

Effect of A Health Education Program about Breast Cancer and Breast Self Examination on the Knowledge and Practices of Females Employees

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ABSTRACT

Background: Breast cancer, is the most common cancer both in developed and developing regions and it present the second most common malignancy amongst women. **Aim:** The aim of the present study is to evaluate the effect of a health education program about breast cancer and breast self examination on knowledge and practices of female employees in Port Said University. **Subject and Methods:** The quasi experimental research design was conducted on all female employees (no=160)from four faculties of the Port Said university selected randomly, an educational health program about early detection of breast cancer and breast self examination was developed by researchers, the selected female is tested before and after giving the health program using a self administered questionnaire and observational checklist. **Results:** The findings revealed that most of the studied sample had unsatisfactory knowledge about breast cancer(80.0%) and all of them unsatisfactory practices (100.0%) regarding early detection of breast cancer and breast self examination in pre program, A statistically significant improvement was detected in the knowledge and practices post program ($P < 0.001^*$). **Conclusion:** The study concluded to the fact that the studied females employees' knowledge and practices regarding early detection of breast cancer and breast self examination are deficient, health educational programs improved their knowledge and practices, so the researchers **recommend** that great efforts should be done to increase the employees females' awareness of prevention and early detection of breast cancer, this can be effectively done through continues health educational programs.

Key words: Breast cancer, Breast self examination, Health education program, Female employees.

INTRODUCTION

Breast cancer is the most frequent malignancy of women worldwide. It is the leading cause of female cancer related disability and mortality, it has been reported that one in eight women will develop invasive breast cancer during her lifetime. It is the first cause of death among women with 40-45 years old (**Cancer treatment centers of America, 2014**).

Data indicated that breast cancer is the most common non-skin cancer among American women, Breast cancer is responsible for 10.4% of the global burden of cancers in women and half of this occurs in developing countries, In Saudi Arabia breast cancer ranks first among cancerous diseases in females(**Radi, 2013**).

Breast cancer is the leading female malignancy among Egyptian women. The majority of Egyptian breast cancer patients present at late stages of the disease with a

large tumor size compared to Western countries. Low breast cancer awareness, social and cultural factors were suggested to play crucial role in late presentation of breast cancer among Egyptians (El-Shinawi et al., 2013).

Breast cancer typically produces no symptoms when the tumor is small and most treatable. Therefore, it is very important for women to follow recommended screening guidelines for detecting breast cancer at an early stage, before symptoms develop. The only way to control this disease is early detection, that it can be treated in about 90% of women with breast cancer. The best way for early detection of breast cancer is screening, and the best accessible way is breast self-examination (BSE) (Reisiet al., 2013)

Early detection in order to improve breast cancer outcome and survival remains the cornerstone of breast cancer control. Performance of breast self-examination is one of the important steps for identifying breast disease at an early stage, by the woman. Many cancers are found by women themselves. There is a need to optimize the chances of women finding changes which can mean cancer and reporting them promptly to their doctors (Thomas et al., 2002).

Wood et al., (2002), in their study about the effect of an educational intervention on promoting breast self-examination, found that the intervention was effective in increasing knowledge about breast cancer risk and screening and BSE proficiency in this sample of women.

Nahcivan & Secginli (2007), recommend that, nurses must provide information on breast cancer etiology, risks, prevention, and detection. To promote BSE practice among women, tailored health education and health promotion programs should be developed based on a specific understanding of women's health beliefs.

So there is a need to assist women to know better about breast cancer and practice BSE correctly and timely. Therefore, this study was done aiming at evaluate the effect of a health education program about breast cancer and breast self examination on knowledge and practices of female employees in Port Said University

Aim of the study

Evaluate the effect of a health education program about breast cancer and breast self examination on knowledge and practices of female employees in Port Said University

Subjects and method

Research Design:

Aquasi experimental research design was used in the present study.

Setting:

The study was conducted at four faculties of Port said university selected randomly ,namely: faculty of science, medicine, education, arts.

