

## Knowledge and Attitude towards Breast Cancer among Female School Teachers in El-Sharkia, Egypt

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### ABSTRACT:

**Background:** Breast cancer is the most prevalent cancer among Egyptian women. **Aim:** To determine the knowledge and attitude of female school teachers towards breast cancer in Ibrahemia district, El-Sharkia Governorate, Egypt. **Subjects and Methods:** A descriptive study design was used. The study sample amounted to 200 female teachers from Ibrahemia schools. Two types of tools were used for data collection: a questionnaire sheet which was designed to collect information on the socio-demographic characteristics of the studied female school teachers, and their knowledge about prevention of breast cancer and a three point likert scale was used to assess the attitude of the female school teachers towards breast cancer. **Results:** More than half (51.5%) of the school teachers had low level of knowledge about breast cancer and only 8.5% had high level of knowledge. The majority of them expressed positive attitude towards breast cancer (86.5%). Twenty nine percent of female teachers were practicing breast-self-examination (BSE) but only 5.0% of them used the correct procedure of BSE. **Recommendations:** Findings of this work highlight the need for increasing awareness of female school teachers about breast cancer through health education programs which to provide them with information about breast cancer and teach them the correct technique for BSE. Booklets about breast cancer, BSE and healthy lifestyles should be available at school libraries in Arabic language.

**Key Words:** Attitude, breast cancer, El-Sharkia Governorate, knowledge, school teachers

### INTRODUCTION:

Breast cancer (BC) is the most common cause of cancer related deaths among women around the globe.<sup>(1)</sup> BC is an urgent public health problem in high-resource regions and is becoming an increasingly urgent problem in lower resource regions, where the incidence rates have been increasing by up to 5% per year.<sup>(2)</sup> Worldwide, BC comprises 10.4% of all cancer incidences among women, making it the most common type of non-skin cancer in women and the fifth most common cause of cancer deaths.<sup>(3)</sup> In Egypt, BC is the most common

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cancer among women, representing 18.9% of total cancer cases (35.1% in women and 2.2% in men) among the Egypt National Cancer Institute (NCI) series of 10 556 patients during the year 2001,<sup>(4)</sup> with an age-adjusted rate of 49.6 per 100 000 population.<sup>(5)</sup> BC is the most prevalent cancer among Egyptian women and constitutes 38.9% of National Cancer Institute cases.<sup>(6)</sup>

Frequency of female BC in Arab world was recorded in Oman (16.2%), UAE (18.4%), Tunisia (19.6%), Saudi Arabia (21.8%), Algeria (23.5%), Qatar (28.2%), Kuwait (29.7%), Jordan (32.4%), Lebanon (33.3%), Egypt (37.5%), and Bahrain (38.4%).<sup>(7)</sup>

The early BC lesions are detected by mammograms. Lumps found in lymph nodes located in the armpits can also indicate BC.<sup>(8)</sup> Indications of BC other than a lump may include changes in breast size or shape, skin dimpling, nipple inversion, or spontaneous single-nipple discharge. Pain ("mastodynia") is an unreliable tool in determining the presence or absence of

BC, but may be indicative of other breast health issues.<sup>(9)</sup>

Numerous risk factors are associated with BC. One major risk factor is increasing age.<sup>(10)</sup> Other factors that augment the risks of developing BC are: early menarche and late menopause, obesity after menopause, use of iatrogenic hormones (both oral contraceptives and postmenopausal hormone therapy have been implicated), nulliparity or having the first child after the age of 30, certain ethnical features, radiation, or intake of alcohol on daily basis.<sup>(11,10)</sup>

Factors that decrease BC risks include breastfeeding, physical activity, and maintenance of a healthy body weight.<sup>(11)</sup> Mammography, clinical breast examination (CBE) and breast self-examination (BSE) are the secondary preventive methods used for investigation in the early detection of BC.<sup>(12)</sup> According to The American Cancer Society (ACS) recommendations, women should know how their breasts normally feel and report any breast changes promptly to their

health care providers. BSE is an option for women starting from the early 20s.<sup>(13)</sup> Women in their 20s and 30s should have a CBE as part of a periodic health examination by health professionals preferably every 3 years. After the age of 40, women should have a CBE and a mammogram every year, as recommended by The American Cancer Society.<sup>(14)</sup>

Long term survival rates for BC have a direct correlation to early detection of a disease. Poor adherence to routine screening examinations can put the client at risk of severe illnesses a result of failed early detection. Considering the fact that BC is the most common major cancer in developed countries as well as in Egypt with a steadily increasing incidence,<sup>(15,16)</sup> the nurses' role in educating female clients about BSE is becoming extremely important.

Meanwhile, teachers can play an effective role in communication with and motivation of young students, assessment of their knowledge, attitudes and behaviors that is

essential to reduce the risk of BC among future young generations.<sup>(17)</sup>

### **Aim of The Study:**

The aim of the study was to determine the knowledge and attitude of female school teachers towards BC in Ibrahemia district, El-Sharkia Governorate, Egypt.

### **Research questions:**

- Do female school teachers have knowledge and attitude about BC?
- What are female school teachers' responses to attitude statements about BC?
- Is there a relationship between female school teachers' qualification, specialization and their knowledge about BC?

### **SUBJECTS AND METHODS:**

#### **Study design:**

A descriptive design was used in conducting the current study.

#### **Study setting and population:**

All schools with preparatory and secondary classes in the same building (8 schools) in Ibrahemia district, El-Sharkia,

Egypt were included in the study. All females working at the above mentioned school setting during the study period (academic year 2009 - 2010) were invited to participate in the study (200 teachers).

#### **Data collection tools:**

Two tools were utilized for data collection.

**(1)** A questionnaire was developed by the researchers to collect data about socio - demographic characteristics as age, marital status, residence, qualifications, specialization, and mass media available at home. Receiving training concerning BSE was also inquired. In addition, the tool assessed female teachers' knowledge regarding risk factors (20 items) and methods of prevention of BC (17 items). The questionnaires were filled by the female teachers at the studied schools.

#### **Scoring system:**

A scoring system for knowledge about BC risk factors consisted of giving one for correct answer and zero for wrong answer or "I don't know". A scoring was given to each question and the maximum total knowledge

score was 20 points. Female teachers' total scores were classified as follows: high level of knowledge (16-20), medium level of knowledge (10-15) and low level of knowledge (<10).

