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Women's Knowledge, Beliefs, and Practices regarding the Screening of Breast Cancer

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Abstract: **Breast cancer is the most common type of cancer and the leading cause of cancer deaths among women worldwide. High breast cancer mortality has been attributed to the lack of public awareness of the disease. Early detection means the discovery of the disease before the occurrence of any symptoms and increases the chance to successful treatment through early diagnosis and screens. The aim of the study: - to assess knowledge, beliefs, and practices of women regarding the screening of breast cancer. Subjects and Method: -Study design: - a descriptive cross-section study design was used. Study settings: - The study was carried out in the outpatient clinics and departments of two big hospitals and three maternal and child health centers at Tanta city which have large numbers of attending women with several health problems Study subjects: - The study included a convenience sample of women(1086) who attended the previous mentioned settings during the period from the beginning of December 2016 to the end of March 2017. Tools of data collection: - Structured interview questionnaire sheet was developed by the researchers according to the literature review, it consisted of five parts as follows:- Part 1: Socio-demographic characteristic of the women, Part 2: Reproductive and medical history of women and their families, Part 3: Breast cancer screening knowledge, Part 4: Practices related to breast cancer screening, and Part 5: Beliefs related to breast cancer screening. Results:- The result of this study showed that nearly three-quarters (73.5%) of the studied women had poor knowledge and only 7.4% of them have good knowledge. Also, the majority (97.4%) of the studied women had unsatisfactory practices regarding breast cancer screening and more than two-thirds (66.9%) of them had a positive belief regarding breast cancer screening. Conclusion and recommendations: - our survey showed that women had poor knowledge, unsatisfactory practices regarding and positive belief regarding breast cancer screening tests. Therefore, it is necessary to increase the awareness of women about the different methods of breast cancer screening tests.**

Keywords: **Women, knowledge, practices,beliefs, breast cancer, screening services.**

1. INTRODUCTION

Breast cancer (BC) is the most common cancer among women as well as the second leading cause of cancer deaths among women globally. Breast cancer screening programs for early diagnosis and early treatment have in¬creased the survival rate and substantially prevent the re¬currence and mortality. About 50% of a breast can-cer cases and 58% of breast cancer deaths occur in developing countries (1-5).

Changes in lifestyle and fertility behaviors toward the western countries were the most common causes of the increased incidence rate of breast cancer in recent decades and which were the most determinants of its increased risk (6). Genetic susceptibility, confirmed hyperplasia, family history, postmenopausal obesity, long duration of menarche (starting early age and terminating older age), oral contraceptive, postmenopausal hormonal therapy, late first pregnancy (30 years or older), lack of breastfeeding, alcohol consumption, smoking, and lack of physical activities are The primary susceptible

risk factors of breast cancer. The most common symptom of breast cancer is a new lump or mass. A painless, hard mass that has irregular edges is more likely to be cancerous, but breast cancers can be tender, soft, or rounded. They can even be painful. For this reason, it is important to have any new breast mass or lump or breast change checked by a health care professional experienced in diagnosing breastdiseases (6,7) .

In recent decades early diagnosis and performance of screening programs for breast cancer have substantially decreased mortality and serious outcomes (8, 9). However, in developing countries in addition to the increasing trend of its incidence in recent decades due to changing toward modern lifestyles, cases are diagnosed at late stages (10). The barriers include lack of sufficient knowledge and perception of risk of susceptibility, lack of perception of benefit, and health motivation in performing breast self-examination (BSE), breast clinical examination (BCE), and screening practice, as well as other socio-cultural barriers that are associated with attitudes of women in societies. Breast self-exam (BSE), mammography and clinical breast examination (CBE) are considered as screening methods for the early detection of breast cancer (8-10). A country with free health services and educational campaigns were recommended to improve BC screening and to address the barriers to BC screening (11, 12).

Women have one in eight risks of having breast cancer during their lifetime and early detection through screening is the only way to reduce morbidity and mortality among them. Early detection is enhanced by a follow-up screening program for “high risk” women (12, 13). The American Cancer Society recommended breast clinical examination (BCE) for women aged 20 or older, and mammography for women aged 40 or older. However, the practices of women with respect to BCE and breast self-examination (BSE) or mammography have de¬pended on their awareness, attitudes, socio-demographic characteristics, and beliefs. In some countries, increasing awareness about screening for breast cancer may have contributed to the decrease in its mortality rate (14, 15).

In high-income countries with existing public health and health systems infrastructure, evidence-based guidelines for population-based breast cancer screening and early detec¬tion have been defined, developed, and implemented. These guidelines, principally focused on mammography, are com¬mensurate with high living standards, and access to quality screening, diagnostic, and treatment services. In contrast, in resource-poor countries with limited public health infrastructure and fragmented health systems, the population-based breast cancer screening is a complex under¬taking in them. Recognizing these limitations in existing resources, the Breast Health Global Initiative outlined international evidence-based breast health guidelines for low- and middle-income countries, grouping early detection, diagnosis, treatment, and care resource alloca¬tion of healthcare resources to four levels based on existing services in the country (16, 17).

