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Effect of Health Educational Intervention regarding Breast Self-Examination on knowledge and Practices of Female Adolescent ' Students

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Abstract: **Breast cancer is the most common cause o death among females, it is incidence becomes in increasing. It is frightening for women as it affects all ages so that promoting awareness about breast cancer causes and the screening program can help in reduction of morbidity and mortality among females. The study aimed to assess the effect of health educational intervention regarding breast self-examination on knowledge, and practices of female adolescent student. Design: A pre/ post quasi experimental research design was utilized.Sample:- included 280 adolescent girls which selected from two secondary schools at Sohag City. Tools:: A structure interview questionnaire and Breast self examination (BSE) checklist.Results:There was a statistically significant difference between adolescent student's knowledge pre and post- intervention implementation regarding to breast cancer, As regards sources of information about breast cancer, the main source was the friends, there was improvement regarding BSE checklist pre/ immediate post intervention implementation, there was highly statistically significant (P=0.004, P=0.005) positive correlation between total knowledge scores and their practice at post and after one month intervention implementation. Conclusion: knowledge and practice of adolescent students were improved after receiving the educational intervention. Recommendations: adolescent girls should be provided with health information related to BSE and well-informed continuous; health education intervention should be imparted to adolescent girls.**

Keywords: **Health Educational, Breast Self-examination, Adolescent ' Students.**

1. INTRODUCTION

Cancer is considered a leading cause of death worldwide **(Dolar et al., 2012)**. Breast cancer is the most common cancer among Egyptian women. Breast cancer Incidence is 18.9% of every one of cancer cases ‘35.1% in women. In Egypt breast cancer is represented at 24 per 100 000 cases, breast cancer mortality rate is 9.3% of all cancers **(Mortada and El Safie, 2013)**.

Breast cancer is the most common type cancer in women and it is increasing due to increase life expectancy, increase urbanization and adoption of western lifestyles, illiteracy, lack of awareness, and financial constrains, lack of an organized breast cancer screening program, paucity of diagnostic aids that may lead to diagnosis in very late stages. There are many predisposing factor are considered as the risk factor for breast cancer such gender, age, race, family history and genetic factors, personal health history, menstrual and reproductive history, certain genome changes, dense breast tissue, lack of physical activity, poor diet, overweight or obese, lack of awareness drinking alcohol, radiation to the chest and combined hormone replacement therapy **(Townsend et al., 2017)**.

Types of breast cancer is often divided into non-invasive breast cancer (carcinoma in situ) , invasive breast cancer and other less common types of breast cancer as invasive (and pre-invasive) lobular breast cancer and inflammatory breast cancer and Paget's disease of the breast**(Warner, 2017)**.

Many signs and symptoms are associated with breast cancer that include a breast lump, Change in the size, shape or appearance of a breast, Changes to the skin over the breast, such as dimpling, A newly inverted nipple, Peeling, scaling, crusting and Redness or pitting of the skin over your breast. Diagnosing breast cancer is diagnosed through, examining your breasts and breast screening (mammography) or a biopsy. Treating breast cancer can be treated through using a combination of surgery, chemotherapy, radiotherapy **(American Cancer Society, 2017)**.

A multidisciplinary approach to early detect breast cancer detection is essentialthat can reduced morbidity and mortality by means of screening programs because it enhances the chances for successful treatment and cure of the disease and also improves chances of survival and decreases the need of invasive treatment **(Omoyeni et al., 2017)**.

WHO promotes breast cancer control within the context of national cancer control programmers and integrated to non communicable disease prevention and control. A national cancer control programme is a public health programme designed to reduce the number of cancer cases and deaths and improve quality of life of cancer patients, through the systematic and equitable implementation of evidence-based strategies for prevention, early detection, diagnosis, treatment, and palliation, making the best use of available resources **(National Cancer Institute, 2017)**.

Causes of breast cancer aren't completely understood, it it can be prevented by knowing risk of developing condition and by some treatments that are available and can reduce the risk. Help the women who are risk factors to maintain a healthy weight, exercise regularly, having a low intake of fat and alcohol **(Lea, 2010)**.

Early detection plays a vital role in breast cancer by *Breast Self-Examination* (BSE), mammography, and clinical breast examination are screening methods, which are help to detect breast cancer early. Although BSE alone is not sufficient for earlydetection of breast cancer, it allows females to be aware about their health and know breast tissue, as well as preventive health behavior **(Fotedar, et al., 2013)**.

BSE is considered a good idea: it is inexpensive, simple, and provides service to people without access to mammography and comparatively it is easy, painless, non-invasive, self-care action, and can be performed secretly. It allows females to promote health and teaches them about their bodies **(Salama et al., 2013)**.

BSE is a screening method that should be taught at early ages to aware women about the importance of early detection of breast cancer. This screening method can be performed without the assistance of health professionals and requires no special equipment **(Anakwenze et al., 2015)**.

