Barriers for early detection of breast cancer in Libyan women in Tripoli

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Abstract: The present study was conducted to realize the most common barriers for breast cancer screening among Libyan women living inside Tripoli, the capital of Libya. A descriptive study was conducted at different places, during the period November, 2008 to July, 2009. A total of 221 women, aged 34 years and above with absence of former or current history of breast cancer, were participated in the study and completed self-administered questionnaire that assessed screening knowledge and related beliefs. The parameters computed were socio-demographic characteristics that include; age, education level, monthly income, marital states, previous breast cancer screening, family history of breast cancer, age of first menstrual period and the use of contraceptive. These demographic characteristic were statistically cross-matched with mean barriers scores. The mean age was 45.13 years and majority of women were married. The barriers to breast cancer were significantly higher among women who described a low annual household income family, women who did not know how to do self-examination and among women who listed never doing previous breast screening. While, there were no differences regarding to age, marital state and time of menarche. The four strongest barriers described by women were; there are no insurance coverage, have to wait too long, no way to get there and fear of mastectomy. This study indicates that the effective approach to reduce mortality associated with breast cancer is the early screening since its etiology remains uncertain. Moreover, to increase the awareness of women to the importance of breast screening there is a great need for a well-organized health educational program and improvement of each family economic situation. The better understandings of barriers to breast screening lead to improve interventions directed at reduce morbidity and mortality among women.

Key words: women; breast cancer screening; demographic characteristic, Libya

Introduction

Cancer diseases, and in particular breast cancer, are believed as the main health concern among women worldwide. In both, developed and developing countries, breast cancer is a moral enemy taking 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). It has been shown that breast cancer is the most common malignancy and 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). In Arab women, the incidence of breast cancer has significantly augmented during the last 25 years (5, 6). It is increasing at a rate of more than 3% per year (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, data have indicated that breast cancer occupied the first rank among all types of females' cancer, and constituted a 26% of all female cancer (9). The mean age of breast cancer among Libyan women is 46 years as compared to a mean age of 58.8 years among women in Finland (10).

It is well known that early detections of breast cancer are of great value in the order of offering successful treatments. Furthermore, screening offer a chance for cure since breast cancer once diagnosed at advanced stages can be spread and become untreatable before gathered (11). Nonetheless, despite the benefits of screening in early detection of breast cancer a large 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 benefits (12). Moreover, literature indicated that breast cancer screening behaviors among women residing in Libya is scarce compared to women in Western countries (10). In addition, although, to date, our understanding of the barriers to preventive services is limited and is based largely upon unreliable information there are no clear studies dealing with the difficulties disabling women from experiencing breast cancer screening. Therefore, the present qualitative study amid to gain an overview of barriers and difficulties that may influence women's breast cancer screening activities in order to plan for effective promotion of breast cancer screening for women in Tripoli city. The primary research question was, "what negative influences do Libyan women believe prevent them from participating in breast cancer screening".

Materials and methods

Study design: 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 northwestern part of Libya and had a population of 2.2 million people. The study viewpoint was conducted over a 9-month period from November 2008 to July 2009. For the purpose of the study a descriptive design had been employed. The partakers included in this study were 223 women between the ages of 34 and 89 years, who had experienced absence of prior or current history of breast cancer before starting the study, as determined retrospectively from the questionnaire reports. All participants were Libyan women who were citizens of Libya. Eligible participants included: women with Libyan heritage, who were older than 30 years of age and who stated they were free of breast cancer at the time of the interviews. Women were excluded from the study if they reported that has a history of drug abuse, had uncontrolled medical conditions, or were undergoing treatment for cancer, or were in remission, and women who worked in health care professions (2 women). The remaining 221 women were conveniently and randomly selected through face-to-face interviews. The survey took place in a community

sample of women at different places including schools, streets and government places. The agreement of each subject to fill-in the questionnaire is considered as an informed consent for participation in the study. Prior to data collection, the study was ethically approved by the department of Pharmacology and Clinical Pharmacy in accordance to the University of Tripoli requirements.