The health belief model is a basic conceptual framework to consider health problems that are associated with behaviors. Based on this model, the domain of health practice is driven by health belief attitudes. This model was first adopted by psychologists in 1950 to explain why people would or would not use preventive care in surveillance programs. Recently, researchers have reported that health beliefs of women are affected their breast cancer screening practices. In this theoretical framework, women’s breast cancer screening practices such as BSE, clinical examination, and mammography are influenced by their health belief model (18, 19).

The Health Belief Model (HBM) remains one of the most widely recognized conceptual frameworks for understanding health behaviour (20). The model suggests that a change in preventive health behaviors are based on six factors namely: susceptibility; seriousness; benefits; barriers; health motivation and confidence. According to HBM, women who believe that they are susceptible to breast cancer and that breast cancer is a serious condition are more likely to perform breast cancer screening (BCS). Moreover, women who perceive more benefits from BCS and fewer barriers are more likely to perform BCS. Furthermore, the more motivated women are to promote their health and the more confidence they are in their ability to perform BSE, the more likely they are to practice BSE (19, 21).

The nurse has a major role in determining the need for continuing medical and health education programs that could improve knowledge of the disease and the adoption of early detection measures among women. Little information is known about general breast cancer awareness, prevention, and practices for early detection among women from low-resource countries. The current study was designed to assess knowledge, beliefs, and practices of women regarding the screening of breast cancer.

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Aim of the study

The aim of this study was to:-

Assess women's knowledge, beliefs, and practices regarding the screening of breast cancer.

Research questions

1. What is the level of women knowledge and beliefs regarding screening of breast cancer?
2. What are the practices of women towards the detection of breast cancer?

2. SUBJECTS AND METHOD

Subjects

Study design: -

A descriptive cross-sectional study design was used to achieve the aim of this study.

Study settings:-

The study was carried out in the outpatient clinics and departments of two big hospitals and three maternal and child health centers at Tanta city which have large numbers of attending women with several health problems. These Outpatient clinics of hospitals were: - Outpatient clinics and departments of Medical, Surgical, Cardic, Urology, Orthopedic, Obstetric, and Gynecology departments in Tanta University and El-Menshawy hospitals. MCH centers were: - Second child care center in El-Embaby, the medical center in Botros and medical center in Segar.

Study subjects:

The study included a convenience sample of women who attended the above- mentioned setting during the period from the beginning of December 2016 to the end of March 2017. These health settings were approached three days/week; the total number of women interviewed by the researchers was 1086 women.

Inclusion criteria of the studied women:

- Married and fertile women
- 20-65 years of age
- Free from the major surgical operations
- Willing to participate in this study

Tools for data collection:-

One tool was used by the researchers in order to obtain the necessary data for the study:-

Structured interview schedule :-

Structured interview schedule was developed by the researchers according to the literature review (1,2,12,17,22,24,25), it consisted of five parts as follows:-

Part 1: Socio-demographic characteristic of the women:-

Socio-demographic characteristic of the women such as age, level of education, occupation, marital status, family income and place of residence

Part 2: Reproductive and medical history of women and their families(1,2):-

It was included data related to:-

- Reproductive history of women: age of menarche, regularity of menstruation, duration of menstruation, cessation of menstruation and its cause. Past and present history of contraceptive methods and age of menopause.

 Medical history of women: breast cancer and any chronic disease such as hypertension, diabetes, asthma, obesity or other diseases.

 The family history of chronic and other medical disorder such as breast cancer or cervical cancer, and any chronic diseases such as(heart disease, osteoporosis, DM, hypertension, and asthma).

Part 3: Breast cancer screening knowledge (12, 17, 22-24):-

This part assessed women's knowledge regarding nature of breast cancer (11 items), risk factors (18 items), signs and symptoms (7 items), and common methods for early detection of breast cancer (frequency and motivation factors) (8items) and they are existing and preferred sources of knowledge about breast cancer. The total number of items was forty- four item.

Responses were measured by using the nominal scale of true, false and do not know. One point was given for a correct answer and zero for an incorrect or do not know. The knowledge level was categorized as poor for scores less than 50%, fair for scores from 50% to less than 70% and good for scores from and more than 70 %. Questions regarding their existing and preferred sources of knowledge about breast cancer were not scored.

Part 4: Practices related to breast cancer screening (24,25).

It was developed by the researchers. This part consisted of six questions related to breast self-examination (BSE), clinical breast examination (CBE) and mammography (time of previous use and obstacles for not done). The respondents' practices regarding BCS were measured using multiple choice questions. One point was given for correct practice and zero points for incorrect practice.

Scoring system

The total practices scores of the studied women related to breast cancer screening were classified into two categories as follows:

*Satisfactory practices: ≥ 70% of the total score.