BSE can be demonstrated through many methods as the woman stand in front of a mirror with the torso exposed to view and looks in the mirror for visual signs of dimpling, swelling, or redness on or near the breasts. This is usually repeated in several positions, such as while having hands on the hips, and then again with arms held overhead **(Beaber, 2014)**.

BSE education and observance are a good way to promote health behaviors which associated with clinical breast examination and mammography showing later in life. BSE is at least as effective in reducing mortality. Mammography detects many non-infiltrating and small, non-palpable tumors **(Mohamed et al., 2013)**.

BSE can be an important tool in diagnosing breast cancer at an early stage. It helps in observing and identifying changes in breasts that require further evaluation and treatment. 40% of breast lesions can detected by (BSE) by improving BSE ' knowledge and practices of females that can help in early detection by demonstration health education programs to increase the awareness and practice about BSE **(verma, 2013)**.

Early detection and improving knowledge must be access through mass media to help education about cancer and improve population behavior because female who correctly practice BSE monthly are more likely to detect a lump in the early stage that help in early diagnosis and treatment. Women are more likely to perform BSE effectively when taught by physicians or a nurse **(Sulik, 2014)**.

The nurses can play an important role in educating women through educational programs in the clinical setting, as well as, through community outreach strategies that suit our social and cultural setting, and they are important source of information within their social networks **(Karayurt, 2008)**.

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They help in implementation of the preventive measures about breast cancer, and provide information about BSE and how to perform correctly, Clinical Breast Examination (CBE) and mammography that are recommended screening test for early detection of breast cancer. And provide them with a resource to help them demonstrate properly this including the ideal time of month to perform BSE to allow females to know what is normal and what is abnormal in breast tissue to help in early detection and diagnosis of breast cancer **(Nichols, 2012)**.

Significance of the study:

In Egypt, breast cancer is generally detected at late stages 60% of cases are detected in the third stage of breast cancer, when treatment options are restricted, and death rate is high, as breast cancer is a highly serious disease especially with late diagnosis. Therefore, early detection of breast cancer leads to healthier outcome and prognosis of breast cancer. BSE makes women more aware regarding breast structural abnormalities, which in turn, may direct to an earlier diagnosis of breast cancer **(Ibrahim et al., 2008).**Few adolescent girls regularly perform BSE and many do not even know how to perform it. mortality incidence from breast cancer occurs mostly in developing countries, where most cases with breast cancer are detected and diagnosed in late stages due to lack of knowledge about early detection **(WHO, 2016).** Therefore, they emphasized the need for providing health information about breast cancer and BSE for Egyptian women. Adolescent girls are an important target group for promotion of proper health habits, Breast self-examination (BSE) is an important, cheap, effective and easy l to do by adolescent girls for early detection and diagnosis as a preventive health behavior **(Avci, et al., 2008).**

Aim of the study:

The current study was aimed assess the effect of health Educational intervention regarding breast self-examination on knowledge, and practices of female adolescent student.

Research Hypothesis

1) Adolescent student' who will be exposed to educational intervention regarding BSE will have improved in her knowledge post intervention than pre-intervention.

2) Adolescent student' who will be exposed to educational intervention regarding BSE will have improved in her practice post intervention than pre-intervention.

2. SUBJECTS AND METHODS

Research design:

A pre/ post quasi experimental research design was utilized in the current.

Settings:

The present study was conducted in Al-Shimaa and Althanaweia Banat Secondary school in Sohag city in Egypt.

Subjects:

Multi stages sample were be used in thisstudy, Sohag City contains 10 secondary schools. We selected 20% from the total number of schools bystratified random sample which was about twoschools. The total number of students in allpreparatory and secondary schools was about 650 to750 students, we taken 10% of students from the twoselected secondary schools by simple random sample (280 girls) whichwas selected systematic randomly. The students were from grade one, two and three.The inclusion criteria were: Adolescent girls'students, at the secondary schools, aged from 15 up to 18 years.

Tools and techniques of data collection:

It was developed by the researcher after reviewing relatedliteratures. There were two tools used in the current study as the following:

Tool 1-A structure interview questionnaire: It was composed of three parts.

Part (1):- Socio-demographic data including: age, school level, residence, previous family history of breast problem.

Part (2):include knowledge about breast cancer (definition of breast cancer, types of breast cancer, risk factors of breast cancer, sign & symptoms of breast cancer, treatment, types of treatment of breast cancer, preventive ways of breast cancer, and early detection methods and diagnosis of breast cancer. And also includes knowledge about breast self-examination (BSE), hearing about breast self-examination, concept BSE, properties, purposes, importance, frequencies, and proper time for BSE in accordance with menstrual period and sources of knowledge about BSE.

Part (3): include the practices of breast self-examination (BSE): frequency; time of BSE; regularity of performing and reasons for performing or not performing BSE.

