

# Breast Self-Examination: Knowledge and Practice Among Female Textile Workers in Vietnam

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## Abstract

Breast self-examination (BSE) is a simple, feasible, and suitable method for breast cancer screening in low–middle setting countries. The aim of this study was to assess the knowledge and practice of BSE among female textile workers in Vietnam. A cross-sectional study was conducted among 1036 female workers, aged  $43.9 \pm 3.1$  years old, who were working in 4 textile enterprises in Hanoi and Ho Chi Minh City, in 2016. Overall, 22.7% of participants showed sufficient knowledge on BSE; 15.2% performed monthly BSE; and 7.7% completely performed all 5 steps of BSE. The prevalence of insufficient BSE knowledge was higher among participants with low level of education (odds ratio [OR]: 1.71; 95% confidence interval [CI]: 1.22-2.39, below vs above secondary school), and those whose husbands were farmers or workers (OR: 1.76; 95% CI: 1.27-2.45, compared to other sectors). This prevalence was, however, negatively associated with receiving information on BSE (OR: 0.16; 95% CI: 0.11-0.23, yes vs no). The prevalence of insufficient BSE practice was also higher among females with husbands who were farmers or workers (OR: 1.67; 95% CI: 1.15-2.43, compared to other sectors). In contrast, it was much lower among participants who had history of breast-related diseases (OR: 0.46; 95% CI: 0.24-0.88, yes vs no), received BSE information (OR: 0.13; 95% CI: 0.08-0.19, yes vs no), and had sufficient overall BSE knowledge (OR: 0.09; 95% CI: 0.06-0.13, yes vs no), compared to those who did not. There was a low prevalence of sufficient BSE knowledge (22.7%) and practice (15.8%) among female textile workers in Hanoi and Ho Chi Minh City. Low level of education and not being provided BSE information were associated with insufficient BSE knowledge and practice among Vietnamese female textile workers. Health education programs are essential to encourage and improve women's knowledge and practice of BSE.

## Keywords

breast cancer, breast self-examination, female textile worker, Vietnam

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## Introduction

Breast cancer (BC) is the most common cancer in women in many countries in the world, ranking second among cancer diseases and the fifth in terms of cancer mortality among women.<sup>1</sup> More than 90% of BC can be cured if detected early.<sup>2</sup> Several studies showed that breast self-examination (BSE) is a simple, feasible way for BC early detection in low–middle income countries. There is evidence that women who correctly practice BSE monthly are more likely to detect a lump in the early stage of its development, and early diagnosis has been

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reported to influence early treatment and to yield a better survival rate.<sup>3,4</sup> Although BSE is a useful and relatively simple measure, studies conducted in Turkey and Iraq show that the BSE was not a prevalent practice.<sup>5,6</sup> These results are similar to some other studies conducted in Nigeria,<sup>7</sup> Sahara region,<sup>8</sup> Iran,<sup>9</sup> Kuwait,<sup>10</sup> and Saudi Arabia.<sup>11</sup> There are a number of factors that may influence the knowledge and practice of BSE in women, such as literacy,<sup>11,12</sup> occupation,<sup>13</sup> family history of BC,<sup>14,15</sup> marital status,<sup>12</sup> and access to BSE information.<sup>16</sup>

In Vietnam, BC is the most common cancer in women. Hanoi and Ho Chi Minh City have the highest age-standardized cancer incidence rates at 146/100 000 and 131.5/100 000, respectively.<sup>2</sup> The 2 cities are also homes to many female-dominated companies, especially textile ones. Previous studies have shown increased risk of BC among textile female workers.<sup>17</sup> However, there is limited information on BC early detection among this particular population in Vietnam. The aim of the present study was to assess knowledge and practice of BSE among female textile workers in Vietnam.

## Methods

### Study Design and Settings

This was a cross-sectional study, carried out from October 2016 to October 2017. We included women aged 40 and above and are working at 4 textile enterprises in Vietnam (Garment 10 Joint Stock Company, Duc Giang Garment Corporation, Viet Thang Garment Joint Stock Company, and Phong Phu International Joint Stock Company) in Hanoi and Ho Chi Minh City. These cities are the two biggest hubs for many textile companies in Vietnam. Each enterprise had about 1500 workers, of them women accounted for 75%; nearly 30% of the total female workers aged 40 or higher.

Random sampling was conducted in 2 stages. In the first stage, 4 textile enterprises in Vietnam were randomly selected based on available 8 textile enterprises data in Hanoi and Ho Chi Minh City, Vietnam. List of the textile companies is updated by Vietnam Textile and Garment Union and these companies meet the criterion of having at least 300 female workers aged 40 and above.

