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RESEARCH PAPER

Breast Self-Examination Knowledge and Practice among Female Students: Case of a Public University in Bangladesh

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ABSTRACT

Breast self-examination (BSE) is a cost-effective method for early detection of breast abnormalities which could result in cancer. Breast cancer is the leading cause of death among women in Bangladesh. The study was done to assess the knowledge level and practice of breast self-examination among female undergraduate students of Patuakhali Science and Technology University (PSTU), Bangladesh. This descriptive cross-sectional study was carried out among 270 female undergraduate students selected by simple random sampling technique using a pretested structured self-administered questionnaire. Of the respondents, no one had personal history of breast cancer, but 15.9% had family history. Nearly half of the students (43.3%) never heard of BSE and those who have heard (56.7%) also knew it as useful tool for early detection of breast cancer. More than half of the students (61.9%) had poor knowledge, 26.3% satisfactory and only 11.9% had good knowledge on BSE. Majority (96.3%) did not know about the correct duration of BSE, more than one third of them did not know that lump in the breast is the early sign of cancer, they were also uniformed about the correct position, techniques and methods of BSE. Only 6.3% students had perform BSE and 29.4% of them discovered abnormalities. No one performed BSE at the right time. Lack of knowledge and carelessness was found as the main reason behind not performing BSE correctly. The result of this study reflect the need for encouraging education program on BSE knowledge and practice for increasing breast cancer awareness.

Key words: Breast Cancer, BSE, Knowledge, Practice, Bangladesh

Introduction

Breast cancer is 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 is increasing particularly in developing countries where the majority of cases are diagnosed in late stages (WHO 2018). It is reported that more than 2.1 million women per year newly diagnosed and half million deaths occur which is as high as all of death and from all of cancer (WHO 2018). In developed countries breast cancer is a post-menopausal disease but in developing countries 45% of reproductive age group are diagnosed and 21% death occurs with breast cancer (Forouzanfar *et al.* 2011). The incidence of breast cancer was reported about 22.5 per 100,000 in females in Bangladesh (Uddin *et al.* 2013). Based on cancer mortality profile, amongst all cancer breast cancer is the first leading cause of female death in Bangladesh (WHO 2014).

Mammography, clinical breast examination (CBE) and breast self-examination can early detect breast abnormalities (WHO 2018). Due to cost and access of mammography, many women cannot do this (Sama *et al.* 2017). WHO suggested that according to socioeconomic, cultural and religious context, only affordable, easy and powerful mechanism is required (WHO 2018).

Breast self-examination (BSE) is an effective and cost free method for early detection of any change in breast (Burke *et al.* 2007; Swati *et al.* 2017) that leads to early diagnosis and makes women more aware about breast cancer (Doshi *et al.* 2012). It is a part of general body awareness in which women are familiar with the appearance of their breasts so that any irregular changes could be recognized and reported early (Olaogun *et al.* 2017). Therefore, promotion of Breast Self-examination practice might be contributed in early detection of breast cancer and promoting its survival rate (Hussain *et al.* 2013; Hossain *et al.* 2014; Sama *et al.* 2017).

According to the American Cancer Society, the most common symptom is a new lump or mass which is painless, hard with irregular edges which are likely to be cancerous (ACS 2014). Most of the breast cancer diagnosed at an advanced stage due to lack of awareness, inadequate health care facilities (Hossain *et al.* 2014) and inadequate knowledge about breast cancer (Godfrey *et al.* 2016). In the literature, it is stated that 90% of the times breast cancer is first noticed by the person herself. According to the American Cancer Society, when breast cancer is detected early, and is in the localized stage, the 5-year relative survival rate is 99%. BSE knowledge and attitude is related to perform BSE (Sarfo *et al.* 2013).

In Institute of Cancer Research & Hospital, Dhaka, Bangladesh, breast cancer is the widespread cancer among the female patients, which is the second most common cancer as a whole (NICRH 2013). The adolescent period is a time of rapid change that provides teaching opportunities for shaping health behaviors into adulthood. For example, teaching breast self-care may encourage positive behaviors such as performing breast self-examination (BSE) and seeking regular professional breast examination.

University students are the vital parts for a nation's future progression. Undoubtedly, it is important to know the extent of their knowledge and health practices on health issues. The objectives of this study were to assess the level of knowledge and practice of breast self-examination among female undergraduate students of Patuakhali Science and Technology University. This study is important in providing information on BSE knowledge and practice among female undergraduate students of Bangladesh which could be useful to governmental and non-governmental organization in the design of interventions aimed at effective prevention of breast cancer.

