Breast Self-Examination Training Program of Primary Health Centers Working Women: An Intervention Study

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Abstract

Background: Breast Self-Examination has a role in early diagnosis and prevention of morbidity and mortality rate of breast cancer. Promoting women knowledge, capabilities and practice are required in this regard. **Aim:** Assess the effect of breast self-examination training program on knowledge and practice of the working women in selected primary health centers. **Methods:** Quasi - experimental study pre/post and follow-up after one month was conducted involving 80 women using a purposive sample. Self -administered questionnaire to assess women demographic data, knowledge about breast cancer, breast self-examination and also practice related to the same. **Results:** Pre-program most of women had poor level of knowledge as compared to all and vast of them had high level of knowledge post program and one month follow up, respectively. Vast of women showed unsatisfactory level of practice pre-program compared to all of them have satisfactory level of practice on post program and follow up. Both the knowledge and practical competency scores showed highly significant increment after the intervention. **Conclusion and recommendation:** knowledge and practice of women were improved after receiving the training program. Women health education should occur at an earlier stage in lives with emphasis on the healthy behaviors and practices to prevent cancer.

Keywords: Breast Self-Examination; Training program; Working Women; Primary Health Care Centers

Introduction

World Health Organization (WHO, 2020) reported that there were 2.3 million women diagnosed with breast cancer and 685 000 deaths globally. As of the end of 2020, there were 7.8 million women alive who were diagnosed with breast cancer in the past 5 years, making it the world's most prevalent cancer. There are more lost Disability-Adjusted Life Years (DALYs) by women to breast cancer globally than any other type of cancer. Breast cancer occurs in every country of the world in women at any age after puberty but with increasing rates in later life.

Breast cancer incidence rates vary widely across the world, from 25 per 100,000 in Middle Africa and Eastern Asia to 92 per 100,000 in Western Europe. Incident cases are estimated to increase worldwide by 46.5% by the year 2040 (Bray et al., 2020). According to WHO estimates, BC rates across the Middle East are expected to double between 2012 and 2030, which is the

highest relative increase of any region globally (Ginsburg et al., 2017). Although incidence rates of BC are still lower in Middle Eastern countries than Western ones, mortality rates are similar and at times even higher. It is estimated that 30% of BC cases are due to environmental and lifestyle factors, such as obesity and diet and hence can be preventable (Naja et al., 2019).

Breast cancer is the leading cancer in Abu Dhabi, UAE, and accounting for 25% of all cancers. It is the second killer for women after cardiovascular diseases. Half of the women diagnosed with breast cancer are below the age of 46 years. HAAD Breast Screening Program was established in 2008. HAAD Recommends that women 40 years and above undergo regular screening with mammogram every two years and annual clinical breast exam. The program goal is to reduce mortality from breast cancer, through early detection and treatment of breast cancer (Department of Health, 2021). International Agency for Research on Cancer (IARC, 2018)

reported that total number of breast cancer cases in UAE in 2018 were 1,054 (22.4%).

Routine clinical screening has aided in the early detection of breast cancer. However, more than 71% of breast tumors are self-detected. Therefore, exploring factors influencing delayed presentation to treatment after self-detection of breast tumors by Emirati and Arab women in the UAE is essential for improving the survival and the development of effective and targeted health intervention programs (Elobaid, 2014).

Elobaid, (2014) conducted a study about breast cancer presentation delay among women in the United Arab Emirates, confirmed the occurrence of breast cancer in younger age groups than in Western countries. The descriptive and analytic statistic used to investigate 1,611 cases of breast cancer diagnosed or treated in Tawam Hospital during the period of 5 years and reported that the breast cancer is still the most common type of cancer occurring among females in the UAE. The analysis supported the established guidelines of BSE and CBE but argues the mammography guidelines in the UAE. National efforts are needed to address specific benefits of early detection and increase the awareness about these benefits.

On the other hand, different studies conducted about effective training program of breast self-examination on knowledge and practice, found the early detection plays a crucial role for breast cancer. BSE, mammography, and CBE are screening methods, which are used to detect breast cancer early. In addition, special attention should be paid to BSE to enhance the possibility of early detection of any changes in breast tissue. Although BSE alone is not sufficient for early detection, it allows women to be responsible for their own health, to recognize breast tissue, as well as to adapt the preventive health behavior (Akhtari-Zavare et al., 2013).

