

Impact of Breast Cancer Treatment on the Marital and Employment Status of Young Women

Impacto do Tratamento do Câncer de Mama no Estado Conjugal e Profissional de Mulheres Jovens

Impacto del Tratamiento del Cáncer de Mama en el Estado Civil y Laboral de Mujeres Jóvenes

RESUMO

Objetivo: Avaliar estado conjugal e profissional um ano após o início do tratamento do câncer de mama em mulheres jovens atendidas em um serviço público de saúde no Brasil. **Métodos:** estudo transversal com 39 mulheres com até 40 anos, diagnosticadas com câncer de mama, entre 2019 e 2020. Os dados foram coletados por meio de entrevistas telefônicas e incluíram informações sociodemográficas, reprodutivas e clínicas no diagnóstico e um ano após o início do tratamento. Uma análise comparativa das mudanças no estado civil e no emprego foi realizada usando o teste de McNemar. **Resultados:** A mediana de idade das participantes foi 35 anos (IIQ: 33,9–36,3). O estado conjugal não apresentou mudança significativa, no entanto, a taxa de desemprego aumentou de 30,8% para 61,5% um ano após o início do tratamento ($p < 0,001$). **Conclusão:** pacientes jovens com câncer de mama enfrentam um aumento significativo no desemprego, apesar de relacionamentos conjugais estáveis.

DESCRIPTORIOS: Neoplasias da Mama, Câncer de Mama, Tumor de Mama, Adulto Jovem, Estado Civil, Status Laboral.

ABSTRACT

Objective: To assess marital and employment status one year after starting breast cancer treatment in young women treated at a public health service in Brazil. **Methods:** A cross-sectional study was conducted with 39 women aged up to 40 years diagnosed with breast cancer between 2019 and 2020. Data was collected through telephone interviews and included sociodemographic, reproductive, and clinical information at diagnosis and one year after starting treatment. A comparative analysis of changes in marital status and employment was performed using the McNemar test. **Results:** The median age of participants was 35 years (IQR: 33.9–36.3). Marital status did not show significant change; however, the unemployment rate increased from 30.8% to 61.5% one year after starting treatment ($p < 0.001$). **Conclusion:** Young breast cancer patients face a significant increase in unemployment, despite stable marital relationships.

DESCRIPTORS: Breast Neoplasms, Breast Cancer, Breast Tumor, Young Adult, Marital Status, Employment.

RESUMEN

Objetivo: Evaluar el estado civil y laboral un año después de iniciar el tratamiento del cáncer de mama en mujeres jóvenes atendidas en un servicio de salud pública en Brasil. **Métodos:** Estudio transversal con 39 mujeres de hasta 40 años diagnosticadas con cáncer de mama entre 2019 y 2020. Los datos se recopilaban mediante entrevistas telefónicas e incluyeron información sociodemográfica, reproductiva y clínica en el momento del diagnóstico y un año después de iniciar el tratamiento. Se realizó un análisis comparativo de los cambios en el estado civil y el empleo mediante la prueba de McNemar. **Resultados:** La mediana de edad de los participantes fue 35 años (RIC: 33,9–36,3). El estado civil no mostró cambios significativos; sin embargo, la tasa de desempleo aumentó del 30,8% al 61,5% un año después de iniciar el tratamiento ($p < 0,001$). **Conclusión:** Las pacientes jóvenes con cáncer de mama enfrentan un aumento significativo del desempleo, a pesar de las relaciones maritales estables.

DESCRIPTORIOS: Neoplasias de la Mama, Cáncer de la Mama, Tumor de la Mama, Adulto Joven, Estado Civil, Empleo.

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INTRODUCTION

In Brazil, breast cancer is the most common malignant neoplasm, excluding non-melanoma skin cancers, with an estimated 73,610 new cases expected annually from 2023 to 2025^(1,2). Age is the primary risk factor, with a global median age at diagnosis of approximately 61 years⁽³⁾. A retrospective study of Brazilian women from 2016 to 2018 found a median age at diagnosis of 54 years, with 17% of cases occurring in women under 40⁽⁴⁾. Similarly, a study in Brazilian state, Bahia between 2014 and 2019 reported 12% of diagnoses in women under 40⁽⁵⁾.