A scoring system for methods of prevention of BC consisted of giving one for correct answer and zero for wrong answer or "I don't know". A scoring was given to each question and a maximum total knowledge score of 17 for methods of prevention was adopted. Female teachers who obtained 13-17 were classified as having high level of knowledge, those who had 8-12 were described as having a medium level of knowledge and those who had less than 8 were described as having a low level of knowledge.

**(2)** A 3-point Likert scale (agree, neutral and disagree) was used to assess the female school teachers' attitude towards BC (5 statements) and to help seeking behavior different management practices (6 statements). On attitude statements, a scoring

of three was given to “agree” responses, two for “neutral” responses and one for “disagree” ones.

The total attitude score was 15. A score of 15 conveys a positive attitude towards BC, while a score 5-10 conveys neutral attitude and less than 5 conveys negative attitude towards BC.

The total attitude maximum score towards help seeking and management of BC was 18. A score of 13-18 conveys positive attitude towards help seeking behavior and management of BC, while a score 6-12 conveys a neutral attitude and less than 6 conveys a negative attitude.

#### **Pilot Study:**

A pilot study was carried out in order to test the feasibility of the study and the clarity and applicability of the tools. It was done on 10% of the study sample (20 female teachers). These were excluded from the main sample. Face and content validity of the tools were ascertained by a panel of two experts in community health

nursing who revised the tools for clarity, relevance, applicability, comprehensiveness, and ease of implementation. Accordingly, modifications were applied.

#### **Fieldwork:**

The data collection procedures of this study were executed in one month (May, 2010). Distribution of the questionnaire sheet was subsequently done till the required number of female school teachers was obtained.

#### **Ethical considerations:**

A written permission was taken from the directors of the chosen schools. Subjects' consent to participate in the study was taken orally after explaining the purpose of the study briefly to female teachers during the break time between lessons.

#### **Statistical analysis:**

Data entry and statistical analysis were done using statistical software package (SPSS) version 14.0. Data were presented using descriptive statistics in the form of

frequencies and percentages. Chi-square test ( $X^2$ ) was used for comparing quantitative categorical variables. Statistical significance was considered at  $P$ -value of  $< 0.05$ .

## RESULTS:

The socio-demographic characteristics of the studied female teachers are summarized in table 1. It shows that most of the participants (67.0%) were working in secondary schools compared to 33.0% who were working in preparatory schools. More than three quarters of participants (84.0%) aged 30 to more than 40 years and the mean age of the studied female teachers was  $22.5 \pm 0.714$  years. Concerning marital status, more than three quarters of the participants (76.0%) were married. University graduates constituted more than three quarters of the sample

(76.5%) while, 22.0% had middle education certificates. About three quarters of the sample (73.5%) were coming from rural areas. As regards availability of mass media devices in the house, 62% of the female teachers reported having three or more different mass media devices while only 15.5% of them had only one device. Regarding training, the majority of the studied respondents (96.5%) reported not receiving any training courses about breast self-examination.

As regards the participants' general knowledge about BC, only 13.0% of female teachers were aware that BC can occur among men and 22.0% reported that a woman who had early menarche is more susceptible to BC (Table 2).

**Table 1. Percentage distribution of the studied school teachers by their socio-demographic characteristics**

Socio-demographic characteristics.	n = (200)	
	No.	%
<b>Schools:</b>		
Preparatory	66	33.0
Secondary	134	67.0
<b>Age in years:</b>		
20 -	32	16.0
30 -	86	43.0
40+	82	41.0
<b>Mean ± SD</b>	22.5 ± 0.714	
<b>Marital status:</b>		
Married	152	76.0
Single	19	9.5
Widowed	21	10.5
Divorced	8	4.0
<b>Education:</b>		
Institute (Middle education)	44	22.0
University	153	76.5
Postgraduate	3	1.5
<b>Specialization:</b>		
Literature (Art)	99	49.5
Scientific	101	50.5
<b>Residence:</b>		
Rural	123	61.5
Urban	77	38.5
<b>Mass media devices<sup>a</sup> at home:</b>		
None	5	2.5
One	31	15.5
Two	40	20.0
Three or more	124	62.0
<b>Training courses<sup>b</sup>:</b>		
Yes	7	3.5
No	193	96.5

<sup>a</sup>Radio, T.V, dish, computer or internet

<sup>b</sup> On breast self-examination

**Table 2. Female school teachers' general knowledge about (BC)**

General Knowledge items	Yes		No		I don't know	
	No.	%	No.	%	No.	%
BC is an uncontrolled proliferation of cells	131	65.5	23	11.5	46	23.0
The commonest cancer in Egypt & Arab Countries among women	130	65.0	21	10.5	49	24.5
The second cause of death after lung cancer among women	102	51.0	33	16.5	65	32.5
The main cause of death for women between 20-35 years	51	25.5	71	35.5	78	39.0
BC spreads by direct contact with the patient	31	15.5	119	59.5	50	25.0
BC is rare before the age of twenty	119	59.5	33	16.5	48	24.0
Breast cancer can occur among men	26	13.0	128	64.0	46	23.0
Breast cancer can occur among nullipara	85	42.5	59	29.5	56	28.0
Primipara after 35 years are more vulnerable to BC	93	46.5	39	19.5	68	34.0
Early menarche carries a higher risk for BC	44	22.0	64	32.0	92	46.0
Delayed menstruation (after age 55 years) is risk factor for BC	58	29.0	59	29.5	83	41.5
Oral contraceptives for long period make the female more prone to BC	78	39.0	43	21.5	79	39.5
Breast feeding for a long period reduces the incidence of (BC)	139	69.5	24	12.0	37	18.5
Increased incidence of BC among first degree relatives	71	35.5	58	29.0	71	35.5
Recent withdrawal in the nipple denotes BC	63	31.5	33	16.5	104	52.0
BC usually begins with severe pain	77	38.5	58	29.0	65	32.5
Hard lump of breast denotes BC	136	68.0	23	11.5	41	20.5
Bloody discharge from breast indicates BC	92	46.0	28	14.0	80	40.0
Some masses not palpable by physician investigation	89	44.5	38	19.0	73	36.5
Enlargement of one breast denotes BC	126	63.0	34	17.0	40	20.0

Table 3 displays knowledge about practice BSE, while 29.0% reported that they methods for preventing BC among the studied practice BSE. Concerning correct procedure female teachers. Only 5.5% and 12.5% of the of BSE, only 5.0% of the participants practiced participants reported "No" and "I do not know" the correct procedure of BSE and 21% of respectively regarding routine BSE benefit or them answered correctly the timing of BSE. its role in early detection of the disease, while As regards the right age for doing most of them (82.0%) reported "yes". mammography, only 13% of them answered Regarding practicing BSE, only 10.0% correctly. More than half of the studied reported that they did not know how to females gave a wrong answer about types of



brassieres that protect against BC (61.5%). Regarding screening programs for BC, 46.5% of them answered correctly. Concerning obesity which is the most common risk factor for BC, more than one third of the participants answered correctly.