In the second stage, a sample of patients was randomly selected, comprising of 1036 female workers working at these 4 enterprises (in each enterprise, based on list of eligible workers, 259 female workers [one-fourth of the total female workers] were randomly selected). Written informed consents were obtained from all the participants prior to recruitment.

### Data Collection

A self-administered questionnaire was developed by the authors based on an extensive review of the literature.<sup>18</sup> The questionnaire obtained information on participants' demographic characteristics, medical history, knowledge, and practice of BSE. Demographic variables include age, literacy,

occupation of husband, and marital status. Medical history variables include family history of BC, history of using endocrine drugs, history of the first period, history of menstruation, and history of pregnancy and giving birth(s).

Knowledge of BSE variables include age of starting BSE, frequency of BSE, point of time of BSE, benefits of BSE, signs for early detection of BC while practicing BSE, and knowledge of the 5 steps of BSE.

Practice of BSE was assessed through participants' self-report, using a checklist with image illustration. In addition, we assessed the practice of the participants' BSE based on evaluation of medical personnel using 5-step checklist according to the guidance on BSE in the document as well as community screening programs, implemented by oncology hospitals and national cancer institutes in Vietnam.

The questionnaire had been validated over a group of 65 female textile workers (35 in Hanoi and 30 in Ho Chi Minh City) for its repeatability. The Cronbach  $\alpha$  test was performed and resulted a score of 0.885, which suggests high repeatability of the questionnaire.

In each self-administered questionnaire session, we invite about 15 female workers to a private room and ask them to fill in the questionnaire, focusing on knowledge and practice (self-report) of BSE in 60 minutes. A total of 1036 female workers from the 4 enterprises were recruited for the study. After self-administered questionnaire, the workers are invited to a private room to assess their practice of BSE under the supervision of a medical staff. Ninety-eight workers refused to practice, leaving the 938 women participating in the assessment of BSE.

### Assessment

Knowledge of BSE in single-choice questions (age, frequency, point of time) and multiple-choice questions are aimed at benefits of BSE and signs for early detection of BC while practicing BSE. Questions related to the 5 steps of BSE (correct/incorrect/don't know). For each question, a score of 1 was given for a correct answer and 0 for incorrect. The maximum score for knowledge was 21 and the minimum score was 0. Knowledge of BSE shall be at sufficient level if  $\geq 10.5$  scores and insufficient if  $< 10.5$  scores.

Practice of BSE is measured based on the participants' self-report: checklist of 5 steps of BSE based on illustrations, questions (ever practice of BSE, frequency, point of time, and place of BSE), and scenarios. The maximum score of overall practice of BSE was 24, sorted into 2 levels: sufficient practice level if  $\geq 12$  scores and insufficient practice level if  $< 12$  scores.

Practice of BSE is based on evaluation of medical personnel following 5-step checklist. Each step has 3 choices: 0 = not performed, or performed but severely incorrect, 1 = performed but need improving, 2 = good. Because the third step of BSE checklist for detecting tumors or abnormalities is important, it is assigned with a multiplier of 2. The maximum score of BSE

is 12, sorted into 2 levels: sufficient practice level if  $\geq 6$  scores and insufficient practice level if  $< 6$  scores.

### Data Analysis

After being collected, data are consolidated and processed by SPSS version 20.0 software.

#### Statistical description

*Calculating percentage of knowledge and practice of BSE.* Statistical analysis determines a number of factors related to knowledge and practice of BSE, using multivariate logistic regression modeling for calculating odds ratio (OR) after exclusion of confounding factors.

## Results

### Characteristics of Study Sample

One thousand thirty-six female workers were included in the study, with the mean age of  $43.9 \pm 3.1$  years. Among them, 35.6% had educational qualification of below secondary school; 82.8% were married or having partner; and 9.2% were menopausal. The history of breast-related diseases or family BC accounted for 4.8% and 6.6%, respectively. The percentage of participants who used contraceptive or hormonal drugs was 17.4% and who lacked information about BSE was 54.1% (Table 1).

### Knowledge of BSE

Overall, there were 235 (22.7%) participants who showed sufficient knowledge on BSE (Garment 10 Joint Stock Company, Duc Giang Garment Corporation, Phong Phu International Joint Stock Company, and Viet Thang Garment Joint Stock Company were at 18.1%, 23.2%, 23.9%, and 25.5%, respectively). Among them, 23.2% were knowledgeable of all 5 steps of monthly BSE practice.

