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Knowledge, Attitude, and Practice of Breast Self-Examination among Women Attending Primary Health Care Facility in Sharkia Governorate, Egypt

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ABSTRACT

Background: Breast cancer (BC) is the most common cancer among females worldwide. Breast self-examination (BSE) is accepted, cheap, simple, accessible, non-invasive screening methods for early detection, helping in reducing morbidity and mortality and improving prognosis of breast cancer.

Aim: Assessments of the knowledge, attitude and practice of women toward breast self-examination to help in the future reduction of prevalence of breast cancer and promote women health**.**

Subjects and methods: A cross sectional study was done on 420 females ≥20 years old attending primary health care services in Zagazig district of Sharkia Governorate. Data were collected through structured questionnaire to assess the sociodemographic data, knowledge, attitude, and practice of women toward breast self-examination (BSE).

Results: The level of satisfactory knowledge, attitude, and practice towards BSE; 24.3%, 27.4% and 22.9% respectively and it was high among highly educated, professionally working and those with positive family history of BC with statistically significant association. Most common source of information of women about BSE was mass media (49%) and (63%) were practicing BSE irregularly. There were statistically significant association between knowledge, attitude, and practice.

Conclusion and recommendation: There was low level of satisfactory knowledge, attitude and practice towards BSE among participants, and (63%) of those practicing BSE did it irregularly. So, we recommend regular health education program to all females ≥20 about BC and importance of BSE in early detection and training them on how to perform it properly and regularly in simple and clear way.

Keywords: Breast self-examination, Knowledge, Attitude, Practice, Primary Health Care, Sharkia Governorate.

INTRODUCTION

Breast cancer (BC) is the most common cancer and most commonly diagnosed malignancy in women worldwide and the leading cause of cancer-related deaths. In 2020, more than two million women were diagnosed with BC, and 685,000 deaths were sick globally. Nearly, 7.8 million women had been living with BC for the past 5 years, making it the world's most widespread form of cancer [(1)]. Two important strategies for early detection of BC include early diagnosis and screening. A key step in early detection includes raising awareness of the early signs of cancer among health care professionals, and the general public [(2)].

Breast self-examination (BSE), mammography and clinical breast examination (CBE) are accepted screening methods for breast cancer. BSE is a process whereby women examine their breasts regularly to detect any abnormal swelling or lumps to seek prompt medical attention. It is recommended for females in their 20s to know how healthy breasts look and feel. It is cheap, simple, accessible and non-invasive [(3-4)].

Egypt has high incidence of breast cancer which represents thirty-five percent from all cancers affecting females. In 2019 the Egyptian Ministry of Health started initiatives to improve women health through increasing awareness of women about breast cancer and importance of breast self-examination (BSE), training the women on how to correctly do BSE , screening more than 34.7 million women through 3,588 health units and 102 hospitals nationwide and suspected cases were provided with proper management freely [(5)].

Assessment of women knowledge, attitude and practice toward breast self-examination can indirectly lead to raise awareness and knowledge and improving attitude and practice toward breast self-examination especially among females attending primary healthcare centers as it is the first basic level of contact between them and the health care system leading to early detection, proper management and good prognosis of breast cancer [(6)]. Therefore, our study aims to assess the knowledge, attitude, and practice of women toward breast self-examination to help in the future reduction of prevalence of breast cancer and promote women health.

SUBJECTS AND METHODS

Study design: -A cross sectional study was done.

Target population, site and time: Women were attending the primary health care services in Zagazig district of Sharkia Governorate during the period from June 2023 to October 2023.

Sample size calculation was done using (open Epi-Info 7.0). Based on data obtained from Central Agency for Public Mobilization and Statistics, 2017 the overall

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number of females in Sharkia Governorate was 425105 [7] and the expected practice toward breast self-examination 29.2% [3] at 95% confidence level and the margin of error was 5%. The total calculated sample size after adding 15% non-responses was 420 females.

Sampling technique:

Multistage random sampling technique was used to select the participants, where out of 17 districts of Sharkia Governorate, Zagazig district was randomly selected, then out of 38 primary health care units in Zagazig district, one urban health center and two rural health units were selected randomly from a list of the primary health care (PHC) services in Zagazig district by simple random sample. Half of the sample was obtained from the attendants of the urban health center (Alnahal Health Center) and the other half from attendants to two rural health units (Sheba and Elnakhas) who attending the PHC center for routine medical follow up, vaccination, laboratory investigation, family planning, outpatient clinic, antenatal care.…etc. They were selected randomly by simple random sample.