In young women, breast tumors typically exhibit more aggressive features, and the potential reduction in life expectancy is further complicated by the fact that critical life milestones - such as childbearing, marital relationships, career establishment, and financial stability - may still be in progress⁽⁷⁾. Additionally, young women undergoing breast cancer treatment experience significantly poorer sexual health outcomes compared to survivors of other cancers, with long-term reductions in sexual quality of life^(8,9).

The diagnosis of breast cancer

presents a profound challenge for women of all ages, often requiring prolonged and complex treatment regimens that complicate adherence. Moreover, many women must take time off work, making the prospect of returning to employment a crucial aspect of therapeutic planning. A 2017 study demonstrated that breast cancer patients who maintained paid employment reported significantly better quality of life, with 71.7% of those employed shortly after surgery expressing overall life satisfaction, compared to 49.3% of those on medical leave⁽¹⁰⁾. Absence from work and limitations in family activities can exacerbate financial challenges and psychosocial life and for the entire family unit⁽¹¹⁾.

This study aims to assess social outcomes related to marital and occupational status one year after initiating treatment in women under 40 years of age with breast cancer at a reference hospital in Recife, Brazil. The findings would guide the development of targeted support strategies and interventions to enhance quality of life and well-being by addressing the specific social and professional challenges faced by these young patients.

METHODS

A cross-sectional study was conducted at an oncology outpatient clinic in a reference center for breast cancer in Recife, Pernambuco, Brazil. Of the 820 women diagnosed with breast cancer in 2019 and 2020, 81 (approximately 10%) were under 40 years old. These women were identified from the hospital registry and subsequently contacted by telephone. Those who consented to participate completed a structured questionnaire covering socioeconomic data (age, race, education, residence, number of pregnancies, total family income, occupation, and marital status) and cancer-related variables (histological type, immunohistochemistry, treatment). Electronic and physical medical records were accessed to verify and supplement clinical and treatment-related information.

After data collection, the questionnaires were reviewed for completeness, and statistical analysis was performed using Stata version 12.1. Descriptive statistics were used to generate frequency distribution tables for categorical variables. To compare proportions of variables such as marital status and occupation

before and one year after the initiation of treatment, the McNemar test for paired samples was applied, with a significance level set at 5%.

This study was approved by the Institutional Ethics Committee on June 9, 2021, Approval Number: 4.762.934 and CAAE: 47067421.9.0000.5201. All participants provided informed consent.

RESULTS

Between 2019 and 2020, 81 women under the age of 40 were admitted to the oncology service with a diagnosis of breast cancer. At the time of the interview, it was not possible to contact 33 of these women, despite two phone call attempts. Among the 48 women who were reached, nine were excluded due to death, and 39 agreed to participate in the study.

The median age of the participants was 35 years (IQR: 33.9–36.3). Most participants ($n=20$; 51.3%) were from Recife and the surrounding metropolitan area. The median household income was R\$ 2,080.00 (IQR: 1,540.00 – 2,620.00) (equivalent to USD \$265 at the 2019–2020 exchange rate), with 43.6% ($n=17$) of the participants having completed at least elementary school. The predominant self-declared race/color was mixed/brown ($n=18$; 46.1%). Regarding parity, eight participants (20.6%) were nulliparous, while 31 (79.4%) had experienced one or more pregnancies. (Table 1).

Table 1. Sociodemographic characteristics of young women under 40 years of age with breast cancer. Recife, Pernambuco, Brazil, 2019-2020.

Characteristics	N = 39	%
Age (years): median 35 (IQR*: 33,9 - 36,3)		
18 to 30	6	15,4
Above 30	33	84,6
Education level		
Elementary education	17	43,6
High school education	12	30,8
Higher education	10	25,6
Race/ethnicity		
White	15	38,5
Mixed race	18	46,1
Black	6	15,4
Prior pregnancy		
0	8	20,6
1	11	28,2
≥ 2	20	51,2

*IQR- Interquatile range

At diagnosis, 12 participants (30.8%) were single, while 27 (69.2%) had a partner. After one year of starting treatment, two women reported a

change in marital status: one married, while another reported being without a partner, maintaining similar proportions of marital status before and after treatment ($p > 0.99$) (Table 2).

