

Effect of Nursing Educational Guidelines on Women's Awareness, Health Practices and Beliefs Regarding Prevention and Early Detection of Breast and Cervical Cancer

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Abstract: Background: Women of all races and ethnicities are at risk for breast cancer and cervical cancer. These types of cancer have remained major public health issues across the world. **Aim:** To evaluate the effect of nursing educational guidelines on women's awareness, health practices and beliefs regarding the prevention and early detection of breast and cervical cancer. **Design:** A quasi-experimental design. **Setting:** The study was conducted at El sedik Islamic Medical Center, El salam Islamic Medical Center and El Noor Islamic Medical Center. **Subjects:** A purposive sample of 98 women attending family planning and gynecological outpatient clinics, aged 20 to 60 years and more of different levels of education, not having a history of breast or cervical cancer and not under chemotherapy or radiotherapy treatment. **The tools of data collection** were Breast and cervical cancer questionnaire, the 7 steps of breast self-examination checklist (BSE) and Champion's Health Belief Model Scale (CHBMS). **Results:** The mean age of the studied women, was 34.9 ± 10.2 years. There were general improvements of awareness and beliefs about breast and cervical cancer of the studied women during the different assessment periods as compared to before program with highly statistically significant differences at (p -values < 0.01). After program implementation the practices of breast self examination relatively increased (57.3%) among the studied women meanwhile minimal effect on screening rates of clinical breast examination and Pap smear test (11.2% & 5.0% respectively) and screening mammogram remained the same as the pre program. There was highly statistically significant positive correlation ($p < 0.01$) between total mean knowledge and beliefs scores as well as total mean knowledge and breast self examination practices scores at different times of assessment. **Conclusion and Recommendations:** The implementation of nursing educational guidelines led to significant improvements in women's awareness, health care practices and beliefs toward breast and cervical cancer prevention and early detection. The following recommendations are proposed: provide women with simple information (through illustrated brochures & booklets) that can assist in decreasing barriers and clarifying any misconceptions about breast and cervical cancer screening and to involve women in the design of breast and cervical cancer program to ensure its validity in satisfying their needs and to promote breast and cervical cancer screening.

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1. Introduction

Cancer is a term used for malignant uncontrolled growth of epithelium cells. Cancer begins with irreparable damage to one or more genes controlling cellular growth, proliferation and apoptosis in a single cell that results in further genetic damage leading to abnormal cellular proliferation and evasion of the body's immune system. Cancer is the second leading cause of death in the U.S. The breast cancer is among the leading causes of cancer deaths. One in every nine women will develop the disease at some time in their lives (Nnodu et al., 2010).

The mortality for both breast and cervical cancer can be reduced significantly by using a combination of screening and early detection technologies, including screening mammography, clinical breast examination, and Pap smears. It is

estimated that up to 50% of the lives lost could be saved using these techniques, which detect the cancers when they are most curable. Furthermore, some screening tests (e.g., Pap & mammography) may lead to a reduction in incidence via detection of pre-neoplastic lesions, which can be removed or treated. Each year, an estimated 4475 deaths from breast cancer and 3644 deaths from cervical cancer, could be prevented if all patients received appropriate cancer screening services (WHO, 2010).

Breast cancer is one of the concerns of societies especially for women and is the most prevalent female malignancy. Prevalence of this disease is varied in different parts of the world. According to the American Cancer Society report, breast cancer is diagnosed in about 1.3 million women annually worldwide and around 465,000 will die from the

disease. It is estimated that 207,090 new cases of invasive breast cancer are expected to occur among women during 2010 in the US. (**American Cancer Society, 2010a**).

The risk factors of breast cancer included age, family history, age at first full-term pregnancy, early menarche, late menopause, and breast density. Modifiable risk factors were defined as risk factors that can be controlled with action taken by the risk population (**American Cancer Society, 2007b**). High, moderate, and mild relative risk factors define the correlation of risk associated with populations exhibiting certain traits. Modifiable risk factors consist of postmenopausal obesity, postmenopausal hormones, alcohol consumption, and physical inactivity. High relative risk factors for breast cancer included female, over 65 years old, two or more first-degree relatives with breast cancer diagnosed at an early age, personal history of breast cancer, high breast tissue density, and biopsy-confirmed atypical hyperplasia. Mild/moderate relative risk factors comprise one first-degree relative with breast cancer, high-dose radiation to chest, and high postmenopausal bone density (**American Cancer Society, 2011**).

Cervical cancer is the second most common type of cancer among female genital tract cancers. Almost 80% of cases today and an even higher proportion of deaths from cervical cancer occur in low-income countries, where access to cervical cancer screening and treatment virtually does not exist (**WHO, 2009**). Development of cervical cancer is a multi-stage process that generally occurs over many years and nearly always begins with a woman's infection with an oncogenic type of the human papillomavirus (HPV). The HPV is one of the most common sexually transmitted infections, and types 16 and 18 are responsible for approximately 70% of all cervical cancers (**Lenahan et al., 2008**). The other known risk factors are the early onset of sexual activities, multiple sex partners, long use of oral contraceptives, immune suppressants, smoking and specific dietary factors (**Hoque & Hoque, 2009**).

Women at high risk for cervical and breast cancer morbidity and mortality have a low education level, low income, and low health literacy. They also have the socio-demographic characteristics that most complicate screening and care (**Mauad et al., 2009**). Many low and middle-income countries face the double burden of cervical and breast cancer need to implement combined cost-effective and affordable interventions to tackle these highly preventable diseases (**WHO, 2010**).

The effective strategies for preventing breast and cervical cancer have yet to be developed, following early detection practices can reduce the impact of the

disease and allow for a greater range of treatment options (**Amin, 2008**). Lower levels of cancer screening among women are the result of psychosocial factors including fear of cancer, invasive procedures and pain, lack of knowledge about cancer and its screening methods, attitudes of fatalism, religious or spiritual beliefs, concerns over confidentiality, embarrassment, and partner disapproval. External factors also influence screening such as lack of health insurance, regular sources of health care, and physician referral, transportation barriers, cost, and restrictive work policies (**Fernandez, et al., 2009**).

Breast and cervical cancer screening is important in the reduction of cancer-related mortality. When breast cancer is diagnosed early when confined to the breast, the 5-year survival rate is over 95%. Early detection of breast cancer through systematic mammography screening is partially responsible for decreasing breast cancer mortality rates and is optimally effective when performed every 1 to 2 years starting at 40 years of age (**Anagnostopoulos et al., 2012**). As for cervical cancer, early diagnosis has resulted in a decline of approximately 40% in the incidence and mortality associated with invasive cervical cancer. Pap (cervical) smear testing is an effective method of detecting, preventing and delaying the progress of cervical cancer. Over the past three decades, cervical cancer rates have fallen in most of the developed world, probably as a result of screening programs (**Demirtas & Acikgoz, 2013**).