BSE is a cheap, easy, confidential, unfussy, and did not require special tools (Kashfi et al., 2012). Screening can play a major role in reducing the deaths associated with cancer. Early detection and providing of appropriate treatment can improve the chance of recovery and increase the lifespan of patients. Training programs play an important role in promoting breast cancer examination and treatment among women.

Aim of the Study

The aim of the study was to assess the effect of breast self-examination training program on knowledge and practice of the primary health centers working women through:

1- To assess the working women knowledge and practice regarding breast self-examination pre and post the training program.

2- To assess the correlation between the working women knowledge and practice about breast self-examination and selected demographic data.

Hypothesis of the study

H I: Women who received breast self-examination training program will have high knowledge score in post-test than pre-test

H II: Women who received breast self-examination training program will demonstrate a satisfactory level of breast self-exam practice than the pre-training schedule.

Subject and Method

Method

Research design: Quasi-experimental, one group pre-post intervention follow-up study after one month.

Setting of the study: Primary Health Centers (PHC) Fujairah Emirate. UAE from September 2018 to January 2019.

Sample: All the working women in primary health centers who were willing to participate in the study, given the written informed consent and did not attend any sessions or training about BSE; administrative personal, receptionists and laboratory technicians using a purposive sampling.

Instrumentation: researchers developed a self-administered questionnaire after reviewing the related literature consisted of 2 tools. Tool I included the following parts:

Part I: included questions related to demographic data, history of breast problems, and sources of information about breast cancer and breast-self-examination and barriers to performing BSE.

Part II: included questions about women knowledge about breast cancer as definition, signs and symptoms, risk factors, warning signs and prevention. Total score (104 marks), a score

of 2 was given to the correct answer, a score one to the incorrect answer, and a score 0 to unknown answer. The level of knowledge categories' as a poor level: <50%, average level score between 50% to < 75%, while the score ≥75% considered good level.

Part III: questions related to women knowledge about breast self-examination as age of starting to perform, best time, how often and methods. The total score of breast self-examination knowledge is nine mark, a score of 1 was given to the correct answer, and a score 0 was given to the incorrect answer. The level of knowledge categories' as a poor level:<50%, average level score between 50% to < 75%, while the score ≥75% considered good level.

Tool II: Observation checklist to evaluate women practice of BSE- this section included standardized technique of breast self-examination developed by the Organization of European Cancer Institutes (OECI) and European Cancer Organization (ECCO). Reference from Friends of Cancer Patients - the United Arab Emirates, 2018. Four major steps as follow; lying down, stand upright in front of a mirror and place your right hand behind your head, keep arms held over your head and arms pressed against the hips and bending forward. Scoring of the observation checklist, a score of 2 was given to correct performed, a score one was given to incorrect performed, and a score 0 was given to not performed. The score of total items 28 marks was classified as <50% unsatisfactory, while ≥ 50% considered satisfactory.

Validity& reliability

The content validity of the instrument was tested by three experts in the nursing field. Reliability testing was conducted to check the tools of data collection. Cronbach's Alpha (0.78).

Pilot study

Pilot study was conducted for 10% of the sample size in the Al Twyeen center in Fujairah Emirate for one month (1st - 30th August 2018) that was excluded from the sample to assess the feasibility of the study, clarity of questionnaire and identify potential problem areas in the research instrument and protocol prior to implementation. The researchers found that the review was feasible within the frame, and time was taken approximately 7-10 minute to answer the questionnaire.

Procedure for data collection and program implementation

The program content developed after a review of the literature used CINAHL, PubMed, ProQuest, and online nursing Journals and national pink caravan, 2018. Program session plan consisted: topic, target people (working women), date of session, audio-visual resources (PowerPoint presentation with LCD project, pamphlet and breast model), goal, learning outcomes, content included: general information of breast cancer, anatomy of breast, causes of cancer, signs and symptom, risk factors, prevention of breast cancer, and the 4 steps for monthly breast self-examination through demonstration using breast model; time allotted for each content, summarization and conclusion.