*Unsatisfactory practices: < 70 % of the total scores.

Part 5: Beliefs related to breast cancer screening (12, 17).

The Champion Health Belief model (HBM) has been used to collect data about women's beliefs regarding BC. It consists of 6 concepts: perceived susceptibility to illness (5 items), perceived seriousness of illness (7 items), perceived benefits for the presumed action (6 items), perceived barriers to the presumed action (7 items), confidence in one's ability (11 items) and health motivation (7 items). Each statement has 5 response choices ranging from strong disagreement (1 point) to strong agreement (5 points). It was a forty –three item; scores had a possible range of 43 to 215 for the total health belief score. All concepts are positively related to screening behavior, except for barriers which are negatively associated. The Champion Health Belief Model was modified to meet the social and cultural needs of the study population.

The total scores were obtained by summing responses to each statement on the scale. The mean score for different parts and the total scale was categorized as follows:-

- Positive belief: ≥ 60 % of the total score.
- Negative belief: < 60 % of the total score.

Method

1- Before conducting the study, a written permission letter was obtained from the Dean of the Faculty of Nursing, Tanta University to the responsible authorities of previously mentioned settings.

2- Ethical and legal considerations: - An informed consent for participation in the study was obtained from the entire women,the nature of the study was not lead to any harm and/or pain for the included women. Confidentiality and privacy put into consideration regarding the data collected. Participation in the study was voluntary, and each woman was able to withdraw from the study at any time. The researchers explained the aim of the study to the participants. Agreement to fill out the questionnaire was considered as consent to participate in the study.

3- The study tools developed by the researchers after a review of the relevant literature.

4- The study tools tested for content validity by a jury of five experts in the field of the study. Their opinion and suggestion were taken into consideration.

5- The reliability test of the tools was done by using test of Cronbach's Alpha which was found 0.910 for items of women's knowledge, 0.892 for items of women's believes about screening regarding breast cancer and 0.874 for all items of the tool of data collection.

6- The pilot study was conducted on 20 women who were chosen randomly from the previous settings for testing the tool for its clarity, applicability and identifies obstacles that may be encountered during data collection and were excluded from the study subjects and necessary modification was done.

7- Data collection: The tool of the study was administered individually to each woman of the study subjects. The woman was interviewed in the wait¬ing areas of the previously mentioned settings by one of two researchers and research assistants of nursing students. Interviews were administered at working times on different days at each study sitting. Research assistants briefly explained the background of the study and the types of questions to be asked during the interview. Woman was informed that they involve¬ment in the study would not impact their medical care. The study started at the beginning of December 2016 to the end of March 2017.

Table (1): Distribution of the studied women according to their socio-demographic characteristics

Variables	**The studied women (N=1086)**	
	N	**%**
Age **Range** **Mean±SD**	**(23-64)** **38.44±8.400**	
Marital status		
▪ Married	1010	93.0
▪ Widow	66	6.1
▪ Divorced	10	0.9
Level of education		
▪ Illiterate/read and write	46	4.2
▪ Secondary education	672	61.9
▪ Intermediate education	292	26.9
▪ University education	76	7.0
Place of residence		
▪ Rural	656	60.4
▪ Urban	430	39.6
Working status		
▪ Housewife	732	67.4
▪ Work	354	32.6
Family income		
▪ Enough and save	58	5.3
▪ Enough	822	75.7
▪ Not enough and borrow	206	19.0

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Table (1):-shows the demographic characteristics of the studied women. The table showed that the age of the studied subjects ranged from 23-64 years, the mean age was 38.44±8.400 year. While the majority (93.0%) of study participants were married and nearly three-fifths (61.9% & 67.4% respectively) of them reported that they had the secondary level of education and housewife. On the other hand, only 4.2% were illiterate and the majority (75.7%) of them had enough and save family income.

Table (2): Distribution of the studied women according to their reproductive history

Variables	The studied subjects (N=1086)	
	n	%
Age at menarche **Range** **Mean±SD**	**(10-18)** **13.50±1.3**	
The regularity of the menstrual cycle		
▪ **Regular menstrual cycle**	974	89.7
▪ **Irregular menstrual cycle**	112	10.3
Duration of menstruation		
▪ less than 3days	130	12.0
▪ from3-5 days	796	73.3
▪ from 5 -7 days	142	13.1
▪ more than7 days	18	1.7
Past and present use of contraceptive methods	984	90.6
#Types of contraceptive methods used		
▪ Pills	300	27.6
▪ Loop	732	67.4
▪ Injection	46	4.2
▪ Save period	4	0.4
▪ Condom	6	0.6
▪ Capsules	4	0.4
Suffering from side effects of contraceptive methods	390	35.9
# Side effects of contraceptive methods		
▪ Increase amount of vaginal blood loss	320	29.5
▪ Irregularity of menstruation	82	7.6
▪ Abdominal and back pain	246	22.7
▪ Increase in body weight	130	12.0
▪ Dripping of blood	36	3.3
Suffer from a cessation of menstruation	234	21.5
# Causes of menstrual cycle cessation		
▪ Aging	142	61.5
▪ Hysterectomy or Ovariectomy	8	3.5
▪ Don't know	82	35.0

(# More than one choice allows).

