

# Assessment of Knowledge Regarding Breast Self-examination among College Students (Girls) of District Islamabad, Pakistan

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## Abstract

**Background:** Among all female malignancies, breast cancer (BC) remains the commonest around the globe. Worldwide, more than one million new cases are diagnosed each year and more than 90,000 of them are from Pakistan. Current study was conducted to evaluate the knowledge regarding breast self-examination (BSE) among female students.

**Objectives:** To determine knowledge of college girls regarding breast cancer and assess their knowledge, perception and practices regarding breast self-examination.

**Study design, settings and duration:** Cross sectional study of 3 months duration was conducted among students of government girls colleges of Islamabad from October to December 2016.

**Subjects and Methods:** Using simple random sampling, 05 girl's colleges were selected from Islamabad. From each college 160 students were selected at random. Informed written consent was obtained. A self-administrated questionnaire was used to gather information on knowledge regarding risk factors of breast cancer, breast self-examination, procedure to perform BSE, sources of information on BSE and when did last time perform BSE. Data was entered and analyzed by using Epi Info version 7.2.

**Results:** Total 763 female students were enrolled. Response rate was 95%. Mean age of students was  $20.6 \pm 2.8$  years. All students were Muslims and unmarried. Eighty seven (11.4%) students had a family history of breast cancer. Five hundred fifty one (72%) students knew that family history is a risk factor for breast cancer. BSE is a procedure to pick up early cases of breast cancer was known to 345 (45%) students. Most common source of information was internet 331 (43%). Regarding the process to perform BSE, 313 (41%) answered correctly. About 567 (74%) students agreed that BSE is necessary to perform as an early BC detection method. Positive family history of breast cancer was significantly associated with higher odds of knowing BSE as a method for early detection of breast cancer (O.R: 2.6, CI: 1.7-4.2,  $p < 0.05$ ). However only 188 (25%) had ever done BSE. Positive family history of breast cancer was significantly associated with higher odds of having some kind of breast problem (OR: 2.7, CI: 1.2-6.11,  $p < 0.05$ ).

**Conclusion:** Knowledge about accurate way to perform BSE among female students of Islamabad is insufficient. As prevalence of this cancer is at rise in the country, therefore there is an urgent need for health education programs to focus on this important issue and take steps so as to enhance knowledge regarding importance and accurate method to perform BSE.

**Key words:** Breast self-examination, students, attitude, risk factors, breast cancer.

## Introduction

**B**reast cancer, the most common malignancy among females, is equally prevalent around different parts of the world.<sup>1</sup> Prevalence of breast cancer is increasing in developed countries however prognosis is also better in these countries leading to increased survival rates.<sup>1</sup> In contrast, in resource poor countries, women usually present at advanced stages of disease resulting in poor outcome.<sup>2</sup> Difference may be due to increased awareness about the disease and thus early health seeking attitudes. Meanwhile in most of the developing countries annual screening programs based on

mammography are also not available. Breast self-examination procedure has been recognized as a

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### Authors Contribution

NJA & SA conceptualized the project and performed the all tasks i.e. data collection, literature search, analysis and write up collectively.

tool of early breast cancer detection in developing countries to avoid delay in detection and treatment of malignancy.<sup>2</sup>

Health expenditure of Pakistan is 2.4-3.7% of GDP.<sup>3</sup> Mammogram is a screening tool for early detection of breast cancer, however most of the affected population is either unaware about this screening program or it is very expensive.<sup>4</sup> Most of the health expenditure is consumed by curative services and negligible is spent on preventive side e.g. screening facilities. Only 9.5% of urban and 4.8% of rural females uses clinical screening for breast cancer whereas radiological diagnostic facilities are available for 2.5% of urban and 0.7% of rural females<sup>5</sup> therefore, most of patients present at advanced stages of disease with poor survival rates.<sup>6</sup> There are many factors responsible for late presentation, however poor awareness and inaccessibility of health services are among the common reasons.<sup>7</sup>

Among most prevalent cancers in Pakistan, breast cancer ranks first followed by lip and oral cavity, cervix uteri, colorectum and bladder. Breast cancer has the highest incidence (n = 34038, 23%) and is responsible for the majority of deaths (n = 16232, 16.1%) out of total 101,113 deaths attributed to cancer only.<sup>8</sup>

In developing countries like Pakistan with ample burden of breast cancer, the most effective and efficient approach to tackle this issue is through early detection of breast cancer that could be achieved by promoting awareness about this malignancy. In addition, social and cultural barriers which hinder timely health seeking need to be taken in account.<sup>8</sup> For a realistic future plan to reduce burden of this lethal malignancy, there should be a baseline data. Current study was carried out to identify gap regarding knowledge of BSE among young females to promote early detection.

## Subjects and Methods

The cross sectional questionnaire based study was conducted among 3rd year and 4th year students of girls colleges of Islamabad over a period of 3 months from October to December 2016. Statistically calculated sample size using Epi Info stat calculator was 800. Multi-stage stratified cluster sampling technique was used.

