RESEARCH ARTICLE

Awareness of Breast Cancer and breast self-examination among Female Nursing Students at Faculty of Nursing, Minia University

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Manuscript Info	*Abstract*

Background:-Breast cancer is the most commonly diagnosed cancer and worldwide it is considered the leading cause of cancer death in females, accounting for 23% (1.38 million) of the total new cancer cases and 14% (458,400) of the total cancer deaths in 2008. Approximately half of the breast cancer cases and 60% of the deaths are estimated to take place in developing countries. Globally, it claims the lives of 508,000 women per year. Since risk reduction strategies cannot eliminate the majority of breast cancers, early detection remains the cornerstone of breast cancer control. Health education and communication have been found critical to promote breast cancer prevention and screening strategies. Breast cancer is the most common cancer in women worldwide and its incidence is increasing in many countries. Nursing students are the future nurses who will have the opportunity to encourage and influence women to be breast aware. Breast-self-examination is a simple and easy way to help women to detect any changes in their breasts.

Aim of the study:- To assess Knowledge of female Nursing students about risk factors for breast cancer, early warning signs, methods of early detection, knowledge about Breast Self-Examination and different lines of treatment.

Methodology: A Cross sectional study was conducted on the period from September to December 2014, to investigate the research problem. Convince study sample of 80 female Nursing students at faculty of Nursing, Minia University.
a self-administered assessment questionnaire used for data collection assessing knowledge, a health beliefs assessment rating scale and a breast self- examination observation checklist. The knowledge of breast cancer and competency in performing breast self-examination were assessed before and after the awareness lectures using a set of questionnaires designed for the study. The data showed that the participants' knowledge of breast cancer increased significantly after the awareness lectures. They felt confident to teach and they were willing to pass the information of breast cancer and breast self-examination to their relatives, friends and colleagues. Based on the findings of the study, researchers believe that nursing students need to provide lectures and awareness sessions on a regular basis about breast cancer and breast self-examination in order to increase their knowledge, and enhance their confidence and skills to teach women about breast cancer and its early detection.

Results: The main source of knowledge about breast cancer and BSE in our study was the Internet, television and doctor it representing (36.76%, 27.95% &8.82%)particularly students emphasizing the potential effectiveness of the visual media in modifying health behavior and promoting education .A significant improvement in the participants' knowledge of the risk factor of breast cancer was obtained after the workshop. It is Interesting to note that before the workshop 22.5 % of the students were aware that Late menopause (>55 years), Smoking, is a risk factor of breast cancer. The majority of subjects improved markedly after the workshop session regarding the knowledge of the most frequently endorsed steps were Examining breasts at end of the menstrual period(28.75%), recommended BSE steps before and after session. Most of them When examining breast, feel for lumps, hard knots, or thickening (21.25%   ), (27.5%) Examine one breast at a time and (25.0%)Use right hand to examine left breast and left hand to examine right breast.

Conclusion: The main source of knowledge about breast cancer and BSE in our study was the Internet, television. The most common reason for not performing BSE was given by the participants for never having performed BSE were that they had not been taught the proper technique of the study sample. A significant improvement in the participants' knowledge of the risk factor of breast cancer was obtained after the workshop. The majority of subjects improved markedly in practicing steps of breast examination after the workshop session.

Introduction:-

Breast cancer, one of the non-communicable diseases, is the most common cancer in women worldwide. It accounts for over one million of the estimated 10 million neoplasm diagnosed worldwide each year **(Ferlay et al.,2008).** Incidence rates vary greatly worldwide from 19.3 per 100,000 women in Eastern Africa to 89.7 per 100,000 women in Western Europe. In most of the developing regions the incidence rates are below40 per 100,000. Even though it is generally increasing, the lowest incidence rates are found in most African countries. It has been estimated that one out of every nine women living in western countries is likely to be affected by breast cancer in her lifetime (**WHO, 2014**). The incidence of breast cancer varies between countries; the highest rates occur in the United States and Canada and, the lowest rate is found in Asia **(Seifand Aziz, 2000).** Breast cancer is the primary cause of cancer death among women globally. It is estimated that over 508, 000(**American cancer society, 2008**). Breast cancer survival rates vary greatly worldwide, ranging from80% or over in North America, Sweden and Japan to around 60% in middle-income countries and below 40% in low-income countries. The low survival rates in less developed countries can be explained mainly by the lack of early detection program, resulting in a high proportion of women presenting with late-stage disease, as well as by the lack of adequate diagnosis and treatment facilities (**WHO, 2014**).