Tool (2):- Breast self-examination checklist which includes steps of BSE, positions, sites to be examined, inspection and palpation technique.

Scoring system:

(A) Scoring system for of the present study was designed as follows:

1) Knowledge about breast cancer. It contains 7 questions the scoring process of it was: each right response will take 1 score and zero for no response.

2) Assessment of adolescent 'studentknowledge about BSE. It contains 8questions, scored as following: each right response will take 1 score and zero for no response.

The total scores of adolescent student' knowledge was divided into three levels:-

- Score above (≥ 65 %) considered good
- Score between (50% – < 65%) considered fair
- Score less than 50% was considered poor.

(B) Scoring system for adolescent student's practice wasclassified asadolescent student's practice about BSE was 20 items. The adolescent students were assigned (2) if their performance was done correctly; assigned (1) if not done and assigned (0) if not applicable.

The total scores of adolescent student'' performance was divided into three levels:-

- Score above (≥ 65 %) considered good
- Score between (50% – < 65%) considered fair
- Score less than 50% was considered poor.

Tool validity:

Content validity of the tools was determined through an extensive review of literature about the effect educational Intervention for adolescent students regarding BSE. The content of the data collection tools was submitted to a panel of five experts in Community health nursing, and the Obstetric health Nursing field with more than ten years of experience in the field. Modifications of the tools was done according to the panel judgment on clarity of sentences, appropriateness of the content, sequence of items, and accuracy of scoring and recording of the items.

Tool Reliability

The tools reliability was estimated through using the Pearson correlation coefficient test to compare between variables. The Pearson correlation coefficient for the variables ranged between (P.< 0.5) and (P. < 0.001), which indicated a highly significant positive correlation between variables of the subjects. The findings from the validity and reliability suggested that, the tools of the study could be used as valid and reliable data collection tools for the current study.

Procedure for Data Collection:

- **Approval:** Before starting this study, an official approval was obtained from authorities of the study setting to carry out the study. An official permission from the managers of the two secondary schools was obtained. A clear explanation was given about the nature, importance and expected outcomes of the study to administrators.

- **Ethical consideration:** All adolescent students were informed about the aim of thestudy, its benefits, and data collection tools in order to obtain their acceptance and cooperation. The researcher informed them that the participation in the study is voluntary; they have the right to withdraw from the study at any time, without giving any reason and that their responses would be held confidentially.

- **Review of current and past** local and international literature related to the research task was made so as to be oriented with relevant research articles and magazines. It was done in two secondary schools (**A**l-Shimaa and Althanaweia banat Secondary school in Sohag city in Egypt); hence this review was helpful in developing the data collection tools used.

- **Pilot study:**

It was carried out on 10 % of the adolescent students, for the purpose of modification and clarificationand estimation of the time needed for data collection. The designed tool was tested on adolescent students. To fill in the sheets unclear items were clarified, unnecessary items were omitted and new items were added.Those who shared in the pilot study will be excluded from the study sample.

- **Study period:** Data was collected from March to May 2018 after obtaining the permission from the authorities.

- **Health Educational Intervention**

- The researchers gone to the participants classes and first introduced them self to the adolescent students and then explained the purpose of the study at the beginning of the interview, so the adolescent students were reassured that all gathered information will be confidential.

- Data collection was done by the researchers during school day. The data collected according to every school policy. After obtaining the written permission from the schools and oral permission from the girls for data collection,

- The girls were interviewed face to face by the researchers and a total of 280 questionnaires were distributed. Then the questionnaire was distributed to 280 adolescent' girls and collected on the same day.

- The purpose of the interview was to fill out the questionnaire sheet pre-intervention application. The questionnaire was used three times. At the first time, it was used as a pre-intervention application for assessment of adolescent students' knowledge and practices regarding BSE.

- Then it was used another time as immediate post intervention application and repeated follow up after one month to evaluate the effect educational intervention. The purpose and nature of study was explained to the adolescent students. Tools were utilized to collect the desired data. The purpose of the study was explained by the researcher to all adolescent students regarding BSE who included in the study.

- The average time spent for adolescent students for completion of each interview for knowledge were around 30-45 minutes, while the time needed for practice was 20-30 minutes. The researchers were available for more clarification whenever needed. Once the participants completed the questionnaires, the researchers collected it from the participants by themselves in every visit.

- The researchers visited each school three to four times every week to collect the data. It was done during the routine work of the school.

- The intervention was constructed based on the actual results that obtained from pre-intervention assessment using the interviewing questionnaire practice checklist as well as literature review which aimed to improve the studied adolescent students' deficit knowledge and practice regarding to BSE.

- It was designed in English and translated into Arabic. The content of the health education included simple and clear information about BSE. It also, included preparation of teaching materials i.e booklet and power point presentation.

