ORIGINAL RESEARCH article

Breast cancer delay presentation among Libyan patients: Demographic and clinical features

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Abstract: Globally, breast cancer is the most common cancer in women worldwide, it represents about 25.0% of all cancer cases. In developing countries, breast cancer is mainly discovered at a late stage, which has a negative impact on the prognosis. To determine the extent of, and the factors contributing to, delay in breast cancer presentation, and to evaluate the mammography screening practice in breast cancer Libyan women. A descriptive cross-sectional study was carried out on five hundred and one breast cancer patients who attended the Oncology Outpatient Clinic of the Medical Department at Tripoli University Hospital and Tripoli Central Hospital during a period between February and August 2019, after the application of inclusion and exclusion criteria enrolled in the study. The mean age of the patients was 47.35±01.0 years, 55.1% of them were diagnosed in late stage (III and IV), and 30.9% of the patients were presented late (≥3 months). The time interval between the initial breast symptom and first presentation to a clinic ranged between 2nd day and up to three years, with a median time of 1.5 months, and the main factor of the delayed presentation to a clinic was a lack of knowledge about symptoms (33.5%). The study revealed a significant association between delayed presentation and older age (P<0.001), low educational level (P<0.001), low family income (P<0.001), unemployed women (P< 0.002), postmenopausal women (P<0.001), patients with negative family history (P<0.05). This study concluded that delayed presentation is found in less than a third of the study population, and lack of knowledge about breast cancer signs and symptoms is a common factor. Age, educational status, family income, unemployed women, menopausal status, and family history of breast cancer were all significant factors for delayed presentation. Improving women's awareness about breast cancer is needed and applying the policy of regular screening mammograms is a useful tool for early diagnosis and early treatment in Libya.

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Introduction

Worldwide, breast cancer (BC) is the most commonly diagnosed cancer in women [1, 2], and in 2020, it's estimated 2.3 million new cases [3]. The incidence is on the rise throughout the world [4], where it's higher in developed countries, whereas the relative mortality rate is highest in less developed countries. The incidence rate of BC, is between 19.4 and 89.7 new cases of BC per 100,000 persons in East Africa and West Europe, respectively [5]. BC is discovered at a late stage in developing countries which has a negative impact on the prognosis. There are many studies reported that the painless nature of the breast mass, fear, shyness, inaccessibility to health services, old age, negative family history of BC, low educational level, and low socio-economic status are the most common causes of delayed presentation (DP) [6]. Identifying early-stage BC cells is considered the most important point for the best prognosis [7]. BC in the early stages is usually asymptomatic and curable. Therefore, screening for BC is an important point in reducing the mortality rate and morbidity rate [8]. Worldwide, screening mammography is considered the common method used for detection of asymptomatic BC in the early stage and it is the only imaging technique that has been shown to dramatically reduce BC mortality [9]. This study aimed to determine the extent of BC DP, and the factors contributing to that delay, and to evaluate the mammography screening practice in BC Libyan women.

Materials and methods

Study design and setting: A descriptive cross-sectional study was carried out at the Oncology Outpatient Clinic (OOPC) of the Medical Department at Tripoli University Hospital (TUH) and Tripoli Central Hospital (TCH). All BC women that who followed up in those centers from February 2019 to August 2019 were included in the study. Consent was obtained from authorized bodies of TUH and TCH, and verbal consent was taken from all the participants.

Data collection: A standard predesigned case sheet was used to collect the relevant data from the patient's files and by face-to-face interviews after applying inclusion and exclusion criteria, Libyan female patients diagnosed and confirmed pathologically as a case of BC, which is newly diagnosed or under follow-up in OOPC at TUH and TCH were enrolled in the study. Collected data included epidemiological data, clinical data, and clinical stage of BC at presentation as well as use of mammography screening test. The patients were classified as early (<3 months) or late (≥3 months) presentation to assess the DP, and factors related to those delays. The DP was defined as a time interval of three months or more since the onset of the first symptoms and presentation to a clinic [6, 10-13]. According to BC stage classification; patients are classified into two stage categories: early stage: I and II and late stage III and IV [10]. To minimize recall bias, the patients were reminded of events in the calendar year, such as religious and national occasions, school holidays, and birth dates, to help the patients remember important dates that related to their medical history and presentation to a clinic.

Statistical analysis: the data set was organized and analyzed by using SPSS version 16. Descriptive statistics were used to describe the collecting data including frequency, median, stranded deviation, and chi-square was used to detect the difference between categories. A P value of less than 0.05 is considered significant.

