



EFFECTIVENESS EDUCATIONAL INTERVENTIONAL PROGRAMME ON KNOWLEDGE REGARDING BREAST CANCER AND BREAST SELF-EXAMINATION AMONG NURSING STUDENTS AT COLLEGE OF NURSING, AL AHSa, KINGDOM OF SAUDI ARABIA.

Oncology

Dr. Vathana Pazhanivelu	Assistant Professor, King Saud Bin Abdul-Aziz University of Health Science, Al Ahsa, Saudi Arabia.
Ms. Hannah Deva Priya	Lecturer, King Saud Bin Abdul-Aziz University of Health Science, Alahsa, Saudi Arabia.
Ms. Rehab Rahail Al Matrafi	Teaching Assistant, King Saud Bin Abdul-Aziz University of Health Science, Al Ahsa, Saudi Arabia.
Ms. Amjad Alsultan	Teaching Assistant, King Saud Bin Abdul-Aziz University of Health Science, Al Ahsa, Saudi Arabia.
Ms. Taif Alutaibi	Student, King Saud Bin Abdul-Aziz University of Health Science, Al Ahsa, Saudi Arabia.

ABSTRACT

Cancer is the second leading cause of mortality worldwide. Among females, breast cancer is the leading cause of death. Breast cancer is the most serious type of cancer in women globally, and its incidence rates in females have been increasing every year over the past 10 years, according to the American Cancer Society. (2020). The aim of this study is to assess the effectiveness educational interventional programme on knowledge regarding breast cancer and Breast self-examination among nursing students at College of Nursing, Al Ahsa, Eastern Region, Saudi Arabia. **Methods:** Pre-experimental one group pretest-posttest research design was used with 65 students from the college of nursing, eastern region, Al Ahsa, KSA. A simple random sampling technique (the lottery method) was used to select the students starting in May 2022. The data were collected after obtaining consent from all subjects. Information related to demographic variables and knowledge, regarding breast cancer and breast self-examination The pretest, was conducted by using a semi-structured questionnaire to assess the pretest's level of knowledge for about 15–20 minutes. After the pre-test, an immediate educational interventional program regarding breast cancer and breast self-examination was taught to the students for 25–30 minutes. After the teaching session, the post-test was conducted using the same structured questionnaire for 15–20 minutes to reassess the knowledge. SPSS version 20 was used for analysis. **Results:** Data analysis reveals that the majority of students, 90.8%, are between the ages of 18 and 20. In regard to a family history of cancer, 90.8% had no family history of breast cancer. 83.1% of the students received the information. With regard to breast cancer, among them, 93.8% were unmarried. Results of the study showed that the participant's knowledge was not sufficient in the pretest but improved in the posttest. The study results concluded that the evidence-based intervention was beneficial to nursing students. Further research with a larger sample is recommended to evaluate needed curriculum content and effective teaching strategies.

KEYWORDS

INTRODUCTION

Breast cancer is the most common cancer among women, accounting for 30% of all cases. It is expected that 1.8 million new cases of cancer will be diagnosed in 2025 (Bray 2018). Early detection of breast cancer plays a significant role in decreasing mortality and morbidity. Breast self-examination (BSE) is one of the best ways to detect breast cancer (Majed, 2008). Breast self-examination (BSE) is the process of examining any abnormalities in the breast, such as pain, cysts, thickening of the breast, and nipple problems. (Centre for Disease Prevention, 2020) Breast pathology might be easily recognized through breast self-examination (BSE). It is one of the easiest and best methods to find the abnormality in the breast. BSE is an important technique for female in breast cancer detection and prevention. BSE would be recommended on the seventh day of every menstrual cycle. As nursing students play a significant role in teaching people in both hospital and community settings, they should have in-depth and suitable knowledge about BSE to extend the knowledge of women and help them practice BSE themselves. So this study has been undertaken by the researcher to find out the effect of an educational interventional program to enhance the student nurse's knowledge regarding breast cancer and breast self-examination. Education programs play an important role in supporting breast cancer examination and treatment among women (Hatefnia, 2010). Effective educational modules and interventional programs aid in the early detection of breast cancer, and BSE aids in the early detection of breast problems. An educational program is a useful tool and effective in changing the behavior of an individual (Rezaeian M., 2014). In Saudi Arabia, breast cancer is the most common cancer among women. It is a paramount issue for women's well-being and leads to depression and anxiety. Breast cancer is becoming more prevalent among the young generation, too. The Saudi government is intensively working to protect the female population against breast cancer (Abdelaziz, 2018) Breast cancer is an important issue and a leading problem among Saudi women. There will be an increase in the number of older people diagnosed with breast cancer over the next few years. (Al-Qahtani, M. 2007). Women