Inclusion criteria: Females ≥20 years' old attending selected primary health care services in Zagazig district of Sharkia Governorate accepted to share in this study.

Exclusion criteria: Females < 20 years old, outside selected primary health care services in Zagazig district of Sharkia Governorate, had mastectomy or refusing to share in this study.

Study tool: Data were collected through a structured questionnaire which was developed by the researcher after reviewing scientific literature [3] to assess the following.

(1) **Sociodemographic data e.g.,** age, marital status, occupation, education…. etc.

(2) **Knowledge about BSE**: Fourteen questions were used e.g., the best time, frequency of BSE, the dangerous signs observed on nipple and breast examination……. etc. The right answer of each questions took score one, the wrong and do not know took score zero. The total score was fourteen; women who took scores ≥7 were having satisfactory/good knowledge and those with <7 were having unsatisfactory / poor knowledge [3].

(3) **Attitude toward BSE:** This included 8 questions to assess the attitude of females toward BSE. It was measured on 3 Likert scale (disagree, neutral and agree) e.g., weather they believe that BSE is important or not, whether they prefer to do it or they feel worried and weather they think that regular BSE can cause early detection of any breast changes…. etc. If the answer was disagree or neutral, it took score zero and if it was agree it took score one. The total score was eight; when score was >4 the women were having a satisfactory/positive attitude and if the score was ≤4 their attitude was unsatisfactory / negative) [3].

(4) Practicing of BSE: Included eleven questions to assess the practice of BSE by studied women e.g., If they were practicing BSE or not, level of practice and causes of practicing and non-practicing of BSE…. etc. The correct practice of each questions took score one and the incorrect practice took score zero. The total score was 11; when score was ≥6 the women were having a satisfactory/ good practice and if the score was <6 their practice was unsatisfactory good poor [3].

Collection of data: Data were collected through interviewing the women during their waiting the needed PHC services. It took about 15 minutes to fill the questionnaire. Validity of questionnaire was assessed by taking opinions of six professors of Community Medicine in Faculty of Medicine, Zagazig University. The reliability of questionnaire was assessed by a Cronbach's one alpha and its score was (0.826)**.**

Pilot Study: A pilot study was done on 10% of sample size to evaluate validity, simplicity, clarity, and the time required to complete the questionnaire. It was not included in main study.

Ethical Issues:

The Institutional Review Board (IRB) of the Faculty of Medicine at Zagazig University gave its approval (ZU.IRB#11118/11-9- 2023) to the proposal. The Declaration of Helsinki, the code of ethics of the World Medical Association, was followed when conducting this research on humans. All participants supplied informed consent after being informed of the study's goals and the confidentiality of the data was guaranteed.

Statistical Analysis

Data were entered and analyzed by using SPSS, version 22 [8]. Data were presented as frequencies and percentages and the Chi-Square test was used for comparisons between independent qualitative variables. P<0.05 was considered significant.

RESULTS

Level of satisfactory knowledge, attitude and practice of studied females regarding breast self-examination were (24.3%, 27.4% and 22.9%) respectively (figure 1).