Subjects:

All female employees who worked in the previously mentioned setting during the time of the study were included in the study sample; their total number was 160 female employees.

TOOL OF DATA COLLECTION:

Two tools were used in the present study:

Tool (I): Questionnaire sheet to collect data about breast cancer and breast self examination practice, this tool was developed by the researchers based on

reviewing of recent related literature, it included two parts:

Part (I): included:

- Socio-demographic characteristics of the females employees as age, level of education, marital status and years of work experiences.

Part (II): it included:

- Knowledge about breast cancer and breast self examination, it included definition of breast cancer, high risk groups, risk factors, signs and symptoms, types, early detection methods of breast cancer, preventive measures of breast cancer, importance of breast self-examination, timing of breast self-examination.

Tool II: An observational checklist of breast self examination technique:

It used to assess the participants performance of breast self examination steps, it includes six steps(each step of the BSE technique is classified into done correctly, done incorrectly and not done) .

Scoring System:

- The female employees knowledge about breast cancer was calculated for each item of breast cancer as follows:
 - Complete correct answer
2
 - Incomplete correct answer
1
 - Didn't know or wrong answer
0

- The total score of knowledge were summed and categorized the follow:

-If it less than 60% it considered unsatisfactory

-If it equal or more than 60% it considered satisfactory

- The female employees practice about breast cancer was calculated for each item of breast cancer as follows:

Done correctly: 1

Done incorrectly and not done: 0

- The female employees practices was calculated and categorized as follows:

- If their practices less than 60% it considered unsatisfactory

- If their practices equal or more than 60% it considered satisfactory.

Content validity:

Tools of data collection were tested for content validity by a panel of five experts in the field of medical surgical nursing and community health nursing, faculty of nursing and medicine (Port Said University), Necessary modifications were done according to the experts' opinions.

Reliability:

- Reliability of the tools was done by using (test and retest) measurement and applied of time to be sure the consistency of answers.

Study maneuver:

The study was conducted through four phases: Pretest phase, program planning, implementation, and evaluation. Collection

of the data started from May 2015 until June 2015.

1- Pretest Phase: In this phase the researchers assess participants' knowledge and practice about breast cancer & breast self examination using Tool I & II. The questionnaire was distributed to the female employees in their place of work and collected after its completion.

2-Program Planning Phase: an educational program was developed based on the identified needs and demands of the participants, and on the light of the most recent pertinent literature. The developed educational program was tested for validity by five experts from faculty of nursing in Port Said city.

3-Program implementation Phase: the employees women were divided into 8 groups, each group contains 20 female employees. The educational program was implemented for each group of the participants, it lasted for eight weeks, two sessions per week for each group. Each session was taken about 1-2 hours for each group. It started from first of May until the end of June 2015. An educational program was presented in clear and concise form, and focused on the point of learning, using different teaching methods and media such as lecture, discussion, demonstration, booklet, data show, models and dolls.

4- Evaluation Phase: The effect of the developed educational program was

evaluated immediately after implementation of the program using tool I & II.

Administrative and ethical Considerations:

An official permission was obtained by submission of an official letter from the Faculty of Nursing to the responsible authorities of the study setting to obtain the authorization for data collection. The aim of the study was explained to every woman before participation, and voluntary participation was emphasized and an oral consent was obtained. Data collection was anonymous, and confidentiality of the data was secured. The procedures of the study could not entail any harmful effects on participants. Professional help and advice was provided to participants in case of need.

Statistical analysis:

Data entry and statistical analysis were done using SPSS 16.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Qualitative categorical variables were compared using chi-square test, Monte Carlo test, t: Paired t-test. Whenever the expected values in one or more of the cells in a 2x2 table was less than 5, Fisher exact test was used instead. Statistical significance was considered at p-value ≤ 0.05 .

