# The impact of educational level on Knowledge, Attitude and Practices toward breast cancer among women attending primary health center in Kufa city.

Huda Ghazi Hamid *
*FIBMS/community medicine,College of medicine/ university of Kufa/ department of community medicine
**Email:** HudaGH**@yahoo.com**
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**الخلاصة:**
أجريت دراسة، 7%ح مقطعية مستندة الى استبيان لتقييم المعارف، المواقف والممارسات حول سرطان الثدي والفحص الذاتي للثدي لدى مائتين واربعة وثلاثين امرأة ممن راجعن أحد مراكز الرعاية الصحية الاولية في قضاء الكوفة محافظة النجف للمدة من الاول من تشرين الثاني للأول من شباط عام 2013، تم اخذ المعلومات من خلال استمارة إستبانة تضمنت اسئلة سكانية و أسئلة تتعلق بأعراض و علامات سرطان الثدي، عوامل الخطورة وكذلك أسئلة تتعلق بالفحص الذاتي للثدي. أظهرت النتائج بأن 48,7% من المشتركات كان مستوى المعرفة لديهم واطئ بينما 38,8% لديهم مستوى متوسط و 12,2% لديهم مستوى عالي من المعرفة. على الرغم من ان 74,4% من المشتركات سمعن بالفحص الذاتي للثدي الا إن 21,8% فقط يمارسن الفحص الذاتي للثدي واهم الاسباب لعدم ممارسة الفحص كانت بالنسبة الخوف من اكتشاف ورم وعدم المعرفة بالفحص. اظهرت النتائج ايضا ان 42,3% من المشتركات يعرفن الوقت الصحيح لفحص الثدي بالنسبة للنساء قبل سن اليأس مقارنة ب24,4% يعرفن الوقت الصحيح للنساء بعد سن اليأس كما ان التلفاز كان أهم مصدر لمعلوماتهن. اما بالنسبة لطرق الوقاية من سرطان الثدي فإن 74,4% من المشتركات اعتقدن بانه يمكن الوقاية عن طريق الفحص. هذه النتائج تشير إلى ان ما يقارب النصف من المشتركات كان لديهن مستوى واطئ من المعرفة حول سرطان الثدي والقليل منهن يمارسن الفحص الذاتي للثدي بصورة منتظمة وعلى الرغم من ان مستوى التعليم يعتبر المحدد الاكبر للسلوك الصحي في المجتمع الا ان هذه الدراسة اظهرت عدم وجود علاقة احصائية بين مستوى التعليم ومستوى المعرفة بسرطان الثدي.

## Abstract:

This study is aiming at exploring breast cancer related knowledge, attitude and practices toward breast cancer and breast self-examination (BSE) and to evaluate the effects of educational level on them. For this a cross sectional study covering 234 women attending Primary Health Care center in Kufa city, Najaf governorate was carried out during the period of 1st of November 2012 to the 1st of February 2013, data collection was done by using questionnaire forms containing demographic and, questions related to the symptoms and signs of breast cancer, questions about the risk factors, questions related to BSE practice.

Results showed that 48.7% of the participant had a low level of education,38.8%, 12.4% had moderate and high levels respectively with no significant statistical association (p=0.322). Although 74.4% of the participants had been heard about BSE only 21.8% of them practiced it regularly. The main causes for non-practicing BSE were afraid to find out a lump and lack of information about it. Only 24.4% knew the correct time of BSE for postmenopausal women while 42.3% knew the correct time for premenopausal women. The main source of information was from television. Results also showed that 74.4% of the participants knew that breast cancer can be prevented through early diagnosis by BSE and mammogram.

These results indicate that women have poor knowledge of breast cancer and minority practice BSE .although, education must be the major determinant of level of

knowledge and health behavior among the community but in this study e was no relation between educational level and the overall knowledge level.

