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Clinical And Demographic Characteristics Of Women Patients With Breast Cancer

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Abstract: **Background**: Breast cancer represents the most common disease worldwide, with 7.8 million women diagnosed in the five years preceding the conclusion of 2020. **Objective**: This study determines the prevalence of breast cancer in the Babylon government and its correlation with age, familial history, and additional factors. **Methods:** The study analysis comprised 258 female breast cancer patients from the Babylon Health Department/Babel Cancer Center. Data were gathered from a validated information system containing verified healthcare data of Iraqi breast cancer patients. The study recorded the pathological, clinical, and demographic aspects of these patients. **Results**: The most incidents were reported among those aged 40 to 60. Furthermore, 30.23% of the patients had a confirmed family history of breast cancer. The percentage of female patients in urban areas significantly exceeded that in rural regions, comprising 74.42% of cases. The study also finds a statistically significant difference in the number of breast cancer patients between female employees (14.34%) and housewives (85.66%). Clinically, more than 68.99% of patients had grade 2 tumors that differed significantly from grades 1, 3, and 4, while 62.79% had tumor size 1 (T1) tumors that differed significantly from one another. **Conclusions**: Improving the national early detection program requires heightened public awareness through educational initiatives.

Keywords: Breast Cancer, Epidemiology, Clinical Features, Oncology

INTRODUCTION

Breast cancer (BC) is a form of cancer that usually affects the breast tissues' lobules (glands that generate milk) or ducts (tubes that carry milk to the nipple) (1). Although it affects both men and women, male breast cancer is rare, making up just around 1% of all cases (2). An estimated 627,000 women lost their lives to breast cancer in 2018, making up 15% of all female cancer deaths. Breast cancer rates are increasing in practically every region of the world, despite being higher among women in more developed nations (3, 4).

In 2020, 685,000 individuals worldwide died from breast cancer, and 2.3 million women received a diagnosis. Breast cancer represents the most common disease worldwide, with 7.8 million women diagnosed in the five years preceding the conclusion of 2020. Breast cancer is the principal cause of women's loss of disability-adjusted life years (DALYs) worldwide. While the incidence rises with age, breast cancer can impact women of all age's post-puberty (5).

Breast cancer is the most prevalent malignancy and represents a significant public health issue for women in Iraq, being the second leading cause of cancer-related mortality, according to the latest Iraqi Cancer Registry (2016) (6,7). In 2014, breast cancer was the predominant malignancy among women, constituting 28.7% of all malignancies, as reported by the Kingdom of Saudi Arabia (KSA) Health Council Cancer Registry (8). Furthermore, the Qatar National Registry for Cancer indicates that breast cancer is the most common malignancy among Qatari women (Supreme Council of Health, 2011) (9). Breast cancer, with an age-standardized mortality rate of 10.9 per 100,000, constitutes nearly 25% of all malignancies among women in Libya (10).

Regrettably, the likelihood of developing breast cancer would be reduced by around 30% if all modifiable risk factors were managed (5). The primary risk factor for breast cancer is female gender. Men are diagnosed with breast cancer in an estimated 0.5–1% of all cases. Men diagnosed with breast cancer receive treatment following the same management procedures as women (11). The majority of women diagnosed with breast cancer lack a known family history of the disease, even though such a history increases the chance of developing it. A woman's risk is not necessarily diminished only due to an unknown family history.
The incidence of breast cancer is significantly elevated by specific inherited "high penetrance" gene mutations, primarily found in the BRCA1, BRCA2, and PALB-2 genes (5). Women with mutations in these critical genes should consider risk-reduction strategies, such as undergoing bilateral mastectomy. Only a limited number of women undergo this highly invasive procedure, which must be meticulously evaluated considering all available alternatives and should not be expedited (5).

The study aims to determine the prevalence of breast cancer and its correlation with age, familial history, and additional factors.

