Impact of health intervention program regarding breast self examination among Port Said female university students

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Abstract: Aim: The aim of the present study is to evaluate the impact of a health intervention program about breast self examination on knowledge and practices of female university students. **Subject and Methods**: The quasi experimental research was conducted on convenience sample of 50 students at the university hostel for females in Port Said governorate, an educational health program about early detection of breast cancer and breast self examination was developed by researchers, the selected sample 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 poor knowledge (94%) and practices (86%) 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 students' knowledge and practices regarding early detection of breast cancer and breast self examination are deficient, health educational programs can improve their knowledge and practices, so the researchers **recommend** that great efforts should be done to increase the young females' awareness of prevention and early detection of breast cancer, this can be effectively done through continues health educational programs.

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1. Introduction

Breast cancer is the most common type and the third most frequent cancer among women in the world **(National Cancer Institute, 2006).**

It was estimated that breast cancer was the second leading cause of cancer death in women in the United States being surpassed only by lung cancer. Aalthough breast cancer was not the leading cause of cancer death in women, it was the most common type of cancer diagnosed in women. According to the Ohio Cancer Plan: 1992-2000, "The breast is the most frequent site of cancer incidence among American women, accounting for 32% of all incidence cancers ***(International Agency for Research on Cancer, 2002)***

Breast cancer is the most common cancer (apart from non-melanoma skin cancer) and the leading cause of cancer death in women in New Zealand. In the late 1990s it accounted for a quarter of all registrations and a fifth of all female cancer deaths. Each year in New Zealand, about 1900 women are diagnosed with breast cancer and about 600 die of the disease. Despite epidemiological evidence of many possible risk factors for breast cancer, at the present time, there are no clear opportunities for prevention. However, early detection with treatment can reduce the risk of dying from breast cancer.***(Stevens et al., 1994)***

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).***

Although mortality from breast cancer could be decreased through early detection, surveys reported that only 20-25% of women routinely examined their breasts ***(Komen, 2010).***

Stage of breast cancer at diagnosis had an impact on survival rates from breast cancer. Women, whose breast cancer was diagnosed at a more advanced stage, had a lower 5-years survival rate (**American Cancer Society, 2011**). The 5-years survival rate for women whose breast cancer was detected before it had metastasized was 93% but that rate dropped to 18% for women with distant metastases (**Atkins *et al.*, 2008**).

The role of breast self examination in the early diagnosis of breast cancer has been reported. A significant number of women present with advanced stages of the disease due to lack of information, knowledge and awareness of early detection measures **(Agboola, 2002).**

The breast self-exam is a way that enables a woman to check her breasts for changes (such as lumps or thickenings). It includes looking at and feeling your

breast. Any unusual changes should be reported to their doctor. When breast cancer is detected in its early stages, chances for surviving the disease are greatly improved. (***Love, 2008)***

Early detection and prompt treatment offer the greatest chance of long-term survival. Mammography, clinical breast examination and breast self-examination (BSE) are the secondary preventive methods used for screening in the early detection of breast cancer. Cancer screening tests play a pivotal role in reducing breast cancer related mortalities**.** (***Noroozi et al., 2010)***Finally, 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. One of the advantages of detecting smaller cancers is improving a woman's chances of having breast conserving surgery and reducing her chance of dying from breast cancer or not advisable ***(Thomas et al., 2002).***

2.Subject and Methods

Study designs and setting:

The study was carried out using a quasi-experimental research design, with pre-post assessment to evaluate the effect of the educational health program. It was conducted at the University hostels for females in Port Said governorate.