Table (2) shows the reproductive history of the studied women. The table showed that the age of menarche of the studied women ranged from 10-18 years, with the mean 13.50±1.296year. The table also showed that the majority (89.7%) had the regular menstrual cycle and nearly three- quarters (73.3%) of them reported that the duration of their menstruation was ranged from 3-5 days. The table illustrated that nearly two- thirds (67.4%) of women were using the loop as the family planning method. Also, the table showed that more than one third (35.9%) of women were suffering from side effects of family planning methods, and more than one- quarter (29.5%) of them reported that the most common

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family planning side effect was increased amount of vaginal blood loss. It was obvious from this table that less than one-quarter (21.5%) of women suffer from the cessation of menstruation, on the other hand, more than one- third of them (35.0 %) don't know the cause of menstrual cycle cessation.

Table (3): Distribution of the studied women according to their (medical history of them and their families

Variables	The studied subjects (N=1086)	
	n	%
# Women suffering from chronic diseases	**386**	**35.5**
▪ Hypertension ▪ Osteoarthritis ▪ Diabetes Mellitus	344 186 56	31.7 17.1 5.2
#Family suffering from chronic diseases	**999**	**61.3**
▪ Hypertension ▪ Diabetes Mellitus ▪ Osteoarthritis	194 164 138	17.9 15.1 12.7
Relative with cancer	**150**	**13.8**
Relative member suffering from cancer ▪ Mother ▪ Sister ▪ Aunt ▪ Grandmother	 70 38 36 6	 6.4 3.5 3.3 0.6

(# More than one choice allows).

Table (3): shows the distribution of the studied women according to their (medical history of them and their families. Concerning women health history more than one- third (35.5%) of them were suffering from chronic diseases and nearly two- thirds of them (61.3) had the family history of chronic diseases and hypertension, osteoarthritis and diabetes mellitus were the most common chronic diseases among women (31.7 %, 17.1&5.2) respectively. The table also showed that 13.8 % of participants had a family history of cancer

Table (4): Distribution of the studied women according to their mean scores of knowledge, practices, and Health Belief Scale (HBS) about breast cancer screening

Items	Women (N=1086)	
	Range	Mean±SD
Knowledge about breast cancer screening **1.** Nature of breast cancer (0-11)	**(0-11)**	**4.74±2.337**
2. Risk factors for breast cancer(0-18)	**(0-16)**	**5.81±3.785**
3. Signs and symptoms(0-7)	**(0-7)**	**2.74±1.952**
4. Common methods for early detection of breast cancer (0-8)	**(0-8)**	**4.07±2.111**
Total knowledge score (0- 44)	**(1-41)**	**17.36±7.830**
Total score of practices related to breast cancer screening.(0-5)	**(0-5)**	**0.48±0.917**
Health belief scale (HBS) 1- Perceived Susceptibility to breast cancer screening(5-25)	**(5-25)**	**12.92±3.846**
2- Seriousness of breast cancer screening(7-35)	**(7-35)**	**25.00±6.051**
3-Benefit of breast cancer screening(6-30)	**(6-30)**	**22.31±4.225**
4- Barrier to breast cancer screening(7-35)	**(14-35)**	**24.55±4.041**
5- self-efficacy of breast cancer screening(11-55)	**(11-52)**	**26.80±7.764**
6- Health Motivation for breast cancer screening(7-35)	**(7-35)**	**26.64±5.048**
Total HBS score (43-215)	**(71-203)**	**138.23±17.494**

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Table (4): This table represents the distribution of the studied women according to their mean scores of knowledge, practices, and health belief scale about breast cancer screening. The table showed that the highest mean score (5.81±3.785) was given for the women's knowledge about breast cancer screening the risk factors for breast cancer compared to signs and symptoms of breast cancer (2.74±1.952). Also, the table showed that the total score of practices related to breast cancer screening was (0.48±0.917).The table also showed that self-efficacy of breast cancer screening &health motivation to breast cancer screening (26.80±7.764 & 26.64±5.048) respectively had the highest mean score of Health Belief Scale (HBS).