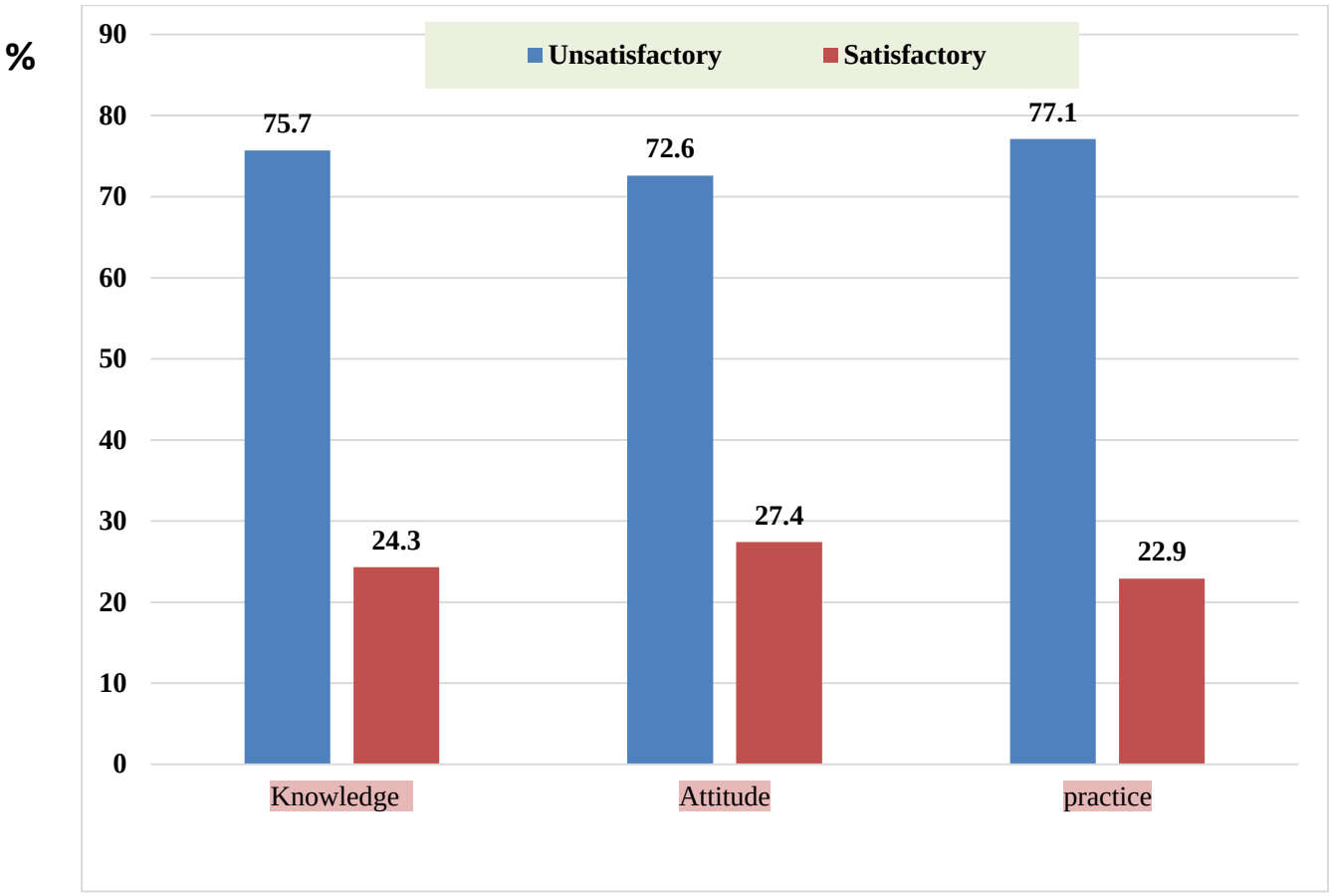

Figure (1): Bar chart shows the level of knowledge, attitude and practice of studied females regarding breast self-examination.

More than two third of highly educated women (70.3%) and three fourths of professionally working women (75%), 87.9% of women having positive family history and 89.5% of those with previous lesion to breast, mammography/biopsy had satisfactory / good knowledge about BSE with statistically significant association. However, there was no statistically significant association between level of knowledge, age, marital status, residence, number of children and income (Table 1). Satisfactory/positive attitude toward BSE was high among highly educated (68.8%), professionally working (85.7%) and those with positive family history of BC (90.9%) with statistically significant association. However, there was no statistically significant association between attitude, age, marital status, residence, number of children, income and previous lesion to breast, mammography/biopsy (Table 1). Most of highly educated (71.9%), 89.3% of professionally working and 78.8% of those with positive family history of BC had satisfactory/ good practicing of BSE. However, there was no statistically significant association between practicing BSE, age, marital status, residence, number of children, income and previous lesion to breast, mammography/biopsy (Table 1).

