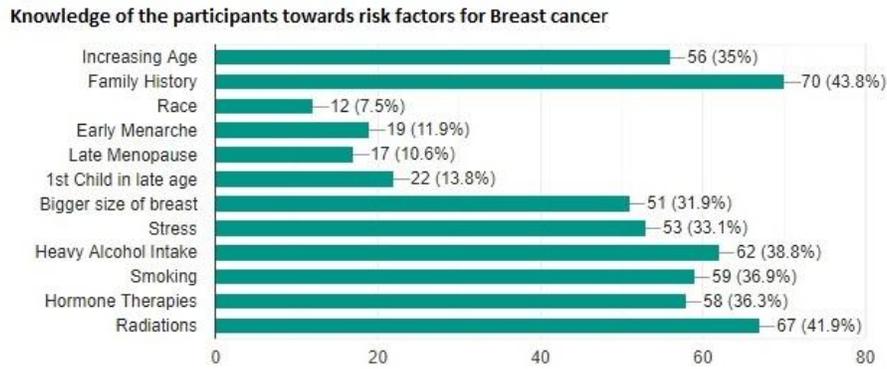


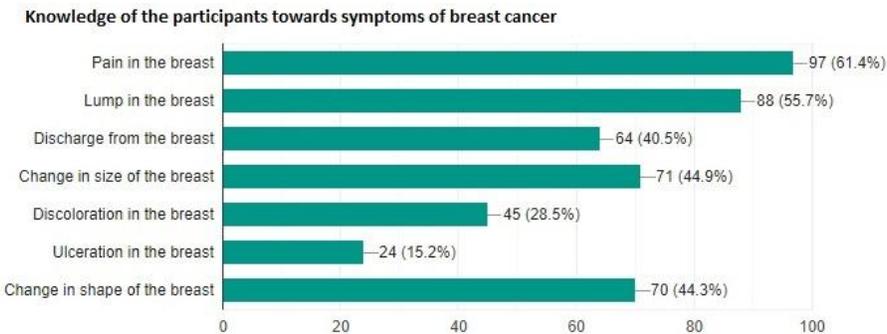
Fig. 1. Age of the participants

Table 1. Marital status and academic level of the participants

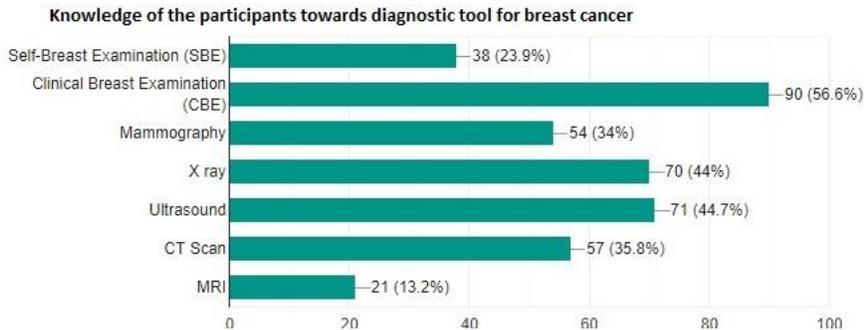
Marital status and academic level of the participants		
	No.	%
<b>Academic Level of the Participants</b>		
Matric	9	5.20%
Intermediate	81	47.36%
Undergraduate	75	43.85%
Graduate	3	1.75%
Postgraduate	3	1.75%
<b>Marital Status of the Respondents</b>		
Married	4	2.33%
Unmarried	167	97.66%



**Fig. 2. Knowledge of the participants towards risk factors of breast cancer**



**Fig. 3. Knowledge of the participants towards symptoms of breast cancer**



**Fig. 4. Knowledge of the participants towards tools of diagnosis for breast cancer**

Answering the question regarding how often self-breast-examination should be performed, around 2/3<sup>rd</sup> of the participants confessed that they don't know at all, nearly 1/5<sup>th</sup> of the participants considered that self-breast examination should be practiced every month (Fig. 5)

Surprisingly, 38.6% of the respondents didn't know that the breast cancer in women all over the world. There were 14 respondents (8.18%) who had a family member with breast cancer;

rest of the 91.8% had no family history of breast cancer. One of the surprising findings of the study was that the 83.63% of participants didn't know how to perform breast self-examination. The last question in the study was whether the respondent practices self-breast examination herself or not, the finding against this research question is never less than a call for attention; surprisingly 88.3% of the participants were not practicing self-breast examination (Table 2).

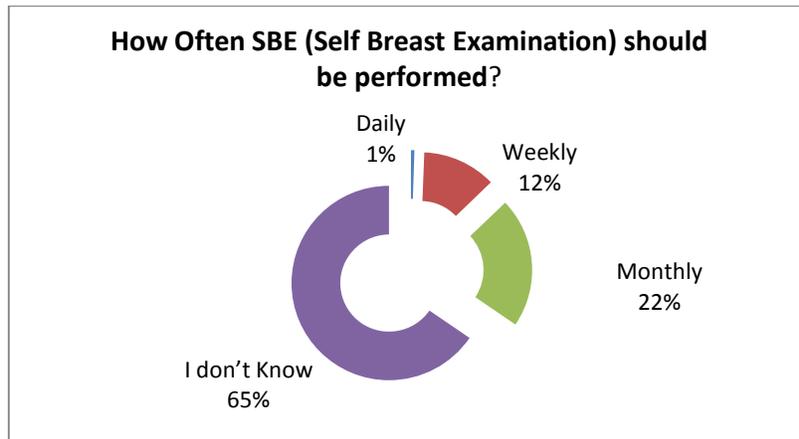


Fig. 5. Frequency of self-breast examination performance

Table 2. Knowledge and practice of participants towards SBE

	Knowledge and practice of participants towards SBE			
	Yes		NO	
	No.	%	No.	%
Q.5 Do you know that breast cancer is the most common cancer in females?	105	61.40%	66	38.60%
Q. Do you have anyone in your family with breast cancer?	14	8.18%	157	91.81%
Q. Do you know how to perform self-Breast Examination?	28	16.37%	143	83.63%
Q. Do you practice Self-breast Examination (SBE)?	20	11.69%	151	88.30%