undergoing training programs about BSE and also those who were counseled by the professional team of health care members related to breast issues have gained adequate knowledge regarding BSE and promoted self-confidence. The woman usually likes to practice the routine of doing BSE regularly (Rezaeian, 2014). In view of the lack of previous studies about the interventional package and information about breast self-examination. The purpose of this study was to better understand Saudi nursing students' knowledge of breast cancer and breast self-examination (BSE) in the Kingdom. Early identification of breast changes is an important factor in the prevention of breast cancer. This is a task for health care professionals, especially nurses; who play a critical role in creating awareness about breast cancer among women. Nursing students are the upcoming nurses who will have the chance to encourage and influence women to be aware of breast cancer. Hence, this study is expected to disseminate knowledge to the general population at large. So the researcher felt it was important to teach the students about breast cancer and BSE, in an effort to promote the early detection of the disease.

Research Questions

1. What is the level of knowledge regarding breast cancer among nursing students at College of Nursing at AlAhsa?
2. What is the level of knowledge regarding breast self examination among nursing students at College of Nursing at AlAhsa?
3. What is the effectiveness of educational intervention programme on knowledge regarding Breast cancer and Breast self-examination (BSE) among nursing students at College of Nursing at AlAhsa?

Objectives of the Study

The aim of this study is to assess the effectiveness educational interventional programme on knowledge regarding breast cancer and Breast self-examination among nursing students at College of Nursing, AlAhsa, (CON-A) Eastern Region, Saudi Arabia.

Specific Objectives

1. To assess the pretest level of knowledge regarding breast cancer and breast-self-examination among nursing students.
2. To assess the effectiveness educational interventional programme on knowledge regarding breast cancer and Breast self-examination among nursing students
3. To compare the pretest and posttest level of knowledge regarding breast cancer and breast-self-examination among nursing students

Study Area/Setting

The study was implemented in College of Nursing, Al-Ahsa, Eastern region, Saudi Arabia. The study subjects are the nursing students of level 4 studying in college of nursing who fulfils the inclusion criteria were selected. All nursing students from level 4. Students those who were not willing to participate in the study and also the nursing students from level 5 to 8 were excluded from the study. The study design was; Pre-experimental One group pretest post test design research. The schematic representation of research design. O1- Pre-test on knowledge regarding breast cancer and breast self examination, X- Educational Interventional Programme on breast cancer and breast self-examination and O2-Posttest on knowledge regarding breast cancer and breast self-examination.

O1	X	O2
Pre-test to assess existing knowledge	Intervention by conducting educational intervention programme	Posttest to assess effectiveness of intervention

Sample Size & Sampling Technique

By using the above Yamane formula sample size we found the maximum sample size of 53 and the simple random sampling technique (Lottery method) was used to select the students. The researcher was obtaining permission from the IRB to conduct the study. After obtaining IRB approval, permission to conduct the study was obtained from the dean of the College of Nursing. The nursing student who fulfilled the inclusion criteria was carefully selected by a simple random sampling technique. Based on the students' will, the research team explained the study to the students and obtained their approval by asking them to sign an informed consent. Participants are encouraged to fill out the demographic data form, including the pretest questionnaires. Then the educational intervention program was implemented through the lecture method. After 7 days, the post-test was conducted using the same questionnaires. All participants maintain confidentiality and anonymity. Once the survey was received, the data was entered into SPSS to analyze the results. A pilot study was conducted on six students in the college of nursing.