Table (1): Association between sociodemographic criteria, family history of BC and history of breast lesion/mammography/biopsy of the studied group and their knowledge, attitude, and practice towards breast self-examination

Variables	KAP (No.=420)						χ^2	P-value
	Knowledge n(%)		Attitude n(%)		Practicing BSE n(%)			
	Poor (n=318)	Good (n=102)	Negative (n=305)	Positive (n=115)	Poor (n=324)	Good (n=96)		
Age :								
<40 years(n= 220)	150 (68.2)	70(31.8)	211(72.8)	79(27.2)	220(75.9)	70(24.1)	3.627 **a**	0.163 **a**
40-60(n= 104)	81(77.9)	23(22.1)	78(75.0)	26(25.0)	83(79.8)	21(20.2)	1.905 **b**	0.386 **b**
>60 years(n= 26)	17(65.4)	9(34.6)	16(61.5)	10(38.5)	21(80.8)	5(18.2)	0.882 **c**	0.643 **c**
Marital status								
Single (n= 129)	95(73.6)	34(26.4)	100(77.5)	29(22.5)	97(75.2)	32(24.8)	4.875 **a**	0.087 **a**
Married(n=260)	204(78.5)	56(21.5)	186(71.5)	74(28.5)	206(79.2)	54(20.8)	3.711 **b**	0.156 **b**
Divorced /widow(n= 31)	19(61.3)	12(38.7)	19(61.3)	12(38.7)	21(67.7)	10(32.3)	2.474 **c**	0.29 **c**
Residence								
Rural (n= 210)	165(78.6)	45(21.4)	155(73.8)	55(26.2)	164(78.1)	46(21.9)	1.864 **a**	0.172 **a**
Urban (n= 210)	153(72.9)	57(27.1)	150(71.4)	60(28.6)	160(76.2)	50(23.8)	0.299 **b**	0.584 **b**
							0.216 **c**	0.642 **c**
No. of children								
0-4(n= 310)	250(80.6)	60(19.4)	222(71.6)	88(28.4)	234(75.5)	76(24.5)	0.021 **a**	0.883 **a**
>4(n= 110)	88(80.0)	22(20.0)	83(75.5)	27(24.5)	90(81.8)	20(18.2)	0.602 **b**	0.437 **b**
							1.847 **c**	0.174 **c**
Education								
Illiterate / Read and write (n=63)	51(81.0)	12(19.0)	61(96.8)	2(3.2)	52(82.5)	11(17.5)	89.888 **a**	<0.001* **a**
1ry education(n= 122)	109(89.3)	13(10.7)	116(95.1)	6(4.9)	112(91.8)	10(8.2)	112.307 **b**	<0.001* **b**
2ndry (n=171)	139(81.2)	32(18.7)	108(63.2)	63(36.6)	142(83.0)	29(17.0)	106.496 **c**	<0.001* **c**
University/more (n=64)	19(29.7)	45(70.3)	20(31.3)	44(68.8)	18(28.1)	46(71.9)		
Occupation								
Housewife(n=289)	272(94.1)	17(5.9)	269(93.1)	20(6.9)	275(95.2)	14(4.8)	172.657 **a**	<0.001* **a**
Student(n=18)	7(38.9)	11(61.1)	4(22.2)	14(77.8)	10(55.6)	8(44.4)	199.055 **b**	<0.001* **b**
Employee (n= 85)	32(37.6)	53(62.4)	28(32.9)	57(67.1)	36(42.4)	49(57.6)	186.355 **c**	<0.001* **c**
† Professional (n= 28)	7(25.0)	21(75.0)	4(14. 3)	24(85.7)	3(10.7)	25(89.3)		
Income								
Insufficient(n223=)	177(79.4)	46(20.6)	170(76.2)	53(23.8)	178(79.8)	45(20.2)	4.031 **a**	0.133 **a**
Sufficient(n= 174)	126(72.4)	48(27.6)	119(68.4)	55(31.6)	129(74.1)	45(25.9)	3.137 **b**	0.208 **b**
Sufficient and more(n=23)	15(65.2)	8(34.8)	16(69.6)	7(30.4)	17(73.9)	6(26.1)	1.934 **c**	0.380 **c**
Family history of breast cancer								
Yes (n= 33)	4(12.1)	29(87.9)	3(9.1)	30(90.9)	7(21.2)	26(78.8)	78.766 **a**	<0.001* **a**
No (n= 387)	314(81.1)	73(18.9)	302(78.0)	85(22.0)	317(81.9)	70(18.1)	72.691 **b**	<0.001* **b**
							63.538 **c**	<0.001* **c**
History of breast lesion / mammography/biopsy								
Yes (n= 19)	2(10.5)	17(89.5)	14(73.7)	5(26.3)	15(79.0)	4(21.0)	45.99 **a**	<0.001* **a**
No (n= 401)	316(78.8)	85(21.2)	291(72.6)	110(27.4)	309(77.0)	92(23.0)	0.011 **b**	0.915 **b**
							0.036 **c**	0.847 **c**

† **Professional** :-(Doctor, Engineer, Teacher …etc.) **χ2 =** Chi Square test; **KAP**, knowledge, attitude and practice. **a** Comparing poor and good knowledge. **b** Comparing negative and positive attitude. **c** Comparing not practicing and practicing BSE. *=significant.