Subjects:

The study population subjects consisted of female university students in the university hostels in Port Said governorate. The inclusion criteria were age 17 to 19 years, living in the university hostel in Port Said governorate, and willing to participate in the study. No exclusion criteria were set. The sample size was calculated to detect any improvement in participant's knowledge or attitude from 30% (pre) to 60% (post), at 95% level of confidence, and 80% power. Accordingly, the required sample size was 45 students. This was increased to 50 students to compensate for a dropout rate of about 10%..A convenience sampling technique was used for recruitment of eligible participants. The sample included students from the faculties of nursing (20), computer sciences (16), commerce (10), and special education (4). They were from all four faculty grades from first to fourth years: 7, 12, 19, and 12 students respectively

Tools of data collection:

The researchers developed a self-administered Arabic language questionnaire consisting of four parts. Data were collected through using two tools:

Tool I: A questionnaire sheet was designed by the researchers, based on literature review, it was constructed in simple Arabic language for the female university students to suit their level of understanding, and the questionnaire took 10 - 20 minutes to be completed.

Tool II: The second tool was an observational checklist of breast self examination technique to assess the student's performance of breast self examination steps.

Study maneuver

The study was conducted through four phases:

Pretest phase, program planning, implementation, and evaluation. Collection of the data covered a period of one month from March 2011 until 25 September 2011.

1- Pretest Phase: assess student's knowledge and practice about breast self examination using Tool I & II.

2-Program Planning Phase: an educational program was designed using the base line information gathered in phase I and statistical results of pilot study for female university students. it was developed based on the identified needs and demands of students, and on the light of the most recent pertinent literature. The developed educational program was tested for validity by expertise from Medical surgical nursing professor and nursing education professor.

3-Program implementation Phase: the students was divided into 5 groups, each groups contains 10 female students.The educational program was implemented for each group of students.it lasted for five weeks, two session per week (one group each week). Each session was taken about 3-4 hours for each group according to their available times and place for attendance which commonly in the afternoon. It started from 15 May until 22 June 2010. An educational program was presented in clear and concise form, and focused on the point of learning, using different teaching method and media such as lecture, discussion, demonstration, booklet, data show**,** models and dolls.

4- Evaluation Phase: The impact of the developed educational program was evaluated after implementation of the program using tool I &II.

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 student 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 were analyzed using statistical package for social sciences (SPSS).

The *P*-value < 0.05 was used as the cut off value for statistical significance and the following statistical measures were used:

Numbers and percentage are used as measures of central tendency and dispersion respectively for normally distributed quantities data. Qualitative categorical variables were compared using for McNemar test. Fisher Exact test was used to test the relation between knowledge and practice in post program.

3. Results:

Table (1) : Presents the personal characteristics and family history of breast cancer of the studied students, students mean age was 19.8, All of them were unmarried, regarding their family history of breast cancer, the majority of them(92%) had no family history of breast cancer,only 8% of them had a family history of breast cancer.

Table (2): Demonstrates the progression of knowledge of the studied sample related to different items of **early detection of** breast cancer and breast self examination through the pre and post intervention. In pre program,results revealed that the majority of them had insufficient knowledge in most areas of it, where nearly about three quarter of them (74%) had poor knowledge about methods for prevention or decrease risk of breast cancer, 72% of them did not know the definition of breast-self examination and nearly two third of them(62%) did not identify dangerous signs and symptoms, One quarter of them (25%) did not know the importance of breast self examination.In the post program phase, it can be clearly seen that there was an improvement in some areas knowledge, as definition, methods for prevention or decrease risk of breast cancer, important of examination, and knowing the dangerous signs and symptoms.

Table (3): Shows the progression of the practices of the studied sample related to different items of breast self examination and management of dangerous sings and symptoms through the pre and post intervention. results revealed that there was a progress in students practices regarding doing self examination of their breast correctly as it raises from 18% to reach 42% from pre to post program, also a progression in the correct management of dangerous signs and symptoms were detected after program implementation, especially in management abscess it raises from 32% in pre program to 82% post program, in management of secretion from 52% to 98% and in management in the presence of lump from 72% to 94%.

