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ASSESSMENT OF KNOWLEDGE AND PRACTICE OF FEMALE STUDENTS IN ERBIL MEDICAL TECHNICAL INSTITUTE REGARDING BREAST SELF EXAMINATION

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Abstract

ackground and objectives: Breast cancer is the supreme common cancer attacking females.Breast self-examination (BSE) is a significant noninvasive screening measure for discoveringbreast cancer in its initial stage that could avoid serious and lethal complications. This studyaimed to examine the level of knowledge and practice of breast self-examination among femalemidwiferyandnursingstudents,tofindtheassociationbetweenthelevelofparticipant`sknowledgeandpracticingBSE,andt KurdistanRegion -Iraq.Methods: A descriptive cross-sectional study design carried out by the researchers on femalestudents in Erbil Medical Technical Institute; A convenient sampling technique was used togatheringinformationfromasampleof117femalestudentsinmidwiferyandnursingdepartments involves the age of 17 –44 years old and included both stages of their study. Thestudyconductedduring1stto31stofDecember2017.Theresearchersusedamodifiedquestionnairefordatacollection.

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ASSESSMENT OF KNOWLEDGE AND PRACTICE OF FEMALE STUDENTS IN ERBIL MEDICAL TECHNICAL INSTITUTE REGARDING BREAST SELF EXAMINATION

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ABSTRACT

Background and objectives: *Breast cancer is the supreme common cancer attacking females. Breast self-examination (BSE) is a significant noninvasive screening measure for discovering breast cancer in its initial stage that could avoid serious and lethal complications. This study aimed to examine the level of knowledge and practice of breast self-examination among female midwifery and nursing students, to find the association between the level of participant`s knowledge and practicing BSE, and their demographical data in Erbil Medical Technical Institute in Kurdistan Region -Iraq.*

Methods: *A descriptive cross-sectional study design carried out by the researchers on female students in Erbil Medical Technical Institute; A convenient sampling technique was used to gathering information from a sample of 117 female students in midwifery and nursing departments involves the age of 17 – 44 years old and included both stages of their study. The study conducted during 1st to 31st of December 2017. The researchers used a modified questionnaire for data collection.*

Results: *The mean ± standard deviation (SD) for the current study for the age was 20.3 ± 3.346, The mean knowledge and practice score ± SD was 5.63 ± 2.280 and 3.24 ± 4.001 respectively. This research found that only 4.3% of the participants had a good level of knowledge, and only 6% had a good level of practicing BSE. The highest percentage (89.7%) resided in urban areas. There was no significant statistical relationship between the participants' level of knowledge about BSE and their demographic information, while the present study illustrates the significant association of the students level of practicing BSE with their age (P= 0.028). There was a highly statistically significant relationship with the residential area of the study contributors at P-value = 0.000. There was no statistically significant relationship between the participants' level of knowledge and their practicing BSE at P = 0.652.*

Conclusions: *The students' knowledge about BSE is not at a satisfactory level as well as the practice. It is logical that educational program about BSE would be handled as an isolated course at the midwifery and nursing departments and all other branches of technical diploma level further studies to find out the factors behind the poor performance of BSE are recommended.*

Keywords: Breast Self-Examination, nurses, midwives, medical students, Erbil

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INTRODUCTION

Background: Breast cancer is the top public cancer attacking females (Ferlay J, *et, al.* 2008). Breast cancer is one of the leading causes of women cancer death worldwide (Parkin M.D, *et, al* 2011 & Jemal A, *et, al* 2011). In developed countries, the incidence rates are high (Agboola AOJ, *et, al* 2009). More than half (64%) of new breast cancer cases in 2003 affected women between age 40 – 60 years old, and the rest were divided to other age groups including

younger and older than 40 – 60 years old (Nurliza Bintsuut 2010). In 2011, over 508000 women died worldwide because of breast cancer according to the World Health Organization (WHO, 2013). Breast cancer assumed to be a disease of the developed countries but around 50% of breast cancer cases and 58% of breast cancer deaths recorded in less developed countries (Globocan, 2008). Approximately one-fourth of breast diseases often present as inflammatory lesions, palpable masses, secretions of the nipple, or mammographic abnormalities (Agboola AOJ, *et, al* 2009). Temporarily, breast cancer in young patients has a lesser rate of survival than old age due to diagnosis at progressive stages. Women's knowledge and assessments about breast cancer and its management may contribute significantly to early interventions and improve patients' quality of life. Crosswise, lack of knowledge may lead to late presentation with advanced stages when slight or no benefit derived from any form of treatment. For an early stage presentation, women must be "breast aware"; they must be proficient in detecting symptoms of breast cancer through routine screening practice (Avci IA, 2008 & Lea Budden 2010).