Results

Demographic and clinical characteristics: The age distribution of the patients ranged between 25 and 79 years with a mean age of 47.35±01.0 years. The age group of 41-49 years was the highest group found (35.1%), followed by the age group of ≤ 40 years (28.5%). It was found that 81.6% of the patients were married, 55.3% of

the patients were housewives, and the secondary level was the most common level of education (37.7%). Nearly, 50.0% of the patients had family incomes ranging between 500 and 1000 Libyan dinars (about 150 $). In addition, 64.5% of the patients were premenopausal, and 29.3% of them had a positive family history. About 80.0% of the patients presented with breast lump, and 79.8% of the patients discovered the disease accidentally. It was also found that 01.4% of the patients were under follow-up by using mammography before being diagnosed as a case of BC.

Pathological characteristic: It is found that most of the patients were diagnosed with invasive ductal carcinoma (89.4%) and 61.5% had grade 2. Stage II was predominant (39.5%), and 55.1% of the patients were diagnosed in late stage (III & IV).

Delay presentation and factors related: Data revealed that 30.9% of the patients were presented late ($\geq$3 months) and the time interval between initial breast symptom and first presentation to a clinic ranged between 2nd day and up to three years, with a median time 1.5 months (**Table 1**). The main four factors of the DP of those patients who attended late to a clinic were lack of knowledge about BC signs and symptoms in 33.5% of them, followed by fear in 15.5%, financial burden in 9.0%, and uses of traditional medicine in 8.0% (**Figure 1**).

Table 1: Time interval between onset of symptoms and patients' presentation

Time at presentation	Frequency	Percentage
2nd day	08	01.6
> 2nd day - 7th day	38	07.6
> 7th day < 01 month	131	26.1
1 month - < 03 months	169	33.7
3 months - 6 months	86	17.2
> 6 months	69	13.8
Total	**501**	**100**
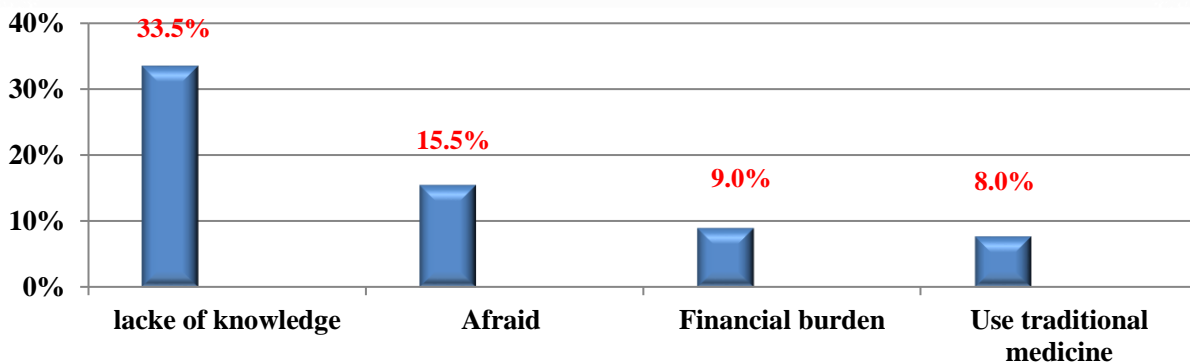
Figure 1: Factors related to late presentation of BC patients

Socio-demographic and clinical factors in relation to DP in BC patients: DP was associated significantly with older age (P<0.001), low educational level (P<0.001), low family income (P<0.001), unemployed women (P<0.002), postmenopausal women (P<0.001), patients with negative family history (P<0.05). While, DP was not associated significantly with place of residence in Tripoli or outside (P=0.485), history of benign breast disease (P=0.143), marital status (P=0.06.), and breast symptoms that did not include lump (P=0.821) (**Tables 2** and **3**).