The main source of information about BSE was mass media (49%) followed by relatives and friends (26%) (Figure 2).

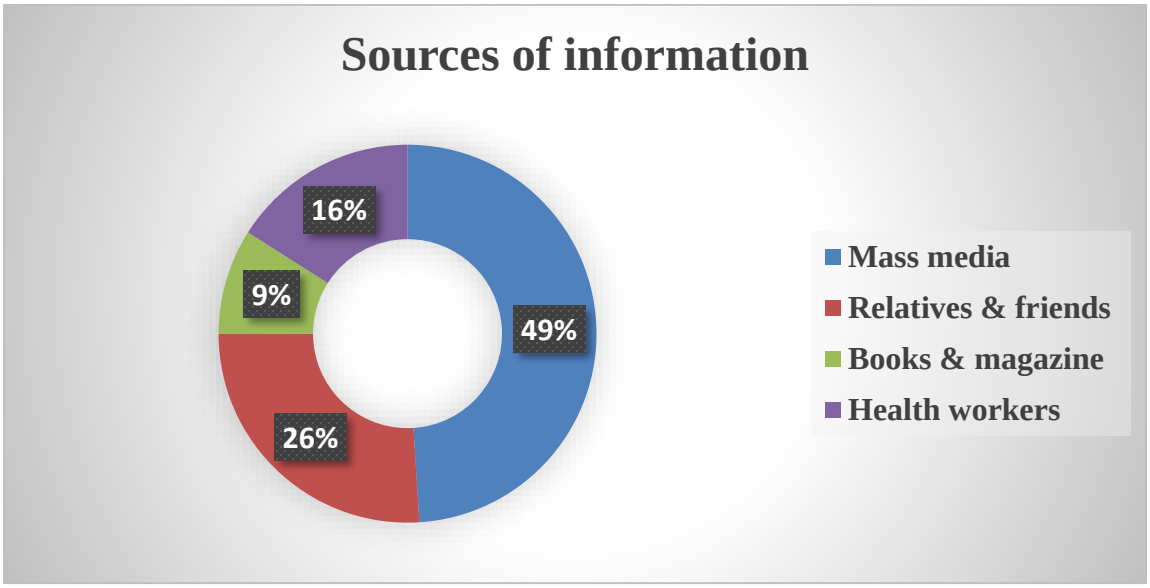

Figure (2): Pie chart shows the sources of information about breast self-examination among studied women.

The frequency of practicing breast self-examination was mostly irregular (63%) (Figure3).