Breast self-examination (BSE) is a significant noninvasive screening measure for discovering breast cancer in its initial stage that could avoid serious and lethal complications (Al-Sharbatti, 2013 & Abdulaziz A, 2004). Evidence showed that women who correctly practice BSE monthly are prospective to perceive a mass in the primary stage of its progress, and early diagnosis to provide effective treatment and to yield a better survival rate (American Cancer Society, 2005). Women who have symptoms of breast cancer or at a higher risk for the disease are encouraged not completely depend on BSE but also have to do clinical breast exams and mammograms. Despite argument concerning BSE's effectiveness in determining tumors at an early stage, it generally accepted as an important assistant to other detection methods, mainly among young women where other screening procedures are not routinely used (Nurliza Bintsuut 2010).

Studies have publicized that nearly 11% of all new breast cancer cases are found in women younger than the age of 45 years (Fitzmaurice C, *et, al* 2013). Numerous factors can influence breast cancer risk, and most women who progress breast cancer do not have any recognized risk factors or a family history of the disease and usually, the absence of some information regarding breast self-examination. Unfortunately, despite the great benefits of consistent breast self-examination, only a few women actually examine themselves. Definitely, a majority do not even know how to do a BSE (Stamler LL, *et, al* 2000 & Al-Abadi N. 2001). The researchers aimed to assess awareness, knowledge, and practice of breast self-examination among young female nursing and midwife students at Erbil Medical Institute/ Erbil Polytechnic University in Kurdistan of Iraq.

The aim of the current study is to test the level of female`s knowledge and practice regarding breast self-examination among nursing and midwifery students of Erbil Medical Technical Institute, to examine the frequency of practicing breast self-examination among the respondents, to find the association between the levels of knowledge and practice regarding BSE with the respondent`s demographical characteristics, and to compare the students level of knowledge and practice within different departments.

SUBJECTS AND METHODS

A descriptive cross-sectional study design carried out by the researchers on female students in Erbil Medical Technical Institute; Midwifery and Nursing departments to measure their knowledge and practice about Breast Self-Examination (BSE). The institute belongs to Erbil Polytechnic University, which is located in Erbil, the capital of Iraqi Kurdistan Region. A convenient sampling technique was used to gathering information from a sample of 193 female students in midwifery and nursing departments included both stages of their academic program.

Seventy-six of them had been excluded in the study because of non-completed answers. The remaining 117 participants represented 57% of the midwifery department and 40.8 % of females in the nursing department students. Participation in this study was voluntary. Data collection performed after obtaining ethical consent from all participants through December 2017.

A modified questionnaire used by the researchers for collecting data. The questionnaire revised from the previous literature based on different studies (Ahmed B, 2010; American Cancer Society, 2005; Fawzia H and Shaista S, 2013; Gwarzo U.M.D., *et, al* 2009; Hamzeh Al Zabadi, *et, al* 2017; & Rabbani SA, *et, al* 2017). The questionnaire of the study started with a covering letter for students explaining the purpose of the study and ethical consent for the student's agreement to participate the survey in this research. The questionnaire consisted of three types of questions; the first part included socio-demographic characteristics such as age, marital status, residential area, faculty/ department, and year of study; the second part was 12 questions on knowledge about BSE, and the third part was 14 questions about their practice regarding BSE. The scale of the second part of the instrument was (Yes, No, and Do not know) and the scale of (Yes or No) was for the third part of the questionnaire. The questionnaire sheets were distributed to the midwifery and nursing students. After answering the questions the questionnaire sheets collected from the participants and then analyzed as per the study objectives. Each correct response was given a score of '1' while the (incorrect), and the (Don`t know) responses were given a score of '0'. Total scores had been used to abundant the level of knowledge–and practice and consequent qualitative analysis was conducted to rank good, satisfactory and poor scores. Thus, the maximum possible score was 12 in case of answering all the questions on knowledge correctly. The scores were determined in percentile. The scores < 60 percentage (< 7) were considered as poor knowledge, the scores from (7 – 9) were considered satisfactory and the scores ≥ 80% (≥ 10) were considered good knowledge. In the third part of

the questions for each 'Yes' response was given a score of '1' and the 'No' response was given a score of '0'. Thus, the maximum possible score was 14 in case of answering all the questions on practice with 'Yes'. The scores were determined in percentile. The scores < 60 percentage (< 9) considered as a poor practice, the scores from 9 - 11 considered satisfactory, and the scores around ≥ 80% (≥ 12) considered good practice.