Women died in 2011 due to breast cancer worldwide. Although breast cancer is thought to be a disease of the developed world, almost 50% of breast cancer cases and 58%of deaths occur in less developed countries can be explained mainly by the lack of early detection program, resulting in a high proportion of women presenting with late-stage disease, as well as by the lack of adequate diagnosis and treatment facilities (**WHO, 2014**).

Established risk factors of breast cancer area familial history of breast cancer, prolonged exposure to endogenous estrogens, such as early menarche, late menopause, late age at first childbirth , Exogenous hormone, Oral contraceptive and hormone replacement therapy. Breastfeeding, weight control, physical activity, and avoidance of smoking also have a protective effect (**WHO, 2014**).Although risk reduction might be achieved with prevention, these strategies cannot eliminate the majority of breast cancers that develop in low and middle income countries. Therefore, the key strategy in reducing breast cancer related mortality, improving breast cancer out come and survival is screening to early detect and manage breast cancer. This is very important because an excellent prognosis

is directly associated with the stage at which the tumor is initially detected and how localized the lesion is. Early diagnosis usually results in successful treatment before metastasis and signifies a better outcome (**Parkin, 1994**).Recommended preventive techniques to reduce breast cancer morbidity and mortality include breast self-examination(BSE), clinical breast examination (CBE), and mammography. CBE and mammography require hospital visit and specialized equipment and expertise whereas BSE is an inexpensive tool that can be carried out by women themselves (**Karayurt et al.,2008**).Even though BSE is a simple, quick, and cost-free procedure, the practice of BSE is low and varies in different countries. Several reasons like lack of time, lack of self-confidence in their ability to perform the technique correctly, fear of possible discovery of a lump, and embarrassment associated with manipulation of the breast have been cited as reasons for not practicing BSE (**Karayurtetal.,2008**).There is an evidence that women who correctly practice BSE monthly are more likely to detect a lump in the early stage of its development, and early diagnosis has been reported to influence early treatment to yield a better survival rate (**Petro-Nustasetal.,2002**).Unfortunately ,despite the benefits of regular BSE, few women actually examine themselves; in fact, a majority does not even know how to do a BSE. Although opinions conflict regarding the value of BSE, The American Cancer Society continues to support the inclusion of BSE as an early detection behavior. There is no published data on the practice with BSE is performed by the female health care professionals (nurses) (**Petro-Nustasetal.,2002**).

Although risk reduction might be achieved with prevention, these strategies cannot eliminate the majority of breast cancers that develop in low and middle income countries. Therefore, the key strategy in reducing breast cancer related mortality, improving breast cancer outcome and survival is screening to early detect and manage breast cancer. This is very important because an excellent prognosis is directly associated with the stage at which the tumor is initially detected and how localized the lesion is. Early diagnosis usually results in successful treatment before metastasis and signifies a better outcome (**Samiaetal.,2010**).

Recommended preventive techniques to reduce breast cancer morbidity and mortality include breast self-examination BSE), clinical breast examination (CBE), and mammography. CBE and mammography require hospital visit and specialized equipment and expertise whereas BSE is an inexpensive tool that can be carried out by women themselves (**Karayurt etal.,2008**).

Aim of the study:-
To assess Knowledge of female Nursing students about risk factors for breast cancer, early warning signs, methods of early detection, knowledge about Breast Self-Examination and different lines of treatment.

Materials and Methods:-
A Cross sectional study was conducted on the period from September to December 2014, to investigate the research problem. A study sample of 80 female Nursing students at faculty of Nursing, Minia University. Approval of study conduction was obtained from the Dean, faculty of Nursing, Minia University. In addition, the purpose of the study was explained to all participants and confidentiality was assured, an oral informed consent was taken from each participant.

A self-administered assessment questionnaire assessing knowledge, a health beliefs assessment rating scale a breast self- examination observation checklist. The knowledge about breast cancer and competency in performing breast-self-examination were assessed before and after the awareness lectures using a set of questionnaires designed for the study. Based on the findings of the study, researchers believe that nursing student need to provide lectures and awareness sessions on a regular basis on breast cancer and breast self-examination in order to increase their knowledge, and enhance their confidence and skills to teach women about breast cancer and early detection.

