

# **Breast Cancer and its Risk Factors Awareness, Knowledge and Beliefs among Libyan Women resident in Zawia**

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## **Abstract**

*Introduction: Breast cancer is the most common female malignancy, and its incidence is on rise in Libya. The high mortality in developing countries is associated with late detection, and lack of knowledge and adequate screening programmes. The aim of this study is to assess the frequency of inadequate knowledge about breast cancer and its risk factors among Libyan women resident in Zawia city in the north western Libya , and to examine if any of their socio-demographic characteristics (age, occupation, marital status, educational level and*

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income) are associated with having inadequate knowledge status.

**Methods:** A cross-sectional descriptive study carried out between October and November 2017 among a sample of adult women in Zawia city in the north western Libya. Women were interviewed using a specifically designed questionnaire to gather data relevant to breast cancer and its risk factors. Data were analyzed using SPSS software.

**Results:** The participants included in this study were 200 women between the ages of 30 and 89 years, using convenient sampling method. Recruitment was done on voluntary bases, and consents to participate were considered. The mean age of the respondents was  $48.0 \pm 12.1$ , and those who reported having no formal education constituted 46.5% of the sample. Overall, the frequency of inadequate knowledge about breast cancer was considerable (59.5%). The most known risk factor for breast cancer was "lack of breast-feeding" (86.0%). Sixty-nine percent of those surveyed were aware that increasing age was associated with a higher incidence of breast cancer and However 45% of the respondents identified positive family history as a risk factor. , the least known risk factors of breast cancer were the hormonal replacement therapy (22.0%) and use of contraceptive pills (26.5%). No significant association between level of knowledge towards breast cancer and any of the studied socio-economic characteristics. **Conclusion:** The study results showed insufficient knowledge of breast cancer among women. Majority of the participants knew about the breast self-examination(BSE), but they lack knowledge regarding frequency and appropriate time to practice BSE.

The results appear to designed to increasing awareness of women regarding breast cancer screening methods. Therefore, there is a need to plan for and implement educational programs to improve the level of knowledge about breast cancer and its risk factors among women in Zawia city . Such actions are expected to contribute the cancer breast prevention among Libyan woman.

**Keywords** Women, Breast cancer, Risk factors, Cancer screening, Attitude, Libya

## **Introduction**

Breast cancer is the most common cancer in women both in the developed and less developed world. It is estimated that worldwide over 508 000 women died in 2011 due to breast cancer. 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 low income countries [1]. In 2020, there were 2.3 million women diagnosed with breast cancer and 685 000 deaths globally. As of the end of 2020, there were 7.8 million women alive who were diagnosed with breast cancer in the past 5 years, making it the world's most prevalent cancer. There are more lost disability-adjusted life years (DALYs) by women to breast cancer globally than any other type of cancer. Breast cancer occurs in every country of the world in women at any age after puberty but with increasing rates in later life. Survival of breast cancer for at least 5 years after diagnosis ranges from more than 90% in high-income countries, to 66% in India and 40% in South Africa. Early detection and treatment has proven successful in high-income countries and should be applied in countries with limited resources where some of the standard tools are available. Countries that have succeeded in reducing breast cancer mortality have been able to achieve an annual breast cancer mortality reduction of 2-4% per year. If an annual mortality reduction of 2.5% per year occurs worldwide, 2.5 million breast cancer deaths would be avoided between 2020 and 2040.[2]

Breast cancer (BC) represents 10% of all cancers diagnosed annually and the second principal cause of cancer deaths in women worldwide [3,4]. The incidence of new cases is expected to rise from 10 million in 2002 to 15 million by 2025, with 60% of those cases occurring in low income countries. Data from the Arab world has placed breast

cancer at the number one position with almost half of cases occurring in women under the age of 50 [5]. On the other hand the majority of female patients in middle and low income countries, particularly in Middle East and North Africa, are younger than those in European countries [6].

In Libya, a number of studies have shown that breast cancer constitutes about 20% of all cancer types [6-12]. Most of diagnosed cases are young, and approximately a half of them at advanced stage [13]. Breast cancer survival rates vary greatly worldwide, ranging from 80% or over in North America, Sweden, Japan and Australia to around 60% in Brazil and Slovakia and below 40% in Algeria [14]. The low survival rates in low income countries can be explained mainly by the lack of early detection programmes, as well as by the lack of adequate diagnosis and treatment facilities, resulting in a high proportion of women presenting with late-stage disease [1].

