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Effect of Intervention Educational Program about Breast Cancer Preventive Measures on Assiut University Employees' Knowledge, Practices & Health Habits

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Abstract: Background: Breast cancer is the top cancer in women worldwide and is increasing particularly in developing countries where the majority of cases are diagnosed in late stages. It is considered curable if detected early, education to promote early diagnosis and screening are two major components of early detection of breast cancer. The aim of the study was to identify the effect of the intervention educational program about breast cancer preventive measures and breast self-examination on the level of knowledge, practices and health habits of female employees in Assiut University. ***Subjects and Methods:*** The study was carried out in six colleges representing all colleges of Assiut University e.g. Faculty of Art, Education, and Commerce as Humanities & business colleges and three from scientific colleges such as Veterinary, Agriculture and Nursing. All female employees worked in the previously mentioned settings during the time of the study and accepted to participate were included in the study sample. Their total number was 100 female employees. ***Results:*** Most female employees had poor knowledge about breast cancer. A significant improvement after receiving the interventional program related to knowledge and practice of BSE among the study group compared to the control group and a very strong association and positive relationship between knowledge of breast cancer and breast self-examination performance among the study group compared to control group. Conclusion: A marked improvement of the participants' knowledge about breast cancer & practice of breast self-examination. However, their consumption of daily health habits was not changed markedly. Recommendations: Strengthen outreach program to females in order to provide them with information, education and communication as well as screening services.

Key words: Prevention, Measures, Breast Cancer, Breast self-examination, Health habits

INTRODUCTION

Breast cancer is a serious and common malignancy among women with high morbidity and mortality rate; each year approximately one million new cases of breast cancer are diagnosed worldwide. [(1)]According to World Health Organization 2010, there were about 519,000 women who die from breast cancer annually and about one million of women develop breast cancer each year.[(2, 3)]The most recent study by Ibrahim et al[(4)]reported that cancer incidence rates based on national and regional level of Egypt revealed 157 per 100,000 among females. The commonest site was breast (32.0%) and the study added that by 2050, this incidence will be a 3-fold increase cancer relative to 2013 estimated rates. Therefore the pattern of cancer indicated the breast cancer represented the second rank.

Many women rarely visit a hospital for breast examination unless they find a breast abnormality. [(5)]In addition lifestyle related risk factors as oral contraceptive, no breast feeding, smoking, some nutritional factors, obesity and high fat diet may increase women's chance to develop breast cancer. However, real causes of breast cancer are not known. [(6)]For that clinical breast cancer research has focused on effective methods to detect breast cancer at its earliest stages and on standardized prevention and treatment to cure the disease after diagnosis. [(7)]

As breast cancer detection in the early stages has a higher chance of responding successfully to treatment.[(8)] In Arabic countries, women currently face a significant risk of high mortality rate from breast cancer due to late diagnosis.[(9)]Women need to be aware about the importance of early detection and diagnosis to have better outcomes, these early detection and screening activities of breast cancer include breast self- examination (BSE) and mammography.[(10)]The American Cancer Society and National Cancer Institute recommend BSE as one of three screening facilities. Breast self-Exam (BSE) depends on knowledge and attitude towards this practice among women and its effectiveness is dependent upon the skills of healthcare providers. [(11-13)]

Moreover, the role of a low fat diet in prevention of breast cancer needs to be verified; however, there are indications that breast cancer risk is increased with consumption of food rich in fat and low in fiber. It has been reported that dietary fat and postmenopausal estrogen levels are directly related. Fruits and vegetables are also important sources of antioxidants which may help protect against the tissue damage linked to increased cancer risk. Richly colored fruits and vegetables are the best sources for these nutrients. These fiber-rich foods are an essential part of a healthy diet. [(7, 8)]

Furthermore, A recent study reported that woman had less than 6 hours of sleep per night may be at increased risk of postmenopausal breast cancer while postmenopausal women who slept 9 hours per night or more had a 33% lower risk of breast cancer, possibly via the effect of melatonin levels.[(9)]

The midwives and the community health nurses, who work in primary healthcare services, play an effective role in

informing and advising women about BSE and also in changing their BSE-related behaviors, for early detection of breast cancer. [11]Their close contacts with women and their status as health professionals gives them the opportunity to use their advanced knowledge and practice skills to educate women about cancer risk factors, the need for breast cancer preventive measures in directing women through early detection, and in screening activities for early detection and intervention. Therefore, early detection of breast cancer executed by the midwives and nurses, who play an active role in improving public health, may be effective in increasing the awareness in women. [11]

The concern of testing the impact of intervention programs to upsurge women's attentiveness and knowledge about breast cancer and BSE has lately given more consideration in Egypt due to the establishment of the "National Program of Women's Health" A study of Abd El Aziz, et al[9] revealed that there was a major significant improvement in women's knowledge due to conducting an intervention program regards breast cancer risk factors.