Table (4): Illustrates the progression of the knowledge and practices scores of the studied students &relation between them related to **early detection of** breast cancer and breast self examination through pre and post intervention. The results showed that there was a defect in the total knowledge and practices of the most of the studied students as it estimated to be 94% and 86% respectively in the pre program, after implementation of the health educational program there was a statistically significant highly improvement((*P* <0.001*) in their both knowledge and practices reaching 94%,96% respectively.Also the same table indicates a statistically significant relation was detected between knowledge and practices (***p*** 0.048*)

Table (1):: Sociodemographic characteristics of the studied students and family history of breast cancer (n = 50)

Age	No.	%
Range	17-22	
Mean	19.8±1.2	
Total		
Marital status		
Married	0	0.0
Unmarried	50	100.0
Total	50	100.0
Monthly income		
Enough	7	14.0
Not enough	43	86.0
Total	50	100.0
Family history for breast cancer		
No	46	92.0
Yes	4	8.0
Total	50	100.0
"If yes "kin relation		
Mother	0	0.0
Sister	0	0.0
Aunt/ (for mother)	0	0.0
Aunt /(for father)	3	6.0
Grand (mother / father)	1	2.0

Table (2):Progression of knowledge of the studied sample related to early detection of breast cancer and breast self examination through pre and post program.

Items	**Pre program**		**Post program**	
	No.	**%**	**No.**	**%**
*** Methods for prevention or decrease risk of breast cancer**				
Breast self-examination	12	24.0	49	98.0
Breastfeeding	1	2.0	36	72.0
Not using the contraceptive for a long time	1	2.0	1	2.0
Healthy food	2	3.8	36	72.0
Birthing	0	0.0	22	44.0

Don't know	37	74.0	1	2.0
Definition of breast-self examination				
Correct	14	28.0	46.0	92.0
Incorrect	36	72.0	4	8.0
Importance of breast self-examination				
Detect any changes in breast.	21	58.3	44	89.8
Self assuring	10	27.8	2	4.1
Early detection of tumor helps for early cure	9	25.0	38	77.6
Don't know	9	25.0	0	0.0
Dangerous signs and symptoms:				
Presence of secretions	7	14.0	24	48.0
Pain	3	6.0	0	0.0
Presence of abscesses	2	4.0	0	0.0
Presence of tumor	19	38.0	45	90.0
Don't know	31	62.0	5	10.0

Table (3):The progression of practices of the studied sample related to early detection of breast cancer and breast self examination through pre and post program.

Items	Pre program		Post program	
	No.	%	No.	%
Self examination of the breast				
Done correctly	9	18.0	21	42
Not done correctly	41	82.0	29	58
Total	50	100.0	50	100
Make breast-self examination every month				
Yes	12	24.0	30	60.0
No	38	76.0	20	40.0
Total	50	100.0	50	100
Action taken when found secretions from the nipple				
Correct	26	52.0	49	98.0
Incorrect	24	48.0	1	2.0
Total	50	100.0	50	100.0
Right time of breast self-examination				
Correct	17	34.0	42	84.0
Incorrect	33	66.0	8	16.0
Total	50	100.0	50	100.0
Action taken when there is pain in breast				
Correct	17	34.0	38	76.0
Incorrect	33	66.0	12	24.0
Total	50	100.0	50	100.0
Action taken when there is abscess in the breast				
Correct	16	32.0	41	82.0
Incorrect	34	68.0	9	8.0
Total	50	100.0	50	100.0
Action taken when there is lump in the breast				
Correct	36	72.0	47	94.0
Incorrect	14	28.0	3	6.0
Total	50	100.0	50	100.0

Table (4):Progression of the total knowledge and practices scores of the studied sample regarding early detection of breast cancer and breast self examination through pre and post program.