Survey form and the questionnaire: This study was conducted using a basic qualitative method with group interviews as the main data collection procedure. The structured questionnaire used to collect data was well validated in other studies (13). A face-to-face interview technique according to a form translated into simple Arabic language to ensure its comprehensibility. The survey form consisted of two sections, taken from previous use in other published surveys so that a comparison can be made with the results from other countries. The first section, socio-demographic, was considering the socio-demographic characteristic of the participants such as age, education, average monthly household income, marital status, previous breast cancer screening, family history of breast cancer, age of first menstrual period and the use of contraceptive either orally or parenteral. The second section of the questionnaire related logically with 15 barriers. Each woman was asked to check any of these barriers that would make it difficult for her to get their breast checkup done. The accessibility individuals' barriers concept 1 code for yes and 0 code for no answer. The total barriers score was calculated by totaling the subject responses for each question in order to get the mean barriers score (MBS). The total range of

barriers score is between 0-15, determined retrospectively from questionnaire reports, and higher scores indicate a greater perceived barrier scale.

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, include; (i) collaborating with females local community health centers (ii) collaborating with students at local universities to recruit their mothers and other female relatives to participate in the study and (iii) 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 filled out 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 frequencies and percentages of socio-demographic characteristics and women barriers concept. Data are expressed as mean ± (SD) unless otherwise stated. Mann–Whitney test or Student t-test was used to test for significant difference between groups, as appropriate. The Kruskal–Wallis one-way ANOVA was employed for comparison of several group means. In

all statistical tests, the null hypothesis was rejected at the 5% level (p<0.05), and the 95% confidence interval (CI) was calculated. Logistic regression was used to assess the strength of association between the dependent and independent variables under study. 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 completed 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 250 women interviewed, 223 eligible women completed and sent-back the questionnaire, giving a response rate of 89.2%. The participants' ages ranged from 34 -89 years, and the mean age (± SD) of the subjects was 45 (±13.1) years (table 1). Data showed that the annual household incomes of 80% of women were less than $6,000 per year; 44% of the women had a college education and 66% of the women were married. Half of the participants (51.58%; 114 women) have reported are know how to do breast self-examination. 12. 67% of the participants (28 women) had a positive family history of breast cancer. Table 1 provides additional details on the questionnaire respondents.

Table 1: Sociodemographic characteristics of women surveyed (n = 221)

Variables	n	%
Age (years)		
34-39	101	45.91
40-45	44	20.00
46-51	39	17.73
52-57	10	4.55
58-63	3	1.36
64-69	3	1.36
70-75	5	2.72
76-81	7	3.18
≥ 82	9	4.09
Mean age ± SD	45 ± 13.1 years	
Median age	40 years	

Marital status		
married	147	66.52
single (never married)	69	31.22
separated (widow/divorced)	5	2.25
Education		
Illiterate	16	7.24
Primary	20	9.05
Preparatory & secondary	86	38.91
University/high	99	44.80
Household Income (US$)/ Month		
< 500	177	80.09
500 – 1000	39	17.65
> 1000	5	2.26
Previous clinical breast cancer screening		
yes	40	18.10
no	181	81.90
Age of first menstrual period		
< 11 years	27	12.22
> 11 years	194	87.78
on contraceptive		
yes	64	28.96
no	157	71.04
Family history of breast cancer		
yes	28	12.67
no	193	87.33
Know how to do self-examination		
yes	114	51.58
no	107	48.42

Overall, table 2 shows that out of 15 investigated barriers, the MBS reported for the whole sample are ranged from 5.00 (95% CI 2.52 - 7.48) to 9.40 (95% CI 6.72 - 7.78). The frequency distribution of the MBS of reasons why women do not seek for early detection for breast cancer screening showed that there are no

significant differences between age categories at P-value > 0.05 (table 2). The lowest MBS 5.00 (95% CI 2.52 - 7.48) was reported by women at age 58-63 years (3 women, 1.36%). Whereas, women aged 70 - 75 years (5 women, 2.72%) have scored the highest MSB 8.40 (95% CI 3.87 - 12.93, table 2) compared to other age categories. The present study showed that the MBS is significantly higher among women who did not know how to do breast self-examination compared to those women who know how to do it (7.83 (95% Cl 7.15 - 8.52) vs. 6.25 (95% Cl 5.59 - 6.90) respectively, P < 0.01, tables 2 & 3).

