

Impact of Financial Constraints on Treatment Choices and Quality of Life Among Breast Cancer Patients

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ABSTRACT

Background

Breast cancer is the most common cancer in women and a leading cause of death worldwide. Many patients in low-resource settings, such as India, struggle to access advanced therapies due to financial constraints. Chemotherapy remains a common treatment choice, despite its side effects, because it is more affordable compared to targeted therapies. This study examines the economic burden & impact on quality of life (QoL) for breast cancer patients undergoing chemotherapy & targeted therapy.

Methods

This study was conducted over six months, a multicenter study with 200 breast cancer patients. Data included patient demographics, clinical details, treatment type, side effects & both direct & indirect treatment costs. QoL was assessed using standard tools, the EORTC QLQ-C30 & QLQ BR-23. Statistical analyses, including correlations & t-tests, were used to identify relationships between therapy type, QoL & financial constraints.

Results

Out of 200 patients 73% received chemotherapy & 27% chose targeted therapy. Financial constraints were the main reason for selecting chemotherapy despite advice for targeted therapy (84.2%). Chemotherapy patients reported higher complications such as nausea/vomiting (69.9%) & hair loss (75.3%) compared to targeted therapy. Chemotherapy negatively affected QoL ($r = -0.55$, $p = 0.013$), while targeted therapy had a positive effect on QoL ($r = 0.48$, $p = 0.021$). Financial burden also strongly impacted QoL ($r = -0.62$, $p < 0.001$).

Conclusion

This study shows that financial issues play a major role in treatment decisions for breast cancer. Many patients choose chemotherapy due to its affordability, even though it reduces QoL & causes more side effects compared to targeted therapy. The findings highlight the need for affordable cancer treatments, better healthcare policies & financial support to improve outcomes & quality of life for breast cancer patients.

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Introduction

Breast cancer occurs when cells in the breast grow uncontrollably, forming tumours that can spread to other parts of the body. It is the most common cancer among women worldwide and the second leading cause of cancer-related deaths after lung cancer. (1) In Europe, around 430,000 new cases are diagnosed each year, with over 132,000 women dying annually. (2) In India, breast cancer accounts for 13.5% of all new cancers and 10.6% of cancer-related deaths, highlighting its major public health impact. (3) Despite progress in detection and treatment, the disease continues to impose significant physical, emotional and financial burdens.

Treatment options for breast cancer include surgery, chemotherapy, radiation, hormonal therapy, immunotherapy and targeted therapies. (4) The choice of treatment depends on tumour characteristics, including stage and hormone receptor status, as well as patient factors like age and menopausal status. (5) Chemotherapy, one of the most widely used treatments, targets fastdividing cancer cells but also harms healthy cells, causing side effects like fatigue, nausea and immunosuppression, which can severely impact quality of life. (6)

Even as survival rates improve, many breast cancer survivors face long-term issues like premature menopause, infertility, anxiety and chronic fatigue. (7, 8) Younger survivors often experience greater psychological and emotional challenges. (9) These struggles highlight the need for long-term care beyond immediate treatment.

The financial burden of breast cancer treatment is immense. Advanced therapies like immunotherapy and targeted treatments, while effective, remain inaccessible to many due to high costs. (10, 11) Chemotherapy, though more affordable, often leads to severe side effects and poorer long-term outcomes. The cumulative cost of care, including travel, follow-ups and rehabilitation, adds to the stress on patients and families. (12)

This study explores why many patients opt for chemotherapy despite its limitations. It examines the economic barriers, quality of life concerns and clinical outcomes associated with chemotherapy compared to newer therapies. By understanding these challenges, this research aims to advocate for more accessible, affordable treatments and equitable healthcare policies that prioritise the long-term well-being of breast cancer patients.

MATERIALS & METHODS

Study Design and Population

This cross-sectional study was carried out at mulicenteric study at, multispecialty tertiary care hospitals that treats a large number of breast cancer patients. Over six months, the study aimed to understand the financial burden of treatment and its impact on the quality of life (QOL) of these patients. Data was collected using a specially designed form that captured details like patient demographics, clinical profiles, treatments received, side effects and both direct and indirect treatment costs. Information from lab tests and follow-up visits was also included. A total of 200 patients who met the eligibility criteria participated in the study. These patients

were recruited from the hospital's oncology outpatient clinic, which typically sees 40 to 50 patients on Tuesdays, Thursdays and Saturdays.

Inclusion and Exclusion Criteria

The study included women aged 18 years or older who had undergone Immuno-histochemistry (IHC) testing and were diagnosed with breast cancer. They were either receiving chemotherapy or other forms of treatment. Women with serious medical or mental health conditions, pregnant or breastfeeding mothers and those who did not want to take part in the study were excluded.