The results of logistic regression analyses (Table 2) showed that the prevalence of insufficient knowledge of BSE was higher among females who had literacy level lower than secondary school, compared to those who had completed secondary school or higher (prevalent OR: 1.71; 95% confidence interval [95% CI]: 1.22-2.39). Similarly, this prevalence was 1.76 (95% CI: 1.27-2.45) times higher among females whose husbands were farmers or workers, compared to those with husband working in other sectors. In contrast, this prevalence was much lower among participants who received BSE information, compared to those who did not (OR: 0.16; 95% CI: 0.11-0.23).

### Practice of BSE

Overall, the prevalence of sufficient practice on BSE (self-reporting) accounted for 15.8%, of them 39.9% had ever practiced BSE (Garment 10 Joint Stock Company, Viet Thang Garment Joint Stock Company, Duc Giang Garment

**Table 1.** Characteristics of the Study Population.

Characteristic	N = 1036 (%)
Mean age (SD), year	43.9 (3.1)
Age-group	
$\geq 50$	71 (6.9)
$< 50$	965 (93.1)
Body mass index (kg/m <sup>2</sup> )	
$\geq 25$	100 (9.7)
23 to $< 25$	222 (21.4)
$< 23$	714 (68.9)
Literacy	
Higher than secondary school	667 (64.4)
Lower than secondary school	369 (35.6)
Occupation of husband	
Other occupation (self-employment, administrative, retired, etc)	266 (25.7)
Farmer/worker	770 (74.3)
Marital status	
Married, having partner	858 (82.8)
Divorced/widowed/single	178 (17.2)
Menopausal status	
Menopause	95 (9.2)
Still having periods	941 (90.8)
Family history of BC	
Yes	68 (6.6)
No	968 (93.4)
History of breast-related diseases	
Yes	50 (4.8)
No	986 (95.2)
History of using contraceptives/hormonal replacement	
Yes	180 (17.4)
No	856 (82.6)
Receiving information about BSE	
Yes	476 (45.9)
No	560 (54.1)

Abbreviations: BC, breast cancer; BSE, breast self-examination.

Corporation, and Phong Phu International Joint Stock Company were at 11.2%, 14.3%, 15.1%, and 22.8%, respectively), 15.2% had monthly practiced BSE. The prevalence of insufficient BSE practice was higher among females whose husbands were working in agriculture, forestry, fisheries, and industry (OR: 1.67; 95% CI: 1.15-2.43), compared to females with husband working in other sectors. In contrast, this prevalence was much lower among females who had history of breast-related diseases (OR: 0.46; 95% CI: 0.24-0.88), received BSE information (OR: 0.13; 95% CI: 0.08-0.19), and had sufficient overall BSE knowledge (OR: 0.09; 95% CI: 0.06-0.13), compared to those who did not (Table 3).

## Discussion

The results of this study show that the prevalence of sufficient knowledge of BSE among Vietnamese female textile workers was relatively low (22.7%). This prevalence is not different among companies in our study. A possible reason is that the patients of study are all textile workers so they may have same limited social awareness. There was only 23.2% of them who

**Table 2.** Association Between Sample Characteristics and Knowledge of BSE.

Characteristic	Knowledge of BSE, n (%)		OR (95% CI)
	Insufficient (n = 801)	Sufficient (n = 235)	
Age-group			
$\geq 50^a$	51 (71.8)	20 (28.2)	1
<50	750 (77.7)	215 (22.3)	1.41 (0.8-2.45)
Literacy			
Higher than secondary school <sup>a</sup>	492 (73.8)	175 (26.2)	1
Lower than secondary school	309 (83.7)	60 (16.3)	1.71 (1.22-2.39)
Occupation of husband			
Other occupation (self-employment, administrative, retired, etc) <sup>a</sup>	183 (68.8)	83 (31.2)	1
Farmer, worker	618 (80.3)	152 (19.7)	1.76 (1.27-2.45)
Marital status			
Married, having partner <sup>a</sup>	659 (76.8)	199 (23.2)	1
Divorced/widowed/single	142 (79.8)	36 (20.2)	1.3 (0.86-1.97)
Family history of BC, yes vs no	55 (80.9)	13 (19.1)	1.55 (0.8-3.02)
History of breast-related diseases, yes vs no	35 (70.0)	15 (30.0)	0.67 (0.36-1.25)
History of contraceptive drugs/hormonal replacement, yes vs no	137 (76.1)	43 (23.9)	0.92 (0.63-1.35)
Menopause, yes vs no	73 (76.8)	22 (23.2)	0.97 (0.59-1.60)
Body mass index (kg/m <sup>2</sup> )			
$\geq 25^a$	78 (78.0)	22 (22.0)	1
23 to <25	168 (75.7)	54 (24.3)	1.03 (0.56-1.89)
<23	555 (77.7)	159 (22.3)	1.11 (0.65-1.93)
Receiving BSE information, yes vs no	293 (61.6)	183 (38.4)	0.16 (0.11-0.23)

Abbreviations: BC, breast cancer; BSE, breast self-examination; CI, confidence interval; OR, odds ratio.