## Introduction:

Breast cancer is the most common cancer in women worldwide, comprising 16% of all female cancers. It is estimated that 519 000 women died in 2004 due to breast cancer, and although breast cancer is thought to be a disease of the developed world, a majority (69%) of all breast cancer deaths occurs in developing countries.[1]

The recent fall in deaths from breast cancer in Western Nations is partly explained by earlier diagnosis as a result of early presentation. Understanding the factors that influence patient delay is a prerequisite for strategies to shorten delays (more likely to delay their presentation with breast cancer), [2], there is data suggesting that factors related to women's knowledge and beliefs about breast cancer and its management may contribute significantly to medical help-seeking behaviors. [3-5]

The three screening methods recommended for breast cancer includes breast self-examination (BSE), clinical breast examination (CBE), and mammography. Unlike CBE and mammography, which require hospital visit and specialized equipments and expertise, BSE is inexpensive and is carried out by women themselves. [6]

In Iraq, breast cancer ranks the first among the commonest malignancies among all the population and accounts for approximately one-third of the registered female cancer according to the latest Iraqi Cancer Registry which shows a trend for the disease to affect younger women. [7]

**Aims of the study:**

1. Exploring breast cancer related knowledge, attitude and practices toward breast cancer and breast self-examination in order to develop an appropriate socio-economic and cultural specific model to improve breast cancer care in Iraq.
2. Evaluate the effects of educational level on the knowledge, attitudes and behaviors of women towards BSE.

**Materials and methods:** A cross sectional study of the impact of educational level on the knowledge, attitude and behavior towards breast cancer and breast self-examination covering 234 women attending Primary Health Care center in Kufa city, Najaf governorate was carried out during the period of 1st of November 2012 to the 1st of February 2013. After an extensive review of available literatures and related studies a questionnaire format constructed. The questionnaire form containing socio-demographic data, questions about the rank of breast cancer in Iraq and in the world, questions related to the symptoms and signs of breast cancer, questions about the risk factors, questions related to breast self-examination practice and correct timing for pre and postmenopausal women and sources of informations. A random sample was selected from women who attained maternity care unit and immunization sessions, the first women selected randomly and the randomization the continued systematically as for every four women the fifth one was selected. Verbal informed consent was obtained from all participants and the females were assured that their participation was voluntary and their responses would be anonymous and confidential and the researcher informed the participants about the objectives of the study. The questionnaire forum was distributed to the participants with the aid

of doctor and the staff. For illiterate women informations were collected by direct interviews with them using the woman's words.

One point was given for a correct answer and zero for an incorrect answer, the maximum score for knowledge was 21 (100%) and the minimum score was 0 (0%). The knowledge level = no. of correct answers/total no. of questions in the same questionnaire. It was categorized as "low" for scores within 0-49%, "moderate" for scores within 50-79% and "high" for scores within 80-100%. [8] A pilot study was done on 20 women to check the women's understanding of the questions and some adjustment by omitting some questions and translating them into most understandable words, those 20 women were not included in the study. Any female with positive history of benign or malignant breast tumor was excluded from the study.

**Results:** The study sample consisted of 234 women who attained primary health care center in Kufa. The age of participants ranges from19-75years (37.98 ±10.5). The socio-demographic features of the sample are shown in the table 1

**Table 1: socio-demographic features of the sample**

| | | No. | % | Total |
|---|---|---|---|---|
| **Age group** | < 20 | 3 | 1.3 | 234 |
| | 20-29 | 40 | 17.1 | |
| | 30-39 | 90 | 38.5 | |
| | 40-49 | 68 | 29 | |
| | +50 | 33 | 14.1 | |
| **Occupation** | Housewife | 139 | 59.4 | 234 |
| | Officer | 46 | 19.7 | |
| | Teacher | 37 | 15.8 | |
| | Bachelor student | 12 | 5.1 | |
| **Marital status** | Married | 195 | 83.3 | 234 |
| | Single | 24 | 10.3 | |
| | Widow | 15 | 6.4 | |
| **Educational level** | Illiterate | 12 | 5.1 | 234 |
| | Primary | 38 | 16.2 | |
| | Intermediate | 35 | 15.0 | |
| | Secondary | 24 | 10.3 | |
| | Diploma | 54 | 23.1 | |
| | Bachelor | 71 | 30.3 | |
| **Address** | Urban | 220 | 94.0 | 234 |
| | Rural | 14 | 6.0 | |