Several studies have been conducted in developing countries recorded low knowledge and attitude among the participants. The need for new studies especially in the core of health education intervention for preventive cancer measures has become necessary to ascertain levels of improvement. This would be necessary in designing appropriate awareness creation intervention strategies. [12-16]

AIM OF THE WORK

This study aimed to assess effect of intervention educational program about breast cancer preventive measures on Assiut University employees' knowledge, practices & health habits

SUBJECTS AND METHOD:

Research design:

A Quasi experimental design (Nonequivalent pretest posttest control group)was used to measure the effectiveness of structured teaching and training sessions regarding breast cancer preventive measures information and BSE knowledge and practice among female employees in Assiut University during the period from April to August 2015.

Setting:

This study was conducted at six faculties representing faculties of Assiut University. It includes three Humanities & business colleges. Art, Education, and Commerce and three from sciences faculties such as Veterinary, Agriculture, and Nursing.

Subjects:

A convenient sample of 100 female employees who accepted to participate in this study was included.

Tools of data collection:

In order to collect the necessary information for the study, the following tools were developed.

Tool (1): The assessment tool was developed by the researcher based on reviewing of recent literature. It included three parts:

Part1: Socio- demographic characteristics of the female employees as age, level of education, marital status and years of work experience.

Part 2: Health history as medical, surgical, reproductive, oncology and family health history of tumors included benign or malignant tumors, previous exposure to radiation as CT, MRI or X – ray.

Part 3: Included preventive practices of female employees: nutritional and eating habits sleep pattern, physical activities, stress management and knowledge about BSE.

Tool (II): Observational checklist (Pre-test posttest) to assess Knowledge about breast cancer preventive measures and breast self-examination practices of the participants.

Method:

Ethical consideration:

The ethical consideration was maintained to ensure participant's right; the necessary official approval was obtained from the faculty of Nursing-Assiut University and directed to Assiut University Administration to collect the necessary data after explaining the purpose of the study. The aim of the study was explained to each woman and written informed consent was obtained to participate. Women were assured that the obtained information will be confidential and used only for the purpose of the study.

Procedure of data collection:

A pilot study was carried out on 10 % of sample (10) female employees, who were selected randomly from the selected colleges and who were excluded from the study sample. The data obtained from the pilot study was analyzed to test the clarity of the sheet and to estimate the time needed to fill the sheet. The necessary modifications were done (questions about employees medical & surgical history, menstrual history and contraceptive history was omitted as these information not related to the aim of the research). Moreover, some questions were restated and some items were added.

Content validity index (CVI) of instrument was validated for appropriateness and relevance by the five juries of experts in the field of obstetrics &gynecology and community health nursing. Some questions were modified based on recommendations of the experts, after the modification 8.75 for tool 1 and 8.32 for tool 2.
Cronbach's Alpha revealed high reliability which is 0.822.

The Educational program sessions: The researcher setup the program objectives and disseminate the pretest questionnaire to identify the base knowledge of participants regarding breast cancer preventive measures. After completion of the questionnaire, women were divided into two main groups 50 for each (study and control), each group represents 3 colleges as a strategy used to prevent control groups from receiving information and prevent intervention group from delivering information. Selection of colleges was done randomly, the study group divided into 5 subgroups each consisted of 10 participants. The tool took about 30 minutes to be filled then the researcher presented a lecture immediately after filling the pretest questionnaire. The program comprised of 6 sessions; The first session took 4 hours during which a power point presentation lecture presented followed by video session and group discussion included theoretical knowledge about breast cancer such as general knowledge, causes, symptoms,

detection and treatment, its preventive measures and breast self-examination knowledge. Practical sessions (5 sessions) were conducted as one session for each sub-group; each practical session lasts 3 hours, 3 days a week for a period of 2 weeks. The researcher explained all steps of the observational checklist about the technique of BSE and let every participant to apply the steps of breast self-examination on normal and abnormal breast models. In addition, two participants made BSE on themselves under supervision. An immediate breast examination observation checklist **tool (II)** was used to assess their skills in performing the technique then the participants received a brochure which included brief information related the lecture given and images to show the ideal method of BSE to remind them about breast cancer preventive measures. A posttest was distributed to the employees (study and control) in their place of work after one month to evaluate the retention of knowledge, practice and health habits regarding breast cancer preventive measures.

Statistical analysis:

Collected data were coded and transferred into special design format. The data were analyzed and were tabulated using the Statistical Package for Social Science (SPSS version17.The arithmetic mean and standard deviation were used as measures of central tendency and dispersion respectively for quantitative data. The chi square (χ^2) was used to test the association between two qualitative variables or to detect difference between two or more proportions. The p-value<0.05 level was used as the cut off value for statistical significance.