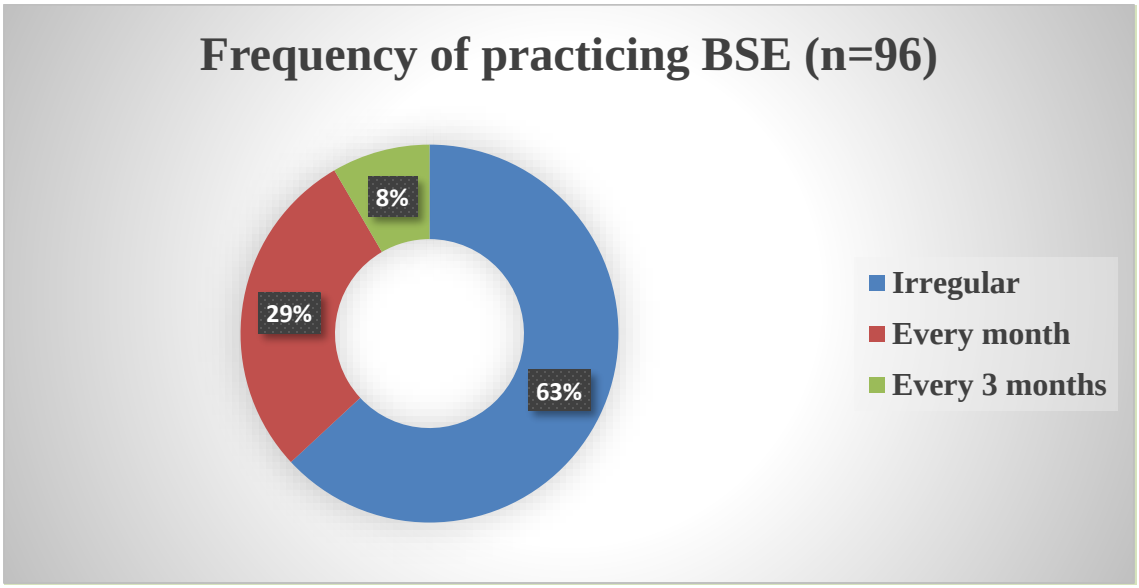

Figure (3): -Pie chart shows the frequency of practicing breast self-examination among studied women (n=96).

The main cause of non-practicing BSE was lack of knowledge (48.1%) (Figure4).

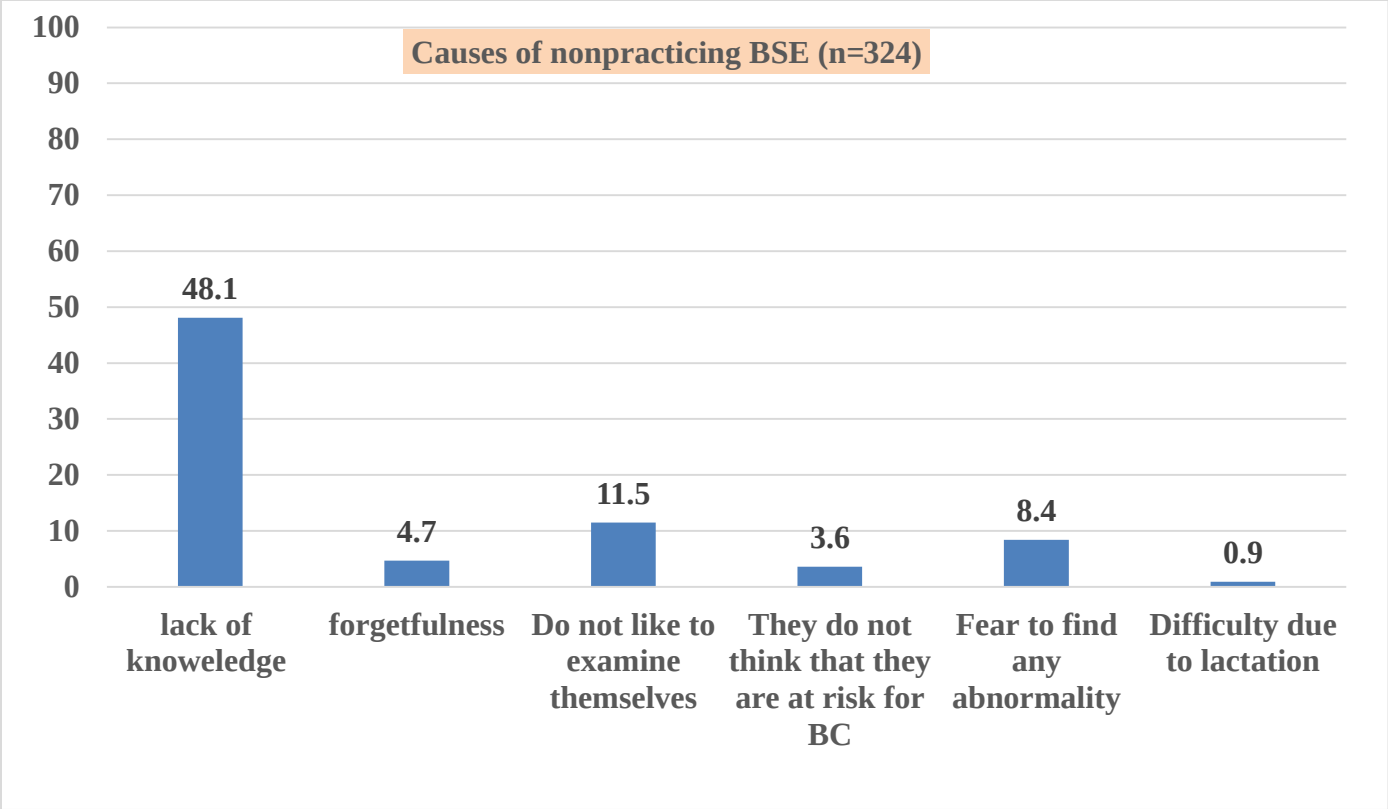

Figure (4): -Bar chart shows the causes of non-practicing BSE among studied females regarding breast self-examination.