Breast cancer is a clinically heterogeneous and complex disease [15]. It is known that both hereditary and non-hereditary factors, some of which are preventative, influence the chance of developing breast cancer. The BRCA1 and BRCA2 gene mutations account for the bulk of hereditary breast cancer cases [16]. whereas female sex and aging over 40 play a significant role in non-hereditary cases. Other contributing factors include endogenous hormonal factors like early menarche age and late menopause, exogenous hormonal ones like oral contraceptives and hormone replacement therapy, reproductive ones like no or late pregnancies after age 30 and no breastfeeding, family history of breast cancer, exposure to ionizing radiation, obesity, and dietary factors [16-18].

lack of knowledge may lead to delayed presentation with advanced stages when little or no benefit is derived from any form of therapy. For

presentation at an early stage, women must be “breast aware”; they must be capable of identifying symptoms of breast cancer through routine practice of screening [19]. Consequently, early diagnosis can be successfully achieved by mass screening either by self-breast examination (SBE), clinical breast examination, and mammography or by the combination of these three. Although it is well-documented that mammography is the best choice for screening, breast self-examination (BSE) is also equally important and beneficial for mass awareness especially in a country with limited recourses.[5,6]

Knowing the preventative and the risk factors of breast cancer, and awareness about personal risk are essential for healthier practices, early detection and management of the disease [5, 18]. WHO promotes breast cancer control within the context of comprehensive national cancer control programmes that are integrated to noncommunicable diseases and other related problems. Comprehensive cancer control involves prevention, early detection, diagnosis, treatment, rehabilitation and palliative care. The main strategies of population-based breast cancer control include campaigning for relevant policies and practices, increasing public knowledge of the problem of breast cancer and the mechanisms to control it, and promoting appropriate programs and policies [1].

Therefore, our study, aimed to assess the frequency of inadequate knowledge about cancer breast and its risk factors among Libyan women resident in Zawia city in the north western of Libya, and to examine if any of their socio-demographic characteristics (age, occupation, marital status, educational level and income) are associated with having inadequate knowledge status.

## **2. MATERIALS AND METHODS**

A cross-sectional descriptive study carried out between October and November 2017 among a sample of adult women in north western Libya. Women participating in the study were interviewed using a pre-tested validated questionnaire. The questionnaire was derived from other published studies dealing with the same topic [23,27,30]. It included questions related to personal data and history of related health events. It also investigated the knowledge and awareness of female regarding breast cancer and their risk factors. The questionnaire had been validated over a group of female workers for its repeatability. In each self-administered questionnaire sitting, we invite female to a private room and ask them to fill in the questionnaire in minutes. The structured English form was first translated into Arabic by the authors. An Arabic version of the questionnaire was used to collect the data. This version was revised and translated back to English by another expert and compared with the original form to ascertain the precision of translation.

A self-reporting questionnaire, comprised of two parts, was used to collect data. The first part intended to collect data about the socio-demographic characteristics of the

respondents including; age, occupation, marital status, educational level and income. The second part was constructed based on literature [23,27,30] to assess knowledge about breast cancer. The questions cover knowledge aspects relevant to breast cancer epidemiology, risk factors, knowledge and awareness of women towards breast cancer screening methods (breast self-examination BSE, clinical breast exam CBE, and mammography).

The participants included in this study were 200 women between the ages of 30 and 89 years , using convenient sampling method.

Recruitment was done on voluntary bases, and consents to participate were considered to find 66% response distribution.

All participants were Libyan women who were citizens of Libya . Women were excluded from the study if they reported that has a history of uncontrolled medical conditions , or were undergoing treatment of cancer.

The study took place in a community sample of women at different places including schools( primary and secondary school) , high school (Zawia college of Education) , A beacon(Manarat) for memorizing the Holy Quran in Zawia city . prior to data collection , the study was ethically approved by faculty of medicine , University of Zawia , Education monitoring corner, Zawia , and the ministry of Awqaf and Islamic Affairs Zawia

**2.1 Knowledge Scoring** The questionnaire consisted of 28 items that assessed women' knowledge related to breast cancer (13 questions related to Breast Cancer BC risk factors and 15 questions regarding breast cancer screening methods. Each question in the second part is attached to a “yes” and “no” scale, whereby a “yes” answer was given a score of 1 and a “no” answer scored as 0. The possible total score range is 0 to 28. To define Knowledge status, the total score was dichotomized into the binary variable; inadequate knowledge and adequate knowledge. Since the total score in this study was normality distributed, mean was used as the cut-off point. Accordingly, respondents whose total knowledge score is equal to, or below the mean was defined as having inadequate knowledge about breast cancer, and those who scored above the mean was defined as having adequate knowledge.

## **2.2 Statistical Analysis**

Data was translated to English and analyzed using SPSS version 16.0 software (SPSS Inc, Chicago, Illinois, United States).

