

Original Research Article

Effectiveness of Breast Cancer Prevention Instructional Program on Female Secondary Student's Knowledge among a Sample in Baghdad City

Athraa Hameed Shaker* Basim Hussein Bahir
College of Health and Medical Technology, Middle Technical University, Baghdad, IRAQ

*E-mail: athaa88.aj@gmail.com

Accepted 24 May, 2016

Abstract

Breast Cancer is the most common cancer among women, comprising 23 percent of the female cancer globally. A Quasi –experimental study was conducted at four female's secondary schools after obtained permission from Directorate general education in Baghdad city during the period from 15 February to 1 April 2014 to assess knowledge of female's students about breast cancer prevention and to find out the impact of instructional program on students. The study include 200 students from four schools and carried through four phase pre-test, planning the instructional program, implementation the program and evaluation the program as post-test. Results shows that level of students' knowledge on breast cancer is limited and inadequate with defect in responses in some items., it also indicates that the students are very enthusiastic to learn about breast cancer and its prevention. After implementation the instructional program post-test revealed that there was a highly significant improvement in the knowledge and also high significant differences between means of their knowledge in pre and posttest in all items. In conclusion most students reported inadequate knowledge in pre-test with highly significant improvement of their knowledge in the post-test indicating effectiveness of the instructional program and the limited level of students' knowledge might be an obstacle to screening program and early diagnosis. Awareness program should be developed including lecture, and on hands training.

Key word : Breast cancer Effectiveness Instructional program pre-test post-test.

الخلاصة

سرطان الثدي هو أكثر أنواع السرطان شيوعاً بين النساء، التي تضم 23 في المئة من سرطان الإناث على مستوى العالم. أجريت الدراسة في عشر مدارس ثانوية للأنثى في مدينة بغداد خلالاً لفترة من 15 شباط إلى 1 نيسان 2014 لتقييم معرفة طلاب المرحلة الثانوية للإناث حول الوقاية من سرطان الثدي ومعرفة تأثير برنامج تعليمي على الطالبات. وشملت الدراسة 200 طالبة من أربع مدارس ونفذت الدراسة من خلال أربعة مراحل مرحلة ما قبل الاختبار، والتخطيط لبرنامج تعليمي، تنفيذ البرنامج وتقييم البرنامج في فترة ما بعد الاختبار باستخدام نفس الاستبيان بمثابة الاختبار البعدي. أظهرت نتائج الدراسة أن مستوى المعرفة لدى الطالبات حول سرطان الثدي كانت محدودة وغير كافية مع خلل في الردود في بعض المواضيع. ومع ذلك، فإنه يشير أيضاً إلى أن الطالبات متحمسات جداً لمعرفة المزيد عن سرطان الثدي والوقاية منه. بعد تنفيذ برنامج تعليمي تبين بعد الاختبار أن هناك تحسناً كبيراً للغاية في المعرفة وفروق ذات دلالة إحصائية عالية أيضاً بين وسائل المعرفة في الاختبار القبلي والبعدي في جميع المواضيع. وفي الختام أشارت الدراسة أن بعض الطالبات لديهن المعرفة الكافية في مرحلة ما قبل الاختبار مع تحسن كبير للغاية من معارفهم في مرحلة ما بعد الاختبار وذلك يشير إلى فاعلية البرنامج التعليمي وأشارت إلى أن مستوى تدني المعلومات التي يمتلكها هذا الجيل من الطالبات قد يكون عائقاً أمام برامج الفحص والتشخيص المبكر لسرطان الثدي، ولهذا فنحن بحاجة إلى زيادة الوعي حول هذا المرض وذلك من خلال المحاضرات والحلقات الدراسية وبرامج التدريب.

الكلمات المفتاحية: سرطان الثدي، اختبار قبلي، اختبار بعدي، برنامج تعليمي، فاعلية.

Introduction

Breast cancer comprising 23 percent of the female cancer worldwide and it is the most common cancer among women. It is the leading cause of cancer-related death in low –resource countries [1, 2]. According to the American cancer society, about 1-3 million women will be diagnosed with breast cancer annually worldwide [3].

In Iraq breast cancer ranks the first among the commonest malignancies among all the population and account for approximately 34.44 percent of the registered female cancer according to the latest Iraqi cancer registry, which shows a trend for the disease to affect younger women [4]. The incidence rate of all females with breast cancer in Iraq had elevated for all age group. It was found that there was a high increase rate among age group 60-69 years [5].

