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## Original Research Article

### Knowledge towards breast cancer among Libyan women in Tripoli.

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#### Abstract

**Introduction:** Breast cancer in women is the commonest type of cancer worldwide. However, in Libya, ordinary systematic screening for breast cancer is neglected.

**Aim:** The present study was aimed to evaluate the women's knowledge towards breast cancer and its risk factors.

**Methods:** A cross-sectional survey, using self-administered questionnaire and face-to-face interviews was conducted at different places in Tripoli city along a period of nine months, from April-December 2013.

**Results:** The mean age ( $\pm$ SD) of the participating women was  $48 \pm 5$  years and out of 284 contributors 84.5% were married. One hundred and eighty women (63.4%) stated that long-term use of contraceptive pills (> 5 years) increases the incidence rate of breast cancer. Besides, more than half of participants (157 women) specified that breast cancer is treated by surgery, chemotherapy and radiotherapy. However, although 50.7% of women reported that mammography and ultrasound are used for early detection, more than 60% of women believed that mammogram can cause cancer. In addition, our data demonstrate that increased knowledge was associated with women who know how to do self-examination and living in urban area.

**Conclusion:** Our findings demonstrate that Libyan women have acceptable level of knowledge regarding breast cancer. However, improvement of the health systems and awareness regarding breast cancer is needed.

#### Key-words:

Women; Cancer screening; Breast cancer; Knowledge, Libya.

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## INTRODUCTION

Breast cancer disease is the main health concern among women worldwide. In developed and developing countries it has been indicated that breast cancer is considered the second leading cause of cancer death [1]. Studies have shown that its incidence and mortality rate are on increase [2]. Recent global cancer statistics showed that breast cancer incidence is rising at a faster rate in populations of developing countries [3]. A number of studies have showed that breast cancer is the most common malignancy and is first killer disease among women beyond the age of 45 years [4]. In parallel, the risk of being diagnosed with breast cancer is significantly higher after the age of 50 [3]. Studies have demonstrated, among Arab women, that the incidence of breast cancer was significantly augmented during the last 25 years [5, 6]. It is increasing at a rate of more than 3% annually [7]. In addition, large number of women in their 30-40 years is often diagnosed at advanced stages of the disease [8]. In spite of that, breast cancer remains not on the top of the priority list for the policy maker's donors and health professionals. In Libya, several data have indicated that breast cancer occupied the first rank among all types of females' cancer, and constituted more than 25% of all female cancer [9]. It has been shown that the mean age of breast cancer among Libyan women is 46 years as compared to 58.8 years among European women [10]. It is well known that early detection of breast cancer is of great value in avoiding the hazards of the cytotoxic agents and the better quality of life in the order

of offering successful treatment. Furthermore, screening offer a chance for cure since breast cancer once diagnosed at advanced stages can spread and become untreatable [11]. Nonetheless, despite the benefits of screening for timely detection of breast cancer, and that breast cancer may present at a younger age, a big number of women still do not do it regularly or even not at all. In literature, several studies have focused on breast self-examination and in particular knowledge, practice and attitudes [12]. In Libya, the age-standardized incidence rate of breast cancer among women was shown 18.8 new cases per 100,000 women per year [13]. Besides, reports have revealed that breast cancer screening behaviors among women, in Libya, is limited compared to women in Western countries [10]. Therefore, the present study was aimed to evaluate the level of knowledge among Libyan women, residents in Tripoli city, towards breast cancer and its risk factors.

## METHODS

This study was a cross-sectional survey among Libyan women residents in Tripoli, the largest city and the capital of Libya. Tripoli city is located in the north-western part of Libya and had a population of more than one million. The study viewpoint was conducted over a 9-month period from April-December 2013. For the purpose of the study a descriptive design had been employed. The participants included in this study were 292 women of Libyan nationality and heritage between the ages of 40-72 years, who had experienced absence of



prior or current history of breast cancer before starting the study, as determined retrospectively from the questionnaire reports. Women were excluded from the study if they reported that they had uncontrolled medical conditions, were undergoing treatment for cancer, were in remission, medical schoolgirls and women who worked in health care professions. So, accordingly eight participants were excluded. The remaining 284 women were conveniently and randomly selected through face-to-face interviews. The survey took place in a community sample of women at several places including schools, streets and government places.