Knowledge scoring system:

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

score

- Complete correct answer provide 2
- Incomplete correct answer provide 1
- Didn't know and wrong answer provide0

- The total score of knowledge about breast cancer was 34, it was divided into the following levels:

- Good $\geq$ 75% of the total score. (> 25.5)
- Fair = 50 < 75 % of the total score. (17 < 25.5)
- Poor <50 % of the total score. (<17)

RESULTS

This study involved a total of 100 female employees completed the questionnaire. The age represents no significant difference among both the study & control groups with mean age (36.7±10.9 years versus 36.2±9.3 respectively).Moreover, no significant differences was observed with respect to other socio-demographic characteristics [educational level, marital status, years of work experience] **Table (1)**

Concerning source of information about breast cancer, the findings of the present study revealed that TV shows slightly less and more than half among the study and control group respectively however the minority related to relatives & friends (2 % & 8% respectively) **Figure (1)**

Overall, the total percentage of employees general knowledge about breast cancer were significantly improved after receiving the health education intervention as near half of the sample (48%) their response was poor compared to being 16 % post-test and a marked improvement in the satisfactory and good level after receiving the education session with a highly significant difference among the study group however no improvement or significant change regarding the other control group. As regards knowledge about breast cancer preventive measures and treatment, significant improvement was observed for the three score levels(poor, satisfactory and good)(66 %, 18 % & 16% for pre-test compared to 26 %, 20 % & 54 % respectively for posttest)among the study group. Furthermore, the improvement was at the same level for knowledge about breast self-examination with p-value 0.002.However, the low knowledge level of the control group regarding breast cancer preventive measures and breast self-examination not changed compared to post test and at the time of follow up with no significant difference. **(Figure 2)**

As regards the performance of breast self-examination, a marked improvement in the performance among the study group compared to low performance in the control group as compared with pre-test, posttest and at follow-up **(Figure 3&4)**

Table 2 shows the daily healthy habits of both groups regarding pattern of sleep, the source of daily life troubles, complaining of any neuropsychological problems, the results portray that the minority among both groups have sleep troubles, only about one third of both groups have daily life troubles and mainly related to family problems with no significant difference.

About one-third more or less of the study & control groups their answers reflected poor daily health habits as a preventive cancer measures in regards to (eating fatty foods, eating food rich in protein, expose to sunlight (38 %, 42%, 36 % , 42%, 44% & 40 % respectively) and no significant improvement in this respect among both groups, however, a marked improvement in other daily health habits as eat foods rich in fibers (vegetables & fruits), white meat, vitamins& balanced diet among the study group versus no significant improvement among the control group. On the other hand, some other daily health habits (eat food rich in Soya, practice physical exercises & avoid weight gaining) have no significant changes even after receiving the program **Table (3).**

Table (4) revealed a very strong association and positive relationship between knowledge of breast cancer and the practice of breast self-examination (P < 0.000), with no improvement in performance of those in the control group.

Table 1: Distribution of socio-demographic data of the participants

	Study		Control		P. value
	No.	**%**	**No.**	**%**	
– Age					
Range	20 – 69		21-66		
Mean±SD	36.7±10.9		36.2±9.3		0.933
– Education					
Secondary	21	42.0	20	40.0	0.998
University Level	29	58.0	30	60.0	
– Marital status					
Single	10	20.0	7	14.0	0.159
Married	37	74.0	35	70.0	
Widowed	2	4.0	8	16.0	
Divorced	1	2.0	0	0.0	
– Years of work experiences					
<10	21	42.0	20	40.0	0.495
10-	15	30.0	20	40.0	
≥20	14	28.0	10	20.0	
– Is there one of your relatives suffered breast cancer? Yes	8	16.0	6	12.0	0.476
No	42	84.0	44	88.0	
– If the answer yes, what is the relationship Mother	3	6.0	4	8.0	0.496
Sister	4	8.0	2	4.0	
Others	1	2.0	0	0.0	