One potentially important strategy in reducing breast cancer mortality is breast cancer screening to achieve earlier detection of cancer. So, creating awareness, which is a very important tool, entails better screening of breast cancer. Early detection tests for breast cancer save thousands of lives each year, and even many more lives could be saved if more women and their health care providers took advantage of these tests. Following guidelines for the early detection of breast cancer improves the chances of breast cancer diagnosis at an early stage and its successful treatment (**Komen, 2011**). The main methods of screening involve breast self-examination (BSE), physical examination of the breasts by physicians or qualified health workers, clinical breast examination (CBE) and mammography (**Allen, 2010**). None of these screening tests is 100% sensitive in detecting breast cancer. Therefore, it is often recommended that a combination of these techniques be used in the screening process (**Ghods et al., 2013**).

Breast Self-Examination also known as self-awareness is encouraged for women of any age. Health care providers should instruct women about

proper technique as well as the benefits and limitations of BSE. Whether or not women engage in structured BSE, all women should become familiar with the appearance and texture of their breasts. If any changes or deviations from normal occur, women should report this promptly to their health care provider. Through BSE, finding and reporting breast changes immediately reduce breast cancer deaths during early detection (**American Cancer Society, 2007a**).

Knowledge, attitudes, and beliefs toward disease and illness have been shown to influence breast and cervical cancer screening in specific populations. Awareness and perceptions toward breast and cervical cancer screening among women hold promise for identifying barriers to early detection and could aid in the creation of interventions to promote screening (**Dang et al., 2010**). Knowledge is a necessary predisposing factor for behavioral change and plays an important role in improvement of health seeking behavior. Not only that knowledge might dramatically improve the attitude, disbelief, and misconception but also enhance screening practice (**Mia, 2007**). Healthcare professionals are a direct source of information for the patients and for the general public at large and since they hold such a pivotal role, it is imperative that the information they convey is accurate and helps in building additional awareness (**Kumar et al., 2009**).

Awareness helps to empower individuals to fight the disease through qualitative reductions in morbidity rather than statistic mortality. Nurses are encouraged to promote the awareness along with educational guidelines. Preventative care, information availability, effective communication, and evidence-based practice should be included in the awareness campaign. The goal of the campaign should be reduction of disease confusion and encouragement of empowerment in breast and cervical health promotion (**Mood et al., 2011**).

Significance of the Study

Breast cancer is the most frequent malignant tumor in women worldwide. In Egypt, it is the most common cancer among women, representing 18.9% of total cancer cases (**Salem et al., 2010**). Raising general public awareness on the breast and cervical cancer problem and the mechanisms to control as well as advocating for appropriate policies and programs are key strategies of population-based breast and cervical cancer control (**WHO, 2011**).

Aim of the Study

This study aims to evaluate the effect of nursing educational guidelines on women's awareness, health practices and beliefs regarding the prevention and early detection of breast and cervical cancer. This aim will be attained through:

- Assessing women's awareness, health practices and beliefs related to breast and cervical cancer.
- Designing and implementing educational guidelines about breast and cervical cancer.
- Evaluating the effect of the educational guidelines on women's awareness, health practices and beliefs related to breast and cervical cancer.

Research Hypothesis

- Nursing educational guidelines will improve women's awareness, health care practices and beliefs regarding prevention and early detection of breast and cervical cancer.

2. Subjects and Methods

I. Technical Design:

The technical design entails the study design, setting, subjects, and tools for data collection.

Research Design:

A quasi-experimental design was utilized to accomplish the aim of this study.

Research Setting:

The present study was conducted at El sedik Islamic Medical Center, El salam Islamic Medical Center and El Noor Islamic Medical Center.

Subjects:

A purposive sample was utilized in the current study. The sample composed of women attending family planning and gynecological outpatient clinic aged from 20 to 60 years and more with different levels of education, do not have a history of breast or cervical cancer and not under chemotherapy or radiotherapy treatment. The sample size was estimated with STATA 10 program. The estimated required sample size was 98 women, to achieve power of study = $1 - \beta = 0.95$ and Alpha $\alpha = 0.01$ (sig. 99%).

Tools of data collection:

three Tools were used in the current study as follows:

I. Breast and Cervical Cancer Questionnaire. It was filled in by the researchers to assess and identify the women's needs. It was adapted from **Grundmayer (2006)**. It was designed in Arabic form. Translation and back translation from English to Arabic was done for this tool. The questionnaire included 3 parts as following:

- **Part 1:** Demographic characteristics of the subjects. It was used to assess; age, religion, setting, education, residence, smoking, marital status, attending previous awareness program toward breast or cervical cancer and phone number.
- **Part 2:** It was used to assess family, menstrual and obstetric history, which include family history of breast cancer and cervical cancer, relation to women, age at

menarche, parity, number of abortions, age at first birth, family planning methods, breast Feeding, menopause and age at the menopause

- **Part 3:** It was used to assess the women's knowledge regarding the breast and cervical cancer.

Scoring system:

The total score of knowledge was 20 marks. Each correct answer was given one mark and the incorrect answer was given zero. It was categorized as follows: $\geq 60\%$ (=12 marks) satisfactory level of knowledge, and $< 60\%$ unsatisfactory level of knowledge.

II. The 7 Steps of Breast Self-examination Checklist (BSE) : It was adopted from Clores (2009) and it was used to assess the women's practices regarding breast self examination. The checklist had three major parts including: in front of mirror, during the shower and in lying down position and each part is divided into three sub groups. The women assess the breast as regards suitable position, perimeter, palpation technique, applying pressure, different patterns, how to practice the breast self-exam and become familiar with the feel of the breast tissue at the mirror, during lying position and under the shower.

1. **Position:** Inspect breasts visually and palpate in front of the mirror with arms at various positions. Then perform the examination lying down, first with a pillow under one shoulder, then with a pillow under the other shoulder, and finally while lying flat.
2. **Perimeter:** Examine the entire breast, including the nipple, the axillary tail that extends into the armpit, and nearby lymph nodes.
3. **Palpation:** Palpate with the pads of the fingers, without lifting the fingers as they move across the breast.
4. **Pressure:** First palpate with light pressure, then palpate with moderate pressure, and finally palpate with firm pressure.
5. **Pattern:** There are several examination patterns, and each woman should use the one that is most comfortable for her. The vertical strip pattern involves moving the fingers up and down over the breast. The pie-wedge pattern starts at the nipple and moves outward. The circular pattern involves moving the fingers in concentric circles from the nipple outward. Don't forget to palpate into the axilla.
6. **Practice:** Practice the breast self-exam and become familiar with the feel of the breast tissue, so you can recognize changes. A

health care practitioner can provide feedback on your method.

7. **Plan:** Know what to do if suspect a change in the breast tissue. Know the family history of breast cancer. Have mammography done as often as the health care provider recommends.

Scoring system:

The total score of practice was 18 marks. If the women performs correctly the method for breast self-examination she obtains two points, and if she cannot do or perform it incorrectly, she obtains 0 point. In each part, she can obtain 6 points and a total score of 18. If she obtains 0-6 total score, she has weak performance (inadequate), if she obtains 7 and above total score, she has acceptable practice (adequate). All participants received adequate privacy to perform breast self-examination.