**Table 3. Knowledge of studied school teachers about methods of prevention of (BC)**

Knowledge about methods of prevention	(n=200)	
	No.	%
<b>Routine BSE benefit or help in early detection of the disease:</b>		
Yes	164	82.0
No	11	5.5
I don't know	25	12.5
<b>BSE should be done annually</b>		
Yes	89	44.5
No	50	25.0
I don't know	61	30.5
<b>Teacher practice BSE</b>		
Yes	58	29.0
No	122	61.0
I don't know	20	10.0
<b>The correct procedure for doing BSE</b>		
Correct answer.	10	5.0
Wrong answer or I don't know.	190	95.0
<b>The best time for BSE:<sup>a</sup></b>		
Correct answer	42	21.0
Wrong answer or I don't know	158	79.0
<b>The right age to do mammography annually:</b>		
Correct answer	26	13.0
Wrong answer or I don't know	174	87.0
<b>Types of brassieres that protect against BC:<sup>b</sup></b>		
Correct answer	77	38.5
Wrong answer or I don't know	123	61.5
<b>Types of programs for screening of BC:<sup>c</sup></b>		
Correct answer	93	46.5
Wrong answer or I don't know	107	53.5

Knowledge about methods of prevention	Yes		No		I don't know	
	No.	%	No.	%	No.	%
Early marriage	79	39.5	50	25.0	71	35.5
Breast feeding for long periods	163	81.5	14	7.0	23	11.5
Early pregnancy	98	49.0	35	17.5	67	33.5
Personal hygiene	14	57.0	41	20.5	45	22.5
Excessive vegetable-fruit groups in your diet	122	61.0	26	13.0	52	26.0
Foods which contain milk, coffee, cola, tea & chocolate protect against BC	52	26.0	53	26.5	95	47.5
Sufficient sleep	27	13.5	82	41.0	91	45.5
Regular exercises	132	66.0	18	9.0	50	25.0
Obesity is the most important risk factor for BC	91	45.5	36	18.0	73	36.5

<sup>a</sup> Options included: 1- First day of the menstruation, 2- At the time of ovulation, 3- At the tenth day after the start of menstruation, 4- Before starting menstruation in short period

<sup>b</sup> Options included: 1 -Non-padded brassieres 2- Padded brassieres 3- Narrow brassieres

<sup>c</sup> Options included: 1- Ultrasonography 2- BSE 3- Excitement interstitial 4- Planning thermal

Figure 1a and 1b illustrates that only 8.5% had high level of knowledge related to of female teachers had high level of methods of prevention of BC and more than knowledge about BC in general and more half (54.5%) of them had low level of than half (51.5%) of them had low level of knowledge. Meanwhile, only 4.0% of them

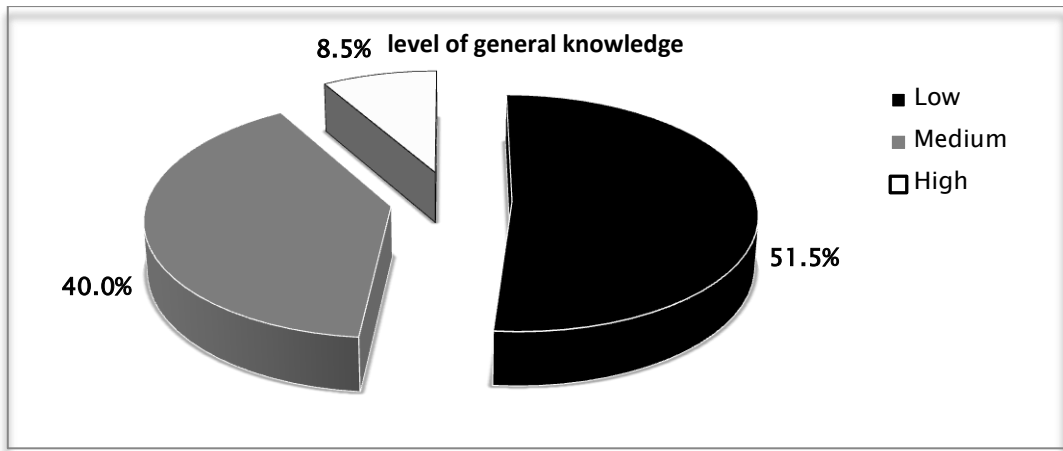


Figure 1a. Female school teachers' level of general knowledge about (BC)

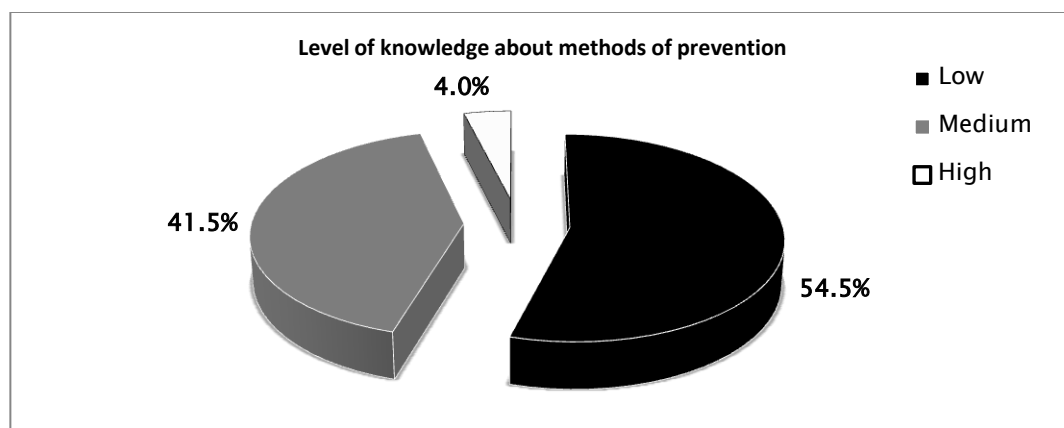


Figure 1b. Female school teachers' level of Knowledge about methods of prevention of (BC)

Table 4 reveals that nearly two thirds of the studied sample (63.5%) mentioned that mass media did not cover knowledge about BC. Meanwhile, 40.5% and 22.0% of them

mentioned that radio and T.V and women meetings are the main sources that raise awareness about BC respectively.