Table 2: Demographic characteristics of women reported barriers to breast screening

Variables	Categories	MBS ± SD	95% CI	Test statistic P - value
Age (years)	34-39	7.23 ± 3.78	6.48 – 7.98	
	40-45	6.93 ± 3.65	5.82 – 8.04	
	46-51	6.51 ± 3.82	5.27 – 7.75	
	52-57	7.60 ± 4.22	4.58 – 10.62	
	58-63	5.00 ± 1.00	2.52 – 7.48	0.87
	64-69	8.00 ± 2.65	1.43 – 14.57	
	70-75	8.40 ± 3.65	3.87 – 12.93	
	76-81	8.00 ± 2.58	5.61 – 10.39	
	≥ 82	6.44 ± 3.25	3.95 – 8.94	
Marital status	Married	6.70 ± 3.60	6.11 – 7.29	0.11
	single	7.83 ± 3.85	6.90 – 8.75	
	widow	7.00 ± 0.55	5.48 – 8.52	
Education	Illiterate	6.56 ± 2.78	5.08 – 8.04	0.55
	Primary	7.55 ± 4.30	5.54 – 9.56	
	secondary	7.44 ± 3.90	6.61 – 8.28	
	University/high	6.80 ± 3.40	6.12 – 7.48	
Income (US$)/ Month	< 500	9.40 ± 2.98	6.72 – 7.78	0.03
	500 – 1000	7.25 ± 3.59	4.81 – 6.99	0.06
	> 1000	5.90 ± 3.36	1.14 – 17.66	

Previous clinical	Yes	5.80 ± 4.56	$4.34 - 7.26$	0.02
breast cancer screening	no	7.28 ± 3.39	$6.79 - 7.78$	
Age of first	< 11 years	6.23 ± 3.81	$4.79 - 7.80$	0.25
menosterial period	> 11 years	7.17 ± 3.65	$6.65 - 7.68$	
on oral contraceptive	Yes	6.61 ± 3.85	$6.68 - 7.81$	0.24
	no	7.24 ± 3.59	$5.65 - 7.57$	
Family history of	Yes	7.12 ± 3.77	$5.71 - 8.64$	0.85
breast cancer	no	7.04 ± 3.67	$6.52 - 7.56$	
Know how to do	Yes	6.25 ± 3.53	$5.59 - 6.90$	0.01
self-examination	no	7.83 ± 3.58	$7.15 - 8.52$	

MBS: Mean barrier score

Table 3: Mean number of barriers out of 15 (n = 221)

Variables	n	Barriers Mean (95% CI)	*Interquartile range*		
			25th centile	*Median*	*75th centile*
**Know how to do self-examination ** **					
yes	114	6.25 (5.59 – 6.90)	3.5	7	9.0
no	107	7.83 (7.15 – 8.52)	5.0	8	11.0
Previous clinical breast cancer screening *					
yes	40	5.80 (4.34 – 7.26)	2.0	5.5	9.0
no	181	7.28 (6.79 – 7.78)	5.0	7.0	9.0
Income (US$)/ Month*					
< 500	177	9.40 (6.72 – 7.78)		12	
500 – 1000	39	7.25 (4.81 – 6.99)	4	8	9
> 1000	5	5.90 (1.14 – 17.66)	4	6	8

Cl: confidence interval, * P < 0.05 and ** P < 0.01, Kruskal-Wallis test.