The questionnaire covered the following items:
- ❖ Socio-demographic data such as age, marital status, academic year.
- ❖ Knowledge about risk factors for breast cancer, early warning signs, methods of early detection and different lines of treatment.
- ❖ Knowledge about Breast Self-Examination (BSE): Practice and reasons for not performing it and source of information about breast cancer.

Data collected were revised, coded and computerized. Data entry using (Statistical Package for Social Science SPSS) version 18 was used. (Frequency tables and a chart were utilized to describe nominal variables. Continuous variables were described using distributions, means and standard deviation.

Results:-
All the participants were female First, Second, Third and Fourth year nursing students. The mean age of the participants was (18.24±1.1).Ranged from 18 to 21 years).(100%) all of them were single, (10%)stated that they have family history of breast cancer, and (76.25%) of them stead that the knowledge of breast cancer and breast self-examination very important.

The main source of knowledge about breast cancer and BSE in our study was the Internet, television and doctor it representing (36.76%, 27.95% &8.82%)particularly students emphasizing the potential effectiveness of the visual media in modifying health behavior and promoting education.

The most common reason for not performing BSE was given by the participants for never having performed BSE were that they had not been taught the proper technique of the study sample 30.19%. Also 30.19%% of them reported that afraid to finding a lump, 15.09% of them reported that they did not have confidence or trust in their own examination and the other study sample reported that they think it is not benefit and not interested to perform it represent (18.87%&566%).

A significant improvement in the participants' knowledge of the risk factor of breast cancer was obtained after the workshop. It is Interesting to note that before the workshop 22.5 % of the students were a ware that Late menopause (>55 years), Smoking, is a risk factor of breast cancer.

Most of the students 38.75% identified pain in the breast as a symptom for breast cancer. However less than half were aware of other warning signs such as change in shape/or bloody nipple discharge , breast lump, redness of breast skin and retraction of nipple accounting for 28.75%, 26.25% ,27.5% , 23.75and 30.0 % respectively . Further, as many as 40.0% of students identified breast self-examination as an early detection measure for breast cancer. The most widely known lines of treatment were surgery followed by chemotherapy accounting for 32.5 and 20.0%respectively. After the workshop, their Knowledge of warning signs, early detection and treatment of Breast cancer improved markedly.

The frequency, and percentage distribution of knowledge of the most frequently endorsed steps, as shown in Table 6,were Examining breasts at end of the menstrual period(28.75%), recommended BSE steps before and after session. Most of them When examining breast, feel for lumps, hard knots, or thickening (21.25%   ), (27.5%) Examine one breast at a time and (25.0%) Use right hand to examine left breast and left hand to examine right breast. Overall, the majority of subjects improved markedly after the workshop session.

Discussion:-
Breast cancer is the most frequent malignancy of women worldwide. It is the leading cause of female cancer related disability and mortality. The global incidence of breast cancer is escalating. There is marked geographical variation in incidence rates, being highest in the developed world and lowest in the developing countries in Asia, Middle East, and Africa. Breast cancer rates are increasing in developed as well as developing countries(WHO, 2010).

The aim of the current study was the intervention and early detection of Breast Cancer. All of participants were female from the First, Second, Third and Fourthgrades nursing students. The mean age of the participants was (18.24±1.1)ranged from (18to 21 years). (91.4%) of them were single, (10%) stated that they have a family history of breast cancer, and (76.25%) of them stead that the knowledge about breast cancer and breast self-examination are very important. This finding was consistent with the study by(Yakoutet al, 2014) which showed that about half of the sample of the nursing students had a previous knowledge regarding BSE from their college curricula. Also the study agrees with (Al-Dubais et al, 2008)who showed that most of the respondents were aware about BSE, while, knowledge about the different methods of screening of breast cancer was generally poor.

In relation to the knowledge about breast self-examination (BSE) and the source of knowledge in more than half of participants in our study was the, Internet, television and doctors, it was representing (36.76%, 27.95%

&8.82%respectively)particularly students emphasizing the potential effectiveness of the visual media in modifying health behavior and promoting education. This finding was consistent with a study among young Malaysian women revealed that electronic media such as radio and TV was the most common source of information of BSE(**Al-Dubais et al, 2008**).