- Sessions: Each adolescent student received two sessions. The first session about the knowledge content while thesecond session about the practical content of the intervention. Regarding the knowledge session, the adolescent students were divided into seven groups, each group containing about 40 adolescent girls. Each group was attending one session from the total seven sessions until covered the totaladolescent students. During this session the researchers covered knowledge related to breast cancer definition, risk factors, signs and symptoms and methods of early detection; and BSE's purpose, timing, and frequency.

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- The adolescent' students were taught through power point presentation for the knowledge and practice of BSE in addition the researcher demonstrated the techniques on a breast models (simulator).During and after the presentation the researchers encouraged the active participation of the students through asking questions and receiving feedback.

- Concerning the practical session, the adolescent students were divided into fourteen groups (20 adolescent students each).Each group attended one session of the total fourteen sessions until covered the total adolescent students. This session includeddemonstration of BSE by the researchers and re-demonstration was done by each adolescent student individually. The researcher's carried out one session for one group per day for a period of fourteen days. Demonstration on BSE took about 30 minutes; while re-demonstration took about 10 minutes for each adolescent student. After the completion of each session the handout was distributed toeach girl. This handout contained all the information given during the two sessions as well as it contained photos thatclarify the information.

- **Evaluation** took place one month after the intervention, to examine the adolescent students' knowledge and practice using pre-post test questionnaire and breastself-examination checklist and by re-demonstration of BSE on breast model (post-test) by them. Each adolescent student' was followed up individually in special room to keep privacy.

Statistical Analysis:

The data obtained were reviewed, prepared for computer entry, coded, analyzed and tabulated. Data entry and analysis were done using SPSS 17.0 statistical software package. Data were expressed as mean, SD and number, percentage. Using Manwhitiny test to determine significant for numeric variable and using Chi Square to determine significance for non-parametric variable. Using paired T test for comparison between pre, post and follow up. Using person's correlation for numeric variable in the same group, $P > 0.05$ no significant, $P < 0.05$ significant, $P < 0.01$ moderate significant and $P < 0.001$ highly significant.

3. RESULTS

Table (1) showed the socio-demographic data of children, where (60%) of them was their age was from 17 to 18 years. As regards residence, more than two third (72.00%) of students were from urban.

Figure (1) showed the previous family history of breast problem of students, it was noted that more than most of them (96.0%) don't have family history of breast cancer but only 4.0% of them had family history of breast.

Table (2) concerning the adolescent student's knowledge about breast cancerpre/post and after one month of intervention implementation, this table pointed out that there was an improvement in adolescent student's knowledge as compared to pre- intervention knowledge. There was a highly statistical significance difference between pre/post and after one month of intervention implementation in relation to the adolescent student's knowledge regarding breast cancer (P- value <0.000).

Table (3) illustrated that, there was highly statistical significant difference between adolescent student's knowledge as pre/immediate post and after one month of discharge guide intervention implementation regarding to breast cancer in adolescent student's levels (P=<0.000). It's clear from the above table that there was a highly statistical significant difference (p= <0.000) in the adolescent student's ' total knowledge mean scores as pre/immediate post and after one month of intervention implementation.

Figure (2) reveals that most (93%) of adolescent students in this study didn't hear about breast self-examination (BSE).

Table (4) showed that there was a highly statistical significant difference (P= 0.000) as regard concept, properties, purposes, importance, frequencies and proper time for BSE in accordance with menstrual period pre/ immediate post and after one month discharge guide intervention implementation.

As regards sources of information about breast cancer, **figure (3)** display that, the main resource was the friends (67.5%).While medias represented by (22.0%) and (7.0%) for books. Health team (nurse & physicians) was mentioned by (3.5%).

Table (5) indicates that, most of the adolescent students (93.0%) didn't perform breast self-examination. regarding time of performing breast self-examination (50.0%) of the students reported from 5 day to 7 after menstruation. of the women who not performed breast self-examination, (70.0%) mentioned that not performed it because of lack of awareness about BSE practicing, while one fifth of them (20.0%) mentioned that they have no idea about it (never hear about it.

Table (6) this table presented that there was improvement regarding BSE checklist pre/ immediate post and after one month discharge guide intervention implementation, where there were highly significant differences (P=0.000) as regard all the steps of BSE checklist except lying down position, place a towel or pillow under shoulder before examining breast on that side there were a moderate significant differences (P=0.002). As regarded wedge pattern, it was observed that there no significant difference pre and discharge guide intervention implementation. Where there were significant differences (P=0.002) as regard examining one breast at a time , using the pads of the three middle fingers flat and together , begin in a standing position, to palpated your right breast raise your right arm over your head, using the pads of the three middle fingers of your left hand, examine underarm area also.

Table (7) reflected that there was highly significant difference (P= 0.000) as regard BSE checklist pre/ immediate post and after one month discharge guide intervention implementation.