Materials and Methods

Study Design and Area: This descriptive cross-sectional study design was carried out from August to November, 2019 among female undergraduate students of Patuakhali Science and Technology University, Bangladesh. It is the first science and technology university in the coastal zone, Bangladesh.

Subjects/Samples: Using Epi info (population size 900, confidence level 95% and acceptable margin of error 5%) a total of 270 female undergraduate students from Patuakhali Science and Technology University were taken as sample students to conclude this survey. The study subject was selected proportionally to size allocation to give equal chance to each department, and then simple random sampling technique was performed. The major selection criterion was undergraduate education as it is the base of vast knowledge source.

Data Collection and Analysis: Data were collected using a pretested structured self-administered questionnaire. The results of the pre-testing were not incorporated in the final analysis of the data. All of the selected participants were made well informed of the study aims and informed written consent was obtained from the subjects. After obtaining consent, participants who were willingly to participate in the study were well explained about questionnaire to ensure completeness and correctness. It took 15-20 minutes of each for completing the questionnaire. After completing the questionnaire, we thanked them for participating in this study. Privacy and confidentiality of the participants were maintained. The participants were told that they could refuse and withdraw from the study at any time without any penalty.

The questionnaire contained four parts, comprising (1) socio-demographic characteristics, (2) history of breast cancer, (3) knowledge about BSE and (4) practice of BSE.

(1) The Socio-demographic Questionnaire (SCQ) were developed based on literature review consisted of 6 items - age, religion, marital status, level of education, family average monthly income and previous place of residence.

(2) To know the history of breast cancer, 3 items were set – personal history of breast cancer or breast abnormalities, history of breast cancer in the family and known person of breast cancer.

(3) BSE Knowledge Scale: There was total 16 items of question to assess the knowledge of participants about breast self –examination. For positive Knowledge, items score '1' was used for correct answer (true response) and '0' for false or no response was applied. Assessment of level of knowledge was out of 100% and by using blooms classification, a score of less than 60% indicated poor knowledge while as a score of 60-100% indicates positive knowledge which was further classified as follows; 60-86% indicates satisfactory knowledge and score of 86%-100% indicates good knowledge.

(4) BSE Practice Scale: There was total 7 items of question to explore the practice of participants of breast self-examination.

The collected data was analyzed by Microsoft Excel 2013 software program.

Results and Discussion

1. Socio-demographic Characteristics of the Respondents

A total of 270 students were interviewed in this study whereas maximum (95.2%) were Muslim, more than three fourth (77%) were unmarried (Table 1). Of the students, maximum (45.2%) were from 4th year of their honor's education, from the family of average 20000-30000 taka monthly income (58.1%) and from the urban area (63.7%).

Table 1. Distribution of socio-demographic characteristics of the respondents

(N = 270)

Variables	Categories	Number of students	Percentage (%)
Age	≤22 years	173	64.1
	≥23 years	97	35.9
Religion	Islam	257	95.2
	Hindu	12	4.4
	Others	1	0.4
Marital status	Unmarried	208	77.0
	Married	62	23.0
Year of education	1st year	108	40.0
	2nd year	9	3.3
	3rd year	31	11.5
	4th year	122	45.2
Family average monthly income	<20000 taka	6	2.2
	20000-30000 taka	157	58.1
	> 30000 taka	107	39.6
Previous place of residence	Urban	172	63.7
	Rural	98	36.3

2. History of Breast Cancer

Of the respondents, no one had personal history of breast cancer. About one fifth (15.9%) had family history of breast cancer and nearly half (43%) of them knew someone with breast cancer (Table 2) which is comparatively lower than the previous studies conducted on Bangladeshi females (Tithi *et al.* 2018; Islam *et al.* 2016).

Table 2. Respondents' familiarity with breast cancer

(N = 270)

Variables	Categories	Number of students	Percentage (%)
Personal history of breast cancer	Yes	0	0.0
	No	270	100.0
Family history of breast cancer	Yes	43	15.9
	No	227	84.1
Know someone with breast cancer	Yes	116	43.0
	No	154	57.0

3. Breast Self-examination (BSE)

Nearly half of the respondents (43.3%) never heard of Breast self-examination and those who have heard (56.7%) also knew it as useful tool for early detection of breast cancer but alas not everyone of them were taught how to do it (Table 3). This is in line with another study conducted in bangladesh (Tithi *et al.* 2018). Those who were taught were taught mainly by friends (23.7%) (Figure 1).