The increased incidence in most countries is attributed to the increase in numbers of women with major breast cancer risk factors [6]. Most women are unaware that they have breast cancer until they have reached the second stage. Screening of breast cancer is useful in early detection and early treatment to have a better prognosis [3].

Recommended preventive breast cancer screening techniques used to reduced cancer mortality and morbidity which include Breast self-examination (BSE) Clinical breast examination (CBE) and Mammogram.

Mammogram and CBE need specialized equipment and expertise whereas BSE is simple and inexpensive tool that can be done by women themselves [7] and does not require complex technical training [8].

Breast cancer is easier to treat if early diagnosed, for this reason some experts recommended that women age over 20 years must perform monthly breast self-examination to look for lumps and other changes [9]. Many studies have shown that education programs has positive impact on women's knowledge of breast cancer and increase the participation in prevention and screening [10, 11].

One of the potential obstacles to early diagnosis of breast cancer in Iraq and other

middle and low income countries include the lack of public health awareness program [2, 12].

Materials and Methods

A Quasi-experimental design was conducted at female's secondary schools in Baghdad city in Al-Rusafa and Al-Karkh sector during the period from 15th February to 1st April 2015. Prior to collection of data, formal administrative approval was obtained from Directorate of the general educational/Baghdad/Al-Karkh and Al-Rusafa. Sample of the study is considered to be 200 students. Two schools from each sector one conventional and the other distinguished were selected randomly and then 50 students from each school were selected randomly by using systematic method every other student. Data were collected through special prepared questionnaire. The questionnaire was designed and was reviewed by a panel of experts to assess basic knowledge about breast cancer prevention among females' students. The questionnaire consists mainly of two parts: Socio-Demographic data and Students' Knowledge. The knowledge was assessed through the use of three level scale, the rating score was (1 for yes correct answer) and (0 for don't know and wrong answer). Data collection was carried through four phases: The first phase was assessment knowledge of females' students about breast cancer. The second phase was planning and development instructional program. A booklet of information that covered all subjects needed in the program were contributed to all students. The third phase was implementation of the program through classroom session of one hour lecture, the program session were managed by booklets and lecture to explain and clarify methods that used in breast cancer prevention. The fourth phase is evaluation which carried out two week after implementation of the instructional program by doing posttest to students to study the effect of the program on students' knowledge.

Results

This table shows a highly significant differences $P < 0.01$ for all of the studied items concerning knowledge about epidemiology and risk factors of breast

cancer which indicates that the applying of teaching program has a successful effect since good improvement had been occurred.

Table 1: Initial assessment according to pre – post periods related to knowledge about epidemiology and risk factors of breast cancer

Items of Knowledge about Epidemiology and Risk factors of breast cancer	Period	Pre		Post		Test Stat.	P-value	C.S.
		No.	%	No.	%			
Breast cancer rank the first problem among women in Iraq	False	94	47	2	1	86.3	0.000	HS
	True	106	53	198	99			
Breast cancer is the commonest cancer in women world wide	False	44	22	0	0.0	42.0	0.000	HS
	True	156	78	200	100			
Breast cancer can be diseased male	False	126	63	1	0.5	123.0	0.000	HS
	True	74	37	199	99.5			
Women having a mother or sister with history of breast cancer are at greater risk of breast cancer	False	65	32.5	3	1.5	54.7	0.000	HS
	True	135	67.5	197	98.5			
Early menarche and late menopause is a risk for developing breast cancer	False	179	89.5	14	7	153.7	0.000	HS
	True	21	10.5	186	93			
Breast cancer risk increase at age over 50 years	False	135	67.5	4	2	125.2	0.000	HS
	True	65	32.5	196	98			
Taking of oral contraceptive pills is a risk for breast cancer	False	159	79.5	11	5.5	142.2	0.000	HS
	True	41	20.5	189	94.5			
Fatty women are more prone to breast cancer than slim women	False	169	84.5	8	4	155.2	0.000	HS
	True	31	15.5	192	96			
Delayed first pregnancy after the age of 30 years is a risk for developing breast cancer	False	180	90	25	12.5	145.5	0.000	HS
	True	20	10	175	87.5			
Exposure to radiation at young age may increase risk of breast cancer	False	42	21	4	2	32.6	0.000	HS
	True	158	79	196	98			
Women who breast fed their children are more likely to get breast cancer	False	48	24	0	0.0	46.0	0.000	HS
	True	152	76	200	100			
Physical activity is a great risk for breast cancer	False	67	33.5	3	1.5	60.1	0.000	HS
	True	133	66.5	197	98.5			

This table shows a highly significant differences $P < 0.01$ for all of the studied items concerning knowledge about anatomy and

pathophysiology of breast cancer, which indicates that applying of teaching program had a successful effect since good improvement had been occurred.