Table 2: Socio-demographic and clinical factors about delay presentation in breast cancer patients

Risk factor	< 3 months	≥ 3 months	P value
Age Number of patients (mean age±SD)	346 (69.0%) 46.3±10.5	155 (31.0%) 49.7±10.7	**0.001**
Education Illiterate Read and write Elementary Secondary University & above	31 (53.4%) 11 (50.0%) 54 (57.4%) 133 (70.4%) 117 (84.8%)	27 (46.6%) 11 (50.0%) 40 (42.6%) 56 (29.6%) 21 (15.2%)	**0.001**
Family income (LD) < 500 500 < 1000 1000-2000 > 2000	114 (58.8%) 179 (72.2%) 46 (90.2%) 07 (87.5%)	80 (41.2%) 69 (27.8%) 05 (09.8%) 01 (12.5%)	**0.001**
Occupation Housewives Employee	175 (63.2%) 171 (76.3%)	102 (36.8%) 53 (23.7%)	**0.002**
Residence status Tripoli Outside	221 (68.0%) 125 (71.0%)	104 (32.0%) 51 (29.0%)	**0.485**
Marital status Married Single	290 (70.9%) 56 (60.9%)	119 (29.1%) 36 (39.1%)	**0.060**

Table 3: Clinical factors about delayed presentation in breast cancer patients

History of benign disease Yes No	59 (62.8%) 287 (70.5%)	35 (37.2%) 120 (29.5%)	**0.143**
Presenting symptom Lump Others	271 (69.3%) 75 (68.2%)	120 (30.7%) 35 (31.8%)	**0.821**
Menopausal status Pre-menopause Post-menopause	241 (74.6%) 105 (59.0%)	82 (25.4%) 73 (41.0%)	**0.001**
Family history of BC Yes No	111 (75.5%) 235 (66.4%)	36 (24.5%) 119 (33.6%)	**0.044**

Screening Mammogram: The study revealed a significant association between regular screening mammography and the early stage of BC. Where the study found that of the seven BC patients (1.4%), who screened regularly by mammography: four of them had stage 1 (57.1%) and the other three patients had stage 2A (42.9%), compared with the other 494 BC patients (98.6%) who did not use the Mammogram for screening; and the clinical stages for them were distributed as follows: one patient had stage 0 (0.2%), 4.5% had stage I, 18.4% had stage IIA, 21.1% had stage IIB, 20.6% had stage IIIA, 4.3% had stage IIIB, 13.2% had stage IIIC, and 17.8% had stage IV, (P<0.001), (**Figure 2**).
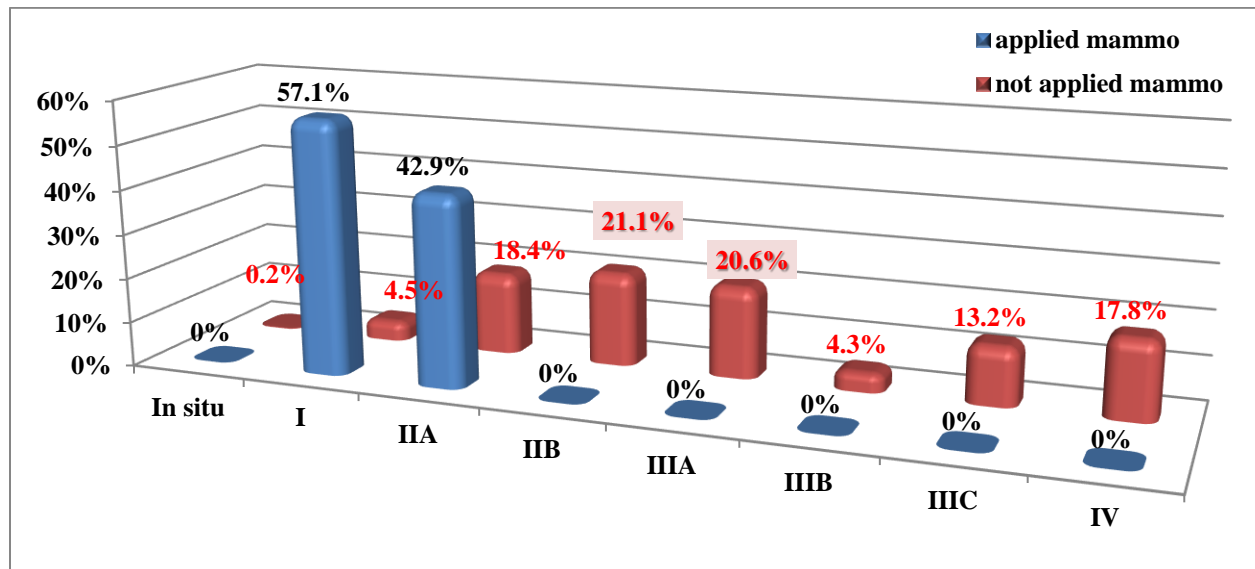
Figure 2: Screening mammography and clinical stages of BC among Libyan patients