Another study found that more than half of the students (62%) reported that they did not hear about BSE. Thirty percent of the participants received information about breast cancer from health professionals were mentioned as a source of information **(karayut et al., 2008).** In a study of **(Yoo et al., 2012)** the majority of women who knew about BSE (87%) mentioned that they had heard about BSE on TV, radio, and in the newspapers. Only (17.2%) of women who were aware of BSE received the information through physicians or nurses **(Yoo etal., 2012).**

Another study reported that participants dislike examining self-breast because they do not know what they feel because of the very lumpy structure of breasts and the fear to find a cancer mass. That agree with a study in which participants did not know how to perform BSE as reported by (47.7%) of Nigerian female students, lack of interest was identified by (35%) and only (7.4%) mentioned a fear of a positive finding as a reason **(Odusanya and Toyo, 2001)**.Also this agrees with a Yemeni study in which (55.9%) of students mentioned lack of knowledge about technique of BSE as a barrier for not practicing BSE **(Ahmed, 2010).**

Similarly the most common reasons for not doing BSE stated by Turkish high school students were "not knowing how to perform BSE" (98.5%),"not expecting to get breast cancer" (45.6%) and "fear of discovering a breast lump" (8.8%) **(Kara and Acikel, 2008).**

In the current study, a significant improvement in the participants' knowledge about the risk factors of breast cancer was obtained after the workshop. It is interesting to note that before the workshop only (22.5 %) of students were aware that late menopause (>55 years) is a risk factor, and only (22.5 %)were aware that smoking is also a risk factor of breast cancer. Also more than half of them were aware that less exercise, oral contraceptive use and never breast fed are risk factors of breast cancer it represented as (70%, 60% and 73.75%). All of this knowledge has been improved after the three months of the session. Similarly a study was carried out to determine awareness of breast cancer risk factors and practice of breast self-examination among female students of the University of Nigeria Enugu Campus showed that the only factors that are widely known are: family history of breast cancer (50%), and tobacco smoking (36%). The findings also showed that very few students had some knowledge about other risk factors as (Obesity, alcohol intake, early menarche, null parity, breastfeeding for at least 18 months) **(Iheanacho et al., 2013).**

Also this results was consistent with a study done by **(Hoda, 2013)** who reported that more than two thirds of students were agreed that the family history, increasing age, and history of the breast cancer, however they were not sure that early menarche, obesity and smoking are risk factors for breast cancer. The most reported risk factors are use of oral contraceptive pills, followed by smoking (98.6%) , family history of breast cancer ,first child at late age and radiation of chest came next(98.6%, 97.1% &94.3% respectively).

Similarly a study carried out nearly all study participants (98.7%) believe that early detection improves treatment outcome and as many as 87.7% believe that there is an effective treatment for breast Cancer. However, most students had poor knowledge of breast cancer risk factors. The most widely known risk factors by the students were smoking (66.9%), radiation to the chest (63.7%), genetic factors (63.7%) and Family history of breast cancer (47.5%). Age at first full term pregnancy >30 years and never being pregnant were not known as risk factors for breast cancer by most of the study participants**(Boulos and Ghali, 2013).** Also in concordance with the current study a cross-sectional survey of Angola university students using a self-administered questionnaire, showed that almost all study participants (80%) reported that breast lumps that are cancerous would be painful **(Sambanje and Mafuvadze, 2012).**

The study agrees with**(Powe et al., 2005)**who reported that association of pain with cancer is a common myth and in fact pain is not necessarily a warning sign of breast cancer as many persons associate pain with the occurrence of cancer and the fact is pain is not necessarily an early sign of breast cancer.

Table (1): Demographic characteristics of the participants Female Nursing Students at Faculty of Nursing, Minia University:-

	Number	%
Age	Mean + SD 18.24±1.1 Range (18-21)	
Marital status Single	80	100%
Family history of Breast Cancer		
yes	8	10%
No	57	71.25%
Do not know	15	18.75%
Appropriate Time of performing BSE		
During menses	19	23.75%
After menses	26	32.5%
Do not know	35	43.75%
Knowledge Important about breast cancer &breast self-examination		
Very important	61	76.25%
Important	19	23.75%
Not important	0	0%

Table (2): Knowledge of breast self-examination (BSE) and source of knowledge among Female Nursing Students at Faculty of Nursing, Minia University:-

Knowledge about breast Self-Examination	NO.	%
No	12	15%
Yes	68	85%
Source		
Television	19	27.95%
Internet	25	36.76%
Doctor	6	8.82%
Magazine	3	4.41%
Folder/poster	5	7.35%
Primary health care Centre	3	4.41%
Friends	5	7.35%
Relatives	2	2.95%