Table 2: Initial assessment according to pre – post periods related to knowledge about anatomy and pathophysiology of breast cancer

Items of Knowledge about Anatomy and Path physiology of breast cancer	Period	Pre		Post		Test Stat.	P-value	C.S.
	Resp.	No.	%	No.	%			
The breast is milk production gland	False	18	9	3	1.5	Bin. test	0.001	HS
	True	182	91	197	98.5			
The breast is not contain ducts and lobules	False	73	36.5	5	2.5	62.3	0.000	HS
	True	127	63.5	195	97.5			
Dark circle color of the skin around the nipple called areola	False	60	30	0	0.0	58.0	0.000	HS
	True	140	70	200	100			
Breast Muscle tissues help for pushing milk	False	66	33	2	1	58.4	0.000	HS
	True	134	67	198	99			
The basic function of the breast is the production and secretion of milk after child birth	False	14	7	0	0.0	Bin. test	0.000	HS
	True	186	93	200	100			
Breast cancer is the most serious disease that affect the breast	False	7	3.5	0	0.0	Bin. test	0.016	HS
	True	193	96.5	200	100			
Breast Cancer "is a malignant tumor that grew in the breast cells"	False	16	8	1	0.5	Bin. test	0.000	HS
	True	184	92	199	99.5			
The severity and spread of the breast cancer depends on the type of cancer	False	80	40	6	3	66.6	0.000	HS
	True	120	60	194	97			
Metastatic cancer will spread to other places in the body through the blood vessels and lymph channel	False	89	44.5	4	2	79.3	0.000	HS
	True	111	55.5	196	98			

This table shows a highly significant differences $P < 0.01$ for all of the studied items concerning knowledge about early detection

of breast cancer, which indicates that applying of teaching program had a successful effect since good improvement had been occurred .

Table 3: Initial assessment according to pre – post periods related to knowledge about early detection of breast cancer

Items of Knowledge about early detection of breast cancer	Period	Pre		Post		Test Stat.	P-value	C.S.
	Resp.	No.	%	No.	%			
Early detection can improve survival chances	False	10	5	0	0.0	Bin. test	0.002	HS
	True	190	95	200	100			
Early detection is an approach to breast cancer control	False	12	6	0	0.0	Bin. test	0.000	HS
	True	188	94	200	100			
Mammogram is a diagnostic method for early detection of breast cancer	False	172	86	1	0.5	167.1	0.000	HS
	True	28	14	199	99.5			
Breast self-examination(BSE) is the best method for early detection	False	46	23	0	0.0	44.0	0.000	HS
	True	154	77	200	100			
Mammogram is recommended annually after 40 years of age	False	139	69.5	4	2	131.1	0.000	HS
	True	61	30.5	196	98			
Clinical breast examination is not useful in early detection of breast cancer	False	171	85.5	2	1	165.1	0.000	HS
	True	29	14.5	198	99			

This table shows a highly significant differences $P < 0.01$ for all of the studied items concerning knowledge about breast self-examination (BSE), which indicates that

applying of teaching program had a successful effect since good improvement had been occurred .

Table 4: Initial assessment according to pre – post periods related to knowledge about breast self-examination (BSE) of breast cancer