There were statistically significant association between knowledge, attitude and practice that the majority of those having satisfactory knowledge had positive attitude (73.5%) and satisfactory practice (63.7%). Also, the majority of those having satisfactory attitude had satisfactory practice (68.7%) (Table2).

Table (2): Association between the level of knowledge, attitude and practicing of breast self-examination of studied females.

Variables	**Knowledge n(%)**		χ^2	P-value
	Poor (n=318)	**Good (n=102)**		
Attitude				
Negative (n=305)	278(87.4)	27(26.5)	144.29	<0.001*
Positive (n=115)	40(12.6)	75(73.5)		
Practicing of BSE				
Poor (n=324)	287(90.0)	37(36.3)	123.49	<0.001*
Good (n=96)	31(10.0)	65(63.7)		
	Attitude			
	Negative (n=305)	**Positive (n=115)**	**χ2**	P-value
Practicing of BSE				
Poor (n=324)	288(94.4)	36(31.3)	188.7	<0.001*
Good (n=96)	17(5.6)	79(68.7)		

χ2 = Chi Square test *=significant.

DISCUSSION

The current study revealed that only 24.3%, 27.4% and 22.9% of studied females had satisfactory knowledge, attitude and satisfactory practice respectively toward BSE (Figure 1), which were low. It was consistent with other studies, which found that level of satisfactory knowledge; attitude and practice were 31.6%, 49% and 8.4% respectively [9] and 4%, 16.3%, and 2.3% respectively [10]. Similar studies in Ghana, Iraq and Saudi Arabia and Jordon, India and Nigeria revealed low level of practicing BSE which were 37.6% 24.2% and 36%, 33%, 19%, and 4% respectively [11-16].

This observed low level of satisfactory knowledge, attitude, and practice can be related to social culture of females in Sharkia Governorate, where talking about some topics related to female body like breast are shameful and decrease health education sessions provided to females attending primary health care services, which can negatively affect attitude and practice toward BSE. Also, a lack of understanding of how to correctly perform the BSE technique was the most common explanation for not doing it. However, it was inconsistent with the studies, which found the level of satisfactory knowledge and attitude were 59.8% and 64.2%, respectively [12], 70% and 59.2%, respectively [16], and 70.3% and 77.4%, respectively [17]. Also, it was found that satisfactory knowledge about BSE was 56 % [6].

This study showed that the satisfactory knowledge was common among more than two third of highly educated females (70.3%), three fourths (75%) of professionally working 87.9% of females with positive family history of BC, 89.5% of females with positive history of breast lesion / mammography/biopsy (Table 1). Similar findings were observed as the satisfactory knowledge was common among 58.8% of highly educated females and 67.4% of professionally working [18]. Also, it was found that 59.8% of highly educated participants had good knowledge about BSE [10]. This may reflect the direct relationship between level of education and occupation as most of those with professional occupation had high level of education and so high level of knowledge.

Also, **Abo Salem *et al.*** [3] found that 75% of females with positive family history of BC and 94.5% of those with satisfactory knowledge had past history of breast lesion, **Sachdeva *et al.*** [19] found that 68.1% of those with positive family history of BC had good knowledge. However, it disagreed with other authors [12, 20] who observed high level of knowledge about BSE among secondary schools' participants and employees.

Also, **Abo Salem *et al.*** [3] observed that 59.3% of those with satisfactory knowledge were housewives. **Fouelifack *et al.*** [10] found that satisfactory knowledge was only 38.9% among those with positive family history. Another study prepared in Sub-Saharan Africa found that there is no significant relationship between level of knowledge and family history [16]. Our study found that 68.8% of highly educated, 85.7% of professionally working and, 90.9% of those with positive family history of BC had positive attitude towards BSE (Table 1). It was similar to the study [10], which found that positive attitude was high among university educated (79.3%), and among professional workers (55.9%) and those with positive family history (60.3%). On the other hand, one study [3] found that 41.1% and 68.6% of those with positive attitude were among secondary school educated and housewives respectively. Other study found that there was no statistically significant association between attitude toward BSE and level of education and positive family history of BC [9].