3. Champion's Health Belief Model Scale (CHBMS)

It is a self-report instrument that includes 61 items with 8 subscales. It was adopted from Tymoore and Berry (2009) and all items were scored on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated more perceived susceptibility, seriousness, benefits, barriers, confidence/self efficacy, motivation of living health lifestyle, benefits and barriers of mammography. It was used to assess the following:

- a. Susceptibility (1999 version): A three-item scale was used to assess perceived susceptibility of breast cancer.
- b. Seriousness (1993 version): A seven-item scale was used to assess perceived seriousness of breast cancer.
- c. Benefits (1993 version): A six-item scale was used to assess perceived benefits of performing BSE.
- d. Barriers (1997 version): An eleven-item scale was used to assess perceived barriers of performing BSE.
- e. Confidence/Self-efficacy to BSE (1997 version): A ten-item scale was used to assess perceived confidence in performing BCE.
- f. Motivation (1993 version): A seven-item scale was used to assess motivation of living a healthy lifestyle.
- g. Benefits of having a mammography (1993 version): A six-item scale was used to assess the benefits of having a mammography on the breast.
- h. Barriers of having a mammography (1999 version): An eleven items were added to a self-report questionnaire to assess self-efficacy for performing BSE and getting CBE.

The scoring system as follows:

- i. Perceived barriers to mammography screening, consisting of 11 items related to lack of time, mammography being painful or embarrassing, rudeness of personnel and being exposed to unnecessary radiation. Answers ranged from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated more perceived barriers.
- ii. Perceived benefits of mammography screening were assessed by four items related to health beliefs for mammography screening to reduce worry, benefits of early detection, increased chances of survival, and better treatment options. Response options ranged from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated more perceived benefits.
- iii. Self-efficacy was measured by seven items related to perceived confidence in personal ability to obtain a mammogram. Items tapped respondents' beliefs about their ability to exercise control over finding a place to have a mammogram, calling to make an appointment, arranging for transportation to the mammography facility, talking with people at the mammography facility about concerns and arranging other things in their life to have a mammogram. Items were answered on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated higher self-efficacy.

Breast and cervical cancer educational guidelines for health practices and beliefs toward early detection and prevention of breast and cervical cancer:

The educational guidelines was designed by the researchers to improve the women' awareness, health practices and beliefs regarding prevention and early detection of breast and cervical cancer. The educational guidelines was designed by the researchers based on the related literature (**American Cancer Society 2010b, Smeltzer et al., 2010; and WHO, 2010**). It was written in Arabic language. The guidelines is divided into 4 parts as follows; (1) General knowledge about breast and cervical cancer which includes, definition, causes, manifestation, warning signs, risk factors, prevention and early detection, and treatment. (2) Health care practices which include: breast self examination, clinical breast examination, mammography and Pap smear test. (3) Beliefs which include: susceptibility, seriousness, benefits, barriers, self efficacy to BSE, motivation, benefits of having a mammography and barriers of having a mammography.

The guidelines were revised by a group of five expertises in Medical Surgical Nursing, two expertises from Obstetric Nursing and two expertises from Community Health Nursing at Faculty of Nursing Ain Shams University for content validity. Based on the opinion of the panel of expertises some modifications were done, and then the final forms were developed.

Pilot study:

The pilot study commenced once ethical approval had been obtained. A pilot study was carried out by 10% of women to test the clarity, applicability, objectivity and feasibility of the tools to conduct the study. No Changes or modifications were done. The women included in the pilot study were included in the study.

Procedure:

The current study was carried out on three phases, preparatory phase, implementation phase and evaluation phase.

Phase I: Preparatory phase:

Human rights and ethical permission were obtained to conduct the study. The researchers developed the educational guidelines regarding knowledge and health practices regarding prevention and early detection of breast and cervical cancer. Also, media was prepared by the researchers, which included the guidelines handout and audiovisual materials as video.

Phase II: Implementation phase:

Data for the current study were collected through the period from February 2012 to August 2012. Before conducting the study, an exploratory visit was done to the previous settings in order to estimate the flow rate of women and suitable time for collecting data. Besides, personal communication was done with nurses and physician to explain the purpose of the study and gain their best possible cooperation. The woman who met the study criteria was included in the study after explaining the purpose of the study and obtaining consent. Pre intervention, women's knowledge interview questionnaire sheet, ability to practice the breast self examination and health beliefs scale were fulfilled before the guidelines intervention to obtain baseline data for comparison after the guidelines intervention in the presence of the researchers who were available 3 days per week at morning in different study settings. Then implementation of the guidelines was given at the previously mentioned study settings for each woman separately based on her needs. An instructional media was used. Each patient took three sessions. The duration of each session took approximately 1 to 1.5 hours. Methods of teaching used were modified lectures, demonstration and re-demonstration. All of the studied women in all study settings were

cooperative with the researchers. The researchers telephones Number were given to studied women and women's telephone number were taken to ensure contact and meeting them during their visits in the different settings to complete data collection. The studied patients were interested in the topic.

Phase 3: Evaluation phase:

During the evaluation phase, the effect of pre educational guidelines was evaluated on: (1)- women's knowledge, health practices and beliefs regarding prevention and early detection of breast and cervical cancer by comparing results pre and post guidelines intervention.

Administrative design and ethical consideration:

An official permission was obtained from the directors of each medical center in which the study was conducted. Meeting and discussions were held between the researchers and administrative personnel to make them aware about the aims and objectives, as well as to get better cooperation during the

implementation phase. It was important to have their full support, especially to find out some sort of motivation to stimulate women to participate positively in the study. The aim of the research was explained to the participants. Verbal consent was obtained from each woman to participate in the study, after clarifying the procedures of the study. Participants were informed about their right to refuse participation and to withdraw at any time without any consequences. Confidentiality of data was ensured.

Data analysis:

Data entry and analysis were done using the Statistical Package for Social Science (SPSS) version 10. Data were presented in the tables and charts using actual numbers and percentages. Appropriate statistical methods were applied (percentage, chi-square (X²), and *t*- test. Regarding *P* value, it was considered that: non-significant (NS) if *P* > 0.05, Significant (S) if *P* < 0.05, and Highly Significant (HS) if *P* < 0.01.

Table (1): Demographic characteristics of the women under study (n=98)

Items	Frequency	Percent
Age (years):		
20 - < 30	42	42.9
30 - < 40	26	26.5
40 - < 50	20	20.4
50 - 60+	10	10.2
Mean ± SD	34.9± 10.2	
Religion:		
Muslim	80	81.6
Christian	18	18.4
Setting:		
El sedik Islamic Medical Center	34	34.7
El salam Islamic Medical Center	43	43.9
El Noor Islamic Medical Center	21	21.4
Education		
Read and write	31	31.6
Diploma	58	59.2
Higher education	9	9.2
Residence		
Urban	74	75.5
Rural	24	24.5
Smoking		
Yes	14	14.3
No	84	85.7
Marital status		
Married	74	75.5
Single	20	20.4
Widow	4	4.1
Attending previous orientation programs regarding breast or cervical cancer		
Yes	2	2.0
No	96	98.0

Table (1) shows the demographic characteristics of the studied women. Their mean age was 34.9± 10.2 years, 81.6% of the women were Muslims, 34.7% were selected from El sedik Islamic Medical Center,

while, 43.9% from El salam Islamic Medical and 21.4% from El Noor Islamic Medical Center. More half than of them (59.2%) had diploma. As for residence, 75.5% of the women live in urban areas,

85.7% were not smoking and 75.5% of them were married. As well, 98% of them not attend previous

orientation programs regarding breast or cervical cancer.