MATERIALS AND METHODS

This retrospective analysis included 258 female patients diagnosed with breast cancer at the Babel Cancer Center/Babylon Health Department from 2020 to 2021. Every relevant piece of information was added to a database of an existing information system. Documenting the demographic, clinical, and pathological characteristics of Iraqi breast cancer patients was the goal of an ongoing National Breast Cancer Research Project (12). Information from the clinical records and file sheets of the referred patients was used to assess the data.
Age, employment, demography, and a family history of breast cancer or any other cancer were among the clinical and demographic data analyzed. the trial's clinical presentation phase. Tumor size, grade, and disease stage were among the variables noted.

The clinical stage of breast cancer was defined using the American Joint Committee on Cancer Staging and the UICC TNM Classification System (13).

STATISTICAL ANALYSIS:

The 2018 Statistical Analysis System (SAS) application was employed to evaluate the influence of different factors on study parameters. The Chi-square test has been used to compare percentages at probability of 0.05 and 0.01. This study utilised the Least Significant Difference (LSD) test, part of Analysis of Variance (ANOVA), to compare means (14).

RESULTS AND DISCUSSION

Table 1 shown the demographics and clinical history of 258 female breast cancer patients. The highest frequency was observed among those aged 40-60. Only 13.57% were diagnosed before the age of 40, and 22.48% after the age of 60. However, 30.23% had a specific family history of breast cancer. While the rate of female patients in cities is higher than in rural areas (74.42%). The percentage of patients in cities (74.42%) is significantly higher than in rural areas (25.58%). The study also found a substantial disparity in the number of women housewives (85.66%) and women employees (14.34%) with breast cancer.

Risk factors such as age, familial history, advanced maternal age, exogenous hormone consumption, obesity, and alcohol consumption may contribute to the rising frequency of the disease in emerging nations (15,16). Another study shown the average age of the BC patients was 47.88±10.92 years, while the controls had an average age of 46.2±9.94 years, with no statistically significant difference seen (17).

The cancer burden in the Eastern Mediterranean Region has increased as a result of demographic and socioeconomic changes (18). Prior studies indicate that Iraqi women diagnosed with breast cancer are identified at a notably young age (19-23).

Regional experts suggest that socioeconomic, demographic, and population factors may account for the disparities in the age of breast cancer onset between Arab and Western populations (24, 25). A prior study revealed a notable disparity between the age groups of patient and healthy women. The primary age range for women diagnosed with breast cancer is between thirty and sixty years (26).

A study in Oman indicated that among 1230 participants, 53.5% received a breast cancer diagnosis before the age of 50 (27). A survey involving 1,528 breast cancer patients in India indicated a median age of presentation at 49 years. Additionally, 4.2% of patients reported a familial history of the disease (28). An analysis of the demographic attributes and reproductive outcomes of 870 female patients indicated a mean age of 69 years, with fewer than 2% being under 35 years old. In Croatia, breast cancer is the most common cancer among women (29). The findings corresponded with those recorded in previous European research (30).

Numerous studies indicate a significant association between oestrogen therapy and breast cancer in people with a familial predisposition (31). Nonetheless, the demographic and clinical traits of individuals with a favourable family history in that investigation did not provide any specific identifier for their recognition (32). This contrasts with a prior comparative retrospective study conducted in Iraq, which covered 204 female breast cancer patients and revealed similar results for positive cancer history and breast cancer incidence (30% and 18.5%, respectively) to those observed in this article. Salman, R.A. revealed that a family history of breast cancer was present in 37.5% of the patients (33).

In contrast, 74.4% of patients live in metropolitan areas. Research indicates deficiencies in Iraqi society's comprehension and practices about breast cancer. Formulating national protocol guidelines for early detection, diagnosis, and treatment is essential, as is enhancing awareness through public education initiatives (21,33-36).

