



# INVESTIGATION OF THE INCIDENCE OF BREAST CANCER AMONG THE FEMALE PATIENTS OF JAMHURIAT HOSPITAL IN KABUL, A CROSS-SECTIONAL STUDY 2023

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## Abstract:

**Introduction:** Breast cancer (BC) is one of the malignant tumors of the breast tissue, which is more common in women. This disease is more prevalent with age. The purpose of this study is to investigate the prevalence of BC among women who are referred to the oncology department of Jamhuriat Hospital in Kabul.

**Materials and methods:** This study is a cross-sectional descriptive prospective study in which the required information was collected according to the questionnaire prepared from the files of female patients referred to the Oncology Department of Cumhuriyet Hospital in Kabul during the first 6 months of 2023. The process of reviewing patients' files is based on case series.

**Results:** In the first 6 months of 2023, 142 patients with BC were referred to the Oncology Department at Jamhuriat Hospital in Kabul. The prevalence of BC in this study (3.07%) was observed, most of the patients were between the ages of 40 and 49 (31.7%), married (88%), housewives (97.89%), urban residents (19%), normal body mass index BMI (51.4%), the positive history of cancer (1.4%), chemotherapy (2.1%), and the anatomical location of the tumor in both right and left breast were almost similar.

**Conclusion:** BC is the most common malignant tumor in women. The incidence of this cancer increases with the age of the patient. The most important measures to prevent the spread of this disease are public awareness, identification of the risk factors of the disease, and early diagnosis.

**Keywords:** Breast cancer, incidence, and Kabul.

## 1. INTRODUCTION

Breast cancer (BC) is one of the types of malignant tumors that occur in the breast tissue. Although all breast tissues can become cancerous, cancer cells are more likely to arise from ductal or glandular cells. Breast cancer has the highest prevalence among women and is one of the 3 most common cancers (next to lung and colon cancer) in the world (1). According to the statistics received in 2013 from the United States, 232,340 new cases of breast cancer were registered and 39,620 patients died from this disease. The highest number of patients and deaths this year were patients over 65 years old. One out of every eight women in this country has been diagnosed with breast cancer (2). In 2019, the number of breast cancer patients increased by 0.3% compared to previous years. In this year, 268,600 invasive cases and 48,100 ductal carcinoma in situ (DCIS) cases were reported. Also, 41,760 patients with breast cancer have died. Among the people with breast cancer, most of the patients are in the age range of 60 to 69 years 28% (3). In 2022, more breast cancer

patients than in recent years were recorded in America. This year, 287,850 new invasive and 51,400 cases of DCIS were registered. Most patients with breast cancer this year are between 60 and 69 years old 31%(4). In 2012, 639,824 new cases of breast cancer were reported in Asia. The most affected countries are Israel, Lebanon, Singapore, Kazakhstan, and Armenia, while India, China, Indonesia, Pakistan, and Japan have the highest number of deaths due to BC (5). In 2020, about 2.3 million new cases of breast cancer were registered around the world. Meanwhile, 639,824 patients with breast cancer have also died. The highest incidence of breast cancer in Belgium is 112.3 patients out of 100,000 and the lowest incidence of breast cancer in Iran is 35.8 patients out of 100,000. The highest number of deaths was recorded in Fiji (41 per 100,000) and the lowest in South Korea (6.4 per 100,000). The probability of increasing the number of breast cancer in 2070 will reach 4.4 million patients. Breast cancer accounts for 24.5% of all cancers and 15.5% of all cancer deaths (6). In 2020, it accounted for 13.5% of