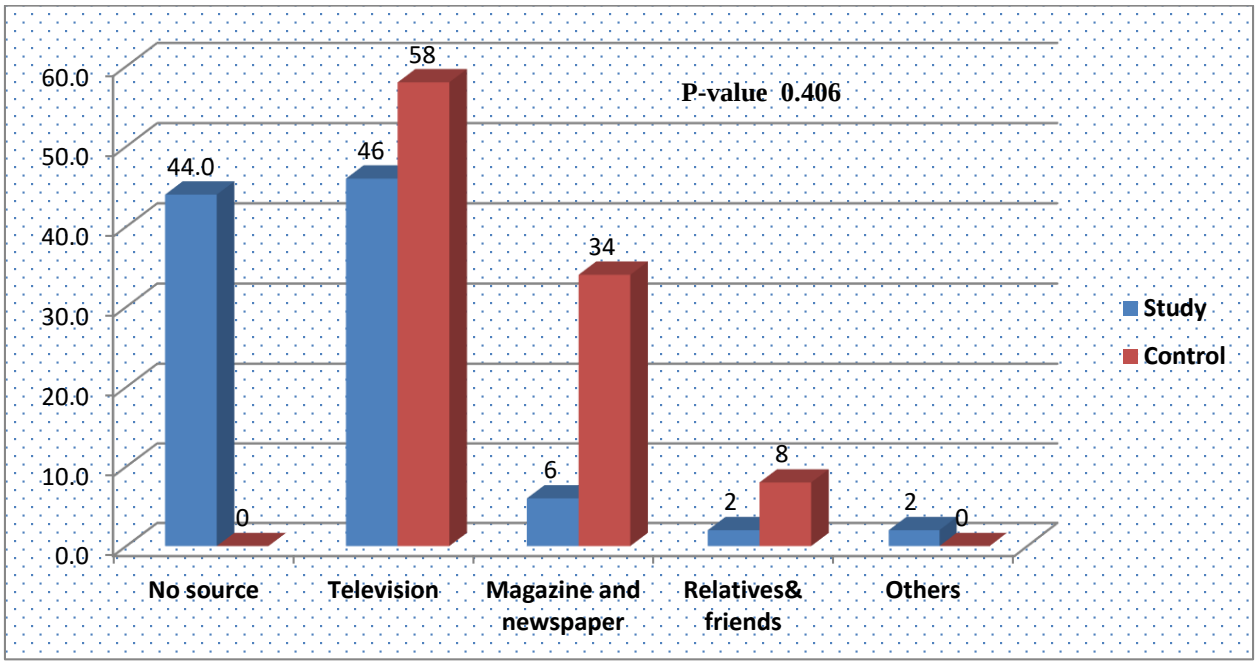

Figure (1) Distribution of the employees according to their source of information about breast cancer

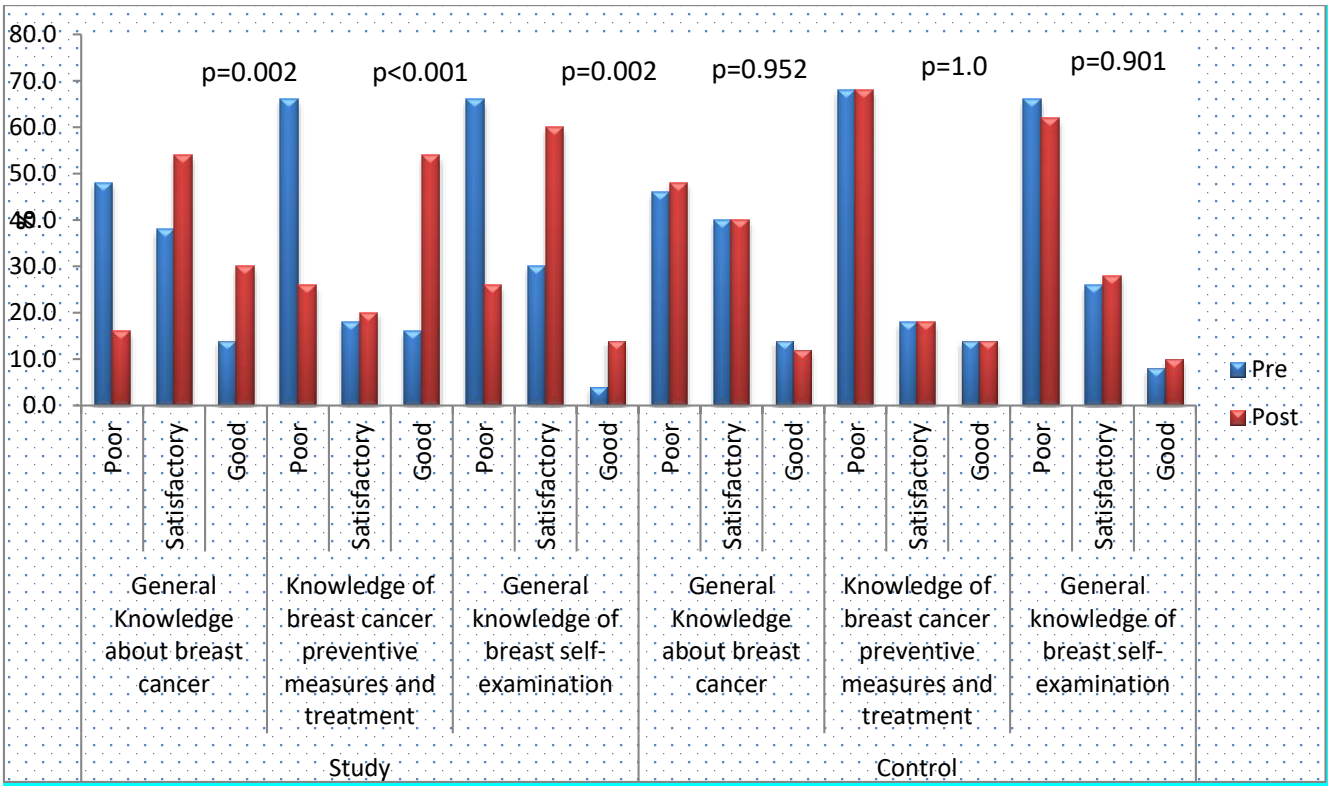

Figure (2): General knowledge of employees about breast cancer preventive measures & breast self-examination among both groups

Figure (3): Distribution of the study group by their total performance of breast self-examination