results shows that 174 ( 74.4%) of the participants indicated that breast cancer is the commonest malignancy in Iraq being highest in the bachelor graduates (35.1%) and lowest in the illiterates (3.4) with significant statistical association, 159 (67.9%) answered the question about the rank of breast cancer worldwide with no significant statistical association (p= 0.2).

Table 2 shows that 114( 48.7%) of the participants had a low level of education, 91(38.9%) had moderate level and 29 ( 12.4%) had high level being higher in bachelor graduates (33.6%, 26.4% and 31% respectively) with no significant statistical association.

**Table 2: distribution according to educational level and knowledge of breast cancer and BSE**

| Knowledge level | Educational level | | | | | | Total | P value |
|---|---|---|---|---|---|---|---|---|
| | Illiterate | Primary | Interme d. | Secondary | Diploma | Bachelor | | |
| | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | |
| Low | 7(6.1) | 15(13.2) | 12(10.5) | 9(7.9) | 33(28.9) | 38(33.6) | 114(100) | 0.322 |
| Moderate | 3(3.3) | 19(20.9) | 17(18.7) | 12(13.2) | 16(17.6) | 24(26.4) | 91(100) | |
| High | 2(6.9) | 4(13.8) | 6(20.7) | 3(10.3) | 5(13.9) | 9(31) | 29(100) | |
| Total | 12 (5.1) | 38(16.2) | 35(15) | 24(10.3) | 54(23.1) | 71(30.3) | 234(100) | |

Regarding knowledge about the symptoms of breast cancer, 180 (76.9%), 93(39.7%) indicated yes for painless mass and nipple retraction respectively with no significant statistical association while 84 (35.9%),144 (61.5%) and 162 (69.3%) indicated yes for bloody discharge from the nipple, mass in the axilla and change in breast size respectively and being higher in bachelor graduates (23.8%, 34% and 31.5%) with significant statistical association as shown in table 3

**Table 3: distribution according to knowledge about the symptoms of breast cancer and level of education**

| Symptoms | Educational level | | | | | | Total | P value |
|---|---|---|---|---|---|---|---|---|
| | illiterate | Primary | Intermed. | secondary | diploma | bachelor | | |
| | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | |
| Painless mass | 12(6.7) | 32(17.8) | 29(16.1) | 18(10) | 36(20) | 53(29.4) | 180(100) | 0.114 |
| Bloody discharge from the nipple | 11(13.1) | 16(19) | 16( 19) | 8(9.5) | 13(15.5) | 20(23.8) | 84(100) | 0.001 |
| Mass in the axilla | 9(6.2) | 25(17.4) | 26(18.1) | 16(11.1) | 19(13.2) | 49(34) | 144(100) | 0.001 |
| Change in breast | 6(3.7) | 34(21) | 31(19.1) | 15(9.3) | 25(15.4) | 51(31.5) | 162(100) | 0.001 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **size** | | | | | | | | |
| **Nipple retraction** | 4(4.3) | 9(9.7) | 19(20.4) | 11(11.8) | 18(19.4) | 32(34.4) | 93(100) | 0.09 |
| **Total** | 12(5.1) | 38(16.2) | 35(15) | 24(10.3) | 54(23.1) | 71(30.3) | 234(100) | |

Table 4 shows significant statistical association between educational level and knowledge about risk factors of breast cancer in questions 1, 3, 4, 5,6,7,9 and 10. On the other hand there was no significant statistical association regarding question 2 and 8. The questions 1, 5,6, 9 and 10 were more accurately answered by bachelor graduates while questions 3 and 7 were accurately answered by those who had primary and intermediate education respectively.