Table (2): Description of studied women according to their family, menstrual and obstetric history (n = 98)

Items	Frequency	Percent
Family history:		
Family history of breast cancer:		
Yes	6	6.1
No	92	93.9
Family history of cervical cancer:		
Yes	0	0
No	98	100
Relation to women (no = 6)		
Mother	3	50.0
Sister	2	33.3
Others	1	16.7
Menstrual history:		
Age at menarcho		
9 - < 12	4	4.1
12 - < 16	74	75.5
16 +	20	20.4
Obstetric history: Parity		
1 – 3	63	64.3
4 – 6	33	33.7
7 +	2	2.0
Number of abortion		
Non	63	64.3
One	29	29.6
Two	4	4.1
Three +	2	2.0
Age at first birth		
15 > 20	13	13.2
20 > 30	32	32.7
30 +	53	54.1
Family planning methods		
Non	20	20.4
Intra uterine device	41	41.8
Traditional methods	33	33.7
Hormonal	4	4.1
Topical	0	0.0
Breast Feeding:		
Yes	70	71.4
No	28	28.6
Menopause:		
Yes	18	18.4
No	80	81.6
Age at menopause (no = 18)		
40 - < 45	8	44.4
45 - < 50	7	38.9
50 +	3	16.7

Table (2) shows the description of studied women according to their family, menstrual and obstetric history. As regards to family history, 93.9% of the women had no family history of breast cancer and 100% of them had no family history of cervical cancer. 50.0% of them had first-degree relation to mothers. As regards menstrual history, for 75.5% of them age at menarcho was 12 -< 16 years.

Conserving obstetric history, 64.3% of them had parity 1 – 3 deliveries and 64.3% of them had no previous abortions. 54.1% of them had more than 30 years at the first birth, 41.8% of them had an intra uterine device, 71.4% of them were breast feeding, 18.4% of them were menopause, and 44.4% of them had a menopause at age of 40 -< 45 years.

Table (3): Distribution of the studied women regarding breast and cervical screening pre guidelines implementation (n=98).

Items	Pre	
	No	%
<u>Practice breast self examination</u>		
Yes	3	3.1
No	95	96.9
<u>Times of doing breast self examination (no = 3)</u>		
Once / month	0	0.0
Once / 2 months	1	33.3
Once / 6 months	2	66.7
<u>Practice clinical breast examination (by the physician) (no =10)</u>		
Yes	10	10.2
No	88	89.8
<u>Times of doing clinical breast examination (no = 10)</u>		
Once / month	2	20.0
Once / 2 months	3	30.0
Once / 6 months	5	50.0
<u>Heard about mammography</u>		
Yes	8	8.2
No	90	91.8
<u>Doing Mammography</u>		
Yes	10	10.2
No	88	89.8
<u>Date of last mammography (no = 10)</u>		
A year ago	4	40.0
Since two years	6	60.0
<u>Heard about Pap smear test</u>		
Yes	23	23.5
No	75	76.5
<u>Doing a PAP smear test</u>		
Yes	6	6.1
No	92	93.9
<u>Date of last Pap test (no = 6)</u>		
A year ago	2	33.3
Two years ago	3	50.0
More than 5 years	1	16.7

Table (3) displays distribution of the studied women regarding breast and cervical screening pre guidelines implementation. Most of the studied women (96.9%) were not practicing breast self examination and only one woman does it every two months and 2 women do it every 6 months. As regards clinical breast examination and mammography, the same table

reveals that 10.2% of them undergone it and only 5 of them were doing it every 6 months as doctors advices. Meanwhile, 91.8% of them did not hear about mammography and only 10.2% of women were doing it. As regards Pap smear test, 76.5% did not hear about it and only 6.1% of women were doing it at different periods.

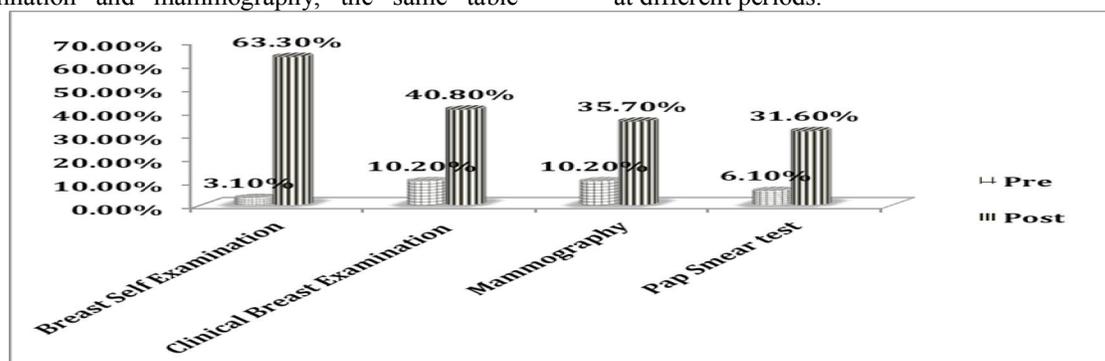


Fig. (1): Breast self-examination, clinical breast examination, mammography and Pap smear test among the studied women pre and post educational guidelines implementation (n = 98)

Fig. (1) illustrates the breast self-examination, clinical breast examination, mammography and Pap smear test among the studied women at pre and post educational guidelines implementation. There were

significant differences between pre and post guidelines implementation regarding to breast self-examination, clinical breast examination, mammography and Pap smear test.

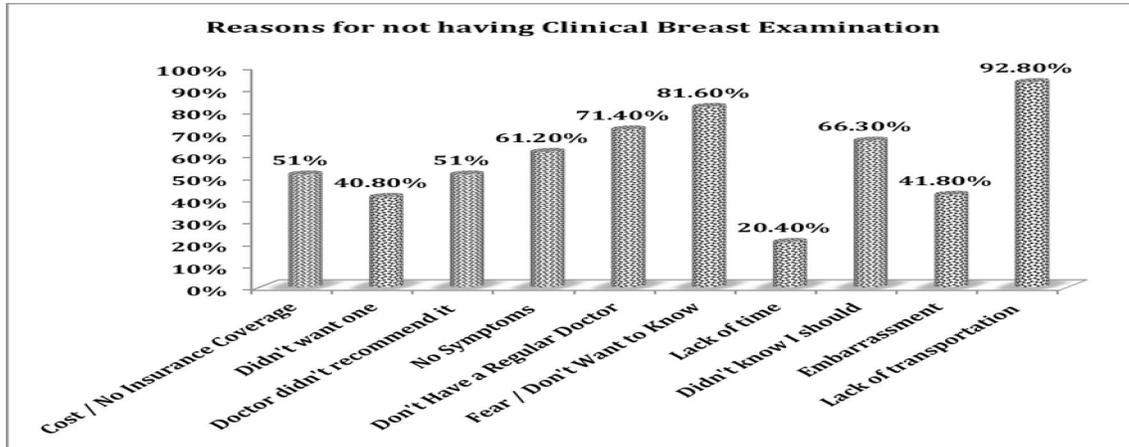


Figure (2): Distribution of specified reasons for not having a clinical breast examination among the studied women pre program implementation (n = 98)

Fig. (2) shows the distribution of specified reasons for not having a clinical breast examination among the studied women pre program implementation. Results showed that 92.8% of them reported lake of transportation, fear/don't want to know (81.6%),

don't have a regular doctor visit (71.4%), didn't know that it should be done (66.3), no symptoms (61.2%), the doctor didn't recommend it (51%), no insurance coverage (51%), embarrassment (41.8%), didn't want one (40.8%) and lack of time (20.4%).