A written informed consent was taken after the purpose of the study was clearly explained to the women. A pretest was conducted as the first level of intervention using the structured questionnaire for the study subjects that took 7-10 minutes to complete the survey. The theoretical part of the program using PowerPoint presentation to group health education in each PHC, it was taken 30-45 minutes. The practical part was taken 10-15 minutes using breast model to train the women about the practice of breast self-examination. Pamphlet of BSE was given at the end of the session (support from the national pink caravan in UAE, 2018).

Evaluation of the program was posted immediate and follow up after one month using the same questionnaire, and for practice, the women demonstrated BSE using breast model evaluated by the observational checklist. Data collected through different times, morning, and evening. Three women dropped out during follow up.

Ethical Considerations:

RAKMHSU Research Ethical Committee approval followed by Ministry of Health & Prevention Dubai Research Ethical Committee approval followed by approval taken from the Director of Sharjah Training and Development Center. Then obtained permission from the PHC director in Fujairah.

The women had the right to consent/ not to consent for participation in the study. Their participation was voluntary. Personal identity would not be disclosed or used for any other purpose only coding by numbers. For ensuring

confidentiality, the data kept in a secured place by the investigator while the soft copies are kept on investigator laptop with password secured. The women had the right to withdraw from the study and important to know; however, their withdrawal from the study their contribution would not be used for analysis since it was not be counted as complete questionnaires. The collected data utilized only for master's thesis and research publications.

Statistical analysis

Statistical Package for Social Science (SPSS) version 25 was used. Data were presented in the form of number, percentages, mean and standard deviation. Comparison between women knowledge and practice pre, post, and follow up after one month using Chi-square, and ANOVA test. Pearson correlation tests used to assess correlation between age and years of experience of the women and their knowledge and practice level pre, post and follow up. Statistical significance was considered at p-value≤ 0.05, < 0.001 highly significant.

Results

The women' age ranged from 20 to 40 years, with a mean age 34 ± 6. Regarding occupation, 67.5% of women were administrative; remaining 32.5% of them was laboratory technicians. More than two thirds (71.3%) of them were married. More than one-third (33.8%) of women reported a family history of breast cancer and the affected members (44.4%) mothers, (29.6%) aunt, (26%) sister had breast cancer (Table 1).

Most of the women reported that media (TV, Radio, and Internet) were the source of information about breast cancer, while (45%) hospital, (35%) books, (6.3%) conferences and the minority (3.8%) friend (Figure 1).

Most of the women reported that the nurse was the source of information about breast self-examination, while the minority (7.2%), (2.5%), (0.8%), (0.4%) were reported doctors, teacher, friends, and parents respectively(Figure 2).

The barriers to perform breast self-examination reported by the women were no breast complaints (50%), whereas lack of knowledge(30%) , afraid to find a lump (20%), (18.8%) was forgetfulness, no time for breast self-examination (11.3), absence of lump during the previous examination (10%) and disliked to touch breasts. While the minority were culture and health beliefs, and unavailability of specialized centers (Table 2).

There was an improvement of the women' knowledge in all items from pretest to posttest and follow up. These improvements were statistically significant (P<0.001). The percentage of satisfactory knowledge continued to improve at the one month follow up test, although, the total score of knowledge has slightly declined during follow-up. Nonetheless, it was a statistically significant higher compared to the pre-training program level (P < 0.001). (Table 3).

Figure 3. shows the total level of knowledge regarding breast cancer, the minority (5%) of working women have a good level of knowledge pre-program and all have a good level of knowledge post-program and after one month of follow up. The knowledge level improved in the post and followed up with a statistically significant difference (P< 0.001).

The minority (18.8%) of the women had a good level of knowledge on the pretest, while all have a good level during the posttest and (92.2%) on follow up. The knowledge level improved in the post and followed up with a statistically significant difference (P < 0.001) (Figure 4).