Description of the Tool

The original questionnaire was taken from a previous study by Sukila B (2020), it was modified by the researcher, and the questionnaire's validity was assessed using content validity from two nursing experts. The survey questionnaire has been changed according to the recommendations and suggestions of the experts. Cronbach's alpha coefficient is used to assess the questionnaire's validity and reliability to ensure acceptable reliability and stability.

In the present study, the tool consists of three sections. Section A consists of demographic variables; Section B consists of knowledge questionnaires related to breast cancer and breast self-examination. The demographic variables consist of age, academic level, family history of breast cancer, information about breast self-examination, menstrual cycle, marital status, number of children, and sources of information. Section B consists of a semi-structured questionnaire that was used to assess the knowledge regarding breast cancer and breast self-examination.

There are 17 questions related to breast cancer and 15 questions about breast self-examination. The questionnaire provides two answers: yes or no. The option "yes" indicates a score of 1, and "no" indicates a score of 0. The scoring interpretation was calculated for each student by summing the number of correct answers, dividing by the total scores of the related questions, and then multiplying by 100 according to Bloom's cut-off point. The cut-off point of 60 (19 below) has been considered a low level of knowledge. A score of 60%–80% (20–25) is considered a moderate level of knowledge. Students with 80–100% (26–32 scores) are considered to have a high level of knowledge. Section-C; Educational intervention program includes a PowerPoint presentation regarding breast cancer and breast self-examination. It includes the following sections: incidence, definition, causes, risk factors, signs and symptoms, management of breast cancer, steps of

breast self-examination, and methods and procedures. Section D consists of the Posttest, the same questionnaire as the pretest was used.

Data Collection and Analysis Plan

Pretest was conducted by using semi-structured questionnaire to assess the pretest level of knowledge. After the pre- test, immediately educational interventional programme regarding breast cancer and breast self-examination was taught to the students about 25-30 minutes. After 7 days post-test was conducted using the same structured questionnaire to reassess the knowledge. Data was revised, coded, computerized and then analyzed using (SPSS) software package version 20.0. P-value lower than or equal to 0.05 was considered to be statistically significant. Descriptive statistics; was used to finalise the mean with standard deviation and percent to describe the scale and categorical data, respectively. The significance difference between the pretest and posttest knowledge scores was calculated by paired t-test.

Ethical Approval and consent; After the ethical approval of Research unit and King Abdullah International Medical Research Center (KAIMRC) IRB Committee. An informed consent was obtained from all participants. The usual assurance of anonymity and confidentiality was obtained. Data was stored securely in PI researcher's office for maintaining the confidentiality of the data.

Table-1 Comparison Of Pretest And Post-test Knowledge Regarding Breast Self-examination