Table 3. Respondents' familiarity with breast self-examination (BSE)

(N = 270)

Variables	Categories	Number of students	Percentage (%)
Heard of breast self-examination	Yes	153	56.7
	No	117	43.3
Knows BSE as useful tool for early detection of breast cancer	Yes	153	56.7
	No	117	43.3
Taught how to do BSE	Yes	117	43.3
	No	153	56.7

4. Breast Self-examination (BSE) Knowledge

The findings show that except a few (3.7%) none of the students (96.3%) knew about the duration of BSE (days 7 until 10 after menses) though more than half (56.7%) of them have heard about it (Table 3) which clearly indicates the lack of knowledge. Only 35.9% students knew that BSE should be done at least once in every two months and 47.4% students knew that it should be done by all women older than 20 years. More than one third of the students did not know about the correct position, techniques and methods of BSE (Table 4) which is similar to the previous studies done in Bangladesh (Begum *et al.* 2019; Tithi *et al.* 2018; Islam *et al.* 2016). Although 28.1% students were aware that retraction of the nipple is a warning sign that should be observed but only 22.6% of the students knew that lump is the early sign for cancer which is different from the other studies done in Bangladesh and the neighboring countries (Tithi *et al.* 2018; Dey *et al.* 2015; Sreedevi *et al.* 2014). Though 43.3% students stated that they were taught how to do BSE but the findings here indicate the lack of proper knowledge. Based on blooms classification of knowledge scale, 61.9% (167) students have poor knowledge, 26.3% (71) have satisfactory knowledge and only 11.9% (32) have good knowledge on BSE. Knowledge on BSE was similarly found very poor in recent Bangladeshi studies (Begum *et al.* 2019; Tithi *et al.* 2018).

5. Breast Self-examination (BSE) Practice

The findings show that only 6.3% students had perform BSE and the rest 93.7% never performed BSE in their life time yet which is almost similar to a previous study on Bangladeshi females (Begum *et al.* 2019). Among those who have performed BSE, only 29.4% did it monthly, no one performed BSE at the right time that between days 7 until 10 after menses (Table 5) which is lower in comparison with other Bangladeshi studies (Tithi *et al.* 2018; Islam *et al.* 2016). Of the practicing BSE, 29.4% had previous breast problem, 41.2% did it in fear of developing breast cancer and the rest 29.4%

did it for early detection of any abnormalities in the breast. Of them 29.4% discovered abnormalities in the breast and visited to a doctor immediately after discovering the abnormalities (Table 5). All the participants were asked their reason for not practicing BSE correctly. Nearly half (43.3%) of them already mentioned that they never heard of it, among those who have heard claimed lack of knowledge and carelessness as the main reason behind not performing BSE correctly.

Though the knowledge and practice of BSE among our respondents are lower than the neighboring countries (Batool *et al.* 2018; Dey *et al.* 2015; Sreedevi *et al.* 2014) but all of them as well as other countries including Bangladesh concluded the lack of correct knowledge as main reason behind its poor practice (Begum *et al.* 2019; Tithi *et al.* 2018; Sama *et al.* 2017; Olaogun *et al.* 2017; Godfrey *et al.* 2016).