Results:**Table 1:** Socio-demographic data of the studied women employees

Socio-demographic data	No.	%
Age (n=160)		
20 - < 30	40	25.0
30 - < 40	61	38.1
40 - <50	31	19.4
≥50	28	17.5
Min. – Max.	20.0 – 58.0	
Mean ± SD.	37.91 ± 9.79	
Educational level (n = 160)		
Basic education	46	28.8
Moderate education	36	22.5
Higher education	62	38.8
Post graduate(Master)	16	10.0
Marital status (n = 160)		
Single	25	15.6
Married	117	73.1
Widow	13	8.1
Divorced	5	3.1
Working years (n= 160)		
Min. – Max.	1.0 – 36.0	
Mean ± SD.	10.50 ± 8.25	

Table (1): presents that, more than one third of the studied women 38.1 % aged from 30 to less than 40 years with mean ± SD37.91 ± 9.79, about two fifth of them (38.8%) had higher education while most of them (73.1%) were married. Finally, the mean of working years is 10.50 ± 8.25.

Table 2: Comparison between pre and post program of females according to their knowledge about breast cancer

Knowledge of breast cancer	Pre		Post		χ^2	MC p
	No.	%	No.	%		
Definition of breast cancer						
Correct answer	85	53.1	148	92.5	70.767*	<0.001*
Wrong answer or don't not know	75	46.9	33	13.8		
High risk group						
Complete Correct answer	0	0.0	118	73.8	232.212*	<0.001*
Incomplete correct answer	147	91.9	41	25.6		
Wrong answer or don't not know	13	8.1	1	0.6		
Risk factors of breast cancer						
Complete correct answer	7	4.4	147	91.9	248.093*	<0.001*
Incomplete correct answer	75	46.9	12	7.5		
Wrong answer or don't not know	59	36.9	0	0.0		
Sign & symptoms of breast cancer						
Complete correct answer	5	3.1	151	94.4	267.756*	<0.001*
Incomplete correct answer	95	59.4	9	5.6		
Wrong answer or don't not know	60	37.5	0	0.0		
Methods for early detection methods of breast cancer						
Complete correct answer	5	3.1	150	93.8	81.494*	<0.001*
Incomplete correct answer	88	55.0	9	5.6		
Wrong answer or don't not know	67	41.9	1	0.6		
The availability of breast cancer treatment						
Complete Correct answer	132	82.5	148	92.5	21.559	<0.001*
Wrong answer or don't not know	28	17.6	12	7.5		
Preventive measures of breast cancer						
Complete correct answer	15	9.4	145	90.6	214.338*	<0.001*
Incomplete correct answer	76	47.5	3	1.9		
Wrong answer or don't not know	69	43.1	12	7.5		

χ^2 : Chi square test MC: Monte Carlo test *: Statistically significant at $p \leq 0.05$

Table (2): Demonstrates the progression of knowledge of the studied sample related to different items of breast cancer and breast self examination through the pre and post intervention. In pre program, results revealed that the studies women had insufficient knowledge in most areas of breast cancer & breast self examination, where nearly half of them 46.9% did not know the definition of breast-cancer ,moreover about third of the studied women(36.9%) did not know risk factors of breast cancer, nearly one third of them(37.5%) did not identify signs and symptoms of breast

cancer, about two fifth of them (41.9%) did not know methods for early detection of breast cancer while, more than two fifth of them (43.1%) did not know methods for preventive measures of breast cancer. In the post program phase, it can be clearly seen that a highly statistical significant improvement in most areas of knowledge had been detected, as definition, risk factors, signs and symptoms of breast cancer , early detection ,preventive measures , where they reached 92.5%,91.9%,94.4%,93.8%,90.6% respectively .

Table 3: Comparison between pre and post program of females according to their practice about Breast Self Examination (BSE).