S. No	Questions	Respondents & Percentage in Pre-test				Respondents & Percentage in Post-test			
		YES	%	No	%	YES	%	No	%
1	Breast cancer incidence can be increases with age	60	92.3	5	7.7	64	98.5	1	1.5
2	Breast cancers have a link with inheritance of abnormal genes	50	76.9	15	23.1	58	89.2	7	10.8
3	The first sign of Breast cancer is presence of lump or mass in the breast	55	84.6	10	15.4	60	92.3	5	7.7
4	The women have Breast cancer in one breast can be spread to another part of the breast.	50	76.9	15	23.1	62	95.4	3	4.6
5	Breast cancer is painless, hard with uneven edges.	30	46.2	35	53.8	55	84.6	10	15.4
6	Skin irritation & dimpling is a sign of Breast cancer.	44	67.7	21	32.3	62	95.4	3	4.6
7	Discharge from the nipple or inversion a sign of Breast cancer.	55	84.6	10	15.4	61	93.8	4	6.2
8	Lump in the axilla, be a possibility of breast cancer.	51	78.5	14	21.5	62	95.4	3	4.6
9	Breast cancer can be risk for the people those who have the family history.	63	96.9	2	3.1	63	96.9	2	3.1
10	Exposures to chemicals and radiations are a risk for such breast cancer.	52	80	13	20	60	92.3	5	7.7
11	Overweight and obesity increases the risk of breast cancer.	20	30.8	45	69.2	53	81.5	12	18.5
12	Late pregnancy (>30 years age) is a higher risk of breast cancer.	30	46.2	35	53.8	61	93.8	4	6.2
13	The women who are not feeding the baby have the risk of Breast cancer.	35	53.8	30	46.2	57	87.7	8	12.3

14	Early menstruation and or late menopause, a greater risk of having Breast cancers?	27	41.5	38	58.5	57	87.7	8	12.3
15	Drinking alcohol & smoking increases the woman's risk of breast cancer.	49	75.4	16	24.6	61	93.8	4	6.2
16	Mammography, Ultrasound, Computer Tomography (CT) & Magnetic Resonance Imaging (MRI) scans is used to screen and diagnose Breast Cancers.	56	86.2	9	13.8	60	92.3	5	7.7
17	Breast Self-Examination (BSE) is a method to diagnose breast cancer in very early stages.	60	92.3	5	7.7	64	98.5	1	1.5

Table-2 Comparison Of Pretest And Post-test Practice Regarding Breast Self-examination

S. No	Questions	PRETEST				POST-TEST			
		Yes		No		Yes		No	
1	Breast Self-Examination (BSE) is recommend for all women	57	87.7	8	12.3	64	98.5	1	1.5
2	BSE has to be done at least once a month	46	70.8	19	29.2	62	95.4	3	4.6
3	BSE is easier to perform while taking bath.	52	80	13	20	60	92.3	5	7.7
4	BSE has to be done at specific date and time.	32	49.2	33	50.8	50	76.9	15	23.1
5	BSE is to be done by looking at the breasts, in front of the mirror	42	64.6	23	35.4	52	80	13	20
6	The woman has to keep the shoulders straight and the hands on her hips while performing BSE.	40	61.5	25	38.5	49	75.4	16	24.6

7	The woman has to inspect her breasts by raising the arms.	53	81.5	11	16.9	63	96.9	2	3.1
8	BSE has to be done while lying down.	33	50.8	32	49.2	56	86.2	9	13.8
9	During BSE the right hand is used to feel the left breast & vice versa.	47	72.3	18	27.7	60	92.3	5	7.7
10	BSE has to be done in a circular motion, covering the whole breast.	53	81.5	12	18.5	62	95.4	3	4.6
11	BSE is to be done using only light pressure and deep pressure on the Breasts.	47	72.3	18	27.7	53	81.5	12	18.5
12	Looking for axillary lymph node is also important while performing BSE.	52	80	13	20	59	90.8	6	9.2
13	BSE is to be done for to look changes in size and shape of the breasts.	52	80	13	20	64	98.5	1	1.5
14	BSE detects a lump, redness, soreness, rash or unusual swelling of the breasts etc., should it be brought to a doctor's attention without any further delay.	56	86.2	9	13.8	64	98.5	1	1.5
15	BSE is a useful tool for early detection of breast cancer.	52	80	13	20	64	98.5	1	1.5

In the pretest, where breast self-examination (BSE) is recommended for all women, 87.7% of students said yes, and 98.5% said yes in the post-test. According to the statement, BSE must be performed at least once a month, and month after month, 95.4% of students accepted as yes 70.8% of students said yes, and. In terms of whether BSE is easier to perform while taking a bath, 80% of students said yes in the pretest, and 92.3% of students said yes in the posttest; additionally, during BSE, the right hand is used to feel the left breast and vice versa. In regard to BSE is to be done by looking at the breasts in front of the mirror. 80% of them agreed with the yes answer. In the posttest for the statement "The woman has to keep the shoulders straight and the hands on her hips while performing BSE," 75.4% of them responded yes. In the posttest, 98.5% of students answered yes to questions 13, 14, and 15.