#### ***Ethical consideration:***

Prior to collection of data, the study was ethically approved and proceeds in accordance to the Tripoli University requirements. All women were invited to participate in the study voluntarily and participants were guaranteed of the privacy of their replies. Verbal consent from each contributor to fill-in the questionnaire was considered as an informed agreement for participation in the study.

#### ***Survey form and the questionnaire:***

This study was conducted using a basic method with group interviews as the main data collection procedure. The structured questionnaire used to collect data was available in Arabic language. Knowledge survey points regarding the disease, risk factors and methods for detection of breast cancer were well validated in several studies [14, 15]. A face-to-face interview technique was performed according to a form translated into simple

Arabic language to ensure its comprehensibility. The questionnaire was divided into two sections adapted from previous use in other issued surveys so that a comparison can be made with the results from other countries. The first section considered the socio-demographic characteristic of the participants such as age, marital status, education, previous breast cancer screening, family history of breast cancer and the use of contraceptive. The second section covered questions related to knowledge of participants toward breast cancer disease. Each informative question was answered either yes or no, depending on participant knowledge and so answers were converted to numerical numbers i.e. 1 or 0, respectively.

#### ***Recruitment of participants:***

The current study focused on a random sample selected among Libyan women living in Tripoli city. To enroll women to participate in this study and to produce a mixture of characteristics within the survey population a number of innovative strategies were used including collaborating with females' local community health centers and visiting different primary and secondary schools, restaurants and beauty salons. After the purpose of the study was explained to each woman, respondents were invited to participate in the study. The survey was answered by each woman at the points where recruitment took place. For privacy, women were instructed not to write their names on the questionnaire. Further, all women had the right to ask for clarification and/or to withdraw from the study at any conflict.



### Statistical analysis

The study used was a descriptive statistics method to find out the frequencies and percentages of socio-demographic characteristics. Percentage, mean and median data  $\pm$  SD or 95% confidence interval (CI) are postulated. The Mann–Whitney test was used to test for significant difference between groups. The Kruskal–Wallis one-way ANOVA was employed for comparison of several group means. Overall statistical analysis, the null hypothesis was excluded at the 5% level ( $p < 0.05$ ). Each point in the questionnaire was entered and analyzed using GraphPad Prism statistical software (GraphPad Software Inc, version 3.0, San Diego, USA).

### RESULTS

The questionnaires were matched by women who are living in Tripoli city. Demographic characteristics of the individuals who agreed to participate in the survey are shown in Table 1. Of the 300 women interviewed, 292 eligible women completed and returned the questionnaire, yielding a response rate of 97.3% ( $N = 284$  after excluding 8 women). The participants' ages ranged from 40-72 years, and the median age was 53 years (with mean age of the subjects  $\pm$  SD being  $48 \pm 5$  years, Table 1).

Our data showed that 189 (66.6%) participants were employed; 10.9% of the women had a college education level and 92.3% of women were living in urban area. More than 25% of participants (78 women) have reported that they know how to do breast self-examination. Almost more than 90% of the

subjects (260 women) stated that their family had no history of breast cancer. Additional details on the socio-demographic data are illustrated in Table 1.

**Table 1: Sociodemographic characteristics of women surveyed (n=284).**

Characteristic	n	%
<b>Age (years)</b>		
40-50	112	39.4
51-60	71	25.0
61-70	55	19.4
>70	46	16.2
<b>Mean age <math>\pm</math> SD</b>	<b><math>48 \pm 5</math> years</b>	
<b>Marital status</b>		
Married	240	84.5
Single (never married)	19	6.7
Divorced /widow	25	8.8
<b>Education</b>		
Illiterate	23	8.1
Primary	28	9.9
Preparatory & secondary	202	71.1
University/high	31	10.9
<b>Employment status</b>		
Employed	189	66.5
Unemployed	95	33.5
<b>Place of residence</b>		
Rural area	22	7.7
Urban area	262	92.3
<b>on contraceptive</b>		
Yes	98	34.5
No	186	65.5
<b>Family history of breast cancer</b>		
Yes	24	8.5
No	260	91.5
<b>Know how to do self-examination</b>		
Yes	78	27.5
No	206	72.5