Our study observed that 71.9% of university/more, 89.3% of professional occupation, 78.8% of those with positive family history were practicing BSE satisfactorily with statistically significant association (Table 1). The same result was observed by other studies[9,16,21], which found good practicing of BSE among those with high educational level and those with positive family history. Also, one study [18] found that 47.1% of those highly educated were practicing BSE and 70.7% of professional workers were practicing BSE and another study [17] found that (51.1%) of professional workers were performing BSE and (98.6%) of nonperforming BSE participants were not having positive family history of BC. On the other hand, one study [10] found that satisfactory practice of BSE was low among university educated (18.4%), and those with positive family history of BC (15.1%). Also, another study [3] found that 48.4% and 35.5% of secondary school educated and housewives respectively had good practice of BSE than highly educated and one study [20] found that (27.8%) of primary school educated had satisfactory practice of BSE.

Mass media was the most common source of information (49%) for the participants in our study (Figure 2), similar to other studies [3,18] in which mass media was common among (68.4%) and (45.4%) of participants respectively. It may be due broad and attractive role of mass media, which become an attractive source of knowledge to health-related topics and other social and political issues. However, other studies [11,13,14] found that most of participants take their information about BSE from health care providers (60.1%), (53.1%.) and (29.5%) respectively. Also, in

Iran the main source of information was newspaper and magazines (50%) [21].

Our study found that (63%) of females were practicing BSE irregularly while, 29% and 8% respectively practicing BSE every month and every three months (Figure 3). It was consistent with the study [3], which found that (60.8%) of participants were practicing of BSE irregularly while (32.9% and 6.3%) of them practicing BSE every month and every three months respectively. Also, it was relatively similar to the study [17], which found that 15.2% of participants did regular practice of BSE and 84.8% had never practice BSE or practicing it irregularly. However, our results were in contrast to the study [11], which found that 58.5% of their participants practice BSE regularly every monthly. The current practicing of BSE was low or in irregular manner and it was not adherent to recommendation of American Cancer Society [22] in performing BSE monthly, as females from Arab countries find BSE embarrassing and inconvenient. So, to increase BSE practicing we should provide clear and simple instruction to females.

Our results revealed that the main barrier to practicing BSE was lack of knowledge (48.1%) (Figure 4). It was similar to other studies [3,6], which found that main barrier to practice BSE was commonly due to lack of knowledge 57.6% and 46.1% respectively. However, one study [21] found that fear of finding mass was the main cause of none practicing BSE.

The current study showed that there were statistically significant associations between knowledge, attitude and practice (Table 2) that 73.5% of those with satisfactory knowledge had positive attitude and 63.7% of them had satisfactory practice. Also, 68.7% of those having positive attitude had satisfactory practice. It is similar to the study [13], which reported that 52.7% and 62% of those with good knowledge had positive attitude and practice and 65.9% of those with positive attitude had satisfactory practice. Also, other studies [9,12,16,19,21] concluded statistically significant association between knowledge, attitude and practice. Also, one study [17] found that 83.9% of participants practicing BSE had sufficient knowledge and (83.2%) of participants practicing BSE had positive attitude. This significant association between knowledge, attitude and practice can be interpreted as women with satisfactory knowledge about danger of BC and importance of BSE in early detection, good prognosis and correct method to do BSE will be empowered to improve her attitude and practice. On the other hand, another study [10] found that only 23.6% of those with satisfactory knowledge had satisfactory practice.

CONCLUSIONS AND RECOMMENDATIONS

Our study revealed low level of satisfactory knowledge, attitude and practice towards BSE 24.3%, 27.4% and 22.9% respectively among participants. The highest level of satisfactory knowledge, attitude and practice were observed among highly educated, professionally working and those with positive family history of BC with statistically significant association. Most common source of information for females about BSE was mass media (49%) and (63%) were practicing BSE irregularly. There were statistically significant association between knowledge, attitude and practice regarding BSE. So, we recommend regular health education program to all females≥ 20 years old. Starting from primary health care facilities and then extend to all levels providing health services, universities, mass media about BC and importance of BSE in early detection and good prognosis and training them on how to perform it properly and regularly in correct, simple and clear way.

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