Items	Knowledge				Practice			
	Pre program		Post program		Pre program		Post program	
	No.	%	No.	%	No.	%	No.	%
Satisfactory	3	6.0	47	94.0	7	14.0	48	96.0
Unsatisfactory	47	94.0	3	6.0	43	86.0	2	4.0
Total	50	100.0	50	100.0	50	100.0	50	100.0
P	<0.001*				<0.001*			
FE*p*					0.048*		0.118	

p: *p* Value for McNemar test between pre and post programs of knowledge and practice
FE*p*: *p* value for Fisher Exact test between knowledge and practice in pre and post program
*: Statistically significant at $p \leq 0.05$

4.Discussion

Breast self-examination (BSE) is an important component of any program for the early detection of breast cancer. Compared to clinical breast examination and mammography, BSE is relatively safe, low cost, offers monthly assessment, and does not require overcoming barriers associated with access to the medical care system (unless an abnormality is discovered). Considering this, breast self examination (BSE) is an ideal method which can be done by every woman at her leisure time with little training. Medical and paramedical professionals can act as trend setters in promoting BSE for control of breast cancer in the community, **(Janz *et al.*,1990),** the present study was carried out to test and improve the breast self examination knowledge and practices among university students in Port Said.

The finding of the study in pre program phase indicated that the majority of the studied sample had insufficient knowledge regarding most of the items of breast cancer and breast self examination as definition, methods for prevention,, important of examination and dangerous signs and symptoms this is before implementation of the program. This may be due to the fact that there was a lack of information provided to those young females, as the mass media and other health care services did not provide such information to them. The finding is in agreement with **Champion (1992),** who found that only 56.1% of the of his studied sample 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.

As regard practicing of self examination of the breast, the finding revealed that most of the studied students did not practice breast self examination correctly and did not make it regularly. The foregoing findings may be due to lack of access of the students to services teaching them how to make examination correctly, its importance and right time to do it.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 your monthly period ends. Becoming familiar with the look and feel of their breasts offers the best chance for a young 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. In this BSE practice group, 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 (1993): added that from a review of the literature on studies on breast self examination (BSE), 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.

The foregoing findings also indicated that the studied students had inappropriate practices regarding management of dangerous signs and symptoms especially in areas of managing abscess, secretions and pain. 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 younger women who have breast cancer ignore the warning sign such as a breast lump or unusual discharge because they believe they are too young to get breast cancer. 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. Health care providers also dismiss breast lumps in young women as cysts and adopt a "wait and see" approach. Although breast cancer might not be prevented, early detection and prompt treatment can significantly increase a woman's chances of surviving breast cancer. More than 90 percent of women whose breast cancer is found in an early stage will survive **(National Cancer Institute, (2006)**. Considering that 46.7% of participants did not perform BSE, and that

almost all of those who did perform BSE did it incorrectly-and taking into account that a lack of knowledge on how to perform BSE was the main reason why most non-performers did not examine themselves-establishing educational programs to teach women at risk may help in the early diagnosis of breast cancer

Also, **Kösters & Gøtzsche (2010)** recommend that Women should, be aware of any breast changes. It is possible that increased breast awareness may have contributed to the decrease in mortality from breast cancer that has been noted in some countries. Women should, therefore, be encouraged to seek medical advice if they detect any change in their breasts that may be breast cancer.

An improvement in most areas of knowledge and practices was detected after implementation of the health educational program, Although there was an improvement in the female students practices regarding breast self examination from pre program to post program, the result was not as expected by the researchers as it reached only 40%, this may indicate that they need more training on practicing such examination.

In this respect **Nahcivan et *al.* (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, found that there was a significant improvement in knowledge regarding all aspects of breast self examination of the intervention group from pre- to post-test. After the intervention program, 590 (59%) women had good knowledge and among them 90.7% practiced (BSE) compared to 0% pre-test. An overall increase in the awareness of 43% and 53% of BSE practice was observed in the study group after intervention. Seven cases of breast disease were detected in which two were breast carcinoma and five were fibroadenomas.

5. Conclusion:

The study concluded that the studied female students knowledge and practices regarding early detection breast cancer and breast self examination were deficient. it can be seen that the implementation of an educational program about breast self examination showed a statistically significant improvement to their level of knowledge and practices regarding early detection of breast cancer and breast self examination,and 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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