Items of Knowledge about Breast self-examination (BSE)	Period	Pre		Post		Test Stat.	P-value	C.S.
	Resp.	No.	%	No.	%			
Breast self -examination is a way for early detection of breast cancer	False	39	19.5	0	0	37.0	0.000	HS
	True	161	80.5	200	100			
Breast self-examination should be started at age of 20 years	False	107	53.5	2	1	99.2	0.000	HS
	True	93	46.5	198	99			
The best time to perform BSE is after menstrual Period	False	92	46	1	0.5	87.1	0.000	HS
	True	108	54	199	99.5			
The method used for BSE by inspection (looking on mirror) only	False	90	45	9	4.5	77.1	0.000	HS
	True	110	55	191	95.5			
Breast self-examination should be done every month	False	55	27.5	0	0.0	53.0	0.000	HS
	True	145	72.5	200	100			
Breast self-examination should be done during menstrual period	False	143	71.5	3	1.5	136.1	0.000	HS
	True	57	28.5	197	98.5			
The palm of hands is used during BSE	False	86	43	1	0.5	81.1	0.000	HS
	True	114	57	199	99.5			
Lying down is a part of good BSE	False	123	61.5	1	0.5	118.1	0.000	HS
	True	77	38.5	199	99.5			
Breast self-examination is done during bathing with wet skin	False	156	78	2	1	150.1	0.000	HS
	True	44	22	198	99			
After breast self-examination recording of abnormal signs in breast and nipple is recommended	False	52	26	0	0	50.0	0.000	HS
	True	148	74	200	100			

This table shows a highly significant differences $P < 0.01$ for all of the studied items concerning knowledge about signs & symptoms of breast cancer, which indicates

that applying of teaching program had a successful effect since good improvement had been occurred .

Table 5: Initial assessment according to Pre – Post periods related to knowledge about signs & symptoms of breast cancer

Items of Knowledge about signs & symptoms of breast cancer	Period Resp.	Pre		Post		Test Stat.	P-value	C.S.
		No.	%	No.	%			
Nipple discharge is a normal sign	False	182	91	140	70	25.5	0.000	HS
	True	18	9	60	30			
A woman may have breast cancer without any signs or symptoms	False	130	65	16	8	101.3	0.000	HS
	True	70	35	184	92			
Nipple retraction and nipple ulceration are signs of breast cancer	False	103	51.5	1	0.5	98.1	0.000	HS
	True	97	48.5	19	99.5			
The changes in breast size, shape and color are not a signs of breast cancer	False	96	48	2	1	90.1	0.000	HS
	True	104	52	19	99			
Difference in size of both breast is a normal sign	False	141	70.5	39	19.5	81.0	0.000	HS
	True	59	29.5	16	80.5			

Results of this table shows that relative sufficiency value (51.4%) has reported for knowledge about epidemiology and risk factors of breast cancer, and knowledge about anatomy and pathophysiology of breast cancer

was reported relative sufficiency value (22.2%) and overall assessment are accounted relative sufficiency (40.4%), and overall grand mean of score before applying the program was (54.35%).

Table 6: Initial assessment according to grand mean of score differences between Pre – Post periods related to knowledge main domains of breast cancer

Main Domains	No.	DGMS	SD	RS%
Knowledge about epidemiology and risk factors of breast cancer	200	0.51	0.22	51.4
Knowledge about anatomy and pathophysiology of breast cancer	200	0.22	0.18	22.2
Knowledge about early detection of breast cancer	200	0.45	0.19	45.2
Knowledge about breast self-examination (BSE)	200	0.46	0.25	46.2
Knowledge about signs & symptoms of breast cancer	200	0.37	0.28	37.0
Overall assessment	200	0.40	0.17	40.4

Results of this table shows that students in distinct schools had ten percent better knowledge about breast cancer than

conventional schools before applying the program for prevention of breast cancer and this difference is a highly significant $p < 0.001$.

Table 7: Students knowledge about breast cancer of different school's type before applying the program

Parameter	School type	No.	DGMS	SD	SE	Levene's Test for Equality of Variances		t-test for Equality of Means		
						L test	Sig.	t-test	d.f	Sig.
Knowledge Concerning Overall Assessment	Conventional	100	0.49	0.18	0.02	L test	Sig.	t-test	d.f	Sig.
	distinct	100	0.59	0.12	0.01	15.012	0.000	4.63	170	0.000

This table shows students at conventional schools had better improvement of knowledge according to overall studied main domains assessment about breast cancer than distinct

schools type after applying the program of prevention of breast cancer and this difference is a highly significant $p < 0.001$.