Regarding the knowledge of the participants towards breast cancer, our data in Table 2 show that more than half of the women (191, 67.3%) were significantly certain that breast cancer is the most type of cancer attacking women ( $P=0.03$ ). One hundred and ten women (38.7%) thought that breast cancer affects old women only ( $P>0.05$ , Table 2). Participants who believed that breast feeding can protect and, at least in part, decreases the risk of breast cancer comprised 98 (34.%,  $P<0.001$ ) women. Eighty one participants (28.5%) significantly ( $P<0.001$ ) described that breast cancer is not distinguishing between women races and economic situations. Out of 284 respondents 84 (29.6%,  $P<0.001$ ) women had reported that

breast cancer's survival rate is increased if it is early detected. In addition, the majority (180, 63.4%) of women agree that continuous use of oral contraceptive for a period of more than five years increases the chance of getting breast cancer. More than 50% of all women (157 women) announced that breast cancer is a treatable disease (Table 2) and 66 women (23.2%) agreed that the risk of breast cancer is increased with positive family history. Whereas, less than 10% of the participants (22 women) reported that mammography can treat breast cancer although almost 172 (60%) women stated that even though mammogram is one of the methods used for early detection of breast cancer it may cause it (Table 2).

**Table 2: Knowledge score levels among women answers about breast cancer, risk factors and methods of diagnosis (n=284)**

Statements on breast cancer	Yes		score		P value
	n	%	Median	Mean $\pm$ SD	
1. Breast cancer is the most common cancer in women	191	67.3	0	0.43 $\pm$ 0.49	0.03
2. Breast cancer affects old women only	110	38.7	0	0.50 $\pm$ 0.50	0.92
3. Breast feeding decreases the risk of breast cancer	98	34.5	0	0.08 $\pm$ 0.27	<0.001
4. Breast cancer affects women of all racial and economic classes	81	28.5	0	0.37 $\pm$ 0.48	<0.001
5. Continuous use of oral contraceptive pills for a period greater than 5 years increases the risk	180	63.4	1	0.82 $\pm$ 0.39	<0.001
6. Increased survival if breast cancer is detected early	84	29.6	0	0.38 $\pm$ 0.49	<0.001
7. Treatments for breast cancer include surgery, chemotherapy, radiotherapy and hormonal manipulation	157	55.3	1	0.71 $\pm$ 0.46	<0.001
8. Family history of breast cancer is a risk factor	66	23.2	0	0.29 $\pm$ 0.46	<0.001
9. Mammogram treats cancer	22	7.7	0	0.09 $\pm$ 0.30	<0.001
10. Mammogram may cause cancer	172	60.6	1	0.78 $\pm$ 0.42	<0.001
11. Mammography, ultrasound, PBE and BSE are used for early detection	144	50.7	1	0.65 $\pm$ 0.48	<0.001

**Key; PBE = physical breast examination, BSE = breast self-examination**



With respect to knowledge regarding breast cancer our results revealed that there are no significant differences between age categories at  $P$ -value  $> 0.05$  (Table 3). In addition, the present study showed that women's knowledge was significantly low among those women who are living in rural area compared to those women who are living in urban area ( $P < 0.05$ , Table 3). Regarding to educational levels our result show that even though most of the participating women have relatively primary and secondary education background nonetheless, this logical variable was not associated for over 71.1% of women in this study. The knowledge was not significantly

different between illiterate women and those who had an education level of high school (Table 3). A likely, annual employment, either government or private, was found to be a not significant variable that improved the women knowledge in up to 66.5%. Furthermore, despite the fact that the majority of women had no use of contraceptive compared to 98 women (34.5%) who were on contraceptive use, there were no statistical differences in knowledge between these two groups ( $P > 0.05$ , Table 3). In addition, although most of the participants were married our data displayed that there is no significant difference regarding marital status ( $P > 0.05$ , Table 3).