Table 2. Marital status at diagnosis and one year after the start of treatment among young women under 40 years of age with breast cancer. Recife, Pernambuco, Brazil, 2019-2020

Marital status	At diagnosis	One year after	P value*
	N (%)	N (%)	
Single/dating	12 (30,8)	12 (30,8)	>0,99
Married/living together	27 (69,2)	27 (69,2)	

*Teste de McNemar

Regarding employment, 27 women (69.2%) were employed at the start of treatment, but this number dropped to 15 (38.5%) after one year. Twelve women (30.8%) were unemployed at

baseline, and this percentage value increased significantly to 24 (61.5%) after one year of treatment ($p < 0.001$) (Table 3).

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Table 3. Occupation at diagnosis and one year after the start of treatment among young women under 40 years of age with breast cancer. Recife, Pernambuco, Brazil, 2019-2020

Occupation	At diagnosis	One year after	P value*
	N=39 (%)	N=39 (%)	
Formal employment	27 (69,2)	15 (38,5)	<0,001
Unemployed	12 (30,8)	24 (61,5)	

*McNemar test

As for tumor characteristics, most women (n=38; 97.4%) had invasive carcinoma of no special type. 24 (61.5%) were estrogen receptor-positive, 22 (56.4%) were progesterone receptor-positive, and six (15.3%) were HER2-positive. Triple-negative tumors

were identified in 14 women (35.9%). Additionally, most participants (n=32; 84.1%) had a Ki67 index above 14%. In terms of initial treatment, the majority (n=30; 76.9%) underwent neoadjuvant therapy, and 5 women (12.8%) had a mastectomy as initial treatment (Table 4).

Table 4. Tumor characteristics of breast cancer in young women under 40 years of age with breast cancer. Recife, Pernambuco, Brazil, 2019-2020

Characteristics	N	%
Histological type		
Invasive, no special type (NST)	38	97,4
Lobular	1	2,6
Immunohistochemistry		
Estrogen receptor positive	24	61,5
Progesterone receptor positive	22	56,4
HER2 positive	6	15,3
Triple-negative	14	35,9
Ki67 >14%	32	84,1
Initial treatment		
Mastectomy with reconstruction	5	12,8
Neoadjuvant	30	76,9
Palliative	4	10,3

DISCUSSION

This study highlights important social and clinical challenges faced by young women under 40 years of age diagnosed with breast cancer at a referral hospital in Recife, Brazil. It was

observed that one year after starting breast cancer treatment, women continued to have marital partners, but there was a drop in the percentage of those who continued working.

Most participants were diagnosed with aggressive tumor subtypes, such

as triple-negative breast cancer, which is consistent with findings in other studies involving younger populations⁽¹²⁾. Despite these more aggressive characteristics, most of these women had significant social responsibilities, including motherhood and partnership, which add additional layers of complexity to the burden of cancer treatment.

The number of young breast cancer patients in our study population reflects a growing concern, as there is a trend of a faster increase in breast cancer cases among women under 40 years old compared to those over 40. A study conducted at a Brazilian institution showed that the proportion of new cases in young women increased from 7.9% in 2009 to 21.8% in 2020, with a similar increase observed in the proportion of deaths in this young population⁽¹³⁾. In our hospital, we record around 10% of breast cancer cases in women under 40 years of age and, although this percentage is lower than the national average, it still reflects a growing concern.

Despite being young, over 79% had already experienced one or more pregnancies, which counters the assumption that most young women diagnosed with breast cancer are nulliparous. The protective effect of early pregnancies against breast cancer, while present, may be outweighed in this population by other risk factors such as genetic predisposition or lifestyle factors⁽¹⁴⁾. Importantly, this raises the need for continuous education on breast cancer prevention and screening among young women, particularly those in vulnerable socioeconomic conditions⁽¹⁵⁾.

The findings on marital stability in our study are encouraging, with most women maintaining their relationship status despite the physical and emotional toll of breast cancer. Strong family and spousal support appear to play a crucial role in helping patients navigate the challenges of treatment,

as evidenced by previous studies. For instance, a study with breast cancer survivors ($n = 209$) found that married women, regardless of the quality of the marriage, experienced improvements in depressive symptoms, stress, and fatigue from pretreatment to 18 months posttreatment, while unmarried women showed persistently elevated levels of these symptoms over time. Additionally, those in satisfying marriages had fewer psychological and physical symptoms compared to unmarried women or those in dissatisfying marriages⁽¹⁶⁾.