Statistical description including means, standard deviation, frequencies, and percentages were obtained for all continuous and categorical variables as appropriate. Chi-square test was used to examine the association between the respondents' socio-demographic variables and knowledge of breast cancer. The significance level of p less than 0.05 was considered in the interpretation of the significance of the final results.

### **3.Results**

As shown in Table 1, the ages of the females involved in this study ranged from 30 to 70 years, with the mean age of the respondents was 48.0± 12.1. The majority of respondents were married (n=161) 80.5% and (n=74) 37% of them have paid work. All educational levels were representative in the sample, with those who reported having no formal education constituted(n= 93 ) 46.5% of the sample. A total of (n=122) 61 % of the women belonged to the lower income category (less than 500 LD/month).

**Table 1: Socio-demographic characteristics of the respondents (n=200)**

Variable	N
	(%)
Age(years)	
Mean±SD	48 ±12.1
30-39	68 34.0
40-49	31 15.5
50-59	59 29.5
>60	42 21.0

Marital status

Single	26	13
Married	161	80.5
Divorced	8	4.0
Widow	5	2.5
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Educational level		
Illiterate	93	46.5
Primary	13	6.5
Secondary	25	12.5
Higher school and more	69	34.5
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age menarche		
< 11 years	23	11.5
>11 years	177	88.5
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Occupation		
Housewife	126	63.0
Employed	74	37.0
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Income(LD/month)*		
<500	59	29.5
500-1000	122	61
>1000	19	9.5

\*LD= Libyan Dinars

Overall, the percentage of women who have inadequate knowledge was about breast cancer was considerable(n= 119) 59.5%. The results showed a high knowledge rates on some aspects of breast cancer. The highest percentage of correct responses was to the statement “Cancer has no treatment”, where 90.0% of the respondents reported a negative response. The results also showed that(n=92) 46.0% of the respondents know that Self-Breast Examination are used for early detection of breast cancer . The most known risk factor for breast cancer among respondents

was “lack of breast-feeding” (n=172) 86.0%. A total of (n= 160) 80% know Early detection of breast cancer increases survival and the least known risk factors of breast cancer were the hormonal replacement therapy(n= 44) 22.0%, use of contraceptive pills(n= 53) 26.5% and Lack of physical activity(n= 60) 30%.

In contrast , only 30.0% (n= 60) of the respondents know that Cytodiagnosis is a method that helps in early detection and management and about 39% (n=78) know Histopathology is important for diagnosis and management plan (Table 2).

**Table 2: Knowledge about breast cancer and it is risk factor, n=200**

Variable	Yes	
	N	(%)
1 Breast cancer is the most common cancer in women	130	65.0
2 Age of 35 or more is a risk factor for breast cancer	138	69.0
3 Late menopause is a risk factor for breast cancer	129	64.5
4 Early menarche is a risk factor for breast cancer	113	56.5
5 First pregnancy at 30 is a risk factor for breast cancer	99	49.5
6 Lack of breast feeding is a risk factor for breast cancer	172	86.0
7 Breast cancer affects women of all racial and economic classes	164	82.0
8 Use of oral Contraceptive Pills	53	26.5
9 Smoking is a risk factor for breast cancer	65	32.0
10 Obesity is a risk factor for breast cancer	92	46.0
11 Non healthy food consumption is a risk factor for breast cancer	112	56.0
12 Lack of physical activity is a risk factor for breast cancer	60	30.0
13 Hormonal replacement therapy is a risk factor for breast cancer	44	22.0
14 Exposure to radiation is a risk factor for breast cancer	154	77.0
15 Having had a previous history of breast cancer is a risk factor for breast cancer	100	50.0
16 Family history of breast cancer is a risk factor for breast cancer	90	45.0
17 Early detection of breast cancer increases survival	160	80.0
18 Mammography, ultrasound, Physical Breast Examination, Self-Breast Examination are used for early detection of breast cancer	92	46.0
19 I did not know I need to perform Breast self-examination (BSE)	112	56.0
20 Mammography screening is not important*	136	68.0

21 Mammography may cause cancer*	137	68.5
22 Cytodiagnosis is a method that helps in early detection and management	60	30.0
23 Cancer has no treatment*	20	10.0
24 Treatment options for breast cancer include surgery, chemotherapy, radiotherapy and hormonal manipulation	88	44.0
25 Mammogram treats cancer*	88	44.0
26 Histopathology is important for diagnosis and management plan	78	39.0
27 Hormonal receptors are important for management plan	114	57.0
28 Following medical instructions is important for long survival	121	60.5
Total Knowledge Score (27 item)		
Mean±SD	13.1	±2.6
Observed range**	7-22	
Knowledge Status		
Inadequate	119	59.5
Adequate	80	40.5

\* Score was reversed for these responses before calculating the total knowledge score,

\*\* Possible range: 0-27

As shown in table 3, there is no significant difference in the mean age of the respondents across the inadequate knowledge group (47.6±12.3) and the adequate knowledge group(48.5±11.9), the difference is small and insignificant (p >0.05).