Table (3): Practice of breast self-examination by Female Nursing Students at Faculty of Nursing, Minia University:-

Have you examine your breast periodically	No	%
Yes	27	33.75%
No	53	66.25%
Why not		
Afraid of finding a lump	16	30.19%
I don't know the technique	16	30.19%
I don't trust my examination	8	15.09 %
I don't think it is of benefit	10	18.87%
I'm not interested	3	5.66%

Table (4): Students' Knowledge of breast cancer risk factors before and after education session among Female Nursing Students at Faculty of Nursing, Minia University:-

Risk factors knowledge	Before Session		3 months After Session	
	No.	%	No.	%
Aging	27	33.75	73	91.25*
Smoking	18	22.5	72	90.0*
Obesity	26	32.5	78	97.5*
Less exercise	56	70.0	76	95*
Oral contraceptive use	48	60.0	79	98.75*
Never breast fed	59	73.75	77	96.25*
Genetic Factors	37	46.25	80	100*
Null parity	32	45.7	79	98.75*
Family history of breast cancer	42	52.5	78	97.5*
Early onset of menarche (<12 years)	22	27.5	77	96.25*
Late menopause (>55 years)	18	22.5	66	82.5
First child at late age	33	41.25	75	93.75*
Alcohol consumption	24	30.0	72	80.0
Radiation to the chest	21	26.25	78	97.5*

Table(5): Knowledge of warning signs, early detection and treatment of Breast cancer among Female Nursing Students at Faculty of Nursing, Minia University:-

	Before session		3 months After session	
Variable	No	%	No	%
Warning signs of breast cancer				
-Breast lump	22	27.5	68	85.0
-Bloody nipple discharge	21	26.25	58	72.5
- Pain in breast	31	38.75	79	98.75*
- breast size change	23	28.75	61	76.25
- Redness of breast skin	19	23.75	58	72.5
- retraction of nipple	24	30.0	60	75.0
Early detection measures				
- Breast self-examination	32	40.0	73	91.25*
- Mammogram	19	23.75	63	78.75
- Breast U/S	13	16.25	59	73.75
Treatment of Breast Cancer				
- Chemotherapy	16	20.0	51	63.75
- Surgery	26	32.5	68	85.0
- Radiotherapy	14	17.5	58	72.5

Table (6): Frequency and percentage distribution of performance of BSE steps before and after education session among Female Nursing Students at Faculty of Nursing, Minia University:-

Breast self-examination step	No	%	No	%
Examining breasts at end of the menstrual period	23	28.75	74	92.5*
Look at breasts in mirror with arms at sides	20	25.0	45	56.25
Look at breasts in mirror with arms raised over head	12	15.0	48	60.0
Look at breast in mirror with hands on thigh	18	22.5	59	73.75
When looking at breast in mirror, looking for swelling, dimpling of skin, or changes in nipple	17	21.25	62	77.5
Examine breast while lying down, place a towel or pillow under shoulder before examining breast on that side	12	15.0	64	80.0
Examine breasts while lying down, place hand above head before examining breasts on that side	14	17.5	63	78.75
Use right hand to examine left breast and left hand for right breast	20	25.0	77	96.25*
Examine one breast at a time	22	27.5	75	93.75*
Examine breasts by circular, clockwise move from outside in	18	22.5	61	76.25
palpable lumps, hard knots, or thickening	24	30.0	77	96.25*
Squeeze the nipples for discharge	0	0%	58	72.5

Conclusion:-
The main source of knowledge about breast cancer and BSE in our study was the Internet, television. The most common reason for not performing BSE was given by the participants for never having performed BSE were that they had not been taught the proper technique of the study sample. A significant improvement in the participants' knowledge of the risk factor of breast cancer was obtained after the workshop .The majority of subjects improved markedly in practicing steps of breast examination after the workshop session.

Recommendations:-
1. There is a need to create awareness about the importance of BSE among medical health students for improving their practices.
2. Screening methods for breast cancer should be included in the curricula of health professionals for empowering them to take up the challenge of breast cancer detection.
3. Further studies should be done to address the knowledge gaps on breast cancer and breast self-examination, so that positive attitudes can be developed by the young adults towards breast self-examination.