4. DISCUSSION

Breast cancer is one of the leading cancers in women with an increasing incidence worldwide. Early detection of breast cancer is highly important to improve breast cancer outcome and survival. Performance of breast self-examination is one of the important steps for identifying breast disease at an early stage by the woman herself. Similar to our study, a study was conducted among young students in Ajman. Likewise our study, the frequent age range was 18-22 years and most of the participants (82%) were unmarried. It was found that shows the family history of breast cancer which was 9.2% [13]. In our study, participants were students and 73% of those were 20 years old or below. However our sample size was smaller compared to this study. For the family history, both studies had nearly similar findings as there were 8.18% students in our study who had family members with breast cancer.

In a study conducted in Malaysia among students of a private university where more than

half of the participants (55.4%) mentioned that they practiced BSE. young female students have knowledge about breast self- examination, the majority mentioned that radio and TV were their main sources of information (38.2%), followed by family members (21.1%), friends (14.7%), and then newspapers (12.4%) [14]. In contradiction to this study we found that 83.63% of our participants didn't know how to perform breast self-examination.

Nearly three quarter of the respondents (87.7%) had heard of BSE, but out of all those only 19.0% of them were performing SBE every month at Ahmadu Bello University. Regarding the sources of information about BSE among respondents, the media was found to be most common followed by health workers accounting for 45.5% and 32.2% respectively [15]. A significant difference is obvious in knowledge and practice of SBE among students in this study, yet again; findings of our study stand in contradiction with this as most of the students in our study lacked the basic knowledge and more than 4/5<sup>th</sup> participants in our study didn't know how to perform SBE.

We had nearly similar finding with a study conducted in Oman, where a vast majority (3/4th) of the participants were aware about the presenting symptoms of breast cancer; a total of 145 (92%) and 139 (88%) correctly recognized Breast pain and Lump in the breast as the most common symptoms of breast cancer [16]. Similarly in our study, answering the questions on symptoms of breast cancer 61.4% and 55.7% opted for pain in breast and lump in the breast respectively. Family history as risk factor breast cancer was another finding of our study similar to this study. The most widely known risk factor among the participants was family history of breast cancer (86.62 %) [16]. Likewise, choice of family history as a risk factor for breast cancer was on top (43%) in our study.

Similar findings to our study was observed in high school students of Turkey where the most common reason for not doing SBE was having "not knowing how to perform Self Breast Examination" among 98% participants [17].

Positive family history of breast cancer was reported by 156(13.2%) women; 420(35.5%) believed advancing age was a risk factor; 1041(87.9%) never had breast self-examination; 1106(93.4%) never had a clinical breast examination; and 1171(98.9%) never had screening mammogram [18]. Likewise; in our study 88.30% do not practice SBE and 83.63% do not know how to perform SBE.

More than 2/3rd participants had sound knowledge about the risk factors and signs of breast cancer. Majority was aware of the benefits of mammography. More than 80% had the consensus that breast cancer is curable if detected early and more than 50% thought that a surgeon should be consulted first if lump is palpable [19]. On the contrary, findings of our study are almost opposite to this as more than 80% of our participants neither practiced SBE nor they knew how to perform it. Yet again, there is reasonable justification for this as the respondents in our study were young adults most of them aged below 20 and belong to non-medical backgrounds as well, while the participants in mentioned study were practicing medical doctors, consultants, residents, medical officers and nurses. The other most important justification to this can be a social taboo in various districts of Sindh province to discuss and share regarding breast cancer.

## 5. CONCLUSION

Our study shows that the young students in various districts of Sindh province in Pakistan do

not have reasonable knowledge towards Self-breast examination and do not practice the same in routine life. It was also observed that despite having knowledge regarding SBE, female students do not practice breast self-examination. Since early detection of breast cancer like any other cancer is very important for effective treatment and management, having reasonable knowledge and starting to practice SBE for young females will be a great tool to prevent and manage breast cancers.

Our study has observed that despite there was a reasonable deficiency in knowledge and practice of SBE among students yet there was a positive attitude of students which provide an available ground to initiate the mass media and awareness programs. When more than 80% of the students do not know how to perform breast self-examination we have strong evidence to conclude that the knowledge of breast cancer and breast self-examination practices are highly deficient in this study population. However, there is generally a positive attitude which provides a fertile ground for awareness dissemination in order to improve knowledge and practices. We strongly recommend the relevant health authorities to start awareness programs for breast cancer especially for young students where a series of seminars and workshops should be designed all over the province emphasizing breast self-examination for young females.

## CONSENT

All the students appearing in the event were given a questionnaire and a cover letter explaining the importance of the study with consent form attached.

## ETHICAL APPROVAL

The Iqra Organization for Talent Enhancement Larkana Ethics Committee approval (No. IQRAETO/D.E/13/2018, Dated: 30/07/2018) has been collected and preserved by the author.

The approval for data collection was obtained from IQRA ETO, a written approval was given by the "Director Events" of the aforementioned non-profit organization.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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