The overall Knowledge and Practice of the study contributors measured by means of the totality score of each outcome centered on Bloom's cut-off point (60-80%). Measuring a score above the cut-off point was determined by having high levels of knowledge, and good practice (Mulat Yimer, *et, al* 2014; Segni MT, *et, al* 2016; & Hemn K. Qadir, *et, al* 2017). Descriptive and inferential statistics used through the Microsoft Excel Database jointly with the Statistical Package for Social Sciences (SPSS, Version 19). Chi-Square test and P-value used to determine the significant relationships between the variables. The P value of > 0.05 considered as non-statistically significant. The P value of ≤ 0.05 considered as statistically significant. The P value of ≤ 0.01 considered as highly statistically significant.

RESULTS

Description of the sample:

Table 1 shows the distribution of participants' age, the highest proportion (39.3%) of the students were 19 years old. The mean age ± SD 20.3 ± 3.346. Table 2 demonstrates the characteristics of the participant students; that 83 participants (70.9%) were from the age group of 19-20 years old. The highest proportion of them (81.2%) were single. While the majority of the students (89.7%) were urban habitats. Regarding the faculty department, 51.3% of them were studying nursing and the others (48.7%) were from midwifery department. The majority of them (88%) were in the second stage and the others (12%) were in the first stage of their study.

In table 3 this study revealed that around 21.4% of the participants have not heard breast self-examination ever. Moreover, it has been found that 35.9% of the contributors' first source of information about BSE were television and digital media, while health care providers represented the first source of information regarding BSE for nearly 23.9% of the students. Obtaining firstly information concerning BSE from print media, friends and family members had formed 8.6%, 5.1%, and 5.1% of the study sample respectively.

Students' level of Knowledge about BSE

The knowledge means score ± SD for the current study was 5.63 ± 2.280 as it is shown in table 4 which also showed that the highest number of the participants 22 (18.8%) were collected 7 scores up on 12 maximum possible scores. This research found that only 4.3% of the participants had a good level of knowledge, 60.7 % of them were in a poor level of knowledge, and the remaining contributors (35%) had satisfactory knowledge in relation to BSE as it mentioned in table 5. Table 6 indicates the dispersal of the studied undergraduates by their levels of knowledge about BSE in association with their demographic variables. This table also shows that there was no statistically significant relationship between the knowledge levels of the students with their age at P-value = 0.623, and there were no statistically significant connotation with their marital status, residential areas, faculty department, and stage of their study (academic year), at P-value = 0.426, 0.718, 0.837, and 0.643 respectively.

Students' level of practicing BSE

The mean score of participants practicing BSE ± standard deviation for the present study was 3.24 ± 4.001 as it exposed in table 7. Furthermore, this table displayed that the chief number of the participants 57 (48.7%) were collected zero scores up to 14 maximum possible scores. Table 8 indicates the dispersal of the studied undergraduates by their levels of practicing BSE; the

study found that most of the contributors 103 (88%) were in a poor performing level, 7 (6%) were in satisfactory, and 7 (6%) were in a good level of practicing BSE. Table 9 illustrates the significant association of the students' level of practicing BSE with their age, P-value = 0.028, Moreover, there was a highly statistically significant relationship between the residential area of the study contributors and their level of practicing BSE, while it clarifies no statistical significant connections between the students' levels of performing BSE and their marital status, faculty department, and academic Stages at p = 0.570, 0.081, and 0.339 respectively. The research findings in table 10 clarified the distribution of the studied students by their level of knowledge about BSE in association with their levels of practicing BSE, presenting an absence of significant relationship statistically with P- value 0.652.