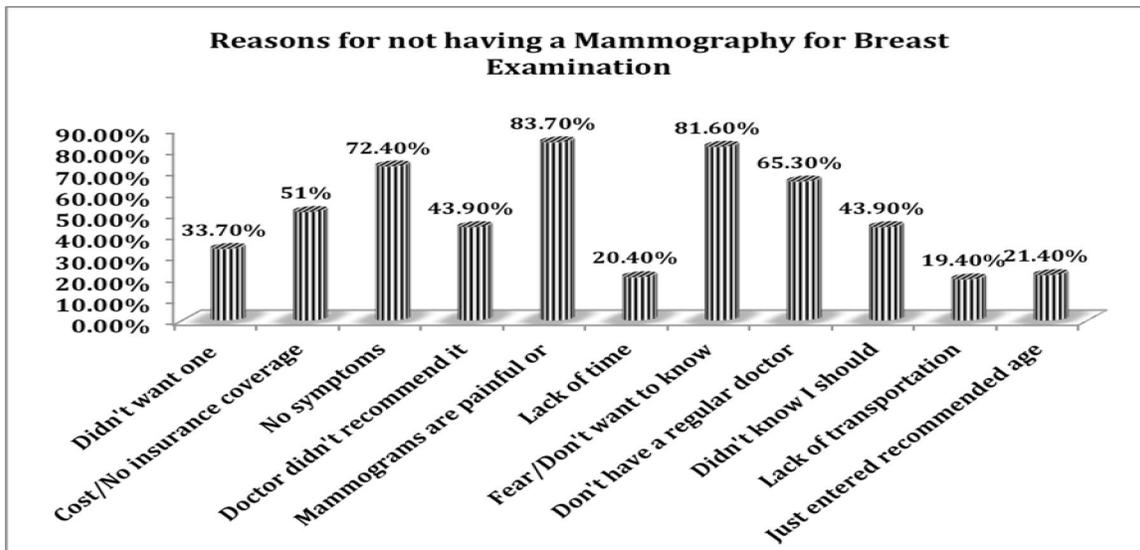


Figure (3): Distribution of specified reasons for not having a mammography among the studied women pre program implementation (n = 98)

Fig. (3) shows the distribution of specified reasons for not having a mammography among the studied women pre program implementation. It was showed that 83.7% of them reported the mammogram might be a painful procedure. Fears/don't want to know was reported by 81.6% no symptoms, 72.4% didn't have a

regular doctor (65.3%), no insurance coverage (51%), doctors did not recommend it (43.9%), don't know I should (43.9%), don't want one (33.7%), just entered recommended age (21.4%), lack of time (20.4%) and lack of transportation (19.4%).

Table (4): Difference between the level of satisfactory level of knowledge of the studied women regarding breast and cervical cancer pre & post guidelines implementation (n = 98).

Satisfactory Knowledge	Pre		Post		X ²	P	Sig
	No	%	No	%			
Breast cancer	7	7.1%	80	81.6%	110.1	< 0.01	HS
Breast self examination	14	14.3%	93	94.9%	128.5	< 0.01	HS
Risk factors of breast cancer	15	15.3%	74	75.5%	71.6	< 0.01	HS
Diagnostic measures as mammography	6	6.1%	81	82.7%	116.3	< 0.01	HS
Cervical Cancer	13	13.3%	96	98.0%	142.4	< 0.01	HS
Risk factors of cervical cancer	3	3.1%	80	81.6%	123.9	< 0.01	HS
Diagnostic measures as Pap smear test	6	6.1%	81	82.7%	116.3	< 0.01	HS
Early detection and prevention	7	7.1%	80	81.6%	110.1	< 0.01	HS
Proper diet	6	6.1%	81	82.7%	116.3	< 0.01	HS
Management of cancer	13	13.3%	96	98.0%	142.4	< 0.01	HS

(HS) Highly significant ($P < 0.01$).

Table (4) showed the difference between the level of satisfactory level of knowledge of the studied women regarding breast and cervical cancer pre & post educational guidelines implementation. It was

showed a general improvement in all items of knowledge post guidelines as compared to pre the guidelines implementation with a highly statistically significant difference at P values (< 0.01).

Table (5): Distribution of knowledge about risk factors and warning signs and symptoms associated with breast cancer among studied women pre and post program implementation (n = 98)

Items	Pre		Post		X ²	P	Sig
	NO	%	NO	%			
Risk Factors Associated with Breast Cancer							
1. Heredity or family history	11	11.2	51	52.0	37.7	< 0.01	HS
2. Smoking	15	15.3	66	67.3	54.7	< 0.01	HS
3. Hormones	8	8.2	52	53.1	46.5	< 0.01	HS
4. Don't know the proper diet	4	4.1	62	63.3	76.8	< 0.01	HS
5. Overweight	7	7.1	80	81.6	110.1	< 0.01	HS
6. Not getting tested	10	10.2	68	69.4	71.6	< 0.01	HS
7. Older age	3	3.1	80	81.6	123.9	< 0.01	HS
8. Lack of exercise	6	6.1	81	82.7	116.3	< 0.01	HS
9. Stress	13	13.3	96	98	142.4	< 0.01	HS
10. Injury/Lump	15	15.3	74	75.5	71.6	< 0.01	HS
11. No risk factors	14	14.3	93	94.9	128.5	< 0.01	HS
Warning Signs & Symptoms Associated with Breast Cancer							
1. Lump/Mass in breast	47	48.0	87	88.8	37.7	< 0.01	HS
2. Discharge from nipple	36	36.7	94	95.9	76.8	< 0.01	HS
3. Pain/Soreness in breast	31	31.6	88	89.8	69.4	< 0.01	HS
4. Lump/Mass in arm	47	48.0	87	88.8	37.7	< 0.01	HS
5. Abnormal look or feel	11	11.2	95	96.9	145.0	< 0.01	HS
6. Don't know	8	8.2	52	53.1	46.5	< 0.01	HS
7. No signs or symptoms	3	3.1	87	88.8	145.0	< 0.01	HS

(HS) Highly significant ($P < 0.01$).

Table (5) shows the distribution of knowledge about risk factors and warning signs and symptoms associated with breast cancer among studied women at pre and post program implementation. General

improvement in all items of knowledge post guidelines as compared to pre the guidelines implementation with highly statistically significant differences in all items (P values < 0.01).