Table 8: Descriptive statistics concerning knowledge about breast cancer of different school's type after applying the suggested program

Parameter	School type	No.	DGMS	SD	SE	Levene's Test for Equality of Variances		t-test for Equality of Means		
						L test	Sig.	t-test	d.f	Sig.
Knowledge Concerning Overall Assessment	Conventional	100	0.44	0.20	0.02	L test	Sig.	t-test	d.f	Sig.
	distinct	100	0.37	0.12	0.01	12.046	0.001	3.289	165	0.001

- *NO: Number
- *DGMS: Differences between pre-post grand mean of score
- *SD: Standard deviation
- *SE: Standard error
- *RS: Relative Sufficiency

Discussion

In this study, which aims to determine the effect of breast cancer prevention instructional program applied to female's secondary students to improvement their knowledge. It was found that overall grand mean of score before applying program was (54.35%) and their knowledge was inadequate about *breast* cancer and failed respond in more questions concerning breast cancer and prevention. After applying the instructional program the students' knowledge reported high significant difference at $p < 0.01$ and over all grand mean of score was (40%) which indicate

that instructional program was achieved female's secondary students knowledge to excellent and improvement in all answers concerning all items in all main domains. This result is in agreement with other study done in UAE, Sharjah 2015 on females Students University [13]. According to the current study findings the knowledge of females students about risk factors, early detection, breast self-exam and signs & symptoms of breast cancer were increased at posttest period according to grand mean of score were 0.51, 0.45, 0.46 and 0.37 respectively this findings were lower than other study that done on nursing students at

port said university in Egypt 2014 [14] and it was study were higher as compared with other study that done in Egypt 2015 on females university students [15].

Conclusion

Levels of knowledge of breast cancer of female students after the instructional program were highly significant improvement at post –test period and the study conclude that instruction program was effective according to the study finding which showed significantly low mean of scores for the study sample responses in pre-test, while were significantly high in post-test.

References

1. International Agency for Research on Cancer. Globocan 2008. Lyon, IARC press, 2010.
2. Anderson BO. Guideline implementation for breast health care in low-income and middle-income countries. Overview of the Breast Health Global Initiative Global Summit, 2007. *Cancer*.2008;113(Suppl.):2221-2243.
3. Bener A, EL Ayoubi H, Moore M .Do we need to maximize the breast cancer screening awareness? Experience with an endogamous society with high fertility. *Community Health*.2009; 10(4): 599-604.
4. Iraqi Cancer Board .Iraqi Cancer Registry 2011. Baghdad, Ministry of Health, 2014.
5. Al-Hashimi MM, Wang XJ. Breast cancer in Iraq, incidence trends from 2000-2009. *Asian Pac J Cancer Prev*. 2014; 15(1):281-6.
6. Colditz GA, Bohlke K. priorities for the primary prevention of breast cancer. *CA Cancer J Clin*.2014; 64:186-194 .
7. Karayurt O, Ozmen D, Cetinkaya AC. Awareness of breast risk factors and practice of breast self-examination among

high school students in Turkey .*BMC public Health*.2008; 8:359.

8. Giridhara R B, Goleen S, Sharon PC, Tanmay M, Randa M W, Sherin M et.al. Breast cancer screening among females in Iran and recommendations for improved practice: a review. *Asian Pac J Cancer Prev*. 2011; 12:1647-55
9. Ali Abu-Salem OT, Abdulla HM. Breast Self-Examination among female nurses in Jordan. *Shiraz E medical journal*.2007; 8(2):51-57
10. Ceber E, Turk M, Ciceklioglu M. The effects of an educational program on knowledge of breast cancer, early detection practices and health beliefs of nurses and midwives. *J Clin Nurs*.2010; 19: 2363-71.
11. Secginli S and Nahcivan NO. The effectiveness of a nurse-delivered breast health promotion program on breast cancer screening behaviours in non-adherent Turkish women: A randomized controlled trial. *Int J Nurs Stud*. 2011; 48:24-36.
12. WHO. Towards a Strategy for Cancer Control in the Eastern Mediterranean Region ,1st. ed. Geneva: Regional Office for the Eastern Mediterranean, World Health Organization; 2010: 308-311
13. Abduekmula R, Fatima KS, Salma S, Talal AA. Evaluation of breast cancer awareness among female university students in university of Sharjah, UAE. *Scientific research publishing*. 2015; 4: 9-12
14. Maha MM. Effect of breast self-examination education program on knowledge, attitude and practice of nursing students. *International journal of research studies in biosciences*.2014; 2:40-90
15. Doaa GM, EmanSh, Nadia MT. Effect of a Breast-Self Examination (BSE) Educational Intervention among Female University Students. *American Journal of Nursing Science*.2015; 4(4): 159-165