Discussion

The current study revealed that the age group 41-49 years was the most affected (35.1%), with a mean age at diagnosis being 47.35±01.0 years. These findings concurred with Alawad and others in Sudan [14], and it is nearly similar to Boder and others in Libya [4], who reported that the mean age of BC patients is 47 and 46 years, respectively. Boder and others [4], in the same study, compared the mean age of Nigerian (42.7 years) and Finland BC patients (58.8 years) in contrast to the current finding. These differences may be attributed to biological and lifestyle differences. Currently, it is found that the time interval between initial breast symptom and first presentation to a clinic ranges between 2nd day and up to three years, with a median time of 1.5 months. According to the definition of DP, the time interval of three months or more since the onset of the first symptoms and presentation to a clinic was considered PD [6, 10-13], in this study, 30.9% of the patients were presented late (≥ 3 months), 35.3% of the patients presented within a time less than one month, and 33.7% were presented between one month to less than three months. The finding is nearly similar to Abu-Helalah and others in Jordan [15], where they reported that 32.2% of the patients are delayed more than three months after the discovery of BC symptoms. However, they reported that the median time between first symptoms and seeking medical advice is 30 days, which is lower than the present finding (1.5 months). Furthermore, a study by Odongo and others in Uganda [16] revealed that the median DP is 13 months, ranging between one month to 127 months, and they found the majority of the patients (89.0%) had delayed consultation by more than three months after noticing a symptom, however, 11.0% of the patient's sought attention within three months, in contrast to the current finding. Moreover, a study done by Alwan in Iraq [17] reported that 32.0% sought medical advice within the first month, in contrast to the present finding (35.3%). Ermiah [18] reported that the median consultation time is four months, in contrast to the current finding (1.5 months). Also, Ermiah [18] reported that 44.5% of the patients have a medical consultation within one month after detecting symptoms, which is higher than the present findings (35.3%), but it is found that the patients who presented in the time ranged between one to three months were 33.7% which is higher than Ermiah [18], where 15.5% of their patients visited the clinician within one and six months after detecting symptoms, and they reported that 40.0% of the patients have consultation later than six months after the first symptoms in contrast to the current findings in Libya (13.8%). In addition, Gueye and others

in Dakar [6], revealed that 78.4% of the patients are presented late, which is higher than the present finding. Moreover, a study by Li and others in China [13] revealed that 40.4% of their patients are presented late (≥ 3 months). Abu-Helalah and others in Jordan [15] reported that the median PD in high-income countries is seven to 16 days compared with ten days to three months for low- and middle-income countries (LMIC) [15]. The current study reported that the common factor related to DP in BC patients is a lack of knowledge about BC symptoms (33.5%), where they considered the symptoms were not important or serious. Ayaz and others in Pakistan [11] reported that most of the patients (62.3%) reported being late because they did not consider the symptoms important due to a lack of information about BC. Also, Alawad and others [14] in Sudan reported that 39.5% of the patients delayed to seeking medical advice due to lack of education. Lopes et al. [19] in Brazil reported that the delay in seeking medical advice is due to a lack of knowledge of severity, fear, or lack of time. These studies agree with the present finding, where the lack of knowledge about the symptoms of the disease is considered one of the common factors related to DP. Furthermore, Gueye [6], reported that the negative family history of their BC patients is associated significantly with DP, which agrees with this study. But disagree regarding other socio-demographic factors such as education and socio-economic status, where they reported insignificant associations with DP in contrast to current findings. The present study disagrees with Odongo et al. [16] regarding the association between age, education level, and monthly income where they reported a non-significant association between these factors and DP in contrast to present data. Regarding BC screening practice, it is reported that the seven BC women (1.4%) who were screened regularly by mammography were diagnosed in the early stage compared with 494 patients (98.6%) who were not screened. This finding agrees with Elobaid et al. [12] and health education practice [20] who they reported that there is a link between screening and DP, where attending regular BC screening aids in the self-awareness process and helps women understand the seriousness of their condition.

Conclusion: Delay presentation of breast cancer is found in less than a third of the study population and lack of knowledge about breast cancer signs and symptoms is a common factor. Age, educational status, and family income, unemployed women, menopausal status, family history of breast cancer are significant factors for delayed presentation. Improving women's awareness about breast cancer is needed and applying policy of regular screening mammograms is a useful tool for early diagnosis and early treatment.

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