DISCUSSION

Numerous authors (Agboola AOJ, *et, al* 2009; Ali Abu-Salem OT, *et, al* 2007; Balogun M. O. and Owoaje M. T. 2005 & Karayurt Ö, 2009) have highlighted the significance of BSE in timely identification of breast cancer. The present study showed the distribution of participants age, the highest proportion 46 (39.3%) of the students were 19 years old. The mean age ± SD was 20.3 ± 3.346. This result agreed with other studies which revealed that the mean age was 21.4+1.43, 22.9 ± 4.1, and 19.6 ± 1.38 years (Özkan A, *et, al* 2010; Segni MT, *et, al* 2016; & Dolar Doshi, *et, al* 2012) respectively. Eighty-three participants (70.9%) were from the age group of 19 – 20 years old, however, (Gwarzo, *et al* 2009) revealed that 81 contributors (36.6%) were from the age group of (20–21). Concerning the characteristics of the study sample of the current research, a high percentage (81.2%) of the participated students were single. This is consistent with the result of another study which revealed that 80% of their study sample were unmarried (Segni MT, *et, al* 2016), whereas other research revealed that all of the student samples were single

(Özkan A, *et, al* 2010). The majority of the students 89.7% were lived in urban areas and the rest of them live in rural areas. Regarding the faculty department, 51.3% of them were studying nursing and the others 48.7% were from midwifery department, while other scholar participants were; 59.3% from nursing students and 40.7% were students of midwifery (Özkan A, *et, al* 2010). Another study done in Palestine in 2017 among female students of An-Najah National University stated that 50 participants 30.6% were nursing students (Hamzeh Al Zabadi, *et, al* 2017).

The majority of the contributors 88% were in the second stage and the others (12%) were from the first stage of their study. In our study around 21.4% of the participants have not heard about breast self-examination ever. This is close to results of (Gwarzo, *et al* 2009 & Ahmed BA. 2010), other suggested 63.4% heard about the procedure (Boulos DNK, *et, al* 2014), but other scholars stated more than 90% of the applicants gotten about the procedure (Redhwan A. Al, Dhekra, *et, al* 2011; & Mehrnoosh Akhtari-Zavare, *et, al* 2013).

Arround one-third (35.9%) of the contributors' first source of information about BSE were television and digital media. Moreover, 23.9% of the participants stated that the health care providers represent the first source of information concerning BSE. but in another hand a scholar (Jemal A, *et, al* 2011) found that 23.8% of their research applicants basis of BSE data was media, and (Gwarzo, *et al* 2009) found that 45.5% and 21.8% as major sources of information were from media, and health workers respectively (Gwarzo, *et al* 2009).

The knowledge mean score ± standard deviation for the current study was 5.63 ± 2.280, however, a study done in 2012 concluded that the mean knowledge score was 14.22 ± 8.04 (Dolar Doshi, *et, al* 2012), but other scholar demonstrated that the score of knowledge level was 43.2±10.6 (Beydağ KD, *et, al* 2010). Also, our results showed that the highest number of the

participants 22 (18.8%) were collected 7 scores up to 12 maximum possible scores. The present study found that only 4.3% of the participants had a good level of knowledge. While 60.7 % of them were in poor level of knowledge, and the remaining contributors (35%) had satisfactory knowledge in relation to BSE, this agrees with the outcome of a study done in 2010 by Beydağ KD, and Yürügen B which stated that 58.3% of the female student sample had no information about BSE (Beydağ KD, *et, al* 2010). Likewise, other studies done in (Iraq 2012, Egypt 2014, Yemen 2010, Pakistan in 2010, Ghana 2013, Saudi Arabia 2013, and Ethiopia 2016) (Nada ASA, *et, al* 2012; Boulos DNK, *et, al* 201; Ahmed BA 2010; Samina K, *et, al* 2011; Sarfo LA, *et, al* 2013; Dalal MN, *et, al* 2014 & Sansnee Jirojwong, and Robert MacLennan 2003), were reported little knowledge score among the majority of the study participants. However, in a study done in Nigeria in 2008, an enhanced knowledge level concerning breast cancer was achieved (Osime OC, *et, al* 2008). Furthermore Hadi MA *et al* also showed higher knowledge level than our findings in regards to BSE (Hadi MA, *et, al* 2010), whereas (Rabbani *et al*, 2017) found in their study, which conducted in UAE, that among female contributors 80.8% had good to excellent knowledge of BSE. Moreover, (Agboola AOJ, *et, al* 2009) showed in a study done in Nigeria, 2009 a similarly outcomes to (Rabbani *et al*, 2017). This is predictable considering the fact that they are students of health sciences and must have taught such knowledge during their instruction.