Regarding to educational background levels our result showed that even though most of the participated women have relatively high education background nonetheless, this logical barrier was not associated for over 44.8% of women in this study. The MBS was not significantly different between illiterate women and women who had an education level of less than high school compared to those women holding college degree (P > 0.05, table 2). On the other hand, annual household income was found to be a strong barrier in up to 80.09%. Our data showed that the MBS was significantly higher among low household income ladies at P = 0.03 (tables 2, 3). Of those 177 women, who their income are less than 500 US$ per month have reported MBS 9.4 (95% Cl 6.72 - 7.78) MBS. The MBS is decreased by increasing the amount of income per month. 7.25 (95% Cl 4.81 - 6.99) MBS were reported by women who get between 500 - 1000 US$ per month, and 5.9 (95% Cl 1.14 - 17.66) MBS stated by those women with their family income are more than 1000 US$ per month (tables 2 & 3). Moreover, the present study demonstrated that there is a strong correlation between MBS and average amount of household income per month (r = 0.85).

Although most of the participants were married women our data showed that there is no significant difference regarding marital status (P > 0.05, table 2). One hundred and forty seven married women have reported 6.7 MBS paralleled to 7.83 MBS and 7.0 MBS described by respectively 69 unmarried women and 5 separated women (table 2). Twenty eight women (12.67%) have reported a family history of breast cancer, however, no significant MSB difference were found

compared to those women who stated no previous history of family breast cancer (respectively 7.12 MBS vs. 7.04 MBS; P = 0.85). In contrast, the present study indicated that there is a statistically significant association between MBS and previous screening behavior. Among women who confirmed had done a previous breast screening, the mean MBS was 5.8 (95% CI 4.34 - 7.26) compared to 7.28 MBS (95% CI 6.79 - 7.78) among 181 women who listed never doing a clinical examination (P < 0.05, tables 2 & 3).

In this study the age of the first menstrual period was found an independent barrier (P = 0.25). Twenty seven women (12.22%) who their menarche started during 11 years old have reported 6.23 MBS, whereas 7.17 MBS was reported by 194 women (87.78%) who their first menstrual period started after the years 11. Despite the fact that the majority of women had no use of contraceptive compared to 28.96% (64 women) were on contraceptive use, there were no statistical differences in MBS between these two groups (respectively, 7.24 MBS vs. 6.61 MBS, P > 0.05, table 2).

The participants in this study revealed that there are multiple negative influences appeared to affect Libyan women from habitually breast cancer screening.Table 4 shows that the most frequently reported screening barrier among participants was "no insurance coverage", in particular 146 women (66.06%) reported having no health insurance. Other top-rated barriers were, "have to wait too long" by 62.44% (138 women), and "no way to get there" by 129 women (58.37%). Less than 25% of the participants (51 women) were clearly reported that they "refuse to go" for breast

cancer examination. "Put it off" was the quietest barrier reported by 22.62% of participants (50 women). Unpredictably, half of the total participants (111 women, 50.23%) stated that they did not know it should have do breast cancer screening routinely. Our data also showed that 42.08% of the participants were shame and fear of examination, and 43.44% (96 women) thought that breast examination would be embarrassed. In addition, approximately 53% (119 women) of the participants did not know where to go. Likewise, 112 women (50.68%) did not

know kind of doctors, and 42.54% (94 women) were afraid to go. Eighty two women (37.10%) stated that, doctors' hour is not convenient while 50.23% of the subjects (111 women) reported that it cost too much (Table 4). Moreover, 81 women (36.65%) believed that the most generally barriers that prevent women to perform breast cancer screening was that during breast examination it may be treated rudely or unkindly, whereas, 55.66% of participants (123 women) have declared fear of mastectomy (table 4).