Table 1: Demographic characteristics and clinical history of the examined Iraqi patients diagnosed with breast cancer

Variables	**Patients**
Age Range (years) Mean SE	23– 82 51.86 0.74
Age groups (year) <40 40-60 >60	N (%) 35 (13.57) 165 (63.95) 58 (22.48)
Chi-Square (χ^2)= 25.482 **	
P-value 0.0001 ** (P≤0.01).	
Family history Yes No Total	N (%) 78 (30.23) 180 (69.77) 258
Chi-Square (χ^2)= 40.325 **	
P-value 0.0001 ** (P≤0.01).	
Demographic Urban	N (%) 192(74.42%)

Rural	66 (25.58%)
Total	258
Chi-Square (χ^2)= 61.535 **	
P-value 0.0001 ** (P≤0.01).	
Employment	N (%)
Employee	37 (14.34%)
Housewife	221(85.66%)
Total	258
Chi-Square (χ^2)= 133.224 **	
P-value 0.0001 ** (P≤0.01).	

Clinically, 62.79% had a tumor size 1 (T1) with a significant difference from the other sizes, while more than 68.99% had grade 2 with a significant difference from grades 1, 3, and 4. Approximately 56% of individuals progressed to stage II (Table2). A study survey involving 1,528 breast cancer patients in India indicated 4.2% of patients reported a familial history of the disease, while 57% presented with stages III and IV malignancy (28).

Table 2: Clinical presentation of the examined breast cancer patients

Variables	**Frequency**	**Percentage (%)**	**P-value**
Cancer stage			
I	48	18.60	
II	145	56.20	0.0001
III	43	16.67	(P≤0.01)
IV	13	5.04	
IIV	9	3.49	
Total	258	100%	
Chi-Square (χ^2)	--	234.79 **	
Grade			
1	9	3.49	
2	178	68.99	0.0001
3	55	21.32	** (P≤0.01)
4	13	5.03	
5	3	1.16	
Total	258	100%	
Chi-Square (χ^2)	--	156.94 **	
Tumor size			0.0001
T1	162	62.79	** (P≤0.01)
T2	77	29.84	
T3	12	4.65	
T4	7	2.71	
Chi-Square (χ^2)	--	243.18 **	

Table 3 shows a patient with stage IIV, grade 4, and T3 who received higher dose treatment. While the age group under 40 receives higher dosages than the other age groups. This study found a substantial correlation between the clinical aspects of breast cancer, including clinical stage (P≤0.01), grade, and tumour size (P≤0.05) at presentation, and the number of therapeutic doses administered. Female patients may respond variably to treatment, potentially accounting for the observed differences.

Table 3: Relationship between difference factors and doses therapy

Factors		Mean ± SE	P-value
Cancer stage	I	4.87 ± 0.75 c	0.0004 **
	II	7.63 ± 0.48 b	
	III	8.76 ± 0.93 b	
	IV	9.00 ± 1.60 b	
	IIV	13.00 ± 2.40 a	
Grade	1	4.00 ± 1.79 b	0.00437 *
	2	7.34 ± 0.43 ab	
	3	8.49 ± 0.89 ab	
	4	9.92 ±1.98 a	
	5	4.33 ± 0.33 b	
Tumor size	T1	7.54 ± 0.48 ab	0.0419 *
	T2	7.39 ± 0.67 ab	
	T3	10.00 ± 1.82 a	
	T4	5.71 ± 1.80 b	
Age groups (year)	<40	9.28 ±1.08 a	0.0022 **
	40-60	8.01 ±0.47 a	
	>60	5.27 ±0.66 b	
Means having with the different letters in same column differed significantly. * (P≤0.05), ** (P≤0.01).			

CONCLUSION

Economic discrepancies in the execution of effective cancer control programs are thought to explain the differences in the impact of sociodemographic factors across Arab countries. Twenty-one Screening and prevention techniques can be employed to temporarily manage the region's priority cancers, facilitating effective therapies for lifestyle risk factors.
Many breast cancer patients in Iraq are identified with locally advanced illness. Improving the national early detection program requires heightened public awareness through educational initiatives. After adjusting for parity, education, and marital status, there was no statistically significant difference in the effect of age on the demographic and clinical characteristics of breast cancer between premenopausal and postmenopausal Iraqi patients.

SUPPLEMENTARY MATERIAL

None

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Conflicts Of Interest
The authors declare no conflicts of interest.

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