Regarding the association between studied undergraduates by their levels of knowledge, about BSE and their demographic variables, the ageing role in the ratio of BSE is controversial, although some study testified a positive bond between age and BSE, (Agboola AOJ, *et, al* 2009 & Samina K, *et, al* 2011). But the current study showed that there was no statistically significant relationship between the knowledge levels of the students with their age at P-value = 0.623.

There was no statistically significant connotation with their marital status, residential areas, faculty department, and stage of their study (academic year), at P-value = 0.426, 0.718, 0.837 and 0.643 respectively. These outcomes are corroborated with the results of a study done in Australia by (Sansnee Jirojwong, and Robert MacLennan in 2003), but other studies specified that the connection between the female`s knowledge scores and their academic years of education is positive (Rabbani SA, *et, al* 2017; Samina K, *et, al* 2011; & Bouton ME *et, al* 2010).

Our study testified that the mean score of participants practicing BSE ± standard deviation for the present study was very low 3.24 ± 4.001. similarly, Rosmawati NH Nik 2010 in Malaysia found a mean score of performing BSE was 9.56 ± 4.87 among 86 respondents (Rosmawati NH Nik 2010), and (Dolar Doshi *et, al*, 2012) in Hyderabad City, India revealed that the mean score of practicing BSE for their study was 12.64 ± 5.92. The current study findings, displayed that the chief number of the participants 57 (48.7%) were collected zero scores from 14 maximum possible scores. Furthermore, our research indicates the dispersal of the studied undergraduates by their levels of practicing BSE. It is found that most of them 103 (88%) were in poor performing level, and the remaining students (12%) were divided to two equal parts, 7 (6%) by having satisfactory, or good level of practicing BSE. And definitely not considerable vary with other earlier revisions (Rosmawati NH Nik 2010), testified only 7% of participants had good level scores of performing this procedure, and our survey results agree with (Al Zabadi, *et al*, 2017) in a study done in 2017, which mentioned that merely 17.4% of the participants performed BSE. Moreover, (Ahmed BA 2010) argued same as Al Zabadi, *et al*, 2017 result. Our outcomes undoubtedly revealed poor performing breast-self examination in the examination population and are reliable with (Gwarzo *et, al*, 2009) which is performed in Nigeria, and overall, other scholars showed similar results regarding female student practicing BSE (Nulufer Erbil, 2014; Beydağ

KD, *et, al,* 2010; Özkan A, *et, al,* 2010 & Akhtari-Zavare M, *et, al,* 2013). Nevertheless, the current results stated more than other research outcomes (Sapountzi-Krepia D, *et, al,* 2017) that testified 59.9% of the female contributors reported never having performed BSE. However, other stated 73.8% of their female study samples were not doing BSE (Beydağ KD, and Yürügen B, 2010), and (Özgül Karayurt, *et, al* 2008) in Turkey stated that 70% of the participants were not performing MSE. These outcomes propose the inclusive problematic of not accomplishment ordered BSE among women worldwide. As distinguished in present study conclusions, the mean score of practicing BSE was not worthy. Altogether, these might be the justification for little proportion of respondents with good performance as supported by earlier study who described that the reason females did not practicing BSE because they did not recognize how to practice it (Gwarzo U.M.D, *et, al* 2009; Rosmawati NH Nik, 2010 & Özgül Karayurt, *et, al* 2008).

In regards to the association between the undergraduate`s level of practicing BSE and their demographic characteristics; our research results illustrate the significant association of the students level in practicing BSE with their age, at P-value = 0.028. this is consistent with a study done by (Nada ASA, *et al*, 2012) in Kirkuk City-Iraq, which clarified that there was a significant statistical relationship between the age of the study participants and their level of performing BSE. elsewhere scholars displayed parallel results (Özgül Karayurt, *et, al* 2008). Moreover there was a highly statistically significant relationship between the residential area of the study contributors and their level of practicing BSE at P-value = 0.000, however, the researchers did not found other scholar that linked these two variables together. The present study clarified no significant connections statistically of student samples level of performing BSE with marital status, faculty department, and academic stage of participants study at P-value = 0.570, 0.081, and 0.339 respectively. 37- (Nada ASA, *et, al* 2012), clarified similar outcomes in regards to practicing BSE linking with marital status at p-value = 0.700. About the academic year of

university, other scholars indicated that the difference wa s found to be highly statistically significant with the level of practicing BSE. ($\chi 2 = 14.3$, $p = 0.007$ (41), furthermore, (Gwarzo U.M.D. 2009 & Özgül Karayurt, *et, al* 2008) stated that there was significant connection between these two variables at p-value < 0,05.