Figure (4): Distribution of the control group by their total performance of breast self-examination

Table (2): Distribution of the studied sample by their daily healthy habits patterns

Health habits items	Study group		Control group		P-value
	No [50]	%	No [50]	%	
Do you have any problems in sleep pattern					0.981
• **Yes**	10	20.0	11	22.0	
• **No**	40	80.0	39	78.0	
If yes, specify the problem					0.915
- **Sleep more than 10 hrs. per day**	2	4.0	3	6.0	
- **Insomnia**	3	6.0	4	8.0	
- **Interrupted sleeping**	5	10.0	4	8.0	
Do you complaining from hypertension or neuropsychological condition in your daily life?					0.977
• **Yes**	17	34	16	32	
• **No**	33	66	34	68	
What is the source of your daily life troubles?					
- **Family problems**	22	44.0	21	42	0.939
- **Workplace problems**	15	30	13	26	
- **Health problems**	9	18	11	22	
- **Financial problems**	4	8	5	10	
What's your reaction to psychological stress?					
- **Withdrawal**	15	30.0	16	32.0	0.979
- **Aggressiveness**	5	10.0	6	12.0	
- **Worship**	12	24.0	11	22.0	
- **Nervousness**	13	26.0	13	26.0	
- **More than one**	5	10.0	4	8.0	

Table (3): Distribution of the studied sample by their breast cancer preventive measures

	Health habits items (Study group)						P. value	Health habits items (Control group)						P. value
	Pre		**Post**		**Follow up**			**Pre**		**Post**		**Follow up**		
	No.	**%**	**No.**	**%**	**No.**	**%**		**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**
1. Do you eat fatty foods?							0.542							0.875
– **Yes**	19	38.0	22	44.0	21	42.0		18	36.0	17	34.0	17	34.0	
– **No**	31	62.0	28	56.0	29	58.0		22	64.0	33	66.0	33	66.0	
2. Do you eat foods rich in fibers (Vegetables & fruits)?							0.069							0.929
– **Yes**	24	48.0	33	66.0	31	62.0		25	50.0	24	48.0	25	50.0	
– **No**	26	52.0	17	34.0	19	38.0		25	50.0	26	52.0	25	50.0	
3. Do you think your foods is considered balanced diet?							0.005**							0.984
– **Yes**	19	38.0	27	54.0	25	50.0		17	34.0	18	36.0	17	34.0	
– **No**	31	62.0	23	46.0	25	60.0		33	66.0	32	64.0	33	66.0	
4.Do you eat food rich in protein as (meat, cheese & eggs)							0.079							0.979
– **Yes**	21	42.0	28	56.0	29	58.0		23	46.0	24	48.0	24	48.0	
– **No**	29	58.0	22	44.0	21	42.0		27	54.0	26	52.0	26	52.0	
5.Do you eat white meat in your food (fish)							0.045*							0.933
– **Yes**	21	42.0	31	62.0	32	64.0		22	44.0	21	42.0	21	42.0	
– **No**	29	58.0	19	38.0	18	36.0		28	56.0	29	58.0	29	58.0	
6.Do you eat food rich in vitamins							0.003**							0.997
– **Yes**	19	38.0	28	56.0	26	52.0		18	36.0	19	38.0	19	38.0	
– **No**	31	62.0	22	44.0	24	48.0		32	64.0	31	62.0	31	62.0	
7. Do you practice physical exercises (PE)?							0.508							
– **Yes**	13	26.0	16	32.0	15	30.0		14	28.0	15	30.0	14	28.0	0.988
– **No**	37	74.0	34	68.0	35	70.0		36	72.0	35	70.0	36	72.0	
8. How often do you practice PE per week?														
- **Once**	1	2.0	6	12.0	7	14.0	0.309	1	2.0	1	2.0	1	2.0	0.983
- **Twice**	3	6.0	2	4.0	2	4.0		4	8.0	3	6.0	2	4.0	
- **Three times**	3	6.0	3	6.0	3	6.0		4	8.0	5	10.0	6	12.0	
- **More than three times**	6	12.0	5	10.0	3	6.0		5	10.0	5	10.0	5	10.0	
9. What is the daily duration of PE you practice?														
- **¼ hour**	2	4.0	4	25.0	4	8.0	0.109	1	2.0	1	2.0	1	2.0	0.975
- **½ hour**	7	14.0	10	62.5	8	16.0		6	12.0	5	10.0	4	8.0	
- **1 hour**	4	8.0	2	12.5	2	4.0		4	8.0	5	10.0	5	10.0	
10. Do you avoid weight gaining?							0.486							0.933
– **Yes**	15	30.0	21	42.0	20	40.0		14	28.0	13	26.0	14	28.0	
– **No**	35	70.0	29	58.0	30	60.0		36	72.0	37	74.0	36	72.0	
11. Do you expose more frequently to sun light?							0.071							0.997
– **Yes**	22	44.0	31	62.0	29	58.0		20	40.0	21	42.0	21	42.0	
– **No**	28	56.0	19	38.0	21	42.0		30	60.0	29	58.0	29	58.0	