**Table 4 : distribution according to knowledge about risk factors of breast cancer and level of education**

| **Risk factor** | **Educational level** | | | | | | **Total** | **P value** |
|---|---|---|---|---|---|---|---|---|
| | **illiterate** | **Primary** | **Interme d.** | **secondary** | **diploma** | **bachelor** | | |
| | **No.(%)** | **No.(%)** | **No.(%)** | **No.(%)** | **No.(%)** | **No.(%)** | **No.(%)** | |
| **1.Increasing age** | 11(11.1) | 20(20.2) | 12(12.1) | 13(13.1) | 18(18.2) | 25(25.3) | 99(100) | 0.002 |
| **2. Family history** | 6(4.3) | 25(18.1) | 23(16.7) | 18(13) | 24(17.4) | 42(30.4) | 138(100) | 0.107 |
| **3.Infertility** | 2(3.3) | 15(25) | 14(23.3) | 8(13.3) | 8(13.3) | 13(21.7) | 60(100) | 0.02 |
| **4.Oral contraceptive pills** | 8(7.8) | 16(15.7) | 25(24.5) | 10(9.8) | 18(17.6) | 25(24.5) | 102(100) | 0.003 |
| **5.No breast feeding** | 5(2.9) | 31(17.8) | 31(17.8) | 17(9.8) | 41(23.6) | 49(28.2) | 174(100) | 0.026 |
| **6.Early menarche** | 6(8.7) | 18(26.1) | 11(15.9) | 7(10.1) | 6(8.7) | 21(30.4) | 69(100) | 0.004 |
| **7.Late menopause** | 6(10) | 17(28.3) | 11(18.3) | 6 (10) | 10(16.7) | 10(16.7) | 60(100) | 0.003 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **8.Increasing weight** | 5(6.7) | 13(17.3) | 14(18.7) | 9(12) | 12(16) | 22(29.3) | 75(100) | 0.498 |
| **9.Smoking** | 9(6.2) | 30(20.8) | 29(20.1) | 14(9.7) | 27(18.8) | 35(24.3) | 144(100) | 0.001 |
| **10.Exposure to radiation** | 9(5.3) | 33(19.3) | 28(16.4) | 19(11.1) | 29(17) | 53(31) | 171(100) | 0.009 |
| **Total** | 12(5.1) | 38(16.2) | 35(15) | 24(10.3) | 54(23.1) | 71(30.3) | 234(100) | |

Results shows that 174 ( 74.4%) of the participants had been heard about BSE most of them were bachelor graduates (30.5%) without significant statistical association. About 89.7% were obtained their informations from television with no statistical association followed by Newspapers and magazines (27.6%) with statistical association , and friends (25.9%), internet(13.2%), family member (12.8%) and colleagues with no statistical association.

Fifty one (21.8%) practicing BSE 35.3% of them were bachelor graduates with no statistical association (p=0.48). of the sample 99 (42.3%), 57 (24.4%) knew the correct time of BSE for pre and post-menopausal women with no statistical association (p= 0.55 and 0.11 respectively).

