Breast Cancer Profile and Healthcare Practices Among Transgender Patients within the Brazilian Unified Health System: a mixed cross-sectional and survey study (TRANSformation)

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Abstract

Background: Breast cancer is the most diagnosed cancer globally; transgender people (0.5–1% of the population) face data scarcity in Brazil. Brazilian Public Unified Health System (SUS) lacks structured gender identity fields, rendering transgender patients largely invisible and hindering equitable screening and care. **Study objective and design**: This is the first nationwide assessment of breast cancer care for transgender patients in Brazil, combining an 18-year retrospective SUS database analysis with a nationwide physician survey to identify registration barriers, preparedness, and care practices.
Methods: Transgender identity was proxied via gender-affirming procedure records in SUS (2008–2025); breast cancer was ascertained by diagnostic and oncology treatment codes. A complementary anonymous online survey of 244 physicians (oncologists, breast surgeons, gynecologists, others) was carried out across all five regions and care settings.
Results: Among 12,648 patients with gender-affirming procedures, only 6 breast cancer cases were recorded (5 trans men, 1 trans woman; <0.0005%), likely reflecting underdiagnosis/underreporting. Survey showed >65% of physicians lack specific protocols and 80% have no specific training at their institutions for transgender patients, with ~50% declaring insufficient knowledge.
Conclusion and implications: Convergent evidence of structural barriers, sex/gender registration gaps, invisibility in information systems, and limited professional training, compromise early detection and management. Urgent actions: strengthen health information systems, implement structured training, and establish inclusive guidelines and public policies.

Introduction

Breast cancer (BC) is the most diagnosed malignancy worldwide, predominantly affecting cisgender women; among cisgender men, it accounts for only 1–2% of cases[1]. In the transgender population, estimated at 0.5–1% of the general population, there is a substantial information gap[2]. BC risk is more complex in this group due to gender-affirming hormone therapies and surgeries[3,4]. In Brazil, data are even more limited. Within the Brazilian Public Unified Health System (SUS), the absence of structured mechanisms to record gender identity given that administrative records rely solely on sex assigned at birth renders transgender individuals largely invisible, hindering equitable care and compromising early detection and management[5,6].
Against this backdrop, we conducted a mixed-methods, cross-sectional study with a survey component to characterize practices, perceptions, and barriers related to breast cancer screening, diagnosis, and care among transgender individuals in Brazil.

Methods and Materials

Mixed cross-sectional and survey study

PART 1

Retrospective analysis of Brazilian Public Unified Health System Outpatient Information System (DATASUS/SIA)

Data Collection: 2008 – 2025

Population: Transgender Patients identified through outpatient procedure codes associated with gender-affirming care (used as a proxy for transgender identity) in SIA records.

Primary Outcomes
• Annual number and distribution of transgender patients linked to gender-affirming procedures
• Demographic characteristics
Additional Outcomes
•Within this population identified the number and profile of transgender patients with breast cancer

PART 2

Prospective, anonymized nationwide survey with a structured questionnaire

Data Collection: May-October 2025

Population: Physicians involved in breast cancer care in Brazil.

Primary Outcomes: assess physicians' perceptions of breast cancer care for transgender people in Brazil's health system, identifying structural, institutional, personal, and other barriers.

Results

Between January 2008 and April 2025, 12,648 transgender or non-binary patients (37% assigned female at birth; mean age 28.2±11.2) were identified mostly from Brazil's Southeast (51%) with over 65% having comorbidities including HIV (B24, n=1,006); numbers of patients and gender-affirming outpatient visits rose steadily to peaks in 2024 (6,376 patients; 26,450 visits), with the most frequent procedures being initial sex reassignment follow-up (n=8,137), hormone therapy follow-up (n=5,537), Anti-HCV testing (n=5,537), and hormone therapy (n=4,902).

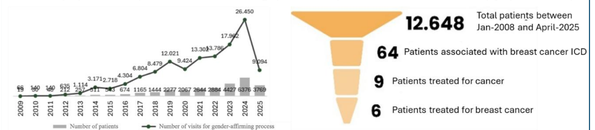


Figure 1. a. Number of transgender patients and outpatient visits for the gender-affirming process within the Brazilian Unified Health System **b.** Funnel diagram illustrates the filtering process from the initial population to the six identified transgender patients with breast cancer.