Table 4. Sources of knowledge about (BC) among the studied school teachers

Items	(n=200)	
	No.	%
<b>Mass media covered awareness about BC:</b>		
Yes	44	22.0
No	127	63.5
I don't know	29	14.5
<b>Most effective method that raises awareness about BC:</b>		
Radio & T.V	81	40.5
Newspapers & magazines	18	9.0
Women meetings	44	22.0
Posters	12	6.0
Handouts	13	6.5
More than one method	32	16.0

Table 5 illustrates the response of school teachers to attitude statements about BC.

The general attitude mean score toward BC was  $2.860 \pm 0.362$ . Concerning attitude

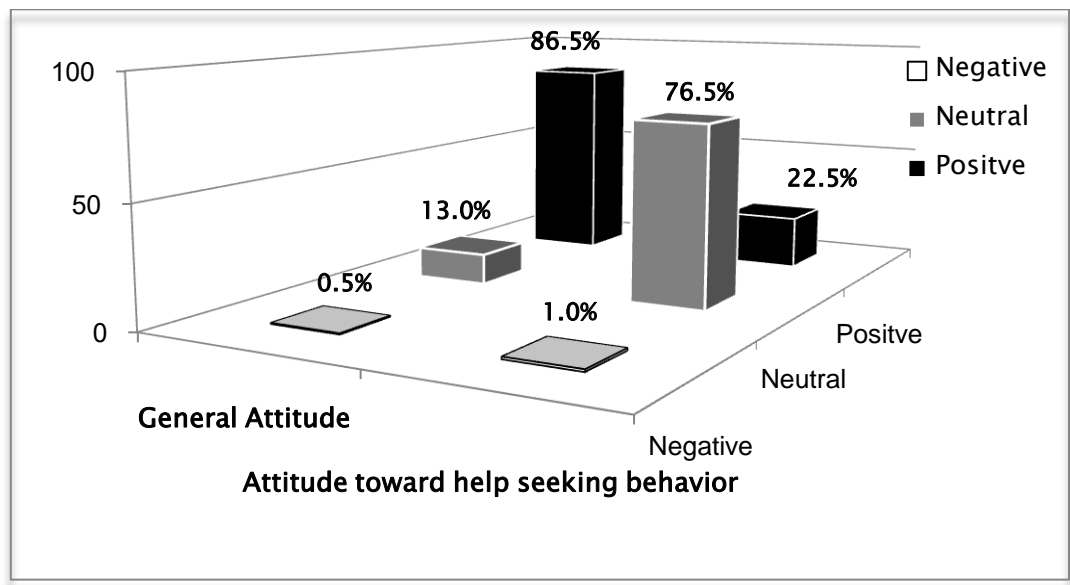
toward help seeking behavior and management of BC, more than half of the participants (57.5%) disagreed about the statement of "Cauterization therapy around the breast helps to reduce the spread of disease" while only 11.0% agreed with this statement. Concerning statement of "I would not want mastectomy because I can't tolerate to live with one breast", less than one third of them (29.5%) agreed with it while 48.5% disagreed.

**Table 5. Attitude towards BC among the studied school teachers (n= 200)**

Attitude toward (BC)	Agree		Neutral		Disagree	
	No	%	No	%	No	%
<b>General attitude towards BC</b>						
If I had BC I would not worry because this is my destiny	147	73.5	30	15.0	23	11.5
BC can affect any one, including me.	161	80.5	30	15.0	9	4.5
Possibility of treatment with early detection of BC	172	86.0	16	8.0	12	6.0
I feel terrified when I hear the word of a cancer.	127	63.5	42	21.0	31	15.5
BC for me means actual death.	76	38.0	55	27.5	69	34.5
<b>Mean ± SD</b>			<b>2.860 ± 0.362</b>			
<b>Attitude towards help seeking and management of BC</b>						
I will ask prompt treatment in case of appearance of symptoms of BC	172	86.0	18	9.0	10	5.0
I shall consult at first with a popular doctor before recent medicine.	24	12.0	23	11.5	153	76.5
I will take a lot of proteins and vitamins for strongest resistance	109	54.5	31	15.5	109	54.5
I will wait may be expect recovery from disease.	29	14.5	26	13.0	145	72.5
Cauterization therapy around the breast helps to reduce the spread of disease.	22	11.0	63	31.5	115	57.5
I would not want mastectomy because I can't tolerate to live with one breast.	59	29.5	44	22.0	97	48.5
<b>Mean ± SD</b>			<b>2.215 ± 0.435</b>			

It is clear from figure 2 that the majority (86.5%) of female teachers had positive attitude towards BC in general while only 0.5% of them expressed negative attitude.

Concerning teachers' attitude towards help seeking behavior and management of BC, the majority of them (76.5%) had neutral attitude while 22.5% had positive one.



**Figure 2. Female school teachers' attitude towards BC**

Table 6 shows that the overall ratings for knowledge score were high for 8.5% of female teachers, medium for 40% and low for 51.5%. Regarding knowledge related to methods of prevention of BC, more than half of them (54.5%) had low level of knowledge and only 1.0% had negative behavior regarding practices towards BC. There was a significant relationship between knowledge and attitude ratings ( $p = 0.001$ ).