The main causes for non- practicing BSE are shown in table 5

**Table 5: distribution according to Causes of non-practicing BSE and level of education**

| **Cause of non-practicing BSE*** | **Educational level** | | | | | | **Total** | **P value** |
|---|---|---|---|---|---|---|---|---|
| | **Illiterate** | **Primary** | **Interme d.** | **Secondary** | **Diploma** | **Bachelor** | | |
| | **No.(%)** | **No.(%)** | **No.(%)** | **No.(%)** | **No.(%)** | **No.(%)** | **No.(%)** | |
| **Do not have information** | 9(8.1) | 22(19.8) | 13(11.7) | 14(12.6) | 25(22.5) | 28(25.2) | 111(100) | 0.159 |
| **Do not believe in BSE** | 10(16.7) | 12(20) | 3(5) | 8(13.3) | 9(15) | 18(30) | 60(100) | <0.001 |
| **Do not believe in herself to do BSE** | 10(11.1) | 14(15.6) | 10(11.1) | 13(14.4) | 13(14.4) | 30(33.3) | 90(100) | 0.001 |
| **Afraid to find out** | 9(6.8) | 20(15.2) | 19(14.4) | 14(10.6) | 31(23.5) | 39(29.5) | 132(100) | 0.427 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **tumor** | | | | | | | | |
| **Total** | 12(5.1) | 38(16.2 ) | 35(15) | 24(10.3) | 54(23.1 ) | 71(30.3) | 234(100 ) | |

* Woman could have more than one cause

Results also shows that 174 (74.4%) of the participants knew that breast cancer can be prevented through early diagnosis by BSE and mammogram 52 (29.9% ) of them were bachelor graduates followed by those with diploma degrees with significant statistical association p=0.04.

## Discussion:

World Health Organization, recent global cancer statistics indicate a rising global incidence of breast cancer and the increase is occurring at a faster rate in populations of the developing countries that previously enjoyed a low incidence of the disease. [9-11]

In the current study 74.4% were aware that that breast cancer is the commonest malignancy among the Iraqi population and 69.9% were aware that it is the commonest cancer among women worldwide while in another Iraqi study 71% and 56% respectively were not aware about the problem.[12]

In this study the overall knowledge level shows that 48.7% of the participants had a low level of knowledge, 38.8% had moderate level and 12.4% had high level being higher in bachelor graduates (33.6%, 26.4% and 31% respectively but with no significant association), this about the same results in an Iraqi in which about half of the participants had a low knowledge score (< 50%); only 14.3% were graded as "Good" and above and higher scores of knowledge was among educated[12] In a study from Saudi Arabia where knowledge, attitude and practices were evaluated among female school teachers, only 12% had a high score; the rest of the participants were categorized as a having limited level. [13]

In Malaysia a study was done among female teachers in Selangor revealed that 63% of the participants had low level of knowledge, 37% moderate and 0.7% high[14] this indicates that in most developing countries the overall knowledge about breast cancer is still low and more work in this field is necessary.

In Indian study among Female Dental Students in Hyderabad City, the total mean knowledge score was 14.22 ± 8.04 with the fourth year students having the maximum mean score (19.98 ± 3.68).[15]

Regarding knowledge about the symptoms of breast cancer (76.9%) stated that painless mass is the most common symptom of breast cancer followed by change in breast size (69.3%), this decreased to 60.8% in an Iranian study[16] and increased to 70% in UK study. [17] In Malaysian study 61% stated painless mass , 41.5% change in breast size, 69.4% bloody discharge and 16.6% for nipple retraction.[14]

In a study in Ghana west Africa the participant stated that breast lump (46.6%) is the commonest symptom followed by changes in breast size and shape (15.6%), nipple discharge (13.1%) nipple retraction (5.5%) and palpable axillary lymph nodes (0.4%).[18] While in

Angola The majority of the participants were not aware of some of the early signs of breast cancer such as change in color or shape of the nipple, even though they appreciated the need for monthly breast self-examination.[19]

In the current study 74.4% stated that the main risk factors for breast cancer were lacking of breast feeding and late menopause followed 73.1% and 70.5% stated exposure to radiation and early menarche respectively.in contrast to Malaysian study in which 10% of the participants believed that prolonged breast feeding is a cause of breast cancer, 18.9% for early menarche,13% for late menopause,26.1% for obesity, 32.2% for oral contraceptive pills and49.6% for smoking.[14]

In this study 42.3% stated that increasing age is a risk factor for breast cancer while in another study in Iraq 61%[12] and in Saudi Arabia 3% stated that age is a risk factor. [13]