Table (6): Distribution of knowledge about risk factors and warning signs and symptoms associated with cervical cancer among studied women pre and post program implementation (n = 98)

Items	Pre		Post		X ²	P	Sig
	NO	%	NO	%			
Risk Factors Associated with cervical Cancer							
1. Heredity	35	35.7	92	93.9	72.7	< 0.01	HS

2. No regular pap tests	3	3.1	80	81.6	123.9	< 0.01	HS
3. Cigarette smoking	6	6.1	81	82.7	116.3	< 0.01	HS
4. Poor Diet	4	4.1	62	63.3	76.8	< 0.01	HS
5. Birth control/Hormone therapy	23	23.5	85	86.7	79.3	< 0.01	HS
6. Having HPV	11	11.2	95	96.9	145.0	< 0.01	HS
7. Lack of exercise	7	7.1	80	81.6	110.1	< 0.01	HS
8. Poor hygiene	1	1.0	78	79.6	125.7	< 0.01	HS
9. Being overweight	13	13.3	96	98.0	142.4	< 0.01	HS
10. Pollutants	8	8.2	52	53.1	46.5	< 0.01	HS
11. Older age	23	23.5	85	86.7	79.3	< 0.01	HS
Warning Signs & Symptoms Associated with Cervical Cancer							
1. Bleedings other than period	10	10.2	67	68.4	69.4	< 0.01	HS
2. No warning signs	11	11.2	51	52.0	37.7	< 0.01	HS
3. Unusual discharge from Vagina	15	15.3	66	67.3	54.7	< 0.01	HS
4. Pain in Abdomen or Cervix	25	25.5	84	85.7	71.9	< 0.01	HS
5. Bleed during/after sex	31	31.6	88	89.8	69.4	< 0.01	HS
6. Blood in stool	1	1.0	78	79.6	125.7	< 0.01	HS
7. Weight loss	14	14.3	73	74.5	71.9	< 0.01	HS

(HS) Highly significant ($P < 0.01$).

Table (6) shows the distribution of knowledge about risk factors and warning signs and symptoms associated with cervical cancer among the studied women pre and post program implementation. A

general improvement in all items of knowledge was detected post guidelines as compared to pre guidelines implementation with highly statistically significant differences (P values < 0.01).

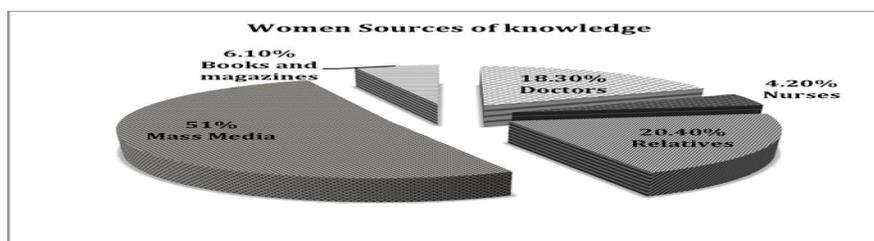


Fig. (4): Distribution of the studied women regarding the source of their knowledge related to breast and cervical cancer prevention and early detection pre guidelines implementation ($n = 98$)

Fig. (4) illustrates distribution of the studied women regarding the source of their knowledge related to breast and cervical cancer prevention and early detection pre guidelines implementation. The source

of information as reported by the women was for 51% from mass media, 20.4% from relatives, 18.3% from doctors, 6.1% from books and magazines and 4.2% from nurses.

Table (7): Difference between the satisfactory 7 steps of breast self examination practices among the studied women at pre & post guidelines implementation ($n = 98$).

The 7 step breast self examination	Pre		Post		X^2	P	Sig
	No	%	No	%			
1. Position	7	7.1	80	81.6	110.1	< 0.01	HS
2. Perimeter	3	3.1	80	81.6	123.9	< 0.01	HS
3. Palpation	14	14.39	93	94.9	128.5	< 0.01	HS
4. Pressure	20	20.4	97	99.0	125.7	< 0.01	HS
5. Pattern	11	14.3	95	96.9	145.0	< 0.01	HS
6. Practice	15	15.3	74	75.5	71.6	< 0.01	HS
7. Plan	6	6.1	81	81.6	116.3	< 0.01	HS

(HS) Highly significant ($P < 0.01$).

Table (7) shows the difference between the 7 steps of breast self-examination practices among the studied women at pre/post guidelines implementation. There were general improvements in all items of practices

post guidelines as compared to pre guidelines implementation with highly statistically significant differences (P values < 0.01).

Table (8): Difference between the studied women beliefs toward prevention and early detection of breast and cervical cancer at pre/post guidelines implementation (n = 98).

Women Beliefs	Pre					Post					X ²	P	Sig	
	1	2	3	4	5	1	2	3	4	5				
BSE Benefits														
(1) When I do self-examination, I feel self-satisfied.	50	28	7	9	4	0	12	6	67	13	105.5	<0.01	HS	
(2) When I complete monthly breast self-examination I don't worry as much about breast cancer.	10	40	30	10	8	0	8	2	55	33	102.2	<0.01	HS	
(3) Completing breast self-examination each month will allow me to find lumps early.	9	66	14	9	0	0	3	3	77	15	142.4	<0.01	HS	
(4) Completing BSE each month may decrease my chances of dying of from breast cancer.	12	60	14	8	4	3	3	3	74	15	123.6	<0.01	HS	
(5) Completing BSE each month will decrease requiring radical or disfiguring surgery if breast cancer occurs.	9	66	14	9	0	0	3	3	77	15	142.4	<0.01	HS	
(6) Completing BSE each month may help me find breast lumps early before it is detected by a doctor	9	66	14	9	0	0	3	3	77	15	142.4	<0.01	HS	
BSE Barrier														
(1) I don't feel I can do breast examination correctly.	0	2	3	70	23	9	66	10	9	4	133.5	<0.01	HS	
(2) Doing breast examination will make me worry about what is wrong with my breast.	0	2	3	70	23	9	66	10	9	4	133.5	<0.01	HS	
(3) BSE is embarrassing to me.	0	2	3	70	23	9	66	10	9	4	133.5	<0.01	HS	
(4) BSE takes too much time.	0	4	22	49	23	9	66	10	9	4	109.4	<0.01	HS	
(5) It is hard to remember to do breast examination.	0	5	21	49	23	9	67	10	8	4	109.2	<0.01	HS	
(6) I don't have enough privacy to do breast examination.	14	66	14	5	0	15	77	6	0	0	NA	NA		
(7) BSE is not necessary if you have a breast examination by a healthcare provider.	14	66	14	5	0	15	77	6	0	0	NA	NA		
(8) BSE is not necessary if you have a routine mammogram.	14	66	10	5	4	7	65	6	15	5	8.4	>0.05	NS	
(9) My breasts are too lumpy for me to complete breast examination	0	5	21	49	23	9	67	10	8	4	109.2	<0.01	HS	
BSE self-efficacy														
(1) I know how to perform BSE.	50	28	7	9	4	0	12	6	67	13	105.5	<0.01	HS	
(2) I can perform BSE correctly.	50	28	7	9	4	0	2	6	67	23	130.2	<0.01	HS	
(3) I could find a breast lump by performing BSE.	50	28	7	9	4	0	2	6	67	23	130.2	<0.01	HS	
(4) I am able to find a breast lump that is the size of rather greater filbert.	50	28	7	9	4	0	2	6	67	23	130.2	<0.01	HS	
(5) I am able to find a breast lump that is the size of a filbert.	50	28	7	9	4	0	2	6	67	23	130.2	<0.01	HS	
(6) I am able to find a breast lump that is the size of a pea.	50	28	7	9	4	0	2	6	67	23	130.2	<0.01	HS	
(7) I am sure of the steps to follow for doing BSE.	50	28	7	9	4	0	2	6	67	23	130.2	<0.01	HS	
(8) I am able to tell something is wrong with my breast when doing breast self-examination.	50	28	7	9	4	0	2	6	67	23	130.2	<0.01	HS	
(9) I am able to tell something is wrong with my breast when I look in the mirror.	50	28	7	9	4	0	2	6	67	23	130.2	<0.01	HS	
(10) I can use the correct part of my fingers when examining my breasts	50	28	7	9	4	0	2	6	67	23	130.2	<0.01	HS	

1: strongly disagree 2: disagree 3: Agree nor disagree 4: agree and 5: strongly agree

Table (8) shows the difference between the studied women beliefs toward the prevention and early detection of breast and cervical cancer at pre/post guidelines implementation. It showed general improvements in all items of beliefs post guidelines as compared to pre guidelines implementation with

highly statistically significant differences (P values < 0.01).