Practices	Pre		Post		χ^2	^{MC} P
	No.	%	No.	%		
Practicing BSE						
No	127	79.4	16	10.0	155.771*	<0.001*
Yes	33	20.6	144	90.0		
Time you practicing BSE						
Monthly	17	51.5	144	100.0	58.624*	<0.001*
Yearly	1	3.0	0	0.0		
Occasionally	15	45.5	0	0.0		
Demonstrate steps of BSE						
Not done	127	79.4	1	0.6	119.959*	<0.001*
Don correctly	14	8.7	130	90.3		
Done incorrectly	19	11.9	13	18.1		

χ^2 : Chi square test MC: Monte Carlo test *: Statistically significant at $p \leq 0.05$

Table (3): Shows the progression of the practices of the studied sample related to BSE through the pre and post intervention. results revealed that in the pre program only 20.6% of them practice BSE , 45.5% of those who practice BSE practice it occasionally and 8.7% of them demonstrate steps of BSE correctly, a statistically significant improvement in the studied women practices was detected post program, where their practices of BSE reached 90.3%.

Table 4: Knowledge and practices of the studied women pre and post program

Total knowledge score	Pre		Post		T	P
	No	%	No	%		
Unsatisfactory	128	80.0	1	0.6	209.476*	<0.001*
Satisfactory	32	20.0	159	99.4		
Total practices score						
Unsatisfactory	160	100.0	4	2.5	304.390*	<0.001*
Satisfactory	0	0.0	156	97.5		

t: Paired t-test *: Statistically significant at $p \leq 0.05$

Table (4): Shows that, the majority of the participants (80%) had unsatisfactory score of knowledge and all of them (100%) had unsatisfactory score of practices before implementation of the program. A highly statistical significant improvement was detected in both knowledge and practices as they reach 99.4%, 97.5% respectively after program implementation.

Table 5: Mean of change of knowledge and practice of the studied women from pre and post interventional program.

	Mean of change from pre to post test
Knowledge	194.09±293.24
Practice	336.11±200.69

Table (5) shows percent of change of knowledge and practice of the studied women from pre and post program. It clarifies that, there were improvement from pre to post test in knowledge and practice with mean of change (194.09±293.24 and 336.11±200.69) respectively

Table 6: Correlation between knowledge and practice of the studied women in pre and post interventional program.

Practice	Knowledge	
	R	P
Pre	0.253*	0.001*
Post	0.294*	<0.001*

Table (6) displays correlation between knowledge and practice of the studied women in pre and post test. It is found that, there were statistically significant positive correlation between women' knowledge and practice in pre and post program

Table 7: Correlation between socio-demographic data of women employee with their knowledge and practice pre and post interventional program

	Age		Educational level		Working years	
	r_s	P	r_s	P	r_s	P
Pre program						
Knowledge	0.098	0.217	0.232*	0.003*	0.188*	0.017*
Practice	0.065	0.416	0.184*	0.020*	0.060	0.450
Post program						
Knowledge	-0.040	0.613	0.065	0.412	-0.086	0.278
Practice	0.156*	0.049*	0.083	0.299	0.169*	0.033*

r_s: Spearman coefficient

Table (7) represents correlation between knowledge and practice of the studied women pre and post interventional program. It revealed that there were positive statistically significant relation between

preprogram knowledge with education and working years (p=0.003 and 0.017) respectively. And positive statistically significant relation between preprogram practice and educational level (p= 0.020)

while in post program there were negative not statistically significant relation between knowledge with age and working years finally there were positive statistically significant relation between post program practice with age and working years ($p=0.049$ and 0.033) respectively.

Discussion:

Breast cancer is the most common type and the third most frequent cancer among women in the world (**National Cancer Institute, 2006**). In Egypt, the number of new cancer patients per year was estimated to be 65,000, **National Cancer Institute (2006)**. The number of cancer patients in Egypt is expected to expand in the future as the population and age continue to grow, in addition to the prevalence of known etiological factors increase (**Gab-Alla, 2003**).