The current research findings clarified the distribution of the studied students by their level of knowledge about BSE in association with their levels of practicing BSE, presenting an absence of significant relationship statistically with P- value = 0.652. This result is contrasting with (Dolar Doshi, *et al*, 2012) that testified a positive correspondence between knowledge and practice of BSE, $P < 0.05$. Likewise, the outcome of other scholars revealed a high statistically significant relationship between the respondent's knowledge and practice of BSE procedure at p-value = 0.000, and p-value = 0.001 (Dalal MN, *et,al* 2014 & Rosmawati NH Nik, 2010 respectively). Our research findings demonstrate no connection between females' level of knowledge about BSE and frequency of conducting this procedure; this is completely contrasting previous scholarly outcomes (Dolar Doshi, *et, al* 2012; Dalal MN, *et,al* 2014 & Rosmawati NH Nik, 2010). These outcomes might hypothesize that not necessarily the increasing of knowledge always has to increase the practice. Therefore, it recommended further studies to find out the factors affecting the performance of BSE.

CONCLUSION

The midwife and nursing students knowledge regarding breast self-examination is poor, as well as the practice. There is a requirement for enhancement of knowledge and practice of the students through their educational program as lectures on BSE, and as an isolated course at the midwifery and nursing departments and all other branches of technical diploma level. Longitudinal researches are necessary to follow up the changes in the level of knowledge and practice of the students in regards to BSE even after graduation.

There was no connection between females level of knowledge about BSE and their level of performing this procedure**,** this might hypothesize that not necessarily the increasing of knowledge always has to raise the level of practicing any procedure. Therefore, it recommended further studies to find out the factors affecting the performance of BSE.

TABLES

Table 1: Mean score of samples age and standard deviation:

Age (Year)	Frequency	Percent	Mean ± Std. Deviation
17	1	0.9	20.3 ± 3.346
18	13	11.1	
19	46	39.3	
20	37	31.6	
21	5	4.3	
22	3	2.6	
24	2	1.7	
25	3	2.6	
26	2	1.7	
27	1	0.9	
28	1	0.9	
31	1	0.9	
34	1	0.9	
44	1	0.9	
Total	117	100.0	

Table 2: The socio-demographic characteristics of the sample

Characteristics of the sample	**Frequency (F)**	**Percentage (%)**

Age		
<19	14	12.0
19 – 20	83	70.9
> 20	20	17.1
Total	117	100.0
Marital status		
Single	95	81.2
Married	16	13.7
Engaged	6	5.1
Total	117	100.0
Residential Area		
Rural	12	10.3
Urban	105	89.7
Total	117	100.0
Faculty Department		
Nursing	60	51.3
Midwifery	57	48.7
Total	117	100.0
Stage		
1st stage	14	12.0
2nd stage	103	88.0
Total	117	100.0

Table 3: Sources of Knowledge about BSE

Sources of knowledge about BSE	Frequency (F)	Percentage (%)
Have you ever heard breast self-examination?		
Yes	92	78.6
No	25	21.4
Total	117	100.0
The first source of information about breast self-examination:		
None	25	21.4
Television and Digital media	42	35.9
Healthcare providers	28	23.9
Print media	10	8.6
Friend's	6	5.1
Family members	6	5.1
Total	117	100.0

Table 4: Mean score of samples knowledge about BSE and standard deviation:

Knowledge scores	Frequency	%	Mean ± Std. Deviation
BSE should be performed monthly	4	3.4	5.63 ± 2.280
A woman with regular menstruation has to do BSE Within 5 days after menstruation?	10	8.5	
Early screening for breast cancer increases the likelihood of treatment	8	6.8	
Age increases the likelihood of developing breast cancer	13	11.1	
Breast-feeding reduces the risk of breast cancer	19	16.2	
Genetic factors could be considered as risk factors for breast cancer	17	14.5	
Secretions from the nipple (other than the milk) could be considered among the symptoms of breast cancer	22	18.8	
Change in the color or texture of the breast could be considered as signs of breast cancer	15	12.8	
Changes in the nipple color, or position and/or nipple rash could be considered as signs of breast cancer	4	3.4	
Do you think that redness in the breast is one of the signs of breast cancer?	3	2.6	
Changes in the shape, size of the breast is one of the signs of breast cancer	2	1.7	
Effective treatment could cure breast cancer	0	0	
Total	117	100.0	