4. Discussion

Breast and cervical cancer screening is important in the reduction of cancer related mortality.

When breast cancer is diagnosed early when confined to the breast, the 5-year survival rate is over 95%. As for cervical cancer, early detection and diagnosis has resulted in a decline of approximately 40% in the incidence and mortality associated with invasive cervical cancer (**Dang et al., 2010**).

The aim of this study was to evaluate the effect of nursing educational guidelines on women awareness; health practices and beliefs regarding the prevention and early detection of breast and cervical cancer.

The demographic factors appear to influence the women attention to cancer symptoms and susceptibility to participate in screening program. As regards demographic characteristics of the studied women, the mean age of the studied women was 34.9± 10.2 years, almost three fifth of them had diploma. Approximately, three quarter of them resided in urban areas and married, the majority are not smoking and only two women had a previous awareness regarding breast or cervical cancer from their sisters working as nurses. In this respect, **Arshad et al. (2010)** stated that consideration of womens educational status is an important factor in planning an educational program to improve knowledge on breast cancer screening and prevention.

As regards women's family, menstrual and obstetric history, the minority of the studied women had a family history of breast cancer. This finding is incongruent with **Zeng et al. (2010)**, who reported that the family history of carcinoma was a statistically significant risk factor of breast cancer. As well, **Bird et al. (2010)** added that, women with a family history of breast cancer constitute risk group for which adhering to preventive screening guidelines could substantially reduce breast cancer mortality. Meanwhile, the **American Cancer Society (2014)** mentioned that, cervical cancer might run in some families. If a woman's mother or sister had cervical cancer, her chances of developing the disease are 2 to 3 times higher than if no one in the family had it. Some researchers suspect some instances of this familial tendency are caused by an inherited condition that makes some women less able to fight off HPV infection than others.

Early age at menarche, late age at menopause and late age at first full term pregnancy are linked to a modest increase in the risk of developing breast cancer. The finding of the current study reflected that, the highest percentage representing more than half of them had menarche at age 12 –< 16 years old, less than two thirds had 1-3 deliveries, no previous abortion and the age of the first birth for more than half of women was over thirty years old. These findings were in agreement

with **Hajian- Tilaki and Kaveh - Ahangar (2010)** who stated that, late age at birth, null parity and abortion were the most important productive factors associated with breast cancer and recommended that the women with these factors should perform breast cancer screening tests earlier. Moreover, **Torres - Mejia and Angeles – Lierenas (2009)** documented that, early age at menarche and late age at menopause, null parity and late age at the first pregnancy have been associated with an increased risk of breast cancer.

Breastfeeding is one of the important protective factors from breast cancer. Less than three quarters of the studied women reported that they were breastfeed their babies throughout their life. This result revealed that the majority of the studied women had a protective factor against the breast cancer. This study was supported by **De Silva et al. (2010)**, who reported that, the prolonged breastfeeding significantly reduces the risk of breast cancer

The early detection of breast cancer through screening mammography, clinical breast examination, breast self examination and Pap smear test are the most effective ways to reduce the mortality from the disease and in fact these methods have so far proven to reduce death due to breast or cervical cancer. The present study revealed that, the numbers of women's undergoing breast self examination highly increased in relation to other screening methods as clinical breast examination, mammography and Pap smear test post guidelines. The minimal effect of the guidelines on the screening rates might be attributed to many factors such as cost, didn't want one, doctor didn't recommend it, no symptoms, don't have a regular doctor, fear or don't want to know, lack of time, didn't know I should and embarrassment.

These results were supported by **Nur (2010)**, who reported that a relatively low awareness about the knowledge and practices of screening methods among the studied women, the relatively low rates of clinical breast examination and mammography practiced by this group are of the concerns and suggested increasing awareness of these methods, their value and how they should be conducted is needed. In addition, **Agboola et al. (2009)** mentioned that although mammography remains the best diagnostic tools in detection of breast cancer, it is not routinely performed because of cost, high technology equipment and expertise required. Furthermore, **Al -Naggat et al. (2010b)** found that a low percentage of doctors who referred patients for routine mammography, the major reason given was the high cost of the procedures. **Heidari et al. (2008)** added that, there is no national protocol for

breast cancer screening programs and both mammography and clinical breast examination are not carried out except on medical request.

On the same line, **O'Brien et al. (2010) & Skwarecki (2014)** documented that; the educational intervention demonstrated improved Pap screening rates, in addition to increased knowledge about cervical cancer and Pap smear test. In this respect, **Al-Naggar (2010a)** stated that, although knowledge about cervical cancer screening is adequate, women have a very poor practice of Pap smear test. Similarly, **Matejice et al. (2011)** documented that open communication, social networks and improving social economic status of women are the most prominent factors, most of which are mainly outside the health services domain and require multispectral collaboration to improve women's reproductive health.

In order to design nursing educational guidelines on breast and cervical cancer it was mandatory to assess the women's baseline knowledge, beliefs and practices to improve them after guideline implementation. The results of the current study revealed that, the knowledge before the guidelines implementation was generally unsatisfactory. Positive highly statistically significant improvements in all areas of knowledge regarding breast and cervical cancer were revealed post guidelines implementation. These findings were plausible given the effect of education on the development of correct concepts based on sound knowledge, which consequently shapes beliefs and practices towards breast and cervical cancer screening.

The forgoing findings were in agreement with **Sait et al. (2010)** in their study of the knowledge of breast cancer among young females, they found that, the level of knowledge of breast cancer was limited and this limited knowledge among the younger generation might be an obstacle to screening programs and early diagnosis. Hence, they recommended that awareness programs should be developed including lectures, seminars, workshops and training. Moreover, **Abd El Aziz et al. (2009)** who examined the impact of health education intervention program on breast cancer among the semi urban area in Alexandria, Egypt, showed that there were highly significant improvements in all knowledge items of the intervention group from pre to post test. This result find also support in that of the study of **Ali et al. (2010)**, who highlighted that, the majority of the study subjects were not adequately equipped with knowledge concerning cervical cancer. The study emphasized on initiating continuing medical educational program at work places to spread knowledge about this disease.