Between January 2008 and April 2025, six transgender patients with unspecified malignant neoplasm of the breast (C50.9) were treated, 83% assigned female at birth, mean age 53.2±10.1, most aged 45–59, with high comorbidity burden (five with ≥3), over 30% lymph node involvement, 50% stage II, originating from Rio de Janeiro (n=3) and Espírito Santo, Goiás, Paraná (n=1 each). Frequent procedures included chest CT and gender-affirmation follow-up (each n=5), and treatments comprising radiotherapy (n=5) and chemotherapy (n=4) using agents such as cyclophosphamide, tamoxifen, anastrozole, doxorubicin, docetaxel, and letrozole.

Table 1. Demographic data of transgender patients between January-2008 and April-2025.

	General Cohort	Breast Cancer
Number of patients – n	12,648	6
Female sex at birth – n (%)	4,673 (37%)	5 (83%)
Age at study entry – mean ± SD	28.2 ± 11.2	53.2 ± 10.1
Age at study entry – median (IQR)	25.0 (20-33)	54.5 (48-59)
Age distribution		
25-29 years		1
35-39 years		1
45-49 years		2
55-59 years		2
Additional comorbidities – n (%)	8,385 (66.3%)	6 (100)
1 Comorbidity - n	2,892	0
2 Comorbidities - n	1,828	1
3+ Comorbidities – n	3,665	5
Lymph node involvement – n (%)	NA	2 (33.3%)
Staging		
I – n		1
II – n		3
III – n		1
IV – n		1

Among 241 survey respondents, 226 were physicians, mostly with over 10 years' experience (77%), 52% of them are specialized in oncology, based in Brazil's Southeast (48%) and Northeast (30%), working in private (42%) or mixed public-private settings (43%) mainly in clinics and cancer hospitals. Many rarely follow transgender patients (≈45%), and those who do often recommend annual BC screening (≈70%) and consider gender-affirming care (82%) but generally use cisgender BC protocols (>60%), and report limited training and confidence, cite lack of guidelines and scarce literature as key barriers, and call for specific guidelines (32%), research (23%), and cultural-sensitivity training (20%).

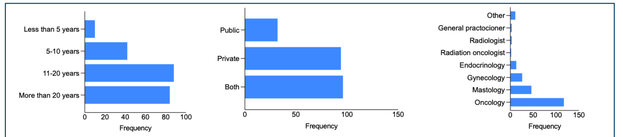


Figure 2. Profile of healthcare physicians that participated in the study. (a) Years of experience in the medical field. (b) Predominant health sector of work. (c) Main specialization of the physicians.

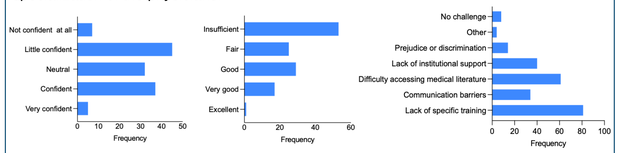


Figure 3. Experience of physicians with transgender patients with breast cancer. (a) Level of confidence in treating transgender patients with breast cancer. (b) Self-assessment of training and preparation to address transgender-specific health issues. (c) Challenges faced when treating transgender patients.

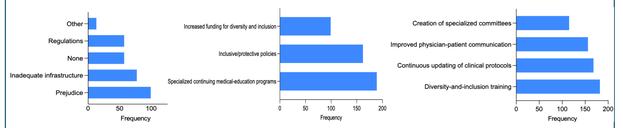


Figure 4. Physicians' awareness of challenges and barriers in transgender health care. (a) Specific barriers to transgender patients' access to screening, diagnosis and treatment programs at the workplace. (b) Institutional support that would help improve care for transgender patients in oncology. (c) Practices or polices to be implemented to ensure more inclusive care for transgender patients.

Conclusions

This first nationwide analysis of over a decade of SUS records exposes critical gaps in registration and care. The transgender population remains largely invisible in SUS's information systems, compromising early detection and effective management of BC. The lack of documented cases, combined with systemic barriers such as inconsistent sex/gender registration and insufficient professional training, underscores the need for urgent action. These findings reveal a convergence between database analysis and physician perceptions, pointing to the same structural barriers. To address them, it is essential to improve health information systems, implement comprehensive professional training, and establish inclusive public health policies.

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