<sup>a</sup>Reference.

**Table 3.** Association Between Demographic Characteristics and Practice of BSE.

Characteristic	Practice of BSE, n (%)		OR (95% CI)
	Insufficient (n = 872)	Sufficient (n = 164)	
Age-group			
$\geq 50^a$	56 (78.9)	15 (21.1)	1
<50	816 (84.6)	149 (15.4)	1.43 (0.78-2.63)
Literacy			
Higher than secondary school <sup>a</sup>	551 (82.6)	116 (17.4)	1
Lower than secondary school	321 (87.0)	48 (13.0)	1.33 (0.92-1.94)
Occupation of husband			
Other occupation (self-employment, administrative, retired, etc) <sup>a</sup>	208 (78.2)	58 (21.8)	1
Farmer, worker	664 (86.2)	106 (13.8)	1.67 (1.15-2.43)
Marital status			
Married, having partner <sup>a</sup>	722 (84.1)	136 (15.9)	1
Divorced/widowed/single	150 (84.3)	28 (15.7)	1.12 (0.71-1.77)
Family history of BC, yes vs no	58 (85.3)	10 (14.7)	1.27 (0.57-2.85)
History of breast-related diseases, yes vs no	36 (72.0)	14 (28.0)	0.46 (0.24-0.88)
History of using contraceptive drugs/hormonal replacement, yes vs no	148 (82.2)	32 (17.8)	0.84 (0.55-1.29)
History of menstruation			
Menopause, yes vs no	787 (83.6)	154 (16.4)	0.60 (0.31-1.18)
Body mass index (kg/m <sup>2</sup> )			
$\geq 25^a$	85 (85.0)	15 (15.0)	1
23 to <25	177 (79.7)	45 (20.3)	0.76 (0.36-1.6)
<23	610 (85.4)	104 (14.6)	1.21 (0.62-2.38)
Receiving BSE information, yes vs no	339 (71.2)	137 (28.8)	0.13 (0.08-0.19)
Having sufficient overall BSE knowledge, yes vs no	128 (54.5)	107 (45.5)	0.09 (0.06-0.13)

Abbreviations: BC, breast cancer; BMI, body mass index; BSE, breast self-examination; CI, confidence interval; OR, odds ratio.

<sup>a</sup>Reference.

were knowledgeable of all 5 steps of monthly BSE practice. This prevalence is slightly lower than that in Saudi Arabia (28.9%),<sup>13</sup> but much lower than that in Iraq (67.7%),<sup>19</sup> Nigeria (46%),<sup>7</sup> and sub-Saharan Africa (81.5%).<sup>8</sup> This difference may be because of the fact that those studies were conducted on teachers and students, who might have higher level of literacy than that of textile workers in our study.

The observed low prevalence of BSE knowledge among Vietnamese female textile workers may be related to their educational level and their husband's occupation. Our results show that female workers who have literacy level lower than secondary school and husbands working as farmers or workers might be less knowledgeable about BSE (Table 2). Being less educated may lead to lower capability of searching for information, resulting in insufficient knowledge of diseases. Level of social awareness of the husband, which related to his occupation, may also have negative influence on the knowledge of the wife. These findings are supported by a study conducted among Arab women, by Donnelly et al<sup>13</sup> and Opuku et al<sup>20</sup> who reported that women with high literacy level had better knowledge of BSE. Indeed, our study showed that the prevalence of insufficient BSE knowledge was much lower among females who could access to BSE information source (OR: 0.16; 95% CI: 0.11-0.23).