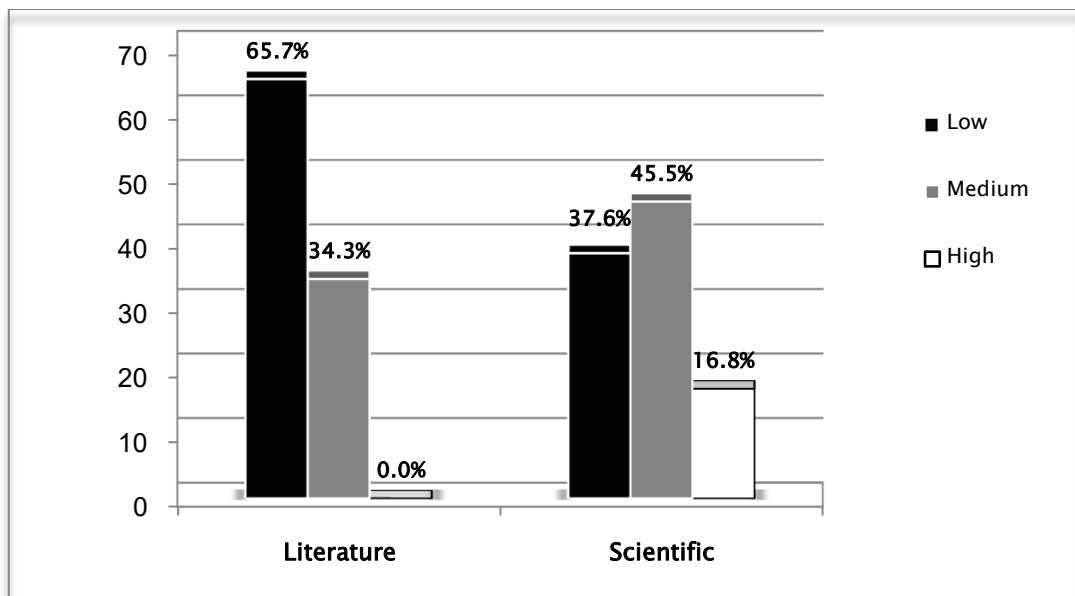
**Table 6. Relation between female school teachers' level of knowledge and attitude towards BC**

Knowledge	Attitude towards (BC)								X <sup>2</sup> test	P-Value
	Positive		Neutral		Negative		Total			
	No. (173)	% 86.5	No. (26)	% 13.0	No. (1)	% 0.5	No. (200)	% 100		
<b>Knowledge about BC</b>										
High	14	8.1	3	11.5	0	0.0	17	8.5	11.23	0.024*
Medium	77	44.5	3	11.5	0	0.0	80	40.0		
Low	82	47.4	20	76.9	1	100	103	51.5		
<b>Knowledge about Preventive measures</b>										
High	8	4.6	0	0.0	0	0.0	8	4.0	18.33	0.001**
Medium	81	46.8	2	7.7	0	0.0	83	41.5		
Low	84	48.6	24	92.3	1	100	109	54.5		
<b>Attitude towards help seeking and management of BC</b>										
Knowledge	Positive		Neutral		Negative		Total		X <sup>2</sup> test	P-Value
	No. (45)	% 22.5	No. (153)	% 76.5	No. (2)	% 1.0	No. (200)	% 100		
	<b>Knowledge about BC:</b>									
High	5	11.1	12	7.8	0	0.0	17	8.5	6.51	0.164
Medium	12	26.7	68	44.4	0	0.0	80	40.0		
Low	28	62.2	73	47.7	2	100	103	51.5		
<b>Knowledge about preventive measures</b>										
High	1	2.2	7	4.6	0	0.0	8	4.0	3.45	0.455
Medium	16	35.6	67	43.8	0	0.0	83	41.0		
Low	28	62.2	79	51.6	2	100	109	54.5		

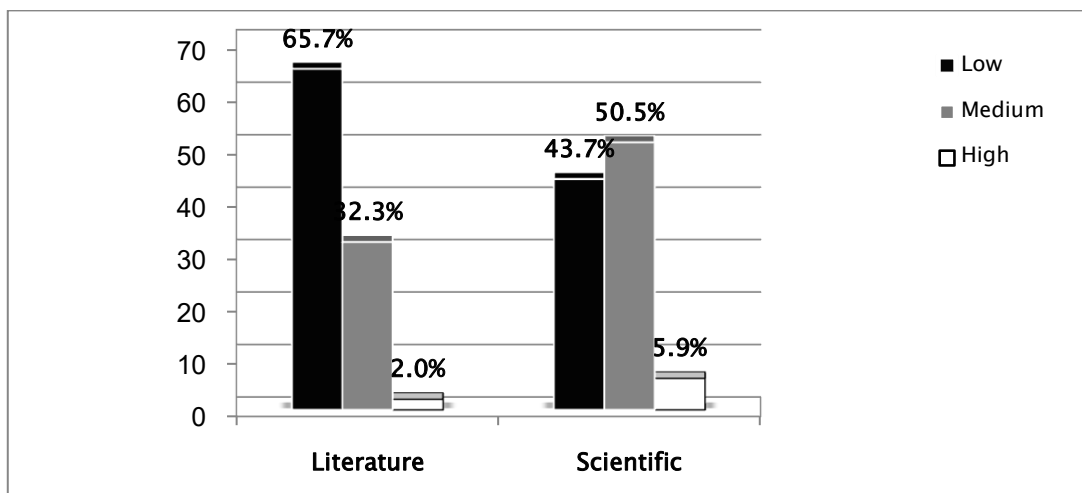
\* Significant at  $p < 0.05$  \*\* Significant at  $p < 0.001$

Figure 3a and b show that 65.7% of specialist literature teachers compared to 37.6% of specialist sciences teachers had low level of knowledge score about BC in general and 16.8% of the literature teachers had high level of knowledge compared to none of those of the literature specialty. The difference between the two groups was statistically significant ( $P = 0.000$ ). On the other hand, 65.7% of literature specialty compared to 43.7% of scientific specialty had low level of knowledge score about methods of prevention

and 2.0% of literature specialty compared to 5.9% of scientific specialty had high level of knowledge about methods of prevention of BC. The difference was statistically significant ( $P = 0.006$ ).



**Figure 3. Distribution of the studied female teachers by speciality and general knowledge about BC**



**Figure 3b. Distribution of the studied female teachers by speciality and knowledge about methods of prevention of BC**

Table 7 shows that 61.4% and 49.7% of female teachers with middle and university education certificates respectively had low level of knowledge about BC in general compared to 75% and 49.7% of them who had low level of knowledge about methods of prevention of BC; the difference was statistically significant ( $P = 0.000$ ). And, (79.5% & 88.2%) of female teachers had positive attitude towards BC. On the other hand, (63.6% & 79.75) of them respectively have neutral behavior toward practices about BC. The difference was statistically significant ( $P = 0.02$ ).