The aim of the present study is to evaluate the effect of a health education program about breast cancer and breast self examination on knowledge and practices of female employees in Port Said University. According to **Alteri et al., 2013**, early diagnosis of breast cancer has been clearly shown to reduce mortality and improve survival. Moreover, Breast Cancer Facts & Figures 2013–2014 reported that, 5-year relative survival decreases with more advanced stage at diagnosis (**Howlader et al., 2014**). **Johnson & Dickson-Swifta (2008)** added that all women need to be educated about breast cancer and to learn early intervention techniques such as breast self examination at an early age.

The finding of the present study in pre program phase indicated that the most of the studied sample had insufficient knowledge regarding most of the items of breast cancer and breast self examination as definition, high risk group, risk factors of breast cancer, methods for early detection methods of breast cancer, preventive measures of breast cancer

dangerous signs and symptoms. This could be attributed to carelessness of the participant in seeking information about the disease as they assumed that breast cancer is a rare disease and that they can never be affected by it, or due to unavailability or insufficient specialized centers (information resources) for the disease or shortage of health education presented in mass media about breast cancer. In this context **Johnson & Dickson-Swifta (2008)** reported that, lack of knowledge about breast cancer and breast cancer risk may lead to inaccurate perceptions of the disease and a lack of utilization of early detection techniques. Low levels of knowledge and a lack of perceived risk coupled with the inundation of breast cancer information that focuses on older women reinforces the belief that young women are not at risk and do not need to be aware of breast cancer.

The finding is in agreement with **Champion & Scott (1993)**, who found that only 56.1% of the participant had sufficient knowledge of breast cancer. Our findings are in contrast with **Trask et al., 2008** who reported that 72.1% of the participants reported having knowledge of BSE.

Regarding participants practices of BSE the finding of the present study showed that the majority of them had unsatisfactory practices in pre program, this could be attributed to that women of fear from finding any abnormalities or because of they did not teaches how to do such examination and its important.

As regard practicing of self examination of the breast, the finding revealed that all of the participant did not practice breast self examination correctly or did not make it at all, this could be attributed to that women of fear from finding any abnormalities or because of they did not teaches how to do such examination and its important due to lack of access to services provide them with accurate practices of BSE. In this regards, the

American Cancer Society (ACS) recommends that all women 20 years of age or older should perform monthly breast self-examinations (BSE). The best time to perform BSE is the day after monthly period ends. Becoming familiar with the look and feel of their breasts offers the best chance for a woman to notice any change. In addition to monthly BSE, annual clinical breast exams are recommended for all women beginning at age 20. (National Cancer Institute, 2006). The finding of the present study is goes in the same line with Trask et al., (2008), who reported only 40.9% of the women in the practiced group ever indicated having practiced BSE in the previous 12 months, while 29.5% stated they examined themselves irregularly, only 10.2% stated that they performed BSE on a regular monthly basis. A total of 59.1% of the participants indicated they had never performed BSE. Sribanditmongkol (2004); found that women performing BSE once a month constituted 5.5% of the population in Istanbul. Coleman et al., (1993), reported that, only 19% to 40% of women practice BSE on a monthly basis, and there is no strong evidence that women who practice monthly BSE perform the procedure correctly. In addition Secginli & Nahcivan (2009), in their study about factors associated with breast cancer screening behaviors of Turkish women: found that the reasons why women did not do breast cancer screening methods were determined to be: not having any symptoms, neglect, not sensing the need, and not knowing how BSE is done. According to American Cancer Society (ACS): younger women generally do not consider themselves to be at risk for breast cancer. Only 5 percent of all breast cancer cases occur in women under 40 years old. However, breast cancer can strike at any age, and all women should be aware of their personal risk factors for breast cancer. (A risk factor is a condition or behavior that puts a person at risk for developing a disease). Many women assume they are too young to

get breast cancer and tend to assume that a lump is a harmless cyst or other growth.

Although breast cancer might not be prevented, early detection and prompt treatment can significantly increase a woman's chances of surviving breast cancer. Furthermore, National Cancer Institute, (2006), noted that more than 90 percent of women whose breast cancer is found in an early stage will survive (National Cancer Institute, (2006) and Abimbola & Oladimeji, 2006) added that, early detection of breast cancer may play an important role in minimizing the number of deaths from breast cancer. Nurses are responsible to participate in breast cancer awareness and early detection of breast cancer campaigns.