Table 5: Distribution of the sample by the level of knowledge about BSE

Level of knowledge	**Frequency**	**%**
Poor	71	60.7
Satisfactory	41	35.0
Good	5	4.3
Total	**117**	**100**

Table 6: Distribution of the studied students by their levels of knowledge about BSE in association with their demographic variables

Demographic	**Level of knowledge**	**Total**	**P-Value**

Variables	Poor (F)	Satisfactory (F)	Good (F)		
Age (years):					
< 19	8	6	0	14	0.623
19 – 20	51	27	5	83	
> 20	12	8	0	20	
Total	71	41	5	117	
Marital Status					
Single	58	33	4	95	0.426
Married	9	7	0	16	
Engaged	4	1	1	6	
Total	71	41	5	117	
Residential area:					
Rural	8	4	0	12	0.718
Urban	63	37	5	105	
Total	71	41	5	117	
Faculty Department:					
Nursing	36	22	2	60	0.837
Midwifery	35	19	3	57	
Total	71	41	5	117	
Stage year of study:					
First Year	7	6	1	14	0.643
Second Year	64	35	4	103	
Total	71	41	5	117	

Table 7: Mean score and standard deviation of samples practicing BSE,

Practice scores

Practice scores	Frequency	Percent	Mean ± Std. Deviation
Have you ever did BSE for yourself?	57	48.7	3.24 ± 4.001
Did you perform 12 times BSE for yourself in a year?	5	4.3	
Examining breasts at end of the menstrual period.	3	2.6	
Look at breasts in the mirror with arms at sides.	7	6.0	
Look at breasts in the mirror with arms raised over-head.	5	4.3	
Look at breast in the mirror with the hands-on thigh.	6	5.1	
When looking at breast in the mirror, looking for swelling, dimpling of the skin, or changes in the nipple.	6	5.1	
Examine breast while lying down, place a towel or pillow under shoulder before examining breast on that side.	7	6.0	
Examine breasts while lying down, place hand above head before examining breasts on that side.	7	6.0	
Use right hand to examine left breast and left hand to examine right breast.	3	2.6	
Examine one breast at a time	2	1.7	
Examine breasts in a circular, clockwise motion moving from outside in.	2	1.7	
When examining breast, feel for lumps, hard knots, or thickening.	4	3.4	
Squeeze the nipple of each breast to look for discharge.	3	2.6	
Total	117	100.0	

Table 8: Distribution of the sample by the level of practice about BSE

Level of practice	**F**	**%**
Poor	103	88.0
Satisfactory	7	6.0
Good	7	6.0
Total	**117**	**100**

Table 9: Distribution of the studied students by their levels of Practicing BSE in association with their demographic variables

Demographic Variables	**Level of practicing BSE**			**Total**	**P-Value**
	Poor (F)	**Satisfactory (F)**	**Good (F)**		
Age (years):					
< 19	11	1	2	14	0.028
19 – 20	78	3	2	83	
> 20	14	3	3	20	
Total	103	7	7	117	
Marital Status					
Single	85	5	5	95	0.570
Married	13	2	1	16	
Engaged	5	0	1	6	
Total	103	7	7	117	
Residential area:					
Rural	8	0	4	12	0.000
Urban	95	7	3	105	
Total	103	7	7	117	
Faculty Department:					
Nursing	49	5	6	60	0.081
Midwifery	54	2	1	57	
Total	103	7	7	117	
Stage year of study:					
First Year	14	0	0	14	0.339
Second Year	89	7	7	103	
Total	103	7	7	117	

Table 10: Distribution of the studied students by their level of knowledge about BSE in association with their levels of practicing BSE

Level of knowledge	**Practice scores**	**Total**	**P-Value**

	Poor (F)	**Average (F)**	**High (F)**		
Poor Knowledge	61	6	4	71	0.652
Satisfactory Knowledge	37	1	3	41	
Good Knowledge	5	0	0	5	
Total	103	7	7	117	

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