Table (4): Relationship of the participants' total knowledge about breast cancer& performance of breast self-examination

	Knowledge							
	Study			P. value	Control			P. value
	Pre	Post	Follow up		Pre	Post	Follow up	
1. Raise your arms and look for any changes in the breasts' size, shape, texture or skin.	31.7±18.3	41.8±12.2	40.8±11.2	0.002**	30.9±12.3	31.2±11.7	31.4±13.2	0.934
2. Stay in front of the mirror looking at your breasts with your shoulders straight and your arms on your hips and look for breasts that are their usual size, shape, and color and are evenly shaped without visible distortion or swelling.	33.5±18.3	41.2±13.4	39.7±13.9	0.001**	34.1±11.8	34.9±9.3	34.5±11.9	0.879
3. While you're at the mirror, look for any signs of fluid coming out of one or both nipples (this could be a watery, milky, or yellow fluid or blood).	37.8±16.7	41.7±12.4	40.3±12.8	<0.001**	37.1±14.6	36.8±12.7	37.1±14.1	0.911
4.Feel your breasts while lying down, using your right hand to feel your left breast and then your left hand to feel your right breast. Use a firm, smooth touch with the first few finger pads of your hand, keeping the fingers flat and together. Use a circular method. O	31.4±18.2	41.9±12.8	40.5±10.8	<0.001**	30.6±13.1	31.0±14.3	30.7±11.7	0.779
5. Finally, feel your breasts while you are standing or sitting.	31.1±18.7	41.6±12.9	39.8±11.3	<0.001**	30.3±10.7	31.0±13.7	31.4±12.4	0.829

DISCUSSION

In Egypt, breast cancer is the most common cancer among women, representing 18.9% of total cancer cases (35.1% in women; 2.2% in men) that is why primary prevention should be given a highest priority in the fight against cancer. [16]This study was done to identify the effect of breast cancer preventive measures intervention educational program on Assiut University employees' knowledge, practices & health habits. As breast cancer usually develops after the age of 45 years, nowadays the age of onset is decreasing and more young women than ever are affected. [17, 18] The socio-demographic data of the present study revealed that the mean age among both the study & control groups were (36.7±10.9 & 36.2±9.3 years respectively). This is considered a good chance for those women to be instructed and given full information about breast cancer preventive measures at this age. Moreover matched other demographic data among both groups was clear in respect to educational level and work experience with no significant difference.

The study results indicated a significant improvement in knowledge of study group compared to control group about breast cancer preventive measures after educational intervention. This significant difference in mean scores of knowledge between two groups for the three score level (poor, satisfactory and good level) can likely be attributed to using of a divers, interactive, efficient and attractive educational intervention in the present study. This finding was in line with Musallam et al. [17] and AbdElsabour et al.[18] and Abd El-Hady& Mohamed [19]who emphasizes the importance of intervention program to raise the participants' awareness about breast cancer. Furthermore, the improvement was at the same level for knowledge about breast self-examination with p-value 0.002. This result emphasized the importance of implanting awareness program as those in the control group even if they read the questions and trying to answer it, they didn't search for the right answer or trying to read more about breast cancer that is why their level of knowledge not changed.

Concerning the participants' source of information, the present study shows that TV represented the source of information for nearly half among the study and control groups respectively, however the minority was related to relatives & friends (2 % & 8% respectively) **Figure (1)**This finding was matched with a study done by Al-Naggar[20]and Boulos and Ghali [21]and in contrast with Omotara et al[22]Who reported that friends and health workers represented the main source information, in this respect our findings found that the health workers represented the minority source of information that may emphasize a highly needed awareness program in our society.

As breast self-examination is considered one of the most important method in the early detection of breast cancer. [17, 18] A breast self-exam should be part of a monthly health care routine. [23]In this context, the present study revealed a marked improvement in practicing breast self-examination among the study group compared to low performance in the control group in respect to the three time assessment **(Figure 3&4)**. This finding was consistent with Abd El-Hady & Mohamed [19] who reported that the percent of women who rightly practice of breast self-examination increases from one quarter in pre-program to more than three quarters immediate and one month after program. Moreover, as regards the breast cancer preventive measures and changing certain harmful habits among employee, the current study revealed that approximately half of the study & control groups (48% & 50% respectively) were consuming normal amount of