As a subsequent result of limited knowledge of BSE, our study shows that sufficient BSE practice among Vietnamese female textile workers was also at low level (15.8%). This prevalence was similar at the 3 studied enterprises, except for Phong Phu Garment which had higher prevalence (22.8%). This difference might be due to the fact that Phong Phu Garment is a foreign-invested company where better health policy was applied for workers. Therefore, the workers at this company have higher attention to their health and BSE practice. Several other researchers also reported similar results. For examples, Aljohani et al reported that 35.5% of their study patients had ever performed BSE, and 27.3% performed BSE monthly<sup>11</sup>; Obaiko et al reported 30% of ever BSE practice and 14% of frequent BSE<sup>8</sup>; Aker et al even reported a lower prevalence of regular BSE practice (12.6%).<sup>14</sup> In contrast, in the study of Deniz et al, 51% of study patients have performed BSE.<sup>21</sup>

A remarkable difference between our study and studies of other researchers is that, in addition to evaluation of general practice of BSE by self-administered questionnaire and scenarios, we conducted direct examination of study patients. Study results show that 90.5% (938/1036 female) of patients agree to attend evaluation of BSE conducted by medical personnel using the recommended 5 steps of BSE. Of all, 9.5% (98 female) patients refused to attend the evaluation, possibly because of cultural barriers or embarrassment or shyness preventing them from showing their breasts to others. Another intervention study conducted by Ahmadian and Asnarulkhadi in Iran also show that religious factors and shyness of female patients also prevent practice of BSE.<sup>22</sup> In addition, our study results show that the prevalence of female patients practicing BSE as per the recommended 5 steps is relatively low at 7.7%.

This is lower than that of Saadoun's study, in which approximately 35% of female patients have performed BSE properly as recommended;<sup>10</sup> but is higher than that of Obaikol's study, in which only 1% of female patients have performed BSE properly as recommended.<sup>8</sup>

Results of logistic regression analyses show that female workers whose husbands worked as farmers or workers had higher prevalence of inadequate performance of BSE than other groups (86.2% compared to 78.2%). Occupation is an important factor that affects the income and awareness of each person as well as families. Husbands of most of female workers in our study were workers or farmers who usually did not have much time taking care of their family. In addition, the income from these types of jobs is often low to moderate which may be the main barrier for accessing to health services and information sources regarding breast screening and early detection of BC. However, Donnelly et al reported that in spite of having significant association with awareness of BC screening, occupations do not have significant association with practice of BSE.<sup>13,23</sup> Having insufficient knowledge of BSE was also significantly associated with insufficient performance of BSE. In addition, our study found that women without a history of breast-related diseases had the higher prevalence of insufficient BSE practiced, compared to those who did not. Obviously, when a woman herself does not have breast tumors, such as fibroids, cysts and so on, would less likely to pay attention to BSE. This is supported by the studies of Saadoun et al,<sup>10</sup> Yoo et al,<sup>24</sup> and Erdem<sup>25</sup> which shared a conclusion about a positive association between BSE knowledge and BSE practice. The study of Jarvandi et al<sup>26</sup> also showed that women who had been provided with information and knowledge related to early detection of BC was 10 times more likely to join BSE screening.

Apart from factor such as education level, husband's occupation, and history of breast-related diseases, knowledge and practice of BSE of the textile female workers might be related to health insurance policy. Often, annual health examination schedules for female workers in Vietnam does not usually include BC screening. This may reduce the chance for female workers to be aware about BC and BSE. However, health insurance is one of the important factors associated with knowledge and practice of BSE.<sup>22</sup> In addition, Health Insurance of Vietnam does not cover BC screening and early detection.<sup>27</sup> This is also an important barrier for improvement of BC knowledge and BSE practice among female textile workers as well as Vietnamese women.

The strength of this study lies in its design. First, it evaluates the BSE at textile female workers through direct observation based on a 5-step checklist of BSE. Second, the samples were randomly recruited; therefore, the findings would represent all textile female workers in Vietnam's 2 biggest cities. Third, the study questionnaire was comprehensive and addressed almost all items of BSE which had been discussed in previous studies. However, the information was self-reported by respondents, which is the subject to potential recall bias. Although, we managed to minimize this source

of bias by carefully training data collectors, and using multiple-interval interview, the limitation should be taken into account when interpreting the study results.

## Conclusions

There was a low prevalence of sufficient BSE knowledge (22.7%) and practice (15.8%) among Vietnamese female textile workers. Factors related to BSE were workers' education level, their husband's occupation, access to BSE information source, and history of breast-related diseases. Health education programs are essential to encourage and improve women's knowledge and practice of BSE.

## Authors' Note

This study was approved by the Research Ethics Board of Hanoi Medical University (No 37/HDDDDHYHN, dated 01/06/2017). The participation of the female workers in the study was voluntary. Written consent forms were obtained from all participants prior to their participation.

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