Figure (1) Distribution of the studied women according to their level score of knowledge related to breast cancer screening

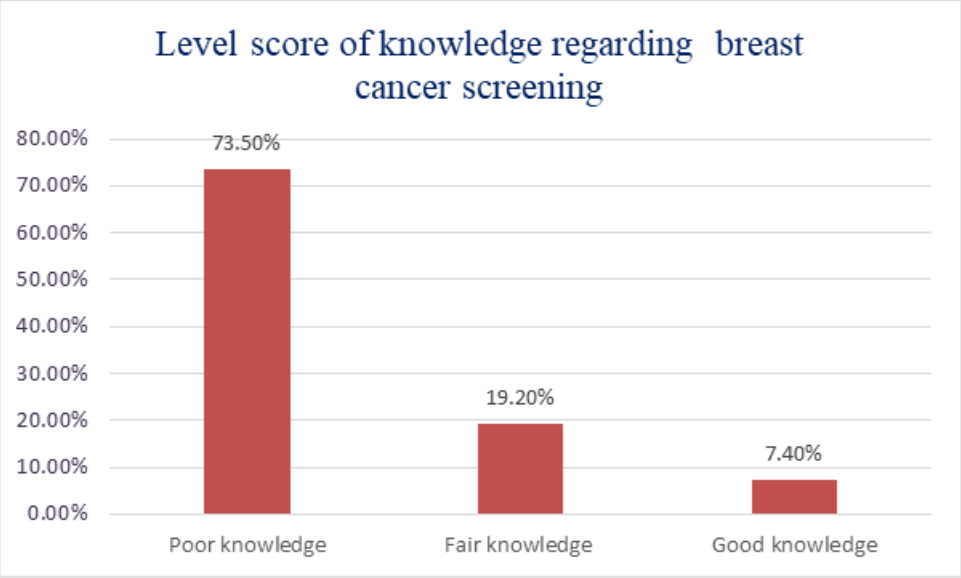

Figure (1): represents the level score of women's knowledge regarding breast cancer screening. It was found that nearly three quarters (73.5%) of women had poor knowledge and only 7.4% of them had good knowledge.

Figure (2) Distribution of the studied women according to their level score of health beliefs (HBS) regarding breast cancer screening

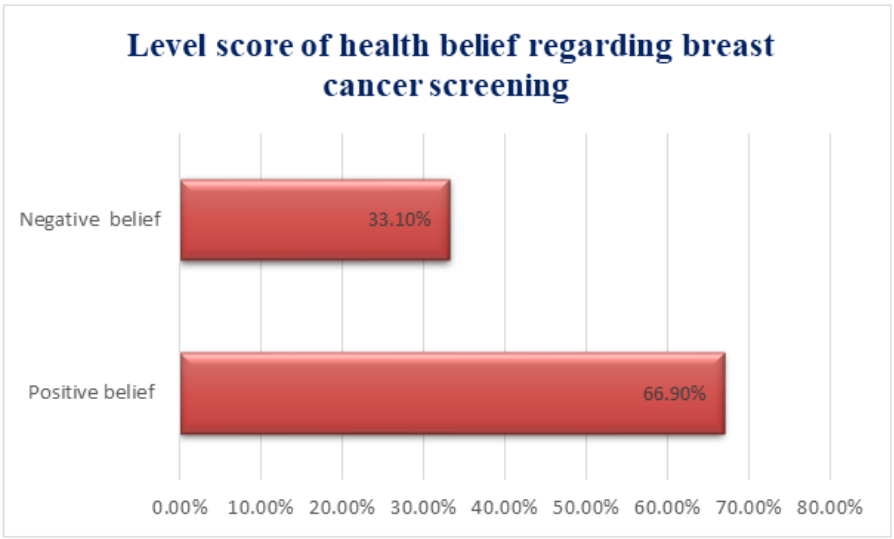

Figure (2): represents the level score of the studied women's health beliefs regarding breast cancer screening. It was found that more than two thirds (66.9%) of them had a positive belief regarding breast cancer screening.

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Figure (3) Distribution of the studied women according to their level score of practices related to breast cancer screening

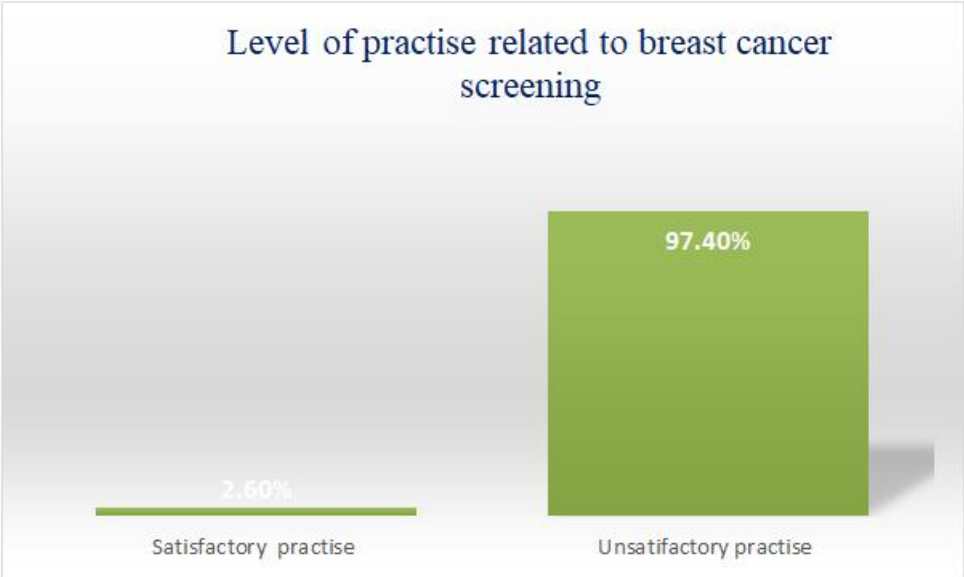

Figure (3): represents the level score of the studied women's practices regarding breast cancer screening. It was found that the majority (97.4%) of women had unsatisfactory practices regarding breast cancer screening and the rest(2.7%) had satisfactory practices.