Vast (98.8%) of the women had unsatisfactory level of practice pre-program, compared to all of them have satisfactory level of practice post program and one month follow up. There was improvement with a highly statistically significant difference between levels of practice score pre - post the program and follow up (p < 0.001)(figure 5).

There was a positive correlation between age of the women and their practice pre and follow up with no statistically significant difference while there was a positive correlation between age and post-practice level with statistically significant difference (p < 0.001).

There was a positive correlation between working experience and practice of breast self-examination, pre and follow up with no statistically significant difference while there was a positive correlation between working experience and post-practice level with

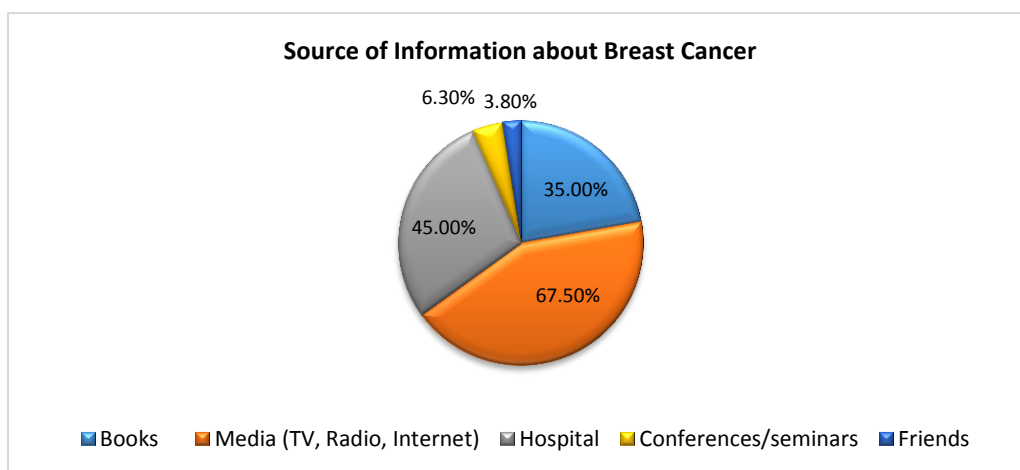statistically significant difference (p < 0.001) (Table 5).

There was a positive correlation between the age of the women and their knowledge level pre, post, and follow up with no statistically significant difference. There was a positive correlation between working experience and knowledge level post, and follow up while a negative correlation between working experience and pre-knowledge of breast self-examination with no statistically significant difference (Table 6).

Table 1. Distribution of the women according to their demographic characteristics (n= 80)

Demographic variable	N	%
Age /years		
20 < 30	22	27.5
30 < 40	41	51.2
≥ 40	17	21.3
M±SD	34 ± 6	
Working years		
1 < 7	47	58.8
7 < 14	26	32.5
≥ 14	7	8.7
M±SD	7 ± 5	
Occupation		
Administrative	54	67.5
Laboratory technicians	26	32.5
Material status		
Married	57	71.3
Single	15	18.8
Divorced	8	9.9
Family history of breast cancer	27	33.8
Relationship of the affected family members		
Mother	12	44.4
Aunt	8	29.6
Sister	7	26.0

Figure 1: Distribution of the women according to their source of information about breast cancer

Source of Information about Breast Cancer

6.30% 3.80%
35.00%
45.00%
67.50%

■ Books ■ Media (TV, Radio, Internet) ■ Hospital ■ Conferences/seminars ■ Friends

* Answers are not mutually exclusive

Figure 2: Distribution of the women according to their source of information about breast self-examination.