**Table 7. Relation between female school teachers' qualification and their knowledge and attitude towards BC**

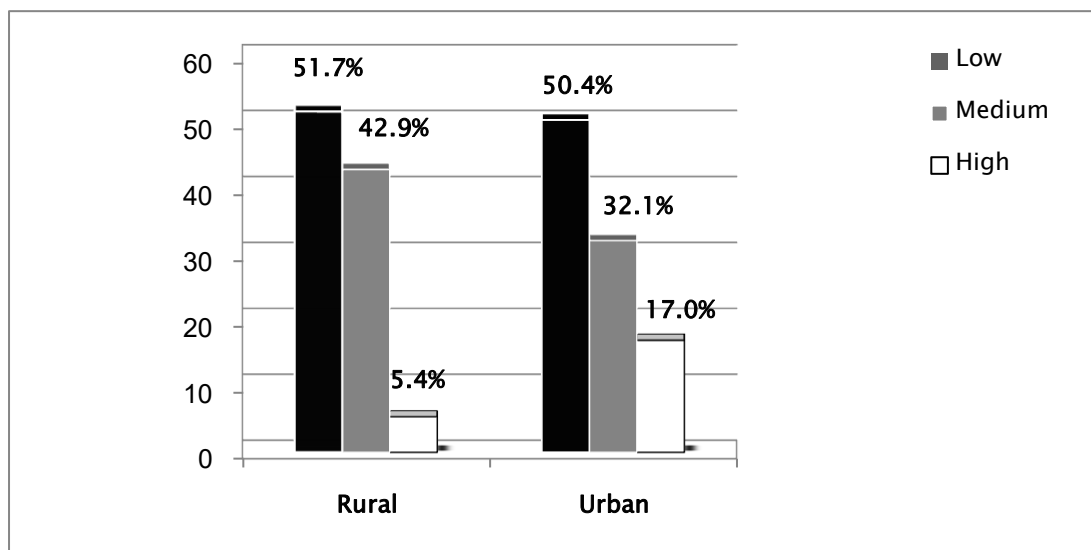
Variables	Qualification								X2 test	P- Value
	Middle Education		University		Postgraduate		Total			
	No. (44)	%	No. (153)	%	No. (3)	%	No. (200)	%		
<b>Knowledge about BC</b>										
High.	4	9.1	10	6.5	3	100	17	8.5	35.68	0.000**
Medium.	13	29.5	67	43.8	0	0.0	80	40.0		
Low.	27	61.4	76	49.7	0	0.0	103	51.5		
<b>Knowledge about Preventive measures</b>										
High.	0	0.0	5	3.3	3	100.0	8	4.0	82.03	0.000**
Medium.	11	25.0	72	47.1	0	0.0	83	41.5		
Low.	33	75.0	76	49.7	0	0.0	109	54.5		
<b>Attitude towards BC</b>										
Positive.	35	79.5	135	88.2	3	100	173	86.5	5.38	0.250
Neutral.	8	18.2	18	11.8	0	0.0	26	13.0		
Negative.	1	2.3	0	0.0	0	0.0	1	0.5		
<b>Attitude towards help seeking and management of BC</b>										
Positive.									11.18	0.025*
Neutral.	14	31.8	31	20.3	0	0.0	45	22.5		
Negative.	28	63.6	122	79.7	3	100	153	76.5		
	2	4.5	0	0.0	0	0.0	2	1.0		

\* Significant at  $p < 0.05$

\*\* Significant at  $p < 0.001$



**Figure 4** shows the residence influence on female teachers' knowledge about BC in general. The difference was statistically significant ( $P = 0.02$ ).



**Figure (4): Distribution of the study sample by their residence and their general knowledge about BC**

**Table 8** illustrated that the age influenced the level of knowledge about (BC) in general and the methods of prevention of (BC) among female teachers. The difference was statistically significant ( $p < 0.05$ ). Also, 96.3% of the females aged 40 & more had a positive attitude towards BC compared to (81.3% & 79.1%) in the age groups 20-29 and 30-39 years respectively. The difference was statistically significant ( $P = 0.01$ ). But, the age did not influence the behavior towards practices about BC among female teachers. The difference was statistically not significant ( $P > 0.05$ ).

**Table (8): Relation between participants' age and their knowledge, attitude and behavior towards BC**

Variables	Age in years								X2 Test	P- Value
	20+		30+		40+		Total			
	No. (32)	%	No. (86)	%	No. (82)	%	No. (200)	%		
<b>General knowledge about BC</b>										0.001
High.	1	3.1	9	10.5	7	8.5	17	8.5	18.38	<b>(P &lt; 0.05)</b>
Medium.	8	25.0	26	30.2	46	56.1	80	40.0		
Low.	23	71.9	51	59.3	29	35.4	103	51.5		
<b>Measures of prevention</b>										0.003
High.	0	0.0	7	8.1	1	1.2	8	4.0	15.79	<b>(P &lt; 0.05)</b>
Medium.	10	31.0	28	32.6	45	54.9	83	41.5		
Low.	22	68.8	51	59.3	36	43.9	109	54.5		
<b>Attitude</b>										0.01
Positive.	26	81.3	68	79.1	79	96.3	173	86.5	12.24	<b>(P &lt; 0.05)</b>
Neutral.	6	18.8	17	19.8	3	3.7	26	13.0		
Negative.	0	0.0	1	1.2	0	0.0	1	0.5		
<b>Behavior towards practices</b>										0.115
Positive.							45	22.5	7.42	<b>(P &gt; 0.05)</b>
Neutral.	11	34.4	21	24.4	13	15.9	153	76.5		
Negative.	21	65.6	65	65	67	81.7	2	1.0		
	0	0.0	0	0.0	2	2.4				

\* **Significant at (P < 0.05) Knowledge 1:** general knowledge about BC & **Knowledge 2:** measures of prevention

The table 9 shows that the mass media at home did not influence the level of knowledge among female teachers about BC as general. The difference was statistically not significant ( $p > 0.05$ ), but it influenced the level of knowledge about methods of prevention of BC. The difference was statistically significant ( $p = 0.04$ ).