vegetables and fruits with no improvement after receiving the program. However, a marked improvement in other daily health habits as (eat foods rich in vitamins, white meat& balanced diet) among the study group. Literature and researches proved intake high or normal amount of vegetable & fruit reduce risk of breast cancer. [24]Moreover, It has estimated that approximately 35% of cancers are potentially avoidable by nutritional modification. In this respect, Foods made from soybeans have some of the highest levels of phytoestrogen which proved by some studies as having health benefits including potential reduction of breast cancer.[25]The findings of the present study revealed that, Near half of study & control groups (48% % 50 % respectively) consumed soybeans and unfortunately no improvement of their consumption even after receiving the program, moreover, about one-third more or less of the study & control groups their answers reflected poor daily health habits as a preventive cancer measures in regard to (eating fatty foods, eating food rich in protein, expose to sunlight)
(38 %, 42%, 36 % , 42%, 44% & 40 % respectively) and no significant improvement in this respect among both groups. Moreover, some other daily health habits (Practice physical exercises & avoid weight gaining) have no significant changes even after receiving the program. These findings could be attributed to that changing health habits is considered more difficult than changing knowledge or practice. As this finding was in accordance with the study done in USA by Enderlin et al[25]and the same was reported by Kalantari et al [26]in Yan & Hausman[27]in China in which they emphasized the importance of national campaign to increase public awareness about breast cancer and screening methods.

As regards the correlation between levels of knowledge related breast cancer preventive measures and the practice of breast self-examination a very strong association and positive relationship between knowledge of breast cancer and the practice of breast self-examination ($P < 0.000$).In the same line Alorf, et al[28]found that about half of participants who did not perform BSE had unsatisfactory knowledge. On the other hand, Seif and Aziz [6] assured that unsatisfactory knowledge was positively associated with practicing BSE post program. Moreover, on studying Breast cancer knowledge and screening practices among Nigerian women. It showed that although they had low knowledge scores about screening methods of breast cancer yet most of them had performed breast cancer screening.[20]This result was on the contrary with the study done in Nigeria by Akpo[29] who found that the women with higher knowledge scores were more likely to practice breast self-examination. On the other hand, the findings were contradicting the study carried out in Iran by Soyer, et al. [30]who reported that although the woman had higher knowledge of breast cancer yet, they were not practicing BSE. This result may be attributed to the fact that female were fear from discovering any abnormalities in the breast.

As mentioned in a study done in Egypt by Ibrahim et al, [4]who found that Upper Egypt represents the most prevalent incidence compared to lower & middle Egypt (38.7%, 33.2 % & 26.8 % respectively)these findings alarm the health care providers especially in Upper Egypt to increase women awareness toward breast cancer preventive measures through implementing an intervention educational program.

CONCLUSION

Based on the current study results, it can be concluded that, a marked improvement of the female employees knowledge about breast cancer & practice of breast self-examination was apparent however, their consumption of daily health habits was varied some changed markedly as eating diet rich in vitamins, meat and balanced diet and improved after receiving the program however, the majority of the studied employees were consuming saturated fat, eat large amount of carbohydrates, did not practice physical exercise and the minority of the female employees were consuming soy products

RECOMMENDATIONS:

The following are the main recommendations:-

1. Raising community awareness especially females about risk factors, signs and symptoms, preventive measures, breast self-examination and early detection methods of breast cancer.
2. Emphasizing the importance of clinical breast examination by nurses and physicians during routine checkup visits and during premarital care.
3. The Ministry of Health and Population should provide free breast cancer screening services or at an affordable cost to women as high cost represents a barrier to screening participation.
4. More efforts are needed in creating awareness and advocacy in all community setting in order to detect early breast cancer and enhance prevention strategies that would reduce the burden of breast cancer in Egypt.

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REFERENCES

[1]. Abd El-Aziz N. A., Mersal F. A., and Taha N. M:"Nursing Intervention Program for Early Detection and Prevention of Breast Cancer among Working Women", Journal of American Science, 7(1) (2011): 15.

[2]. Bates T., Kearins O., Monypenny I., Lagord C. and Lawrence G.:" Clinical Outcome Data for Symptomatic Breast Cancer", the Breast Cancer Clinical Outcome Measures (BCCOM) Project. Br. J. Cancer, 101 (3) (2009): 395-402.

[3]. World Health Organization Cancer WHO. Retrieved on 20thApril,http://www.who.int/mediacentre/factsheets/fs297 /en/, 2010.

[4]. Amal S. Ibrahim, Hussein M. Khaled, Nabiel NH Mikhail, Hoda Baraka, and Hossam Kame. Journal of Cancer Epidemiology; (2014) http://dx.doi.org/10.1155/2014/437971.

[5]. Arthur DW: "Internal Mammary Node Coverage", An Investigation of Presently Accepted Techniques, and International Journal of Radiation Oncology, Biology and Physics, 48; (2000) (139): 146.

[6]. Seif Z.Y. and Aziz M.A.: "Effect of Breast Self-Examination Training Program on Knowledge", Attitude and Practice of a Group of Working Women, Journal of the Egyptian Nat. Cancer Inst.; 12(2): (2000)105-115.

[7]. Bener A., Ayub H., Kakil R. and Ibrahim W.: "Patterns of Cancer Incidence among the Population of Qatar", Worldwide Comparative Study, Asian Pac. Jour. Cancer Prev.; 9 (1): (2008)19-24.

[8]. Bener A., El Ayoubi HR., Moore M.A., Basha B. Joseph S. and Chouchane L.: "Do we Need to Maximize the Breast Cancer Screening Awareness? " ,Experience with an Indigenous Society with High Fertility. Asian Pac. Cancer; 10(4): (2012)16 - 17.