Table (8) this table illustrated that adolescent students' mean scores total practice related to BSE before and after the intervention implementation and included that there was a highly statistical significant difference (p= <0.000) where the mean practice was 16.17 before the intervention compared to X=25.84 after one month from intervention implementation

Table (9) revealed that there was highly statistically significant (P=0.004, P=0.005) positive correlation between total knowledge scores and their practice at post and after one month intervention implementation, respectively.

Table (1): Percentage distribution of adolescent students according to their characteristics

Characteristics of adolescent students	N=280	100.0%
1-Age(months)		
• 15-	112	40.00
• 17-18	168	60.00
2-School level		
• First	96	34.29
• Second	88	31.42
• Third	96	34.29
3-Residence:		
• Urban.	202	72.00
• Rural.	78	28.00

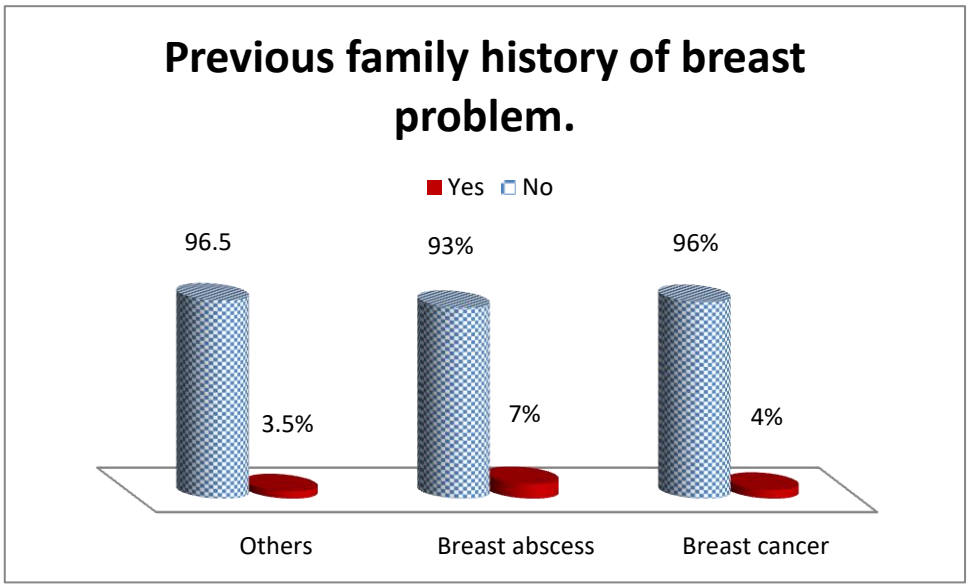

Figure (1): Distribution of adolescent students according to their previous family history of breast problem.

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Table (2): Distribution of adolescent student's knowledge regarding breast cancer as pre/ immediate post and after one month discharge guide intervention implementation

Items	n=280 100%						P- value N.S
	Pre-intervention		Immediate-post intervention		After one month intervention		
	No.	%	No.	%	No.	%	
1-Definition of breast cancer - Don't know - Know	260 20	93.00 7.00	0 280	100 0	20 260	93.0 7.0	0.000
2-Types of breast cancer - Don't know - Know	280 0	100 0	0 280	0 100	0 280	0 100	0.000
3-risk factors of breast cancer - Don't know - Know	280 0	100 0	12 268	4.28 95.72	90 190	32.28 67.72	0.000
4- sign and symptoms of breast cancer - Don't know - Know	280 0	100 0	0 280	0 100	10 270	4.0 96.0	0.000
5- treatment - Don't know - Know	280 0	100 0	20 260	7.1 92.9	56 224	20.0 80.0	0.000
6-early detection methods and diagnosis of breast cancer: - Don't know - know	280 0	100 0	36 244	0 87.0	26 254	9.3 90.7	0.000
7- preventive ways of breast cancer -Don't Know -know	280 0	100 0	0 280	0 100	36 244	12.9 87.1	0.000
8-Knowledge mean scores as pre, immediate and post intervention (Mean± SD)	**1.00 ± 0.00**		**47.28 ± 1.63**		**43.26±3.83**		0.000

Table (3): Comparison of adolescent students' level of knowledge related to breast cancer as pre/immediate post and after one month discharge guide intervention implementation

Items	n=280 100%						P-value
	Pre- intervention		Immediate-post intervention		After one month intervention		
	No.	%	No.	%	No.	%	
- bad > "50 "	280	100%	0	0.0	0	0.0	<0.000
-fair "50- 65"	0	0.0	32	11.4	84	30.0	<0.000
-good"≥ "65"	0	0.0	248	88.6	196	70.0	<0.000
Total knowledge	5.68±0.69		66.17±3.10		64.04±8.64		<0.000