Furthermore, a large-scale analysis from Chinese database ($n=324,062$) demonstrated that married breast cancer patients had significantly better 5-year breast cancer-specific survival (92.6%) and overall survival (88.1%) compared to unmarried patients (88.3% and 78.1%, respectively, $p<0.001$). This remained true even after adjusting for factors such as age, cancer stage, and molecular subtype, marital status remained an independent predictor of better outcomes, further reinforcing the critical role of emotional and social support in improving survival and recovery during breast cancer treatment⁽¹⁷⁾.

In contrast, the significant increase in unemployment rates found in this study after one year of starting treatment raises serious concerns about the economic impact of breast cancer on young women and its potential interference with survival. In our study, we evaluated patients only at one year after diagnosis, and there is evidence that with longer follow-up, higher return-to-work rates may be observed, as demonstrated in a Brazilian study that reported a return-to-work rate of 21.5% at six months after diagnosis, 30.3% at one year, and 60.4% two years later⁽¹¹⁾.

Most of our patients were non-white (mixed race and Black), making the sample representative of this population, which is often underrepresent-

ed in scientific studies and faces greater social vulnerability. Research from the Carolina Breast Cancer Study, which followed 1,646 employed women with primary breast cancer, found that nearly half (46.4%) experienced job interruptions within two years of diagnosis, with job loss being more prevalent among Black women (adjusted odds ratio = 3.44; 95% CI 2.37-4.99). Job loss was linked to lower well-being in several domains, independent of clinical factors [18]. Women who lose employment during or after treatment may face not only financial strain but also a loss of identity and independence, which can further compound their psychological burden. The COVID-19 pandemic, which coincided with the study period, likely exacerbated this trend, but the results suggest a more systemic issue regarding the difficulties young women face in balancing cancer treatment with work⁽¹⁹⁾.

The clinical profile of our patients highlights the aggressive nature of breast cancer in younger women, with a high prevalence of triple-negative tumors and elevated Ki67 levels. These aggressive subtypes often require intensive treatment regimens, such as chemotherapy, which can lead to significant long-term impairments in quality of life (QoL). For instance, in a study of 79 patients, sexual activity declined significantly during chemotherapy, from 71.9% to 47%, and although QoL and global health status improved six months after treatment, these effects were more pronounced in premenopausal women⁽²⁰⁾. Additionally, findings from the CANTO cohort, which included 4,131 breast cancer patients, identified that 16.6% of patients experienced either poor or deteriorating QoL trajectories following chemotherapy, with younger age, obesity, and lower income being key factors associated with persistent declines in QoL over four years post-diagnosis⁽²¹⁾. These results underscore

the critical need for tailored supportive care to address the long-term side effects of chemotherapy in younger breast cancer patients. The predominance of neoadjuvant therapy in our cohort is reflective of the advanced stage and aggressive nature of the tumors at diagnosis.

A limitation of this study is the sample size, which, although reflective of the population under 40 diagnosed with breast cancer, limits the generalizability of the findings. Additionally, the one-year follow-up after initial treatment is another constraint, as breast cancer treatment is a prolonged process. This timepoint provides only a snapshot of social outcomes at that specific stage and cannot be generalized to the broader experiences of young breast cancer patients undergoing treatment.

Furthermore, the socioeconomic impact of the COVID-19 pandemic may have confounded occupational outcomes, making it difficult to separate the effects of the disease from broader economic trends. Future research should explore larger, multicenter cohorts and incorporate longitudinal assessments to better understand the long-term social and economic effects of breast cancer in young women.

Overall, this study offers insights into the intersection of social, economic, and clinical factors that may affect young women with breast cancer. Holistic care approaches that go beyond medical treatment to address psychosocial and occupational challenges, improving access to comprehensive support services, including social support, could help improve the quality of life and well-being of young women undergoing breast cancer treatment.

CONCLUSION

Approximately one year after starting treatment, young women with

breast cancer maintained stable marital status, but the unemployment rate doubled compared to the start of treatment. These findings suggest the need for comprehensive public poli-

cies that not only address the medical aspects of breast cancer treatment but also provide support for the socio-economic challenges these patients face.

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