[9]. National Cancer Institute,: "Clinical Trial Summary from the National Cancer Institute's PDQ", U.S. National Library of Medicine; 3(3): (2006)1-12.

[10]. Gab-Alla S.: "Quality of Life in Cancer Patients under Chemotherapy", Unpublished Master Thesis, Faculty of Nursing, Suez Canal University, Egypt, (2003)54.

[11]. Mai V., Sullivan T. and Chiarelli AM.: " Breast Cancer Screening Program in Canada: Successes and Challenges", Salud Publican Mex, (2009)51.

[12]. McCready T., Littlewood D. and Jenkinson J.: "Breast Self-Examination and Breast Awareness": A literature review. J. Clin. Nurs. 14(5): (2005) 570-578.

[13]. Li-Yuan Liu1, Fei Wang R. and etal. :"Breast cancer awareness among women in Eastern China": a cross-sectional study, (2014); 222-30.

[14]. ZawillaNM.: Breast cancer in Egypt: A fact sheet; the Health", (2)1: (2011)8-10.

[15]. Okobia MN, Bunker CH, Okonofua FE, and Osime U.: "Knowledge, attitude and practice of Nigerian women towards breast cancer: A cross-sectional study". World J Surg.Oncol. (2006)4:11.

[16]. Gakwaya A, Galukande M, Luwaga A, Jombwe J, Faulal J, Kiguil-Malwadde E, et al.: "Breast cancer guidelines for Uganda " 2nd ed., Afr. Health Sci. ;8: (2008)126–32.

[17]. Musallam R., Al Jundiai S. and Alam Khan j. Musallam R., et. al.: "Knowledge and Awareness of Breast Cancer among University". Oncology Med. J.: (2011)155:65.

[18]. AbdElsabour M., Qalawa A. S. and Mohamed A. M.: "Impact of Health Intervention Program Regarding". Obstetrics and gynecology; 56(2): (2013) 582-89.

[19]. Abd El-Hady. S & Mohamed N: "Effect of Educational Program about Breast Cancer Knowledge and Breast Self-Examination Training on Building Accurate Information and Behavior among Women". Journal of Natural Sciences Research; 5(4): (2015) 123-45.

[20]. Al-Naggar R.A., Al-Naggar D.H., Bobryshev Y.V., Chen R. and Assabri A.: "Practice and Barriers toward Breast Self-Examination among Young Malaysian Women". Asian Pacific Journal of Cancer Prevention; 12: (2011)1173-78.

[21]. Dina N. K. Boulos and Ramy R. Ghali. Awareness of Breast Cancer among Female Students at Ain Shams University, Egypt, Global Journal of Health Science. 2014 Jan; 6(1): 154–161.

[22]. Omotara B., Yahiya S., Amodu M. and Bimba J.: "Awareness, Attitude and Practice of Rural Women regarding Breast Cancer in Northeast Nigeria Community". Med. Health Educ.; (2012) 2(5) http://dx.doi.org/10.4172/2161-0711.1000148.

[23]. Milaat WA. Knowledge of secondary school female students on breast cancer and breast sell examination in Jeddah, Saudi Arabia. East Mediter Health J. 2008; 6: 338-44.

[24]. Fetohy ME, Abdel Cowed SF, Hashmi JT. Predicting breast self-examination among Saudi women using theory of reasoned action. Bull High Instit Public Health. 2006; 36(3): 737-56.

[25]. Enderlin C, Stewart C, Coleman E: "Dietary Soy intake, Breast cancer risk". Oncology Nursing Forum Journal; 6 (5): (2009) 537.

[26]. Kalantari R, Montazeria A, Ebrahimi M et al.:"Knowledge and Practices Related Breast Cancer Prevention in Iranian Female Population". Research Journal of Biological Science; 3 (3): (2014) 284-87.

[27]. Yan Y.andHausman M.: "Breast Cancer: Knowledge and Perceptions of Chinese Women in Hong King". Global Journal of Health Science, 2015; 1(2): 99 -110.

[28]. Alorf S.H., Al-Sogaih Y.S., Alaskar R.S., Al-Mahana A.M., Alsalhowb W.F., Alibrahim A.K., Saka M.Y., Alhazimi A.M., Baghirova A., and Hindawi S.I.: "Breast cancer awareness and breast self-examination in Northern Saudi Arabia. A preliminary survey". Saudi Med J.; 34(7): (2013) 681-8.

[29]. AKpo M.: "Breast cancer knowledge and Screening Practices among Nigerian Practices". Unpublished Master Thesis. Faculty of Nursing: Southern Connecticut State University; (2007) 54.

[30]. Soyer M, Ceber E, Ciceklioglu M. Breast Cancer Awareness and Practice of Breast Self-Examination among Primary Health Nurses: Influencing Factors Affecting .Journal of Clinical Nursing; (2010)16:707.