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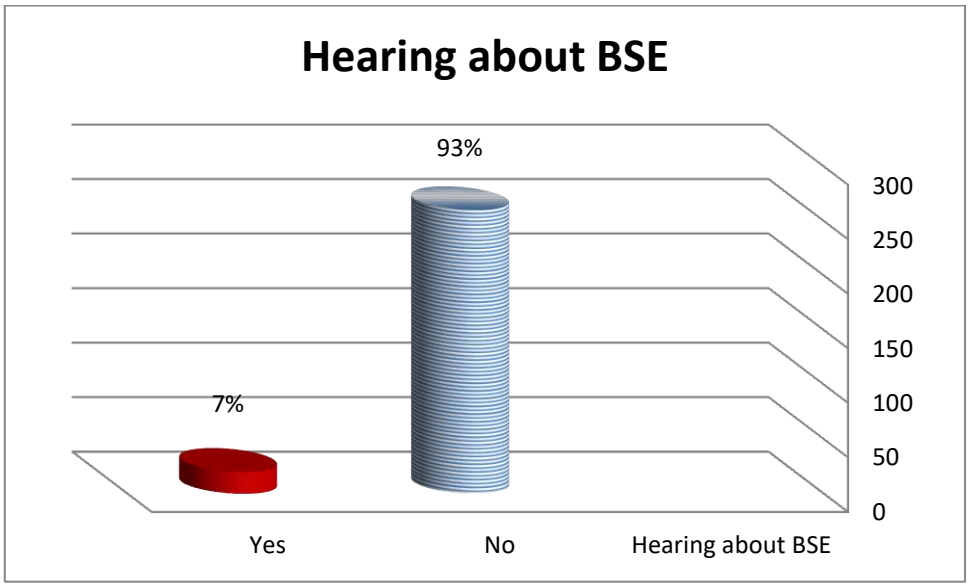

Figure (2): Distribution of adolescent students according to theirhearing about BSE.

Table (4): Distribution of adolescent student's knowledge regarding BSE as pre/ immediate post and after one month discharge guide intervention implementation

BSE	no=280 100%						P-value
	Pre-intervention		Immediate-post intervention		After one month intervention		
	No.	%	No.	%	No.	%	
- concept BSE	0	0.0	280	100	280	100	0.000
- properties	0	0.0	280	100	280	100	0.000
- purposes	10	4.28	280	100	256	91.4	0.000
- importance	0	0.0	188	67.14	168	60.0	0.000
- frequencies	0	0.0	232	82.85	172	61.4	0.000
- proper time for BSE in accordance with menstrual period	0	0.0	200	71.4	240	85.7	0.000

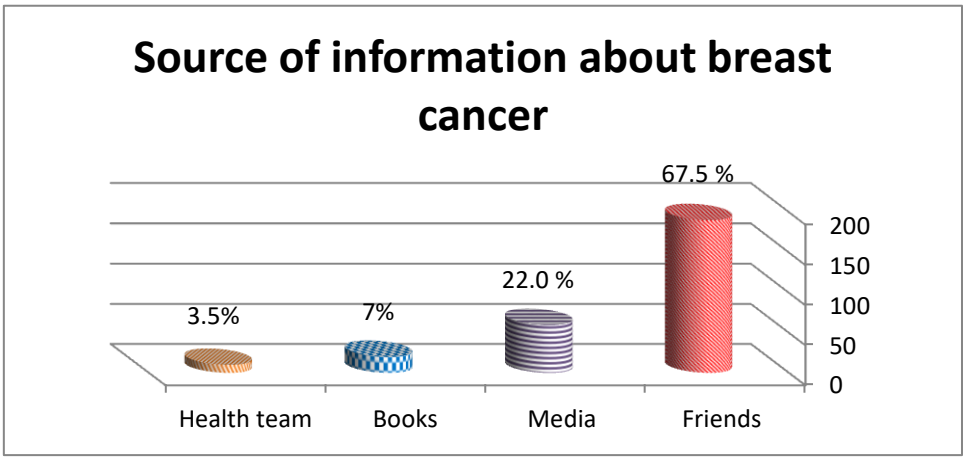

Figure (3): Distribution of adolescent students according to theirsource of information about breast cancer.

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Table (5): Adolescent students' knowledge about practice of BSE

Items	No	%
BSE performing (N=20)		
- No	260	93.0.
- Yes	20	7.0
Frequency of BSE (N=20)		
-One time	2	12.0
-Two times	8	43.0
-Three times	6	33.0
-More than	4	22.0
Time of BSE (N=20)		
- Immediately before menstruation	5	22.9
- During menstruation	4	20.1
- Day 5 to 7 after menstruation	10	50.0
- At any time	1	7.0
Regularity of performing BSE (N=20)		
- Yes	0	0.0
- No	20	100.0
Reasons for not performing BSE:		
- Lack of awareness about BSE practicing	196	70.0
- I have no idea about it (never hear about it.	56	20.0
- Fear from detecting breast cancer	28	10.0
- Forgetting	0	0.0