**Table 3: Mean knowledge scores of the women according to sociodemographic characteristics.**

Characteristic	Mean (95% CI) knowledge score	<i>P</i> value	Characteristic	Mean (95% CI) knowledge score	<i>P</i> value
<b>Age (years)</b>			<b>Place of residence</b>		
40-50	4.21 (2.82-7.04)	0.67	Rural area	5.77 (3.31-7.30)	<b>0.02</b>
51-60	5.20 (3.11-8.02)		Urban area	6.61 (4.23-7.18)	
61-70	5.00 (3.12-7.61)				
>70	4.89 (3.32-8.11)				
<b>Marital status</b>			<b>on oral contraceptive</b>		
Single	5.10 (3.82-7.04)	0.89	Yes	6.61 (2.21-7.44)	0.32
Married	4.83 (2.21-6.55)		No	7.24 (4.23-9.28)	
Divorced/widow	5.00 (3.42-7.15)				
<b>Education level</b>			<b>Family history of breast cancer</b>		
Illiterate	4.46 (2.12-6.15)	0.31	Yes	7.33 (5.21-9.44)	0.85
Primary	5.51 (3.11-6.17)		No	6.04 (2.11-7.04)	
Secondary	5.04 (2.99-7.35)				
University/high	4.12 (2.42-6.71)				
<b>Employment status</b>			<b>Know how to do self-examination</b>		
Employed	6.30 (3.72-8.15)	0.31	Yes	7.29 (5.21-9.44)	<b>0.01</b>
Unemployed	5.55 (2.13-7.18)		No	4.53 (2.21-6.44)	





Twenty four women (8.5%) have reported a family history of breast cancer, however, no significant difference in knowledge were found compared to those women who admitted no previous history of family breast cancer ( $P=0.85$ ). In difference, our results demonstrated that practicing of breast self-examination was a crucial variable regarding knowledge of participants on breast cancer. The mean knowledge scored by women who stated that they had done previous breast self-examination was 7.29 (95% CI 5.21-9.44) compared with 4.53 (95% CI 2.21-6.44) described by 206 women who stated that they had never done breast self-examination ( $P<0.05$ , Table 3).

## DISCUSSION

Breast cancer is the commonest cancer among women worldwide [16]. However, although the fact that early detection of breast cancer with clinical examination offers a clear indication for a significant reduction in female mortality many women were not screened. Indeed, investigations are focused on trends in use, and factors associated with physicians and women's knowledge, attitude and practice related to mammography. Even though the use of mammogram has increased, studies suggests that a number of difficulties to participate in routine screening [17], including low knowledge, needs to be addressed.

The knowledge level is an important factor in the control of breast cancer. Generally, prevention is the first approach to decrease breast cancer related morbidity. Increasing knowledge regarding the risk factors is crucial

for the primary prevention. In the present study, we found that Libyan women, living in Tripoli city, expressed satisfactory knowledge in relation to breast cancer. Our results revealed that more than half of the participants (67.3%) were aware that breast cancer is the commonest malignancy among females. Furthermore, women stated that the most known risk factors were not having breast fed, continuous use of contraceptive and old age, while those least known was previous family history. Almost similar results were obtained in studies from different countries [18, 19].

Results of the present study support findings by other researchers that knowledge regarding breast cancer varies among women [20]. Our findings that knowledge regarding risk factors like use of contraceptive and increasing age were fair. In contrast, participated women had had a poor knowledge regarding family history as a risk factor since less than 25% of the participants knew that family history is a risk factor. In Pakistani study by Ahmad et al. [18] family history as a risk factor for breast cancer was observed at high rate of 80% in the study population. Knowledge of Libyan women regarding mammography was also fair by 50.7% except the surprising finding that 172 (60.6%) participants answered that mammogram may cause breast cancer. With current information, we know that the knowledge has a significant relationship with the culture of the society and may influence how the disease is realized. Also, the present data were in agreement with findings by Oluwatosin and Oladebo [21] who reported



that knowledge of breast cancer risk factors among rural women was poor. So, our findings emphasized that the risk factors for breast cancer should be underlined and taken in consideration during the education courses.