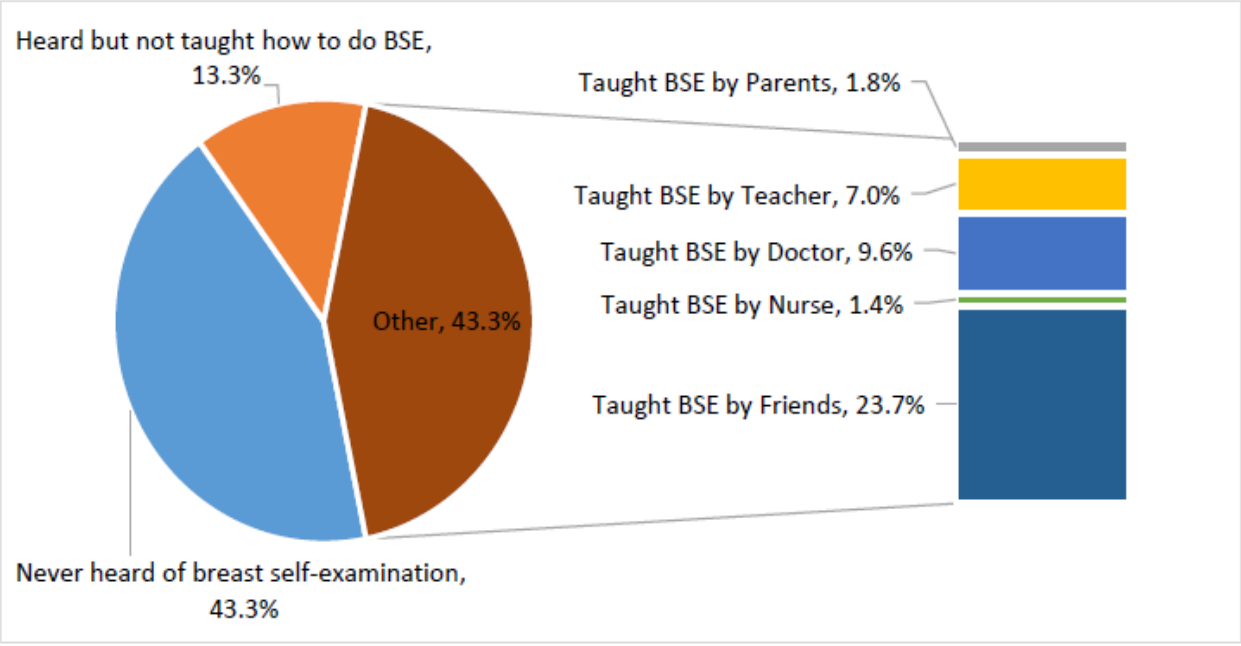

Figure 1. Scenario of breast self-examination familiarity

Table 4. Breast self-examination (BSE) knowledge of respondents

Items	(N = 270) True response	
	n	%
BSE should be done for all women older than 20 years	128	47.4
BSE should be done every 2 months	97	35.9
BSE must be done between days 7 until 10 after menses	10	3.7
BSE should be done in front of the mirror	108	40.0
Undress until the waist when doing the BSE	105	38.9
Hands should be raised up alternately above the head when doing the BSE in front of the mirror	108	40.0
BSE should be done from the front view only	45	16.7
BSE can be done in a supine position	77	28.5
Palpate in the right breast while left-sided lying when doing the BSE	98	36.3
Use finger pulps to examination any lumps of the skin	77	28.5
BSE can be done using the vertical strip and circular technique	103	38.1
Need to press on the nipple to check any unusual discharge	105	38.9
BSE includes arm- pit examination to check for any lump	102	37.8
Need to observe any unusual change in the shape and size of the breast	108	40.0
Retraction of the nipple is a warning sign that should be observed	76	28.1
Lump is the early sign for cancer	61	22.6

Table 5. Breast Self-examination (BSE) practice of respondents and associated factors

Variables	Number of students	Percentage (%)
Ever performed BSE (n=270)		
Yes	17	6.3
No	253	93.7
Frequency of performing BSE (n=17)		
Monthly	5	29.4
Rarely	12	70.6
Time of performing BSE (n=17)		
When it comes to mind	11	64.7
Anytime during the month	6	35.3
Reason of performing BSE (n=17)		
Had previous breast problem	5	29.4
Fear of developing breast cancer	7	41.2
For early detection and treatment	5	29.4
Ever discovered any abnormalities in breast (n=17)		
Yes	5	29.4
No	12	70.6
Activity after discovering abnormalities in breast (n=17)		
Saw a doctor	5	29.4
Reason for not practicing BSE (n=270)		
Never heard of it	117	43.3
Did not know how to do it	97	35.9
Carelessness	50	18.5
Forgetfulness	6	2.2

Conclusion

There is no evidence on the effect of screening through breast self-examination (BSE). However, the practice of BSE has been seen to empower women, taking responsibility for their own health. Therefore, BSE is recommended for raising awareness among women at risk rather than as a screening method (WHO 2018). Although the value of BSE is controversial, American Cancer Society recommends as an option breast awareness and BSE for early detection of breast cancer. It benefits women in two ways: women become familiar with both the appearance and the feel of their breasts and detect any changes in their breasts as early as possible. BSE makes women more breast aware, which in turn may lead to an earlier diagnosis of breast cancer. The rationale behind extending BSE practice as a screening test is the fact that breast cancer is frequently detected by women themselves without any other symptoms. But the findings here are disappointing as it is unfamiliar with many, majority are less knowledgeable on this, maximum are not doing this and those who does are doing it in incorrect way. Therefore it is recommended to increase BSE training session to encourage doing it regularly in right way and fight this deadly disease in its initial stage before it is too late.

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