Table (6): Adolescent students' practice of BSE checklist pre / immediate post and after one month discharge guide intervention implementation

Item	n=280 100%						P-value
	Pre-intervention		Immediate-post intervention		After one month intervention		
	No.	%	No.	%	No.	%	
1- Looking at breasts in mirror with arms on hips	20	7.0	280	100	280	100	0.000 ***
2- Looked at both breasts and noted any differences in shape, size, nipple or skin puckering, and dimpling	0	0.0	256	91.4	236	84.2	0.000 ***
3- Raise arms over head	24	8.5	280	100	64	91.4	0.000
4- Looked at both breasts and noted any differences in shape, size, nipple or skin puckering, and dimpling.	24	8.5	280	100	280	100	0.000 ***
5- look for any signs of fluid coming out of one or both nipples	64	22.8	224	80	280	100	0.000
6- lying down position, place a towel or pillow under shoulder before examining breast on that side	0	0.0	145	50.0	56	20.0	0.002**
7- Use right hand to examine left breast and left hand to examine right breast to palpate the breast	0	0.0	179	64.2	276	98.5	0.000
8- Examining one breast at a time	0	0.0	280	100	280	100	0.001

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9-Using the pads of the three middle fingers flat and together	0	0.0	280	100	280	100	0.001
10- Circular pattern	14	5.14	274	98.0	246	87.9	0.000
11- Up and down line pattern	0	0.0	280	100	252	90.0	0.000
12-Wedge pattern	0	0.0	0	0.0	0	0.0	---
13-Begin in a standing position	56	20.0	269	96.3	241	86.1	0.001
14- To palpated your right breast raise your right arm over your head.	17	6.0	244	87.0	274	98.0	0.001
15- Using the pads of the three middle fingers of your left hand	0	0.0	252	89.9	266	95.0	0.001
16- Circular pattern	14	5.14	274	98.0	246	87.9	0.000
17- Up and down line pattern	0	0.0	280	100	252	90.0	0.000
18-Wedge pattern	0	0.0	0	0.0	0	0.0	---
19- Examine underarm area also	0	0.0	280	100	280	100	0.001
20-Repeat this process for the other breast	0	0.0	280	100	252	90.0	0.000

Table (7): Mean score of studied adolescent student's practice regarding to BSE checklist during pre/ immediate post and after one month discharge guide intervention **implementation**

Item	No.=280 100%			
	Pre- intervention	**Immediate-post** intervention	**After one month** intervention	**P-value**
- BSE checklist	14.08±1.05	20.57±0.811	20.28±1.14	0.000 ***

Table (8): Comparison of adolescent students 'level of practice related to BSE as pre/immediate post and after one month

Items	n=280100%						
	Pre- intervention		**Immediate-post** intervention		**After one month** intervention		**P-value**
	No	**%**	**No**	**%**	**No**	**%**	
- bad > "50 "	156	(55.7%)	0	0.0	0	0.0	<0.000
-fair "50: 65"	112	(40.0%)	0	0.0	0	0.0	<0.000
-good"≥ "65"	12	(4.3%)	280	(100%)	280	(100%)	<0.000
Total practice	**16.17±1.60**		**27.06±1.73**		**25.84±2.12**		<0.000

Table (9): Correlation coefficient between total adolescent students' knowledge and practice scores during pre/immediate post and after one month discharge guide intervention implementation

Items	Practice					
	no=280100%					
	Pre- intervention		**Immediate-post**		**After one month**	
	R	**P**	**R**	**p**	**r**	**P**
- **Total knowledge pre** intervention	0.036	0.815(N.S)	---	---	---	---
- **Total knowledge post** intervention	---	---	0.242	0.004	0.411	0.005

4. DISCUSSION

Health education and prevention of breast cancer is very important. So, primary prevention should be given the highest priority in the fight against the disease such as avoidance of fatty foods and obesity, practice of physical exercises and intake of soy products. Early detection must be considered the best second choice for reducing mortality through breast self-examination, clinical breast examination, ultrasound and mammography **(Fikry et al., 2012).**

The present study revealed that less than five percentage of the studied sample had family history of breast. These results were nearly and supported by the study conducted by **(Reem et al., 2014).**Who studied "impact of a health education intervention regarding breast self-examination on female employees in Damanhour University".

They found that less than one quarter of study sample had a family history of breast cancer.

The present study revealed that there was a highly statistical significance difference between pre/post and after one month of intervention implementation in relation to the adolescent student's knowledge regarding breast cancer (P- value <0.000). These results were in accordance with the results conducted by **Amany et al., (2017). Who** studied "effect of breast self examination training intervention on knowledge and practice of adolescent girls" and found the same result.