As regards the knowledge about risk factors and warning signs and symptoms associated with breast and cervical cancer among studied women pre and post program implementation, the findings of present study highlight the need to educate the women on the role of awareness about breast and cervical cancer signs and its risk factors pre guidelines implementation to promote early identification of cancer. It was observed a significant improvement of all items about the warning signs and risk factors of the breast and cervical cancer knowledge and the related benefits after the educational program.

This result was congruent with **American Cancer Society, (2011)** who stated that, the women should be orient about the most common symptoms of breast cancer as change in the look or feel of the breast, a change in the look or feel of the nipple and nipple discharge. Awareness of these symptoms and doing the exam regularly helps to detect any signs or symptoms right after a change occurs; examples of such changes are: development of a lump or swelling, skin irritation or dimpling, nipple pain or retraction (turning inward), redness or scariness of the nipple or breast skin, or a discharge other than breast milk

In the same line, **Komen (2011) and Rosen and Rosen (2011)** stated that, the following increase of awareness among health providers and early detection guidelines will not prevent breast cancer, but there are things all women can do that might reduce the risk and help raise hopes that if cancer does occur, it is diagnosed at an early, more treatable stage. Understanding which factors may affect the risk can help develop a congruent breast health plan. Even after diagnosis of breast cancer, women need to be well informed and have access to the right information in order to make the best decisions for their health and well being. Meanwhile, the most common symptoms of cervical cancer that the women should be oriented about them, abnormal vaginal bleeding, such as bleeding after sex (vaginal intercourse), bleeding after menopause, bleeding and spotting between periods, and having longer or heavier (menstrual) periods than usual. Bleeding after douching, or after a pelvic exam is a common symptom of cervical cancer but not pre-cancer. An unusual discharge from the vagina, the discharge may contain some blood and may occur between women's periods or after menopause and pain during sex (vaginal intercourse).

The American Cancer Society (2014) mentioned that, the most common factors that predispose cervical cancer are the human papilloma virus (HPV), Women who smoke are about twice as likely as non-smokers to get cervical cancer, Human immunodeficiency virus (HIV), the virus that causes

AIDS, damages the immune system and puts women at higher risk for HPV infection. This might, in part, explain the increased risk of cervical cancer in women with AIDS; Women whose diets don't include enough fruits and vegetables may be at increased risk for cervical cancer. As well, overweight women are more likely to develop adenocarcinoma of the cervix; oral contraceptives pills, intrauterine device (IUD), women who have had 3 or more full-term pregnancies, women who were younger than 17 years when they had their first full-term pregnancy are almost 2 times more likely to get cervical cancer later in life than women who waited to get pregnant until they were 25 years or older, poverty and family history of cervical cancer are other predisposing factors for cervical cancer.

The highest proportion of the participants obtained their information from the mass media (television/radio & newspapers) for the first time. This is consistent with two other studies in which mass media, such as newspapers and television, were the major source for obtaining breast cancer information (**Ravichandran et al., 2011 and Ghodsi & Hojjatoleslami; 2012;**). It is therefore important that efforts should be intensified to use these media to make people aware of breast cancer issues and emphasize the importance of early detection, as this appears to be better media to reach a wider audience. It is essential for women to receive more information to keep their families healthy; furthermore it encourages them to share the knowledge they gain with their family and friends. This was similar to a survey on 50 adult Iranian women in Toronto the results of which showed that participants had limited knowledge of breast cancer and screening practices (**Vahabi, 2011**).

As regards the women's practice toward the breast self-examination, the finding of the current study indicated an improvement in relation to women practice of 7 steps of breast self-examination after guidelines implementation. This might be due to an increase in women's awareness toward the importance of BSE as an easy and available measure in early detection of the breast cancer. According to **Oezaras et al. (2010)** the training given to women had a very important effect on their practices toward the BSE and confirmed that, the women should perform a BSE each month to become more familiar with the normal breast tissue and appearance, it may make it easier to notice changes if and when they occur. Even a small visual change may be a significant early sign of a problem.

Considering, the difference between the studied women beliefs toward the prevention and early detection of breast and cervical cancer pre/post guidelines implementation, it was evident from this

study that, the majority of the women had negative beliefs about breast and cervical cancer related to susceptibility, seriousness, health motivation, BSE benefits, BSE barrier, confidence/BSE self-efficacy, mammography benefits and barriers to mammography pre guidelines implementation. However, after the guideline implementation, the negative beliefs were remarkably decreased, with a highly statistically significant difference between the pre and post guidelines implementation. This might attribute to the horrible feeling of each participant toward such disease of unknown cause and poor diagnosis and after the guideline implementation the knowledge decreased this stress and women fears.

This finding was congruent with **Gursoy et al. (2009)**, who emphasized on, that the educational program provided the participants with valuable information that can influence health beliefs related to breast cancer and breast self examination. This study result is in the same line with **Dang et al. (2010)** who mentioned that, knowledge alone may not be the most important predictor of screening and does not inherently lead to health behavior. These results strongly support the need for prevention efforts that not only improve knowledge but also address the attitudes and beliefs that may inhibit screening utilization. It is important for physicians and healthcare providers to identify their patients' level of knowledge and beliefs regarding cancer-related risk factors, causes, and symptoms during their interactions

Women's beliefs or limited knowledge about breast and cervical cancer appear to mislead them into a false sense of being protected from cancer. The majority of the women did not perceive themselves to be at risk for breast or cervical cancer and believed that as long as they stay healthy, do not have a family history of cancer, eat a healthy diet, do not think or worry about it, and do not have multiple sexual partners or abortions, they would not be susceptible to breast or cervical cancer. Women appear to believe that their faith helps them in a positive way by relieving their stress, which, in turn, improves their mental and physical health and perhaps lowers cancer risk. Their belief in God appears to be interwoven with their belief in destiny, given that some women interpreted destiny as God's will.

Conclusion

In the light of the study findings, it was concluded that women's awareness, health care practices and beliefs regarding breast and cervical cancer were deficient pre-guidelines. Several demographic factors had their reasonable impact on women's knowledge and beliefs, such as age and

level of education. There was significant improvements in women's awareness, health practices as breast self-examination and beliefs regarding the prevention and early detection of breast and cervical cancer after implementation of the nursing educational guidelines. This supported the main hypothesis of the study, which stated that, "women's awareness, health care practices and beliefs regarding prevention and early detection of breast and cervical cancer will be improved after implementation of the educational program".

Recommendations:

Based on the main study findings, the following recommendations are proposed.

- Providing women with simple information (through illustrated brochures & booklets) that can assist in decreasing barriers and clarifying any misconceptions about breast and cervical cancer screening.
- Involving women in the design of breast and cervical cancer programs to ensure their validity in satisfying their needs and to promote breast and cervical cancer screening.
- Providing women with health care services appropriate to them for improving their breast and cervical cancer screening practices.
- Developing of a national breast and cervical cancer early detection program in Egypt.

Further studies need to be performed:

- Replication of the study on nurses to improve their awareness, health practices and beliefs regarding the prevention and early detection of breast and cervical cancer, which will be reflected in improving women's awareness, health practices and beliefs.
- Screening programs with high coverage of the "at risk" group for reducing the number of new cases with breast and cervical cancer and the mortality rate associated with it.

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