Table-3 Comparison Of Mean And Standard Deviation (sd) Regarding Knowledge And Practice Regarding Breast Cancer And Breast Self-examination

S.No	Questions	PRE-TEST		POST-TEST		diff	t	sig
		Mean	SD	Mean	SD			
1	Breast cancer incidence can be increases with age	.9231	.26854	.9846	.12403	.13584	1.655	.103
2	Breast cancers have a link with inheritance of abnormal genes	.7692	.42460	.8923	.31240	.24310	2.049	.045
3	The first sign of Breast cancer is presence of lump or mass in the breast	.8462	.36361	.9231	.26854	.19533	1.298	.199
4	The women have Breast cancer in one breast can be spread to another part of the breast.	.7692	.42460	.9538	.21145	.30767	2.997	.004
5	Breast cancer is painless, hard with uneven edges.	.4615	.50240	.8462	.36361	.53440	5.130	.000
6	Skin irritation & dimpling is a sign of Breast cancer.	.6769	.47129	.9538	.21145	.39694	4.609	.000
7	Discharge from the nipple or inversion a sign of Breast cancer.	.8462	.36361	.9385	.24219	.20588	1.624	.109
8	Lump in the axilla, be a possibility of breast cancer.	.7846	.41429	.9538	.21145	.28974	2.805	.007
9	Breast cancer can be risk for the people those who have the family history.	.9692	.17404	.9692	.17404	.06195	.000	1.000
10	Exposures to chemicals and radiations are a risk for such breast cancer.	.8000	.40311	.9231	.26854	.24310	2.049	.045
11	Overweight and obesity increases the risk of breast cancer.	.3077	.46513	.8154	.39100	.66637	6.392	.000
12	Late pregnancy (>30 years age) is a higher risk of breast cancer.	.4615	.50240	.9385	.24219	.60165	7.639	.000

13	The women who are not feeding the baby have the risk of Breast cancer.	.5385	.50240	.8769	.33108	.48556	4.597	.000
14	Early menstruation and or late menopause, a greater risk of having Breast cancers?	.4154	.49662	.8769	.33108	.60732	6.325	.000
15	Drinking alcohol & smoking increases the woman's risk of breast cancer.	.7538	.43412	.9231	.26854	.30473	2.495	.015
16	Mammography, Ultrasound, Computer Tomography (CT) & Magnetic Resonance Imaging (MRI) scans is used to screen and diagnose Breast Cancers.	.8615	.34807	.9385	.24219	.16784	1.690	.096
17	Breast Self- Examination (BSE) is a method to diagnose breast cancer in very early stages.	.9231	.26854	.9231	.26854	.09795	.000	1.000
Practice								
1	Breast Self- Examination (BSE) is recommend for all women	.8769	.33108	.9846	.12403	.19664	2.419	0.018
2	BSE has to be done at least once a month	.9538	.21145	.7077	.45836	.036230	4.234	.000
3	BSE is easier to perform while taking bath.	.8000	.40311	.9231	.26854	.24310	2.049	.045
4	BSE has to be done at specific date and time.	.4923	.50383	.7692	.42460	.42552	3.723	.000
5	BSE is to be done by looking at the breasts, in front of the mirror	.6462	.48188	.8000	.40311	.28693	2.309	.024
6	The woman has to keep the shoulders straight and the hands on her hips while performing BSE.	.6154	.49029	.7538	.43412	.29565	1.760	.083
7	The woman has to inspect her breasts by raising the arms.	.8281	.38025	.9688	.17537	.24843	2.607	.011
8	BSE has to be done while lying down.	.5077	.50383	.8615	.34807	.48836	5.255	.000
9	During BSE the right hand is used to feel the left breast & vice versa.	.7231	.45096	.9231	.26854	.33286	3.007	.004
10	BSE has to be done in a circular motion, covering the whole breast.	.8154	.39100	.9538	.21145	.25333	2.408	.019
11	BSE is to be done using only light pressure and deep pressure on the Breasts.	.7231	.45096	.8154	.39100	.21404	1.515	0.135
12	Looking for axillary lymph node is also important while performing BSE.	.8000	.40311	.9077	.29171	.22460	1.840	.070
13	BSE is to be done for to look changes in size and shape of the breasts.	.8000	.40311	.9846	.12403	.29094	3.469	.001
14	BSE detects a lump, redness, soreness, rash or unusual swelling of the breasts etc., should it be brought to a doctor's attention without any further delay.	.8615	.34807	.9846	.12403	.20512	2.997	0.004
15	BSE is a useful tool for early detection of breast cancer.	.8000	.40311	.9846	.12403	.29094	3.469	.0001