Table (5) Distribution of women according to their practices related to screening of breast cancer

Items	Women (N=1086)	
	n	%
General medical check up		
Yes	160	14.7
No	926	85.3
Breast self-examination		
Yes	238	21.9
No	848	78.1
Mammogram		
Yes	46	4.2
No	1056	97.2
Clinical breast examination		
Yes	26	2.4
No	1060	97.6

Table (5) shows the distribution of the studied women according to their practices related to screening of breast cancer. This table showed that women's practice related to screening of breast cancer was low where only 21.9% of women perform breast self-examination, 14.7% perform general medical checkup, 4.2 % perform mammogram and 2.4% perform clinical breast examination.

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Figure (4) Distribution of the studied women according to their barriers for performing screening test for breast cancer

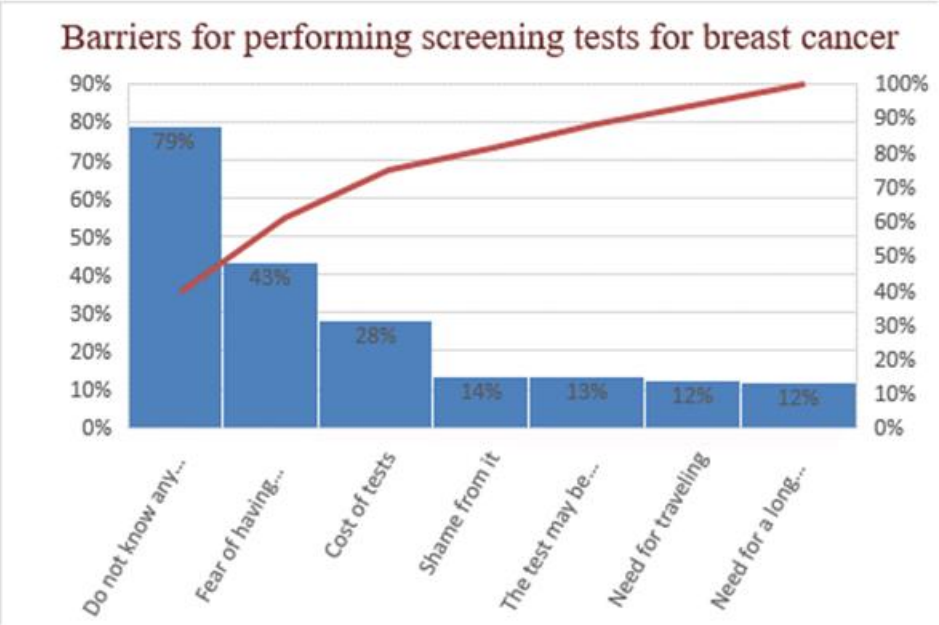

Figure (4) represents the distribution of the studied women according to their barriers for performing screening tests for breast cancer. The figure showed that more than three- quarters (79.0%) of women do not know any information about methods of screening of breast cancer , nearly half (43.1%) of them their fear of having breast cancer was the barrier for performing screening tests and more than one-quarter (28%) of them the cost of the test prevented them from performing screening tests.

Table (6): Relationship between the studied women's total knowledge score, total health believes score (HBS) level and their total of practices level related to breast cancer screening

Items	Total knowledge score						Total (N=1086)		χ^2 P
	(Poor) (N=798)		(Fair) (N=208)		(Good) (N=80)				
	N	%	N	%	n	%	N	%	
Total health believes score									
▪ Positive belief	520	65.2	144	69.2	56	70.0	726	66.9	1.993
▪ Negative belief	278	34.8	58	27.8	24	30.0	360	33.1	0.369
Total practices score									
▪ Satisfactory practices	6	0.8	6	2.9	16	20.0	28	2.6	53.672
▪ Unsatisfactory practices	792	99.2	202	98.1	64	80.0	1058	97.4	0.000*

*** Significant at P <0.05.**

Table (6): Shows the relationship between the studied women's total knowledge score, total health believes score (HBS) level and their total of practices level related to breast cancer screening. It was obvious that there were no significant differences between women's level of knowledge and their total health believe score. The table also showed that the majority (99.2%) of women who had poor knowledge were holding unsatisfactory practices regarding breast cancer screening so, there was highly statistically significant differences between women level of knowledge and their total practices score (P < 0.000*).