In Ghana only 8.2% and 1.7% mentioned increasing age and early menarche respectively as risk factors. Others factors mentioned included smoking (6.3%), obesity (1%), late menarche (1.5%), family history (5%) and benign breast disease (4.2%).[18]

About hearing of BSE in this study 74.4% of the participants had been heard about BSE most of them were bachelor graduates (30.5%) . this is consistent with other studies in Korea and in rural Malaysia [20,21] In Iran (30.8%) of respondents knew the BSE and this knowledge had significant association with their educational status.[16]

About 89.7% were obtained their informations from television followed by Newspapers , and magazines (27.6%) and friends (25.9%) with no statistical association. Another study in Iraq indicated that television was also the commonest source of information.[12] also Nigerian study in which 31% obtained their informations from television followed by publications and doctors27.1% and 21.1% respectively.[22] In Malaysia the main source is television followed by brochures, doctors/nurses.[14] other studies had been suggested that raising the awareness of appropriate cancer management through health education by doctors and nurses and suitable brochures may be more effective resources for women.[23] In Ghana the main source of information was radio 39.8% followed by television 20.5% and nurses 13.9%.[18]In Saudi most information were obtained from media.[24] this can give an idea about the importance of media in conducting health education campaigns.

Practicing of BSE in the current study 21.8% of the participants practiced BSE regularly and 35.3% of them were bachelor graduates with no association to educational level while in Korea 27% practice BSE[25], in turkey educated women educated women perform BSE 1.8 times than non-educated[26], in Iran 12.9% practice BSE. In Iraq less than 50% practice BSE. [16] Among women in the United Arab Emirates (UAE) only 13% performed BSE regularly. [27] A study among African American only 31% reporting performing breast self-exam every month.[28]

Women with a higher (>12 years) educational level were more likely to know about breast self-examination , 95%CI = 22, 6.39-76.76), to know about mammograms (6, 2.49-15.70), and to

practice BSE (3, 1.27-6.83) compared with those with a lower educational level.[29] In Sri Lanka even though 84.1% practiced it, only 47.9% practiced it on a monthly basis. [30]

In Nigeria 866 participants had information on education and practice of BSE. A smaller proportion (31.8% ) of study participants with high school education and below practiced BSE compared with 62.3% of those with education above high school. Higher level of education was significantly associated with practice of BSE. [22]

In this study the main causes for non –practicing BSE were afraid to find out a lump72.1% and 60.7% due to lack of informations about BSE, the same results was found in another studies.[31,32] 30% of bachelor graduates in this study do not believe in the importance of the BSE this must be regarded as warning sign for more educational programs among university students.

74.4% believe that early diagnosis of breast cancer can be done through BSE and mammogram while this is consistent with other studies.[12,14,19]

**Conclusions:** this study showed that the overall knowledge level is low in about half of the participants**,** 74.4% of the participants had been heard about BSE most of them were bachelor graduates . About 89.7% were obtained their informations from television with no statistical association followed by Newspapers and magazines (27.6%) with statistical association , and friends (25.9%) .

Only 21.8% of the participants practiced BSE regularly of them 18 (35.3%) were bachelor graduates followed by those with diploma degree 12(23.5) . 42.3% knew the correct time of BSE for premenopausal women corresponding to 24.4% knew the correct time of BSE for postmenopausal women. The main causes for non-practicing BSE were afraid to find out a lump and they lack of information about BSE . Results also showed that 74.4% of the participants knew that breast cancer can be prevented through early diagnosis by BSE and mammogram 52 (29.9% ) of them were bachelor graduates.

**Recommendations:**

1. The results indicate the urgent need of educational programs about breast cancer symptoms and risk factors for all women regardless of their educational level through every possible route and especially through media like television as it was reported as the first source of information.
2. Inclusion of the prevention concepts especially cancer prevention in the curricula of the intermediate, secondary schools and in universities.
3. More researches regarding this problem taking into account other variables such as women's work

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