Islamabad is the capital city and covers about 1,165.5 km<sup>2</sup> (450 mi<sup>2</sup>). It is divided into Islamabad city and surrounding rural areas. The city area has 27 Union Councils. There are 13 government girls' colleges in urban Islamabad and using simple random sampling five colleges out of 13 were selected. The students were briefed about the

importance of study. A total of 763 students agreed to participate and were enrolled. Study population comprised of only 3rd and 4th year students. To minimize bias, from 3rd and 4th year classes, sections were selected randomly. From each class, every next section was selected and from each college 160 students were enrolled. Informed written consent was taken from each student before distributing the questionnaire to the students.

A questionnaire was developed to gather information on knowledge regarding risk factors of breast cancer, knowledge about breast self-examination, its procedure, sources of information on BSE and when did last time perform BSE. Questionnaire was distributed among the five gynecologists and two researchers to have their feedback on the content and construct of the tool. All agreed on face validity of the tool however some suggested that content, sequence of some questions and language should be improved. Regarding construct validity, tool was found to be predictive, concurrent and divergent. All questions were closed ended. The questionnaire was pretested on same community. Identified gaps were incorporated to modify the wording of questions for easy understandability before the questionnaire was used for study. Questionnaire had a total of 28 questions, of which 09 were to assess knowledge about breast cancer risk factors, 09 were to evaluate knowledge about BSE, 06 on attitude & practices towards BSE. In addition there were 04 general questions on family history of breast cancer among participants.

Data collection teams were constituted, comprising of two females, who were trained to facilitate filling of questionnaire, checking for completeness and quality of data. Literature reprints on the topic on breast cancer and BSE were distributed among students.

Analysis was done by using Epi Info (Version 7). Frequencies and percentages were calculated for correct and incorrect answers of all items. Chi-Square test was applied for association between variables whereas  $p < .005$  was taken as statistically significant level.

The study has been approved by Institutional Bioethics Review Committee, Pakistan Health Research Council, Islamabad. After ethical clearance, permission to conduct the study was sought from Federal Directorate of Education, Islamabad.

## Results

Total 763 female students from five girls' colleges in the district Islamabad were enrolled.

Mean age of the students was 20.6±2.8 years. All students were Muslims and were unmarried. Eighty seven (11.4%) students had a positive family history of breast cancer.

Students' knowledge on risk factors for breast cancer is shown in Table and 45% of the participants were aware of all possible risk factors for breast cancer. Presence of family history was the most correctly known risk factor for breast cancer among 551 (72%) students while early onset of menses 345 (45%) was the least known factor as risk for development of breast cancer. Knowledge about known risk factors for BC was good (75%).

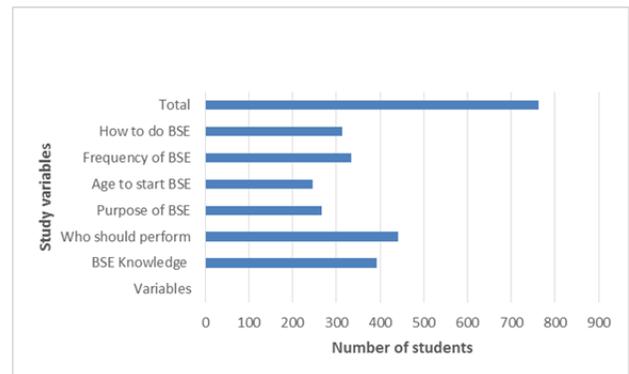
**Table: Knowledge of risk factors of breast cancer.**

| Risk Factors                        | Correct Answer n(%) | Wrong Answer n(%) | p Value |
|-------------------------------------|---------------------|-------------------|---------|
| Increasing age                      | 443 (58)            | 320 (42)          | .004    |
| Positive Family history             | 551 (72)            | 212 (28)          | .000    |
| High Fat diet                       | 445 (58)            | 318 (42)          | .000    |
| Smoking                             | 454 (60)            | 309 (40)          | .542    |
| First child at late age             | 431 (57)            | 332 (43)          | .031    |
| Early onset of menses               | 345 (45)            | 418 (55)          | .000    |
| Late menopause/ cessation of menses | 383 (51)            | 380 (49)          | .000    |
| Stress                              | 393 (52)            | 370 (48)          | .005    |
| Larger breast                       | 347 (45)            | 416 (55)          | .373    |

Knowledge of BSE as an early detection tool was good 397 (52%) among students. Most common source of information was internet 331 (43%), followed by family/ relatives 179 (23%), 127 (16%) said they read about BSE in newspaper whereas 129 (18%) got information through peer group. Only 266 (35%) knew BSE as screening tool for detection. Regarding who should perform BSE, 441 (57%) gave correct answer. 266 (35%) took it as screening tool, 247 (32%) said it is to find out any kind of change developing in breasts while 250 (33%) had no idea. For 246 (32%) students, BSE should be performed in females >19 years of age whereas 266 (34%) said it is <19 years and 260 (34%) had no idea. Regarding how frequently BSE should be done, 71 (9%) students did not respond to this question, 58 (8%), 179 (23%), 334 (44%) and 121 (16%) of the students answered daily, weekly, monthly and annually respectively. According to 227 (30%) students, BSE is performed in the morning, 72 (9%) in afternoon, 136 (18%) in evening and rest 337(43%) had no idea about appropriate time to perform BSE. Regarding the process to perform BSE, 313 (41%) came up with right answer that palpating with the first few finger pads of your hand in circular manner while all other 459 (59%) were ignorant about how to do BSE. Figure shows

comparison among correct answers among students regarding BSE knowledge.