The above table reveals that the Mean score and Standard Deviation in pretest was low comparing to the post test Mean score and Standard Deviation. So the investigator concludes that the planned teaching programme was very effective among the students.

DISCUSSION

Rabia Latif (2014)¹¹ conducted a study regarding the knowledge about breast cancer among Saudi students. The study findings showed a low level of knowledge in symptoms of breast cancer and the students were not clear about the risk factors and etiology causing breast cancer. The present study was done with the nursing students in pre-level before studying the assessment courses. Abdulaziz A. (2004)¹² conducted a cross sectional study to investigate the knowledge and practice of BSE in college students at Riyadh. The study finding showed that correlations were Positive found between students studying nursing. The practice of BSE and their academic performance in nursing college. There is a need to enhance the knowledge about breast self-examination among nurses.

Shadia A. (2010)¹³ conducted a research in king saudbin Abdulaziz university of health sciences related to BSE among female nursing students. The result showed that nurses have knowledge lack related to BSE. And recommended that, every nursing school needs to provide teaching strategies related to the steps of BSE to increase the students' knowledge and skills to perform BSE. An increase in breast cancer consciousness of nurses may have an impact by inspiring women to follow the breast examination and screening. The current study revealed that most of them have adequate knowledge and there was a lack in practice of Breast-self-examination. The study findings correlates with the study done by Shalini (2011) with pre-experimental one group pretest posttest design. The data analysis showed that majority (52%) of them were in the age group, of 18-19 years and 72 percent of them were had average knowledge on BSE in the pre-test score. Out of 40 participants only one student was performing BSE occasionally. A descriptive project was approved with 422 female students at King Saud university. The study revealed that the media is a good source of providing information about BSE and also to create awareness about BSE among the public. The study findings showed that the absence of knowledge and imperfectly believed opinions about breast cancer prevention about females are accountable for the

adverse insight of the curability of cancer detected in initial stages and also the effectiveness of the screening tests. So, the study insisted that it is very important to assess the level of knowledge, attitude, and practice of BSE about breast cancer in our people. The current study was done with 65 nursing students and the study findings revealed that most of the students have adequate knowledge and needs to improve the practice session.

Limitations

The study was done only a period of 6 months and only among female undergraduate students.

Recommendations

A crucial need for a comparative study about the effectiveness of structured teaching programme on knowledge and attitude regarding breast self-examination among adolescent girls studying between and within the states.

A similar study can be done using large samples

CONCLUSION

The findings of this study showed that the structured teaching programme is to help the student nurses to teach and motivate the women in future and other women in society to prevent themselves from breast cancer

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