Concerning the effect of educational program on the participant knowledge and practices of BSE, it is obvious that the participant knowledge and practices were improved in all areas after implementation of the educational program, In the opinion of the researcher, the success of the program to improve nurses' knowledge and practices can be attributed to the process of adult learning and interactions followed during program implementation, and to the fact that it was custom-tailored to participants' needs. In this respect Nahcivan & Secginli (2007) recommend that, nurses must provide information on breast cancer etiology, risks, prevention, and detection to promote BSE practice among women, tailored health education and health promotion programs should be developed based on a specific understanding of women's health beliefs, Dündar et al. (2006), added that, when women learn, at a young age, about the risks and benefits of detecting breast cancer early, they are more likely to follow the recommendations regarding clinical exams and mammograms. Young women also need to understand their risk factors and be able to discuss breast health with their health care providers. Champion 1993 & Champion

1995, found that the intervention consisting of information, BSE demonstration, and follow-up demonstration significantly increased early detection of breast cancer one year post intervention. Also, **Wood et al., (2002)**, in their study about the effect of an educational intervention on promoting breast self-examination, found that the intervention was effective in increasing knowledge about breast cancer risk and screening and BSE proficiency in this sample of women. Furthermore, **Gupta, 2009 & Hajian et al., 2011**, in their study about the impact of a health education intervention program regarding breast self examination by women in a semi-urban area of Madhya Pradesh, India, reported that there was a significant improvement in knowledge regarding all aspects of breast self examination after the intervention.

In this study there were a significant positive correlation between knowledge and practices of the participants in both pre and post program. This finding also in the line with **Hyun, 2003**, who revealed that women who were taught to perform BSE had better level of knowledge about breast cancer ,in the same line **Dolar et al., (2012)** reported a positive correlation between knowledge and practice, he added that this result illustrating the desire among this population to acquire correct knowledge regarding BSE. Furthermore, this finding brings to light that if awareness and health positive healthy practices. In the study conducted by **Parsa et al., (2008)**, she found that women with higher levels of knowledge in relation to symptoms and screening demonstrated higher performance rates of BSE. Similarly, in a study conducted in Western Turkey, it was found that presence of knowledge about breast cancer had a positive effect on performing BSE (**Dundaret al., 2006**).The result is in disagreement with **Gwarzo et al., (2009)**, who found that despite nearly three quarter of the respondents (87.7%) had knowledge of BSE, only 19.0% of them were performing this examination monthly.

Our finding revealed a statistically positive correlations between knowledge educational level and working years, also between practices ,age and working years ,according to **Leslie 1995** working women were more readiness to gain information and acquire skills, **Odusanya (2001)**, **Jebbin and Adotey (2004)** in their studies conducted among women in Port-Harcourt and Lagos revealed a higher level of practice among them, they attribute this results to the higher level of education of the respondents in those studies. In the same line **Al-Naggar et al., (2011)** found that age significantly influenced the practice of the BSE

In contrast with our finding **Balogun & Owoaje 2005** reported that there was no association between level of education of participants and practice of BSE. Also **Alkhasawneh et al.,(2009)** reported that none of the demographic characteristics was found to be associated with the practice of breast self-examination.

Conclusion and recommendation:

The study concluded that the studied employees knowledge and practices regarding early detection breast cancer and breast self examination were deficient pre program It can be seen that the implementation of an educational program about breast self examination showed a statistically significant improvement in their level of knowledge and practices , there are obvious needs for instructional scheme and educational programs offered on simple media to all females in the society to minimize risk of breast cancer, So this study recommended that there is a need for strategies and programs that help to raise awareness of young females in the whole society about breast self examination and early detection of breast cancer. This can effectively be done through national health programs.

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