all cancers in India (7). Factors such as gender (due to the high level of female hormones estrogen and progesterone), density of breast tissue, age, history of cancer, genetic factors, use of steroid drugs such as estrogen, alcohol, smoking, obesity, and radiation in the development of breast cancer Involved. Considering the molecular and histological structure of breast cancer, it is divided into 3 categories: 1) cancer caused by the expression of hormone receptors (estrogen ER+ and progesterone PR+), cancer caused by the expression of human epidermal receptors 2 (HER2+) and the third type is triple-negative breast cancer (TNBC). Although the exact mechanism of breast cancer is not clear, the increase in the expression of hormone receptors (estrogen and progesterone) is reported to be the most common cause of breast cancer in developed countries, 60-70% (8). Breast cancer treatment is also divided into 4 major methods: 1) Oncoplastic surgery, 2) Radiotherapy, 3) Chemotherapy, and 4) Endocrine therapy (1). Among the above methods, chemotherapy can be mentioned as the most widely used method for treating breast cancer. The most widely used drugs in the treatment of breast cancer are estrogen receptor inhibitors (tamoxifen), and aromatase enzyme inhibitors (tetrazole, anastrozole, and exemestane). In the treatment of breast cancer caused by HER2+, monoclonal antibodies (trastuzumab and pertuzumab) can be used. By binding to HER2, these antibodies prevent its activity and thus treat breast cancer by reducing its expression (8). Progesterone and estrogen hormones play a role in many physiological activities such as regulating monthly habits, pregnancy, and fetal development. By binding to their receptors, these hormones also play an essential role in causing breast cancer (9). Although breast cancer has a high prevalence in the world, therefore, the most important measure to prevent the increase in the incidence of this cancer can be considered early diagnosis of the disease (10).

## 2. PURPOSE

The purpose of this study is to investigate the prevalence of breast cancer among female patients at the Oncology Department of Jamhuriat Hospital in Kabul during the first six months of 2023.

## 3. RESEARCH METHOD

This is a cross-sectional descriptive prospective study based on a case series. First, by studying previous research, the questionnaire of this study was prepared, and considering this questionnaire, the required

information was collected from the files of patients referred to the Oncology Department of Jamhuriat Hospital during the first 6 months of 2023. The sample collection method is systematic, including all female breast cancer patients in the first 6 months of 2023. During the collection of information, all the ethical considerations of the research have been observed. After collecting the data, it was analyzed by statistical programs.

## 4. RESULTS

In this study, during the first 6 months of 2023, 142 female patients with BC were registered by the Oncology Department of Jamhuriat Hospital. According to the figures for the first 6 months of 2023, the incidence of BC is about 3.07%. The demographic information of these patients was examined and is listed in Table 1. **Age:** Considering the age of BC patients, among 142 patients with BC, the highest rate of BC was in the age range between 40 and 49 years 31.7%, and the lowest rate of this cancer was in the older age range. **Marital status:** Among 142 patients with BC, 125 patients 88%, were married and 17 patients 12%, were single. **Occupation:** Among 142 patients, 132 patients 97.89%, were housewives and 3 patients 2.11% were employees. **Ethnicity:** Among the 142 patients with BC in this study, 63 patients 44.37% were of Tajik ethnicity, 48 patients 33.80%, were of Pashtun ethnicity, 14 patients 9.11% were of Hazara ethnicity, and 17 patients 11.97% It was from other tribes. **Residence:** Among 142 patients with BC, 27 patients 19%, were from Kabul and 115 patients 81%, were from other cities in Afghanistan. **BMI:** Among 142 BC patients, 19 patients 13.4%, were slim, 73 patients 51.4%, were normal, 35 patients 24.6%, were overweight, and 15 patients 10.6%, were obese. **Parity:** Among 142 BC patients, 10 patients 7%, had no children, 3 patients 2.1%, had between 1 and 3 children, and 129 patients 90.8%, had more than 3 children. **Cancer History:** Among 142 BC patients, 2 patients 1.4%, had a family history of cancer, and 140 patients 98.6%, had no history of cancer. **Chemotherapy:** Among 142 patients with BC, 3 patients 2.1%, did not use chemotherapy and 139 patients 97.9%, did not use chemotherapy. **Tumor location:** Among 142 BC patients, 73 patients 51.4%, had tumors in the right breast, 67 patients 47.2%, had tumors in the left breast, and 2 patients 1.4%, had tumors in both breasts.

Table (1): Patient Profile of BC Patients

Demographic Information	Classification	Frequency (n)	Percent (%)
Age (year)	Less than 30	8	5.6



	30 – 39	37	26.1
	40-49	45	31.7
	50-59	28	19.7
	60-69	21	14.1
	Up 70	3	2.1
Marital status	Single	7	4.9
	Married	135	94.1
Occupation	Hose wife	139	97.9
	Employee	3	2.1
Ethnicity	Pashtun	48	33.8
	Tajik	63	44.4
	Hazara	14	9.9
	Others	17	12
Residence	Kabul	27	19
	Other Cities	115	81
BMI	Less than 18.5	19	13.4
	18.5-24.9	73	51.4
	25-29.9	35	24.6
	Up 30	15	10.6
Parity	No child	10	7
	1-3 Childs	3	2.1
	Up 3Childs	129	90.8
Cancer history	Yes	2	1.4
	No	140	98.6
Chemotherapy	Yes	3	2.1
	No	139	97.9
Tumor location	Right	73	51.4
	Left	67	47.2
	Both	2	1.4