Five hundred sixty seven (74%) students agreed that BSE is necessary to perform as an early method for detection however only 146 (17.1%) students knew BSE procedure. The main reason for not doing BSE was that findings are not reliable. Positive family history of breast cancer was significantly associated with greater odds of doing BSE as a screening tool for breast cancer (O.R: 2.6, CI: 1.7-4.2,  $p < 0.05$ ). When asked about teaching BSE skills to others, 399 (53%) answered that they will teach mainly 375 (49%) due to the fact it is a lifesaving method.



**Figure: Comparison of correct knowledge about variables regarding BSE among study participants.**

In this survey, only 188 (25%) were practicing BSE. Whereas 69 (37%) of those practicing BSE, had started doing BSE in last one year. Among study participants, 37 (5%) of the students have some kind of breast problem. Positive family history of breast cancer was significantly associated with greater odds of having breast problem (OR: 2.7, CI: 1.2-6.11,  $p < 0.05$ ).

## Discussion

In Asia, Pakistan ranks high in the prevalence of breast cancer. Out of every 9 Pakistani women, one may develop breast cancer.<sup>9</sup>

In current study, eighty seven (11.4%) students had someone with breast cancer in their family. Positive family history of breast cancer was significantly associated with greater odds of doing BSE as breast cancer detection tool (O.R: 2.6, CI: 1.7-4.2,  $p < 0.05$ ). Whereas in a Malaysian study, one hundred eleven (15 %) of the participants had a family history of breast cancer which is slightly higher.<sup>10</sup>

Analysis of individual risk factors showed that positive family history for breast cancer is the commonest known risk factors among students 551

(72%) followed by smoking 454 (60%) and consumption of high fat diet (obesity) 445 (58%). A study conducted in Kampala<sup>11</sup> revealed increased knowledge about BC (98.0%) and practices of BSE (76.5%) among students whereas 61.3% students have correct knowledge about risk factors. Another study has reported smoking 66.9% followed by radiation to the chest 63.7% and genetic factors 63.7% as the most widely known risk factors by the students.<sup>12</sup> Most of the students' were aware of the relationship between breast cancer and established risk factors. Samah AA et al has reported that 88.8% of all the participants knew family history of cancer/heredity as the BC risk factor and radiation exposure (76.5%), cigarette smoking (68.3%) and occupational risk factors as other contributing factors for BC.<sup>10</sup>

A study from Cameron showed that majority (74.17%) of participants had heard about BSE, whereas 60% had done BSE. Out of all, only 36.67% recognized it as BC detection method.<sup>13</sup> Our findings are much lower compared to this study. Knowledge about BSE as a method to detect BSE was only 397 (52%) whereas on 188 (25%) of the students have ever practiced it. The difference may be due the fact that current study is performed among the college students whereas in other study participants were older women. Another study reported that 73.5% of students knew about BSE, again much higher than our findings.<sup>14</sup>

Most common source of information for BSE was through internet 331 (43%). About 266 (35%) knew the objective of doing BSE. Regarding how frequently BSE should be done, 334 (44%) of the students answered monthly. About how to perform BSE, 313 (41%) came up with right answer that palpating with the first few finger pads of your hand in circular manner while all other 459 (59%) were ignorant. There was a statistically significant association (95% CI: .256,  $p$  value <.0001) between knowledge and practices of BSE among participants. Godfrey et al<sup>11</sup> in their study showed that for majority (56.9%) of students mass media was the source of information and it is in contrast to our findings where main source was internet. A study from Buea<sup>14</sup> revealed that Television (19.9%) was provided facts about BSE unlike our study. About 88% of students perceive it as tool to detect BC but only 3% done BSE routinely. These results are similar to our study in which though students knew about BSE as early BC detection method however practice is insufficient. BSE deficient knowledge was the reason for not practicing BSE whereas in our study, the reason for not doing BSE was that findings of BSE are not reliable. A study from Turkey reported low practices of BSE on

monthly basis and reason was the poor knowledge about BSE procedure (98.5%).<sup>15</sup> This is consistent with our study in which only 313 (41%) students knew how to perform BSE.

Overall, our study support findings of other studies on same topic and showed the general lack of adequate knowledge on BSE among students in Pakistan. But they have positive attitude towards learning this subject. To improve knowledge on breast cancer as well as BSE, well designed health education program are needed for female college and university students.

Our study indicates insufficient perception and practices of breast self-examination among college students of Islamabad. As the prevalence of breast cancer is at rise in the country, there is an urgent need for health education programs on this subject.

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**Conflict of interest:** None of the authors have any competing interests.

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