4. The need for educational programs as a tool for improving the current knowledge, practices and attitudes of breast self-examination, to assist in early breast cancer detection as well as reducing late breast cancer presentation.

References:-

1- Ahmed B.(2010). Awareness and practice of breast cancer and breast-self-examination among university students in Yemen.*Asian Pacific Journal of Cancer Prevention, 11*(1), 101-105.

2- American Cancer Society. (2008): Breast Cancer Facts and Figures. Retrieved from http://www.cancer.org/downloads/STT/CAFF2005BrFacspdf.pdf

3- Al-Dubai S, Ganasegeran K, Alabasi A, Manaf M, Ijaz S and Kassim S,(2012) Exploration of barriers to breast – Self Examination among Urban Women in Shah Alam,Malaysia: A cross Sectional study, *Asian Pacific Journalof Cancer Prevention*, **13**, 1627-32

4- Boulos D. and Ghali R. (2013): Awareness of breast cancer among female students at Ain Shams University, Egypt Global J Health Sci. 2013 Nov 4,6(1):154-61

5- Ferlay, J., Shin, H. R., Bray, F., Forman, D., Mathers, C. D., &Parkin, D. (2008). GLOBOCAN, Cancer Incidence and Mortality Worldwide: IARC Cancer Base No. 10. Lyon, France: International Agency for Research on Cancer; 2010. Retrieved from http://globocan.iarc.fr

6- Kara B. and Acikel C. (2008). Health beliefs and breast self-examination in a sample of Turkish nursing students and their mothers.*J Clinical Nur*, **18**, 1412-21.

7- Karayurt O, Ozmen D, and Cakmakcı A (2008).Awareness of breast cancer risk factors and practice of breast self-examination among high school students in Turkey.*BMC Public Hlth*, **8**, 1-8.

8 -Hoda Abed El-Azim (2013):Knowledge, Attitudes and Practices Regarding Breast Self-Examination among Female UndergraduateStudents in the Faculty of Applied Medical Sciences at Umm Al-Qura University, http:// j of American science.org.

9 - Iheanacho P., Ndu A, and Emenike A. (2013).Awareness of breast cancer risk factors and practice of breast self-examination among female undergraduates in university of Nigeria Enugu campus.*Open* Journal of Nursing, 3, 147-152

10- Odusanya O., and Tayo O. (2001). Breast Cancer Knowledge, Attitudes and Practice among Nurses in Lagos, Nigeria. *ActaOncologica, 40*(7), 844-848.

11- Parkin D., (1994) Cancer in developing countries.Trends in Cancer Incidence and Mortality Cancer Surveys. Cancer Surv.1994, 19-20:519-61.

12**-** Petro-Nustas W, Mikhail B, Norton M and Al-Masarweh I (2002): Factors associated with breastself-examination among Jordanian women. Journal of Nursing scholarship vol (44),p(19-25).

13- Powe B., Underwood S., Canales M., and Finnie R. (*2005*). Perceptions about breast cancer among college students: Implications for nursing education. *J NursEduc, 44*(6), 257-65.

14- Sambanje M., and Mafuvadze B. (2012).Breast cancer knowledge and awareness among university studentsin Angola.*Pan Afr Med J, 11*:70.

15- SamiaA, Karen W ,Athur M ,SubhojitD, and Amr S. (2010): Evaluating the Knowledge of Breast Cancer Screening and Prevention among Arab-American Women in Michigan J Canc.

16- Seif N, and Aziz M, (2000): Effects of breast self-examination training program on knowledge, attitude and practice of a group of Working Women. Journal of the Egyptian Nat Cancer Inst.in Angola.*PanAfr Med J, 11*, 70.

17- WHO (2010).World Health Organization Cancer. Retrieved on 20th April, 2010.http://www.who.int/ media Centre/factsheets/fs297/en/

18**-** World health organization (2014). Breast cancer: prevention and control. Available at:http://www.who.int/entity/cancer/detection/en/

19- Yakout S., Moursy A., Moawad S., and Salem O. (2014) Awareness, Knowledge and Practice of zreast self examination among groups of Female nursing students, Riyadh, Kingdom of Saudi Arabia. International Research Journal of Biological Sciences. Vol. 3(2), 58-63

20- Yoo B, Choi K, Jung K, and Jun J (2012). Awareness and practice of breast self-examination among Korean women: results from a nationwide survey. *Asian Pac J Cancer Prev*, 13, 123-5.