However, in this study, (n=80) 40.5% of female reported that have a adequate knowledge about breast cancer and (n=119) 59% inadequate knowledge . And show there was None of the studied socio-demographic characteristics displayed a significant statistical association with the knowledge status.

**Table 3: The Association between socio-demographic characteristics and breast cancer knowledge status, n=200**

Variable	Knowledge status				$\chi^2$		
	Inadequate		Adequate				
P-value	N	(%)	N	(%)			
Age(years)			47.6	±12.3	48.5	±11.9	0.546a
0.586							
Marital status							1.479b
0.721							
Single		15	57.6	11	42.3		
Married		92	57.1	69	42.9		
Divorced		5	62.5	3	37.5		
Widow		2	40	3	60		
Educational level							4.523
0.210							
Illiterate		58	62.4	35	37.6		
Primary		8	61.5	5	38.5		
Secondary		10	40	15	60		
Higher school and more		40	57.9	29	42		
Occupation							0.084
0.772							
Housewife		74	58.7	52	41.3		
Employed		45	60.8	29	39.2		
Income(LD/month)							c
1.146	0.587						
<500		36	61	23	38.9		
500-1000		75	61.5	47	38.5		
>1000		12	63.2	7	36.8		

a Independent t test statistic, b Fisher's Exact test statistic, c LD= Libyan Dinars

#### 4. Discussion

The main focus of this study was to assess breast cancer knowledge, attitude, and practice among Libyan women resident in Zawia. Knowledge is an important issue for early detection and improvement of health seeking behavior.

The level of knowledge about breast cancer and the screening behavior is generally poor in the Arab region compared to the developed world [13,14,21].

In the present study, more than half of the respondents exhibited inadequate knowledge about breast cancer. However, El-Hamadi and colleagues research showed a relatively higher knowledge of breast cancer screening and risk factors among Libyan Women [23]. El-Hamadi and colleagues results satisfactory knowledge scores were more common among younger participants and those with higher educational levels this is not in line with our study and Habsa A and , Sana T study the highest rate of adequate knowledge status was among women who reported primary education compared to other educational level categories. There is a no significant relation between any of the studied socio-economic characteristics and the knowledge towards breast cancer. This is consistent with Habsa A and Sana T and Pöhls UG , etc. study [27,31]. Elzahaf, *et al* and colleagues' results found that , there was significant association different between breast cancer knowledge and demographic factors this age, education level and marital status significantly increase the breast cancer knowledge among female medical collage where first

year student have low knowledge about breast cancer risk factors and their practices[30].

Our study demonstrated that, knowledge of respondents about reproductive risk factors was better than their knowledge about lifestyle related risk factors. For instance, 86% of women recognized breastfeeding as a preventive behavior. Respondents reported a lower knowledge about the consumption of unhealthy food, smoking and lack of exercise as risk factors for breast cancer compared to that reported in an Egyptian setting [21]. Contrary to the results from a previous study in the Libyan context [24], hormonal replacement therapy and use of oral contraceptive were the least frequently correctly identified risk factors.

Majority of the female did know that Breast Self-Examination(BSE) and mammography as the ways of diagnosing breast cancer. in the present study Less than a half of women were aware about the role of mammography for early detection of breast tumors. Moreover, considerable proportion of them holds negative thoughts about mammogram that ranges between being not important to that it may cause cancer. These results are consistent with those reported in several Libyan studies [24, 26].Only few of the participants were not aware that they need to perform breast

self-examination for early detection of breast cancer, This is consistent with the

previous research in the Libyan settings [23,26], This is to some extend also

comparable to several studies in neighboring countries [27, 28]

## 5. Conclusion

The study results showed insufficient knowledge of breast cancer among women Majority of the participants knew about the Breast Self-Examination (BSE), but they lack knowledge regarding frequency and appropriate time to practice( BSE).

Besides, the study demonstrates no association between knowledge and studied socio-economic characteristics . Thus, more educational programs could be designed to provide comprehensive information of breast cancer and Breast Self-Examination ( BSE) to improve women's knowledge and awareness, which can help in the early detection and reporting of breast cancer for the better treatment. Further research is recommended to identify the factors that contribute to adequate knowledge level .

## ETHICAL APPROVAL

Permissions were obtained from the faculty of medicine , University of Zawia , Education monitoring corner, Zawia , and the ministry of Awqaf and Islamic Affairs Zawia and prior orientation of participants was carried out. The data collection tools were anonymous, and data confidentiality was maintained throughout the study.

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