Source of informaton about Breast Self-Examination
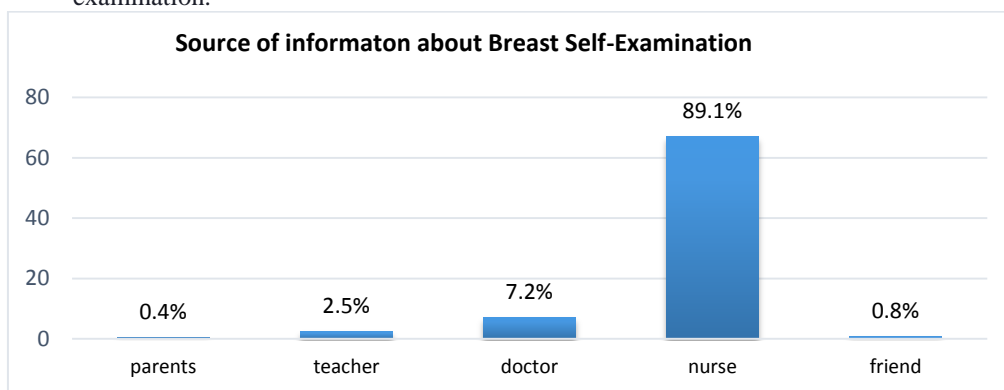
* Answers are not mutually exclusive

Table 2. Distribution of the women according to their barrier to perform breast self- examination (n= 80)

| Items	N	%
No breast complaints	40	50.0
Lack of knowledge about breast self-examination and its value	24	30.0
Fear/worry to find a lump	16	20.0
Forgetfulness	15	18.8
No time for breast self-examination	9	11.3
Absence of lump during previous examination	8	10.0
Dislike to touch breasts	8	10.0
Culture and health beliefs	3	3.8
Unavailability of specialized centers	2	2.5

* Answers are not mutually exclusive

Table 3. Knowledge level of the women regarding breast cancer (pre/ post/follow up program)

| Variable	Pre program	Post program	Follow up	F	P
Definition	4.33 ± 1.50	6.00 ± .00	5.71±1.24	49.54	< 0.001*
Symptoms and signs	8.67±4.24	20.00±.00	19.88±.48	545.39	< 0.001*
Risk factors	14.42±7.39	39.95±.21	39.77±.50	925.05	< 0.001*
Warning signs	6.40±2.61	12.00±.00	11.94±.27	353.57	< 0.001*
Screening methods	5.47±2.26	8.00±.00	7.98±.11	96.65	< 0.001*
Prevention	8.46±4.47	16.00±.00	15.92±.42	218.86	< 0.001*

*: statistically significant at $P \leq 0.05$, < 0.001 high significant.

Figure 3. Distribution of the women according to their level of knowledge about breast cancer

Level of Knoweldge about Breast Cancer
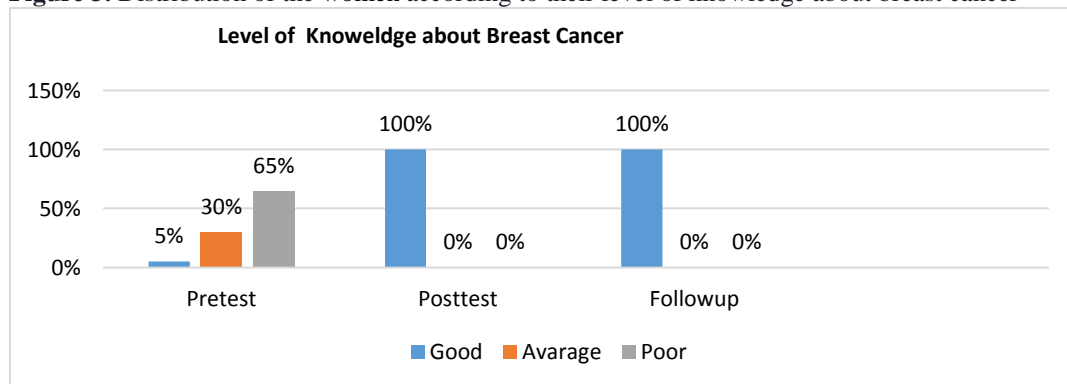
X²: 219.556a, P< 0.001