The current study revealed that there was a highly statistical significant difference (p= <0.000) in the adolescent student's ' total knowledge mean scores as pre/immediate post and after one month of intervention implementation, this is explained by that is considered alarming as it represent insufficient health information as regard this health topic and inform the need for health intervention to increase health information, this result was in agreement with the study conducted by **(Amany et al., 2017)** who mentioned in his study about "effect of breast self examination training program on knowledge and practice of adolescent girls ". They found a statistical significant difference between total knowledge score mean pre-program and one month post program (p<0.0001). This may be related to the effect of health educational intervention regarding breast self-examination on knowledge, and practices of female adolescent student and the booklet which covered all identified needs and knowledge gaps about the topic among the adolescent girls.

The current study revealed that most of adolescent students didn't hear about breast self-examination (BSE). This result was similar with the study conducted by **(Kommula et al., 2014)** who studied "awareness and practice of breast self-examination among women in South India". They found that more than three quarters of the responders statedthat they had never know about BSE

As regards sources of information about breast cancer, the current study display that, the main resource was the friends followed by medias, books and health team (nurse & physicians, this is due to the long time that girls spent with each other at the school in discussing different issues, which creates strong relation among each other, A similar finding was reported by **(Reem et al., 2014).** On the other hand these results was in disagreement with the study conducted by **(Saeed et al, 2014)** who studied that "Are women in Kuwait aware of breast cancer and its diagnostic procedures?", results among school girls in Sri Lanka **(Ranasinghe et al., 2013),** they did the study among university female students about awareness of breast cancer among adolescent girls in Colombo, Sri Lanka. and in Malaysia results conducted by **(Akhtari et al., 2013)** in his study about beliefs and behavior of Malaysia undergraduate female students in a public university toward breast self-examination practice.

The current study indicates that, most of the adolescent students didn't perform breast self-examination, This lower percentage may be explained by insufficient knowledge about BSE, and also may be related to negative personal and family history about breast cancer because positive history to any disease may be indication and encourages the person to seek information about the disease and look for about early detection methods, this result also may be attributed to carelessness of the girls in seeking proper medical advice**,** this result was in the same line with the result conducted by **(Pawan et al., 2013)** who studied " knowledge, attitude and preventive practices of South Indian women towards breast cancer". They found that a low percentage of students had performed breast self examination.

The current study reflected that there was highly significant difference (P= 0.000) as regard BSE checklist pre/ immediate post and after one month discharge guide intervention implementation, The post- intervention results showed progress in overall performance that related to the effectiveness of the current health intervention because it provides of face-to-face education through knowledge and practice about BSE. These finding was in congruence with the study carried out by **Moussa and Shalaby (2014)** which aimed to investigate the effect of an educational program about BSE on nursing students' knowledge, attitude and practice. They reported that,after the program a significant improvement was observed in the students' practice in relation to methods and techniques and total practice score and a highly statistically significant differences (p<0.001) was found.These findings also agreed with those of **Moustafa, Abd-Allah, and Taha, (2015)** who studied "effect of a breast-self examination (BSE) educational intervention among female university students". They found that, there was a statistically significant improvement in student's practice of BSE after the intervention (p<0.001).

The present there was a highly statistical significant difference of adolescent students' mean scores total practice related to BSE before and after the intervention implementation (p= <0.000) , This is reflected the desire of the girls to increase self-awareness and know the value of health and the importance of practicing breast self-examination as a method for early

detection of breast cancer, and it is important to educate them about breast self-examination to be started for girls at school age and make breast self-examination as a habit, these results was in accordance with the results conducted by (**Amany et al., 2017)** who mentioned that there was a highly statistically significant difference between levels of total practice score pre-post program.

The current study revealed that there was highly statistically significant (P=0.004, P=0.005) positive correlation between total knowledge scores and their practice at post and after one month intervention implementation, respectively, This is indicate the high effect of the health intervention on the girls' knowledge and practice and This result also emphasized the readiness of girls to gain more information and acquire skill. This result was similar to results conducted by **(Doshi et al., 2012)** who reported that in his study "breast self examination: knowledge, attitude, and practice among female dental students in Hyderabad city". They found that that, there was a highly statistically significant difference between pre and post-test regarding knowledge and practice of BSE.

5. CONCLUSION

In this study it was found that knowledge deficit about BSE and the majority of adolescent students' had low level of practice before intervention that has been improved after intervention, the deficit may be due to insufficient knowledge, insufficient skill to carry out necessary BSE.

6. RECOMMENDATIONS

1. Adolescent 'students should receive adequate education, simulation and counseling regarding BSE.

2. Assessment of Adolescent 'students needs about BSE performance, knowledge considered as evidence to his educational needs and concern.

3. Training intervention for teachers to be well prepared to provide instructions and training for students about BSE.

4. Health education nurses have to provide Adolescent 'students with appropriate knowledge and practices about BSE through verbal and written instructions.

5. It is important to encourage cooperate between educational institutions, medical care providers and the health personnel to educate student girls about BSE that will help in increasing awareness.

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