**Table (9): Relation between participants' mass media at home and their knowledge, attitude and behavior towards practices about BC**

Variables	Mass Media										χ <sup>2</sup> test	P- Value
	Nothing		Only one		Only two		Three & more		Total			
	No. (5)	%	No. (31)	%	No. (40)	%	No. (124)	%	No. (200)	%		
<b>General knowledge</b>	2	40.0	2	6.5	3	7.5	10	8.1	17	8.5	11.06	0.086 (P > 0.05)
High	0	0.0	10	32.3	14	35.0	56	45.2	80	40.0		
Medium	3	60.0	19	61.3	23	57.5	58	46.8	103	51.5		
Low												
<b>Prevention measure</b>	0	0.0	0	0.0	1	2.5	7	5.6	8	4.0	12.76	0.04 (P < 0.05)
High.	1	20.0	7	22.6	15	37.5	60	48.4	83	41.5		
Medium.	4	80.0	24	77.4	24	60.0	57	46.0	109	54.5		
Low.												
<b>Attitude</b>											16.79	0.01 (P < 0.05)
Positive.	3	60.0	23	74.2	32	80.0	115	92.7	173	86.5		
Neutral.	2	40.0	7	22.6	8	20.0	9	7.3	26	13.0		
Negative.	0	0.0	1	3.2	0	0.0	0	0.0	1	0.5		
<b>Behavior towards practices prevention measure</b>											20.38	0.002 (P < 0.05)
Positive.	3	60.0	13	41.9	13	32.5	16	12.9	45	22.5		
Neutral.	2	40.0	18	58.1	27	67.5	106	85.5	153	76.5		
Negative.	0	0.0	0	0.0	0	0.0	2	1.6	2	1.0		

**Knowledge 1:** general knowledge & **Knowledge 2:** prevention measures of BC

## DISCUSSION

BC remains an important public health problem and is one of the most common cancers among females worldwide.<sup>(18)</sup> School teachers play an important role in health education, helping young people to develop healthy behaviors including BSE. In health education, students gain an understanding and appreciation of healthy lifestyles that promote lifelong wellbeing.<sup>(19)</sup> Women constitute 90% of the teaching profession. Considering the important role teachers have in education, they are in a position to educate young people about BC risk factors, types of screening

practices, and they influence behaviors that will reduce the risk of future BC morbidity and mortality.<sup>(20)</sup> Therefore the purpose of this study was to determine the knowledge and attitude towards BC among female school teachers in Ibrahemia district, El-Sharkia Governorate.

The present study revealed that the majority of female teachers were working in secondary schools. More than three quarters of them were aged between 30 and more than 40 years. These results agree with study conducted in Egypt<sup>(21)</sup> among working women who reported that most of the studied women were in the age group 35 to less than 45, which is the age of rise of BC risk. In this regard, Hoskin P<sup>(22)</sup> stated that age was by far the most important risk factor for BC, and the risk increases ten folds between 30 and 50 years. And disagree with the National Cancer Institute<sup>(23)</sup> which reported that all women are at risk for developing BC. The older a woman is, the greater her chances of developing BC.

The current study results revealed that nearly two thirds of the participants reported that BC is the commonest cancer in Egypt and in Arab countries among women and about half of them mentioned that it is the second cause of death after lung cancer among women (**table 2**). These findings agree with a study done in Egypt<sup>(15)</sup> which mentioned that carcinoma of the breast is the most prevalent cancer among Egyptian women. This result agrees with the results of other studies<sup>(23, 8, 24)</sup> which reported that BC is about 100 times more common in women than in men, although males tend to have poorer outcomes due to delays in diagnosis. Also, the results of this study reveal that less than half of female teachers were aware that BC occurs among nullipara and primipara after 35 years. These two groups are more vulnerable to BC. About one quarter of participants reported that a woman who had early menarche is more susceptible to BC and about one third of

them were aware that oral contraceptives for long period result in being more prone to BC. The results also showed that about two thirds of female teachers reported that breast feeding for long period reduces the incidence of BC and one third of them reported that increased incidence of BC is related to its presence in first degree relatives. Also nipple withdrawal is a risk factor for BC and BC usually does not begin with severe pain while, about two thirds of the participants' in the current study mentioned that a hard lump of breast denotes BC and also, less than half of female teachers mentioned that bloody discharge from the breast indicates BC and that some masses were not palpable by physicians, while about third of them reported that the enlargement of one breast denotes BC. These results agree with a study done in Yew York <sup>(25)</sup> which claimed that the risk of BC increased among women who have had no children and those who did not breast feed their babies. Also the American Cancer society <sup>(24)</sup> added that breast feeding might slightly lower BC risk, especially if breast feeding is continued for 1.5 to 2 years and the risk of a positive family history has been previously confirmed by Yip CH et al <sup>(26)</sup> who mentioned that BC risk was higher among women whose close relatives have this disease and agree with Suzanne C et al <sup>(27)</sup> who mentioned that the association between the use of oral contraceptives and the development of BC has been previously documented. In line with previous findings of a study done in United Kingdom <sup>(28)</sup> which reported that many of the known BC risk factors were age, family history, age at first full-term pregnancy, early menarche, late menopause, and breast density, are not easily modifiable. However, other factors associated with increased BC risk (postmenopausal obesity, use of combined estrogen and progestin menopausal

hormones, alcohol consumption, and physical inactivity) are modifiable.

Concerning knowledge of female teachers about methods of prevention of BC (**Table 3**), the results of present study showed that nearly two thirds of participants did not practice BSE, and few of them reported that they did not know how practice BSE compared to less than one third who reported that they practice BSE and few practice it correctly. The majority of the participants stated a wrong answer or do not know about the best time of the month to practice BSE. These results may be attributed to lack of receiving training courses about BSE and this deficient practice could be explained by fear of women of diagnosis of BC, lack of knowledge of its significance, or related misconceptions. Most of the participants in this study reported a wrong answer or do not know as regards the right age to do mammography compared to few little of them who answered correctly and more

than half of the female teachers answered wrongly or did not know the programs for screening for BC. This may be due to a lack of social support and also intrinsic cultural beliefs were postulated to have negative influences on the choice of screening in women. These results agree with a study done in Iran <sup>(18)</sup> about breast cancer which shows that about two thirds of the respondents said that they knew about BC and the rest indicated that they were performing regular monthly BSE. Lower rates of BSE performance have been reported from developing countries. In Saudi Arabia, a study showed that less than one third of the women had heard about BSE, and less than one quarter reported they practiced BSE within the previous year <sup>(29)</sup> The current study agrees with a study done in Nigeria which demonstrated that women lacked enough knowledge about BC and only one third claimed to ever-practiced BSE <sup>(30)</sup> while it disagreed with a study of BSE behavior