Figure 4: Distribution of the women according to their level of total knowledge on BSE
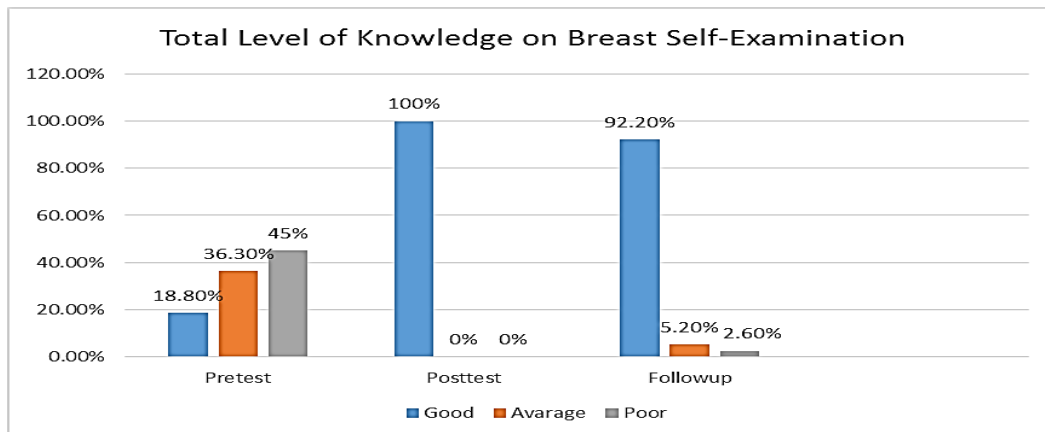
X²: 153.053a   P. value < 0.001

Figure 5: Distribution of women according to their level of practice about breast self-examination
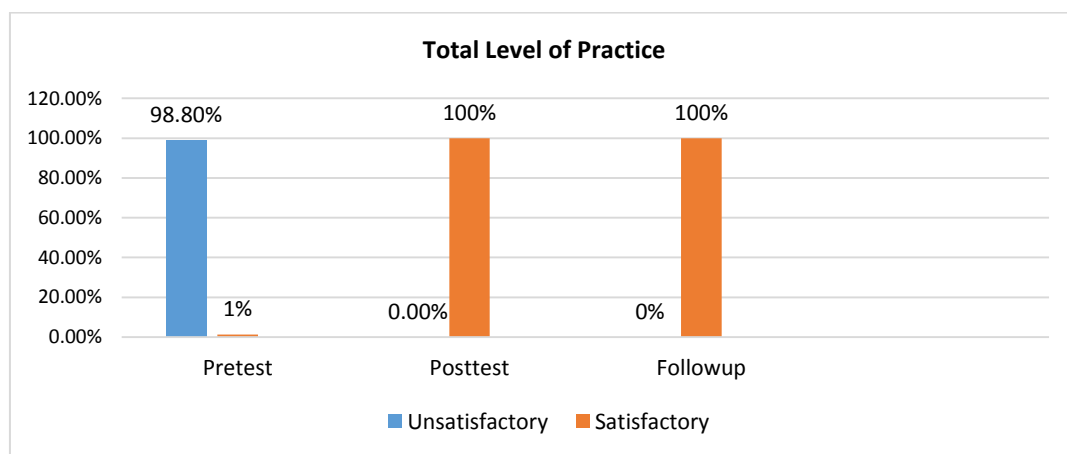

Table 5. Correlation between total practice of breast self-examination and selected demographic data of the women (age, working experience)

Variable	Pre program	Post program	Follow up
Age			
Person correlation	0.17	0.71	0.02
Sig.	0.12	0.000**	0.83
Working experience			
Person correlation	0.29	0.71	0.03
Sig.	0.009**	0.000**	0.78

** Correlation is significant at the 0.01 level (2-tailed).

Table 6. Correlation between total knowledge of breast self-examination and selected demographic data of the women (age, working experience)

Variable	Pre program	Post program	Follow up
Age			
Person correlation	0.01	0.17	0.12
Sig.	0.90	0.12	0.30
Working experience			
Person correlation	0.061-	0.11	0.09
Sig.	0.59	0.31	0.40

Discussion

The research hypotheses of the study were accepted as the knowledge scores were increased post-training program at a high level, as well as working women, demonstrated a satisfactory level of breast self- exam practice post-training program than a pre-training program. Findings of the current research are discussed within the following frame of references.

Based on results of this study, most of women reported that media (TV, Radio, and Internet) was the main source of information, (45%) from the hospital while the minority (3.8%) their friends. A similar finding was identified by Ozdemir et al. (2014) carried out a study to assess breast self-examination knowledge and practices among women and the effects of education on their knowledge and found that most of women (68.5%) reported TV was the source of their breast self-examination knowledge, with journals and books being the second most predominant source (29.3%).