## 5. DISCUSSION

According to the information received from this study, the prevalence of BC among women in the first 6 months of 2023 in the Oncology Department of Jamhuriat Hospital in Kabul city was reported as 3.07%. According to the research findings in Iran 1.7%, this statistic is higher (11), so the prevalence of BC in Afghanistan is higher than in Iran. The factors that play a role in creating this statistical difference can be mentioned in the level of women's literacy and awareness of BC, lack of identification of risk factors of disease, poverty, lack of health facilities, and cultural differences prevailing in society. Considering the age groups, in this study, the age group with BC was in the range of 40-49 years 31.7%, these statistics and figures are significantly different from the research findings in the United States in 2004 (62 years). According to the studies conducted in America in 2013, 2019, and 2022, most patients with BC were between 60 and 69 years old (2–4). In a study conducted between 1990 and 2019, jointly between China, America, and Australia, the highest age of BC patients was reported as 65 to 69

years, 80 to 84 years, and 85 to 89 years, respectively (12). In the study, the prevalence of BC between 1999 and 2014 in the United States and China was investigated. The highest age of BC patients in China was 45 to 54 years 35.62% and in America it was observed in the age group between 55 to 64 years 24.5%(13), which has similar statistics to the results of this study, but the reason for the age difference It can be mentioned the lack of access to health centers and the lack of elderly patients visiting health centers. Marital status 88%, and occupation 2.11% of employees of BC patients in this study are similar to the statistics obtained from studies conducted in Iran. Married and non-working patients are more prone to BC than other patients due to a lack of physical activity and more depression. The level of female hormones estrogen and progesterone is also higher in married women, so the number of BC is higher among these patients. Considering the statistics received from BC patients, the prevalence of this disease is different among different ethnic groups in Kabul city. These results are similar to the results received from a study



from the United States in 2014, which shows the relationship between the prevalence of BC and racial and genetic characteristics (14). In this study, 27 patients 19% were residents of Kabul city. These statistics have a significant difference from the statistics received from the study conducted in India and China 63%, and 67.5%, respectively (15)(8). The reason for this statistical difference can be the lack of access of the villagers to medical services and their travel to the city for treatment. BMI was also investigated in this study. 73 patients 51.4% had normal weight, in a study conducted in India, the BMI of BC patients was more than 30, so the majority of BC patients were overweight (15), which these results compared to the results of other studies. It is different because there are genetic and dietary differences between the people of Afghanistan and other countries. The number of children among BC patients in this study is also remarkably similar to the studies conducted in India (15), and Pakistan (16). In this study, the majority of patients had children and only 7% of patients did not have children, which is similar to the results of studies in India 5.2% and Pakistan. History of cancer (family and individual) was observed in only 2 patients 1.4% in this study. This statistic is similar to the results of the study conducted in India. In a study conducted in India 2.2%, of patients with BC had no history of cancer (15), but in a study conducted in Pakistan 16.9%, of patients with BC had a history of cancer (15,16). The reason for the statistical differences can be reminded of the level of being in contact with carcinogens. In this study, only 3 patients 2.1% have used chemotherapy for the treatment of BC, which is significantly different from the studies conducted in China and America. In these countries, respectively 15.83%, and 39.55% of patients have used chemotherapy to treat BC(13). This statistical difference can be seen as the difference in the type, grade, and severity of cancer. In this study, the anatomical location of the tumor in the right and left breast was similar, and these results were similar to the results obtained from the study conducted in India 48% of the tumors in the right breast, and 52% in the left breast (15).

## 6. CONCLUSION

BC is one of the malignant tumors of the breast tissue that mostly spreads among women. The occurrence of this cancer is closely related to the level of female hormones estrogen and progesterone, and the prevalence of this disease increases with age. In developing countries, this disease is increasing every year and requires public awareness, early diagnosis of the disease, and identification of the risk factors of the disease.

## 7. CONFLICT OF INTEREST

Not available

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