Table (7): Correlation between the studied women' s total score of knowledge, health belief, practice and their socio-demographic characteristics

Variables	Total score of knowledge		Total score of health belief		Total score of practice	
	r	P	r	p	r	P
Level of education	-.105-	0.004*	-.099-	0.021*	.034	0.432
Place of residence	-.190-	0.000**	.017	0.698	-.186-	0.000**
Work	-.208-	0.000**	.112	0.009**	-.326-	0.000**
Family income	-.073-	0.089	.181	0.000**	-.095-	.027
Relative with cancer	0.095	0.002*	0.131	0.002**	-0.012-	0.781

****. The correlation was significant at the 0.01 level (2-tailed).**
***. The correlation was significant at the 0.05 level (2-tailed).**

Table (7): Reflects the correlation between the studied women's total score of knowledge, health belief, practice and their socio-demographic characteristics. A highly significant negative correlation was detected between women's total score of knowledge and their total score of practices with the place of residence and work, also ,between the total score of health belief and family income. Also, the table showed that there was a significant negative correlation between the total score of health believes and the total score of knowledge with women's level of education. Moreover, there was a significant positive correlation between women's relative with cancer and their total score of knowledge and the total score of believes while there was a negative correlation with a total score of practice.

3. DISCUSSION

Breast cancer is one of the most common types of cancer and a principal cause of cancer death among women during their lifespan globally. The majority of advanced stage breast cancer affected women from low-income countries, resulting in limited therapeutic options and persistently high mortality rates. Delays in breast cancer diagnosis and treatment in developing nations are attributed to the patient, healthcare provider, and system-mediated barriers to early detection and care[(26-29)].

In relation to socio-demographic data in the current study it showed that the mean of women age was 38.44±8.4 years and nearly two- thirds of women had a secondary education this was constant with the study of **Younes (2015)** [(25)] who reported that two -thirds of female in her study had age ranged from (30-40) years and more than one third of them had ended preparatory study.

In the present study more than two - thirds of women had used a loop as a method of contraceptive .This result was accepted because the most of the Egyptian women prefer the using of loop and pills as a contraceptive method which did not interfere with the sexual act and did not need for male involvement more than the other types of contraception and most of the Egyptian women knew that these methods were the most available and safest methods .This result was consistant with the study of **Awadalla (2016)** [(30)] who found that more than half of the participants used contraceptive methods where IUDs and pills as the most commonly used methods. In the current study more than one-third of women suffering from a side effect of contraceptive methods and common side effects were increase amount of vaginal blood loss, abdominal and back pain and an increase in body weight. These findings were consistant with **Sir Arthur Lewis Institute of Social and Economic Studies (2001)** [(31)] which reported that the common side effects of contraceptive methods were irregular vaginal bleeding, headaches, nausea/dizziness and weight gain/loss. These side effects occurred mainly among women who used pills and injections as contraceptive methods.

In the present study the age of women's menarche was 13.5 ± 1.3years this was consistant with a study of **Gabriela torres et al., (2005)** [(32)] for the Egyptian girls who found that the mean age of menarche was (12.9 years). Form the researchers' point of view these results were accepted because of the subjects of both studies from the same community and culture.

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Breast cancer is threatening the life of women physically and psychologically. Early detection of breast cancer can be achieved by performing a general medical checkup, breast-self-examination (BSE), clinical breast examination (CBE), and mammography [24]. In the present study, women's practice related to breast cancer screening were low where a few numbers performed general medical checkup, nearly one - quarter of women only performed breast self-examination, low percentage of them performed clinical breast examination, and performed the mammogram. This result was expected in the present study because up till now the Egyption women still were not awear about the importance of this practice and investigation for early detection of breast cancer and even they knew about these practices they neglect their application.This finding was consisttant with the study of **Franzcr et. al. (2005)** [33] who had reported that there were low rates of breast cancer screening. From the researcher point of view, these results were associated with inappropriate and poor levels of knowledge and perceptions of preventive health measures regarding breast cancer.

In relation to women's practices regarding breast cancer screening. The results of the present study found that a low percentage of women practice screening measures regarding BSE, CBE ,and mammography to detect breast cancer. This was consistant with the study of **Okobia et.al.(2006)[34]and Alam et.al. (2006)** [35] who reported that there were low practice levels for BSE , CBE and no history of practice for mammography among their subjects. Also, the findings of the present study were in agreement with the findings of **Younes (2015)** [25]**and Khanjani et al., (2012)** [36]; who found that nearly one- quarter of women practiced BSE and the majority of them did not perform mammography. On the other hand, the findings of the present study were in contrast with **Dahlui etal., (2012)** [37] who reported that the majority of women in their study performing BSE regularly and have attended CBE and mammography. From the researchers' point of view, these variations can be explained by the difference in the study population as nearly two-thirds of women in the present study from rural areas who usually suffer from low socioeconomic status, less educational level and lacking of health education programs which needed to improve their knowledge and awareness about breast cancer screening tests.