This is in disagreement with Seif & Aziz (2000) who conducted a study to assess the effect of breast self-examination training program on knowledge, attitude and practice of a group of working women and reported that peer groups were the most important source of information on BSE (47.8%) followed by media (Radio/TV) 30.4% while only 9% of them got their information from the health teams.

The study finding of women barrier to perform breast self-examination showed that 50% were no complaints, 30% had lack of knowledge, 20% fear and worry about finding the lump. This was in disagreement with different studies Seif & Aziz, (2000); Bener et al., (2001); Alqattan et al., (2008) about effect of training program about breast self-examination on knowledge and practice found that fatalism and fear from discovering breast cancer were the major barriers to perform breast self-examination. This finding is alarming as it represents inadequate health literacy regarding this important health issue and postulates the need for health teaching programs that increase awareness among the community.

The current study finding revealed that the minority (5%) had good knowledge about breast cancer before the training program, and 100% improvement in the knowledge post and follow up of the training program with statistically significant (P <0.001). This is may be due to clarity and simple language of the session, the proper method of teaching and educational materials used as well as the women's readiness to promote and maintain a healthy lifestyle and to know about the disease. This is in agreement with Moussa & Shalaby (2014) conducted a study to assess the effect of breast self-examination education program on knowledge, attitude and practice of nursing students and reported that the nursing student's knowledge improved in all items about breast cancer after the implementation of the educational program and were statistically significant (p<0.001). Also the percentage of students' satisfactory knowledge continued to improve at the 3-month follow up test.

In the current research study finding, women had poor level (18.8%) of knowledge about BSE before receiving the training program that improved to 100% after the program. This is in agreement with White, & Camper, (2016) conducted a pilot study among Dominican women, reported that all women, had limited knowledge about BSE that was improved after the training program. This finding is to highlight the absence of the healthcare provider role as an educator and the deficiency in health teaching programs that raise community awareness and a need for urgent corrective actions.

The current research study revealed that pre-program all women had the unsatisfactory level of practice that was changed to become 100% of them have a satisfactory level of practice on post-program, and one month follow up with statistically significant (p<0.001). This is in agreement with White, & Camper (2016) conducted a pilot study about breast self-examination education among Dominican women, found that about (6%) of women practiced BSE before the program, while (90%) of women practice BSE after the program. This is in accord Ndikubwimana et al. (2016) reported (26%) of interviewed girls performed BSE before the program, and only 4% knew the real timeframe of doing it. This is also in harmony with Abera et al. (2017) conducted a study about effectiveness of planned teaching intervention on knowledge and practice of breast self-examination among first year midwifery students and reported that planned teaching intervention

has resulted in an increment of the practice of breast self-examination of students.

In this study, the post-program results showed progress in overall performance that indicates the effectiveness of the current training program as it provides the opportunity of face-to-face education and creates interactive teaching situation that significantly increases BSE awareness and improves the practice.

Conclusions

In conclusion, before receiving the training program, the majority of women had poor level of knowledge related to breast cancer and BSE, and unsatisfactory level of practice of BSE. After the implementation of the training program, improvement in the knowledge regarding breast cancer and BSE, and practice of BSE.

Implications for Nursing

The nurses who work with women should be adequately trained to educate the women on the importance and practice of breast self-examination. The special staff development programs should be planned to enhance the competencies of nurses' practice as educators in the field of women care and breast self-examination.

The specialized nurses who are trained in women care should be employed in the primary health centers, school, and hospital with the consideration that the United Arab Emirates is country of multi-nationalities each having their own culture to educate.

Recommendations

- A woman should be equipped with health information related to BSE
- An emphasis should be done regarding women healthy behavior pattern concerning BSE
- Encourage the nurse who is knowledge equipped to take an active role in conducting health education program suitable for such vulnerable about BSE
- Replication of the study on a large sample and other setting is necessary.
- In the earlier stage of young women's lives, health education should be given.

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