among Chinese immigrant women living in San Francisco which indicated that the majority reported having heard of BSE but more than half of the women had performed BSE during the past year.<sup>(31)</sup> These results also agree with a study done in Yemen <sup>(32)</sup> among university students which found that despite that the majority of the participants heard about BSE, a minority of them were performing it. More than half of them mentioned that lack of knowledge about the technique of BSE was a barrier for not practicing BSE. These findings also agree with a study done in Malaysia <sup>(20)</sup> which mentioned that female teachers had a low rate of BC screening behaviors. Interestingly, among more than half of women teachers who reported BSE, less than one quarter of them performed BSE monthly. These results disagree with the American Cancer Society <sup>(14)</sup> which reported that after the age of 40, women should have a CBE and a mammogram every year and also disagree with another study done in the United States <sup>(33)</sup> which mentioned that one of the best ways for early diagnosis is screening such as self breast exam (SBE), clinical breast exam (CBE) by a physician or by health staff and mammography. These results are in line with Gotzsche PC et al <sup>(34)</sup> who concluded that mammograms not only reduce mortality from BC by fifteen percent but also result in unnecessary surgery and anxiety. This results in their view that screening mammography may do more harm than benefit. On other hand, the current study revealed that about two thirds of female teachers know that excessive vegetables-fruit groups in diet help in prevention of BC and only one quarter of them were aware that foods which contain milk, coffee, cola, tea and chocolate do not protect against BC and less than half of them mentioned that obesity is the most important risk factor for (BC). These results agree with Chlebowski RT et al <sup>(35)</sup> who reported that in recent years, research has

indicated the impact of diet and other behaviors on BC. Additional risk factors include a high-fat diet, alcohol intake, obesity and environmental factors such as tobacco use and radiation. Another study done in Malaysia<sup>(36)</sup> reported that if teachers are not aware about risk factors of BC, they cannot change their lifestyle risk factors and decrease modifiable risk factors and actively prevent BC. Because of the important role that teachers play in educating young women, they should be encouraged and motivated to increase their own knowledge on BC screening.

The current study revealed that nearly half of female teachers mentioned that radio and TV were considered the most common methods that provide them with information about BC (Table 4). These results come in agreement with a study done in Turkey<sup>(37)</sup> which mentioned that nearly half of the students reported that their main source of information about BC and BSE was media. This result is

consistent with the results of the study conducted in Saudi Arabia<sup>(17)</sup> which findings indicated that media continued to be one of the most important sources of information about BC and BSE and highlighted the cooperation between public health educators and the media in dissemination of BC information and BSE. These findings agree with a study done in Iran<sup>(18)</sup> which reported that the main sources of information about BC were 'mass media' followed by friends and in agree with the results of a study done among African American women<sup>(38)</sup> which reported that women most frequently listed the media as their best source of BC information. Since the public spends considerably more time exposed to the media than to their health care providers, the media represent an important partner for the dissemination of health information.

Results of this study revealed that few female teachers had a high level of knowledge compared to more than half of



them who had a low level of knowledge about BC in general and methods of prevention (Figure 1a and b). These results agree with a study done in Saudi Arabia<sup>(39)</sup> which concluded that there is insufficient knowledge among female teachers about BC and identified the negative influence of low knowledge on the practice of BSE. Accordingly, relevant educational programs to improve the knowledge level of women regarding BC are needed and agree with a study conducted in Jeddah<sup>(17)</sup> which pointed to the low knowledge level of the young female generation in secondary schools. These results also agree with the study among University students in Yemen<sup>(32)</sup> which indicated that the majority of the participants had low level of knowledge about BC and few had gained high level of knowledge. The results disagree with a study done in Tanta<sup>(40)</sup> which reported slightly better results regarding the definition of cancer breast, its

signs and symptoms, and the diagnostic methods.

In the current study, the majority of female teachers had expressed a positive attitude towards BC and three quarters of them had expressed a neutral behavior towards practices if they had been affected with BC (figure 2). These results disagree with a study done among African American women<sup>(41)</sup> which reported that the poor knowledge and wrong beliefs about cancer breast prevention among women are responsible for a negative perception of the curability of a cancer detected early and of the efficacy of the screening tests and agree with a study done in Ajman And United Arab Emirates<sup>(42)</sup> which mentioned that the majority of nurses have a positive attitude in providing knowledge regarding risk factors of BC and purposes of performing BSE. The majority of the nurses had a positive attitude towards providing information about BSE to all females who

come to the hospital irrespective of their demand.

The current study showed about two thirds of female teachers having middle education and nearly half of those having university education had low level of knowledge about BC in general and methods of prevention and the majority of female teachers with university education had a positive attitude towards BC and have a neutral behavior towards practices about BC (table 7). These results agree with a study done in Saudi Arabia <sup>(43)</sup> which reported that the level of education plays a role in the ease of delivering health education; however, it can also be an obstacle if some misconceptions exist. In a previous study, the participants, who were highly educated, had a higher erroneous response regarding the outcome of BC, the potential risk factors, and the importance of mammography than the general population. These results also agree with a study done in Alexandria <sup>(44)</sup> which stated that the practice of early detection was positively associated with the

educational level. The lack of association in the present study could be attributed to the fact that the majority of the sample had university or above education, and were not exposed to any source of training about this topic.

The present study illustrated that the age influenced the level of knowledge about BC in general and the methods of prevention among female teachers (Table 8). The study showed that the majority of participants aged 40 and more had a positive attitude towards BC. These findings agree with Chamot et al <sup>(45)</sup> who reported that the participants aged 40 years and over showed the best level of knowledge.

## CONCLUSION

In the light with the main study findings, it might be concluded that the majority of the studied respondents reported that they did not receive any training courses about BSE. More than half of the studied female teachers had deficient knowledge about BC. Despite that

the majority of them had a positive attitude towards BC, a minority of them practiced BSE.

There was an association between some sociodemographic characteristics and the knowledge and attitude towards BC. The researchers developed a guideline booklet about the factors that decrease or increase BC risks, signs and symptoms of BC and correct practice of BSE and gave it to each participant in the present study.

## RECOMMENDATION

**Based on the findings of the current study, it is recommended to:**

1. Increase knowledge of female school teachers about BC through health education programs to provide them with information about BC and to teach them the correct technique of BSE conducted at school based clinic.
2. Make booklets about BC, BSE and healthier lifestyles available in school libraries in Arabic language.
3. Develop a booklet guideline containing knowledge about BC, and method of

prevention, as well as how to practice BSE. (Appendix I)

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