Our findings that there is a significant relation between the knowledge towards breast cancer and breast self-examination are in agreements with the Malaysian and Turkey studies [22, 23]. In addition, the significant findings of the present study were that the reported knowledge of the Libyan women was different from that in other Arabic countries, for instance Saudi Arabia [24] and Iraq [14]. Compared to these studies 38.7% of our contributors knew that ageing increased the risk of breast cancer compared to only 3% in the Saudi study and 61% in the Iraqis women.

The present study is one of the few qualitative studies regarding breast cancer knowledge in women [13, 17]. Indeed, recruiting participants was difficult because several women refused and feared to discuss breast cancer issues. Hence, this study is not without several limitations. Respondents in our study were drawn from women in Tripoli city and thus may not represent the whole population. Also, there is no control group to compare the present findings. However, despite of these limitations, this study specified valuable information for future comprehensive studies in this area. Moreover, it was demonstrative of a wide range of several traditions and had a high response rate.

## CONCLUSIONS

The continued increase in the incidence of breast cancer death among women is due, in part, to the low level of knowledge. The present study showed that women who are living in urban area and know how to do breast self-examination had the highest knowledge. Hence, this study emphasize that an effective health-care education system is highly recommended.

## FUNDING

None

## COMPETING INTERESTS

Authors declare that there are no competing interests with others.

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## ملخص باللغة العربية

### دراسة مستعرضة حول مدى معرفة المرأة الليبية المقيمة بطرابلس حول سرطان الثدي

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#### الملخص

##### مقدمة:

يعتبر سرطان الثدي الأكثر شيوعاً بين الأمراض السرطانية التي تصيب النساء عالمياً. ومع ذلك لوحظ هناك إهمال واضح من قبل المرأة الليبية للفحص المنتظم العادي لسرطان الثدي. استهدفت هذه الدراسة تقييم مدى معرفة المرأة الليبية بمرض سرطان الثدي والعوامل الخطرة المسببة له.

##### الطرق:

تم إجراء دراسة مستعرضة في عدة أماكن مختلفة في مدينة طرابلس ولمدة تسعة أشهر خلال الفترة من أبريل إلى ديسمبر لسنة 2013 باستخدام طريقة الاستبيان الذاتي عن طريق إجراء المقابلات الشخصية مع النساء.

##### النتائج:

شملت هذه الدراسة 284 امرأة ليبية. كان متوسط أعمار النساء  $48 \pm 5$  سنة. أفادت النساء وبنسبة 84.5% بأنهن متزوجات. أظهرت النتائج بأن عدد 108 امرأة (بنسبة 63.4%) يعتقدون أن استخدام حبوب منع الحمل لفترة تزيد عن خمسة سنوات يزيد من احتمالية الإصابة بسرطان الثدي. إلى جانب ذلك أفاد أكثر من نصف المشاركين (157 امرأة) أن سرطان الثدي يمكن علاجه باستخدام الجراحة والعلاج الكيميائي والعلاج الإشعاعي. أوضحت للباحثين أنه على الرغم من أن 50.7% من النساء ذكرن أن التصوير الإشعاعي للثدي والموجات فوق الصوتية تستخدم للفحص المبكر أفاد أكثر من 60% منهن أن تصوير الثدي يمكن أن يسبب السرطان. إحصائياً أظهرت النتائج وجود ارتباط واضح ما بين زيادة المعرفة بمرض سرطان الثدي ما بين النساء ممن يعرفن كيفية القيام بالفحص الذاتي للثدي وخاصة النساء اللاتي يقمن في المناطق الحضرية.

##### الخلاصة:

أظهرت النتائج التي توصلت إليها الدراسة أن المرأة الليبية تشهد مستوى مقبول من المعرفة فيما يتعلق بسرطان الثدي. ومع ذلك أكدت الدراسة على ضرورة تحسين النظم الصحية والتوعية حول هذا المرض.

##### الكلمات المفتاحية:

ليبيا، المعرفة، سرطان الثدي، نساء