Table 4: Qualitative barriers to breast cancer screening

Barriers	Yes (n = 221)		Scores	
	n (missing)	%	Median	Mean ± SD
1. Did not know I need one	111 (5)	50.23	1	0.51 ± 0.50
2. Would be embarrassed	96 (5)	43.44	0	0.45 ± 0.50
Put it off	50 (7)	22.62	0	0.23 ± 0.42
3. Did not know where to go	119 (6)	53.85	1	0.55 ± 0.50
4. Shame and fear of examination	93 (7)	42.08	0	0.44 ± 0.50
5. Did not know kind of doctors	112 (7)	50.68	1	0.52 ± 0.50
6. Afraid to go	94 (7)	42.53	0	0.44 ± 0.50
7. Fear of mastectomy	123 (8)	55.66	1	0.58 ± 0.50
8. Doctor hours not convenient	82 (8)	37.10	0	0.39 ± 0.49
9. Have to wait too long	138 (8)	62.44	1	0.65 ± 0.48
10. Costs too much	111(8)	50.23	1	0.52 ± 0.50
11. No insurance coverage	146 (9)	66.06	1	0.69 ± 0.48
12. Treated rudely or unkindly	81 (8)	36.65	1	0.38 ± 0.49
13. No way to get there	129 (8)	58.37	0	0.61 ± 0.49
14. Refuse to go	51 (8)	23.08	0	0.24 ± 0.43

Discussion

Although the fact that early detection for breast cancer with clinical breast examination and mammography offers a strong epidemiological indication for a significant reduction in female mortality, and the considerable effort to communicate this message to women and healthcare providers, most women are not screened. Indeed, investigations are focused on trends in use, and factors associated with physicians and women's knowledge, attitude and practice associated with mammography. Even as the use of mammography has increased, literatures suggests that a number of significant difficulties to participate in routine screening will need to be addressed to achieve high rates of screening among women according to recommended guidelines. The present study indicates that half of the subjects have a knowledge deficit about breast cancer assessment "did not know they should experience breast screening". So it appears likely that lack of knowledge about the need of screening is an institutional barrier, attributed to absences of educational programs. Thus, providing more education about breast cancer and the benefits of screening for this disease is essential first step. Those educational programs need to be conducted in a multidisciplinary fashion targeting both the public and the health care sectors. Furthermore, training is greatly needed for nurses, doctors and other health care providers. They in turn will explain to women the benefits and limitations of screening and risk factors for breast cancer and helping women to reduce barriers for screening, and how to get-rid of their

barriers and take advantage of screening when available. The beliefs that "it is better not to know i.e. refuse to go" has been reported as a keen barrier to screening in studies by Austin and his colleagues [14], but consistent with the Iranian studies [15] this was not found in the Libyan sample. On the other hand, and in agreement with findings in other studies [16, 17] the lack of health insurance coverage becomes a negative influence among Libyan women specifically seeking mammography screening. In addition, the present study showed that embarrassment, fear and the need to expose breasts to others for examination "shame" negatively influenced woman's decision to participate in breast cancer screening. This is not unusual and is a consistently common finding among women in many countries [7, 18].

This study is one of the few qualitative studies on breast cancer screening among women. In deed recruiting participants was not easy because some women refused and fearing to discuss breast cancer issues. Hence this study is a subject to several limitations. The present work was limited by relatively small sample size, and there was no control group to compare the findings. Hence, caution in interpreting the findings is required. Moreover, the results might not be representative of the greater target population and so it is weakly generalized beyond the study. However, despite of these limitations, this study provided valuable information for future comprehensive studies in this area. In addition, the intent of this investigation was to improve breast cancer screening

participation among Libyan women in particular, and as an extension, Arab women in general.

In conclusion, the continued increase in the incidence of breast cancer death among women is due, in part, to low screening rates and late detection of breast cancer. There are multiple negative influences identified in this work. The present study showed that women who their household income is low per month had the highest MBS, while those women who previously did clinical breast cancer screening have a lower MBS. According to the participants in the present study, the mean reason

beyond the ignorance of women was related to a number of barriers. The four strongest barriers are: there are no insurance coverage, have to wait too long, no way to get there and fear of mastectomy. Thus, the present study recommends initiating of an educational programs regarding screening by addressing knowledge deficits. In addition, perceived physicians are need for enhancement of clinical breast examination skills. Moreover, further studies are also required to explain extra barriers and to increase the awareness of women about the value of screening.

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