In the current study, the overall level of knowledge of breast cancer was low. This was due to a clear failure of the media, health organization and the Ministry of Health to provide adequate information about breast cancer and its complications,especially in developing countries. This in agreement with the Saudi study of **Abolfotouh et al., (2015)** [12] who stated that lower levels of knowledge related to breast cancer in general ,were detected. While **Dahlui etal.,(2012)** [37] and **Balekouzou1 et. al. (2016)**[38)] reported that majority of the respondents had average knowledge of breast cancer .

Regarding barriers for not performing screening tests for breast cancer the findings of the present study revealed that women hadn't any information about breast cancer screening methods due to their fearing to have breast cancer, shy of performing the tests and it may be painful, need for extra time and money to perform the tests These findings were consistant with **Younes (2015)** [25] who reported that the most common barriers that prevented women from performing breast cancer screening tests were fear of suffering from cancer pain and changing physical appearance, financial cost, shy of applying the tests and it takes time to conduct regular and test may cause pain. When comparing with other studies in term of fear as a barrier, **(Lee et. al., 2014 and Chaowawanit et.al. 2016)**[39,40]. Pointed in their studies that fear of screening results, fear of breast cancer screening tests and fear of the treatment outcomes were among the women barriers to performing breast cancer screening.

Also, this result was consistent with **Donnelly et. al. (2013)**[41] who found in their study in Qatar that one of the barriers that prevented women from performing breast cancer screening tests was the financial matter. Furthermore, they pointed out in their study that the cost and not having a health insurance prevented women from performing breast cancer screening test in Turkey, Jordan, Israel, and Iraq. This matching may due to the same economic status in those countries. While the cost of the test was not a barrier to perform breast cancer screening test in Saudi Arabia due to the level of economic status for Saudi women. On the other hand, the results of the present study were agreement with the results of **Amin et al. (2009)**[42] in Saudi Arabia who showed that the main barrier was ashamed to be examined by the male physician and lack of female physicians.

In the present study,the researchers found that more than two- thirds of the women had a positive belief regarding breast cancer screening. This might due to a lot of women heard about the breast cancer screening but they haven't information and practice to perform it and also this positive belief returned to religious factor. This result was disagreement with **Mohamed et. al.(2016)** [43] who found that there was more than ninety-six of medical and non-medical students had a positive belief regarding breast cancer screening.

Regarding the relationship between the level of knowledge and practice there was highly statistically significant differences between women level of knowledge and their total practices score, this in agreement with **SO Azubuike and So Okwuokei(2013)**[44] who found that not all women who knew about the preventive strategies of breast cancer practiced it. This result in disagreement with Malaysia study which found that women with higher levels of knowledge in relation to symptoms and screening demonstrated higher performance rates of BSE[24].

In the current study, there was a significant positive correlation between relative to cancer and the total score of knowledge and the total score of believes while there was a negative correlation with the total score of practice. This might due to a lot of women know the right things but fear from practice it.This in agreement with **Abolfotouh et al (2015)** [12] who reported that women with a history of breast cancer in the family have more general information on breast cancer and awareness of breast cancer screening tests than other women.

In the current study, there was not significant difference between practice breast cancer screening and the level of education, work and relative to cancer. This constant with the study of **parsa et.al (2008)** [24] which was found that socio-demographic variables were not effective for breast self - examination practice. Since independent variables like educational levels, women's job status, income level and type of health insurance were similar among women in this study.

In the current study there was a significant negative correlation with the level of education and knowledge and believes of women this may due to some women fear of obtaining information about breast cancer, this consistant with **Shiryazdi et. al., (2014)** [45]

It is obvious from the previous results that women need to be 'breast-aware' to facilitate their involvement in screening. Health beliefs concerning the perceived susceptibility to breast cancer and the perceived benefits of screening significantly impact the screening practices. Information on the relationship between health beliefs and breast cancer screening behaviors may be used to develop targeted information and health education on the benefits of screening. Minimizing barriers to screening behaviors may be effective in convincing women. Interventions need to be focused on the benefits of breast cancer screening behaviors.

Limitation of the study

Because this study included women presenting for care at government-funded, hospital-based outpatient clinics, the results presented may not reflect (i) the knowledge, beliefs, and screening practices of women who do not have access to medical care, (ii) those who receive care at private hospitals or clinics, or (iii) those who seek treatment from traditional healers.

4. CONCLUSION

In conclusion, our survey showed that women had poor knowledge, unsatisfactory practices and positive belief regarding breast cancer screening tests.

5. RECOMMENDATIONS

1. Healthcare providers should have an active role and use the different method in educating women about breast cancer awareness and screening.

2. In all health clinic, the healthcare providers must encourage women to perform breast self- examination and apply mammography.

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