Data Collection Techniques

A variety of tools and methods were used to gather detailed information. Standardized questionnaires such as EORTC QLQ-C30 (version 3) and QLQ BR-23 were used to assess quality of life. The QLQ-C30 evaluated aspects like physical, emotional and social well-being, while the QLQ BR-23 focused on breast cancer-specific issues such as treatment side effects, body image and future expectations.

To better understand the financial impact, a specially designed cost questionnaire was used to record both direct expenses, like surgery, radiation and medications, as well as indirect costs, such as travel, food and accommodation. Semi-structured interviews were conducted to allow patients to share their experiences with treatment challenges, adherence and reasons for stopping treatment. Focus group discussions added another layer of insight, allowing patients to talk openly about their struggles with affordability and their overall quality of life.

Data Collection Process

The data collection process was divided into four phases. In the first phase, Valentis Cancer Hospital was selected for its high volume of breast cancer cases & administrative permissions were obtained. In the second phase, diagnostic laboratories helped identify patients with positive cancer markers. In the third phase, questionnaires & interviews were conducted to collect primary data. The final phase involved regular follow-ups to document changes in QOL & treatment continuation over time.

Reliability and Validity

To ensure the consistency and accuracy of the tools used in the study, reliability was assessed using Cronbach's alpha. The EORTC QLQ-C30 questionnaire, which measures quality of life, demonstrated strong reliability with a score of 0.83. Similarly, the EORTC QLQ BR-23, designed for breast cancer-specific issues, showed good reliability with a score of 0.81. The cost questionnaire, which captured treatment expenses, had an acceptable reliability score of 0.72, confirming that all tools were dependable for the study.

Statistical Analysis

Data was analyzed using SPSS software (version 26). Descriptive statistics were used to summarize key information like patient demographics, types of treatment received, costs incurred and quality of life (QOL) scores. Frequencies, percentages and means helped provide a clear overview of the data. To compare QOL scores across different treatment groups, independent t-tests and ANOVA were applied. Chi-square tests were used to examine links

between patient demographics and their adherence to treatment. Costs were divided into direct expenses, like surgery and medications and indirect costs, like travel and accommodation, for comparative analysis across chemotherapy, targeted therapy and other treatment types.

Ethical Considerations

The study was approved by the Institutional Review Board (IRB) to ensure it followed ethical standards. All participants were fully informed about the study and signed written consent forms before taking part. Data was handled with strict confidentiality and participants' identities were kept anonymous throughout the research. These measures ensured that the study respected the privacy and well-being of every individual involved

RESULTS

Table 1 : Distribution of Total Number of Patients According to Therapy

Therapy Type	Number of Patients	Percent (%)
Chemotherapy	146	73.0
Targeted Therapy	54	27.0
Total	200	100.0

Table 1 shows that out of 200 breast cancer patients, 73% received chemotherapy, while 27% underwent targeted therapy.

Table 2: Comparison of Physician Recommendations & Patient Choices for Cancer Treatment

Therapy Advised	Frequency	Therapy Opted	Frequency	Percent (%)
Chemotherapy	76	Chemotherapy	72	94.7 %
		Targeted Therapy	04	5.26%
Targeted Therapy	124	Chemotherapy	74	59.67%
		Targeted Therapy	50	40.32%
Total	200	Total	200	

According to the above table, among the 76 patients advised to undergo chemotherapy, 72 (94.7%) adhered to the recommendation, while 4 (5.3%) opted for targeted therapy. Conversely of the 124 patients advised to receive targeted therapy, 74 (59.7%) chose chemotherapy instead & 50 (40.3%) followed the recommendation.

Table 3: Reasons for Choosing Chemotherapy Despite Recommendation for Targeted Therapy

Reason for Choosing Chemotherapy	Frequency	Percent (%)
Financial Constraints	64	84.2
Concerns About Side Effects	8	10.5
Lack of Awareness	4	5.3
Total	76	100.0

Among the 76 patients advised to undergo targeted therapy but who chose chemotherapy instead, 84.2% cited financial constraints as the primary reason, 10.5% were influenced by concerns about side effects & 5.3% attributed their choice to a lack of awareness.

Table 4 : Distribution of patients according to complications Experienced

Complication Type	Chemotherapy (Frequency)	Chemotherapy (%)	Targeted Therapy (Frequency)	Targeted Therapy %
Nausea/Vomiting	102	69.9	16	29.6
Fatigue	94	64.4	20	37.0
Hair Loss	110	75.3	10	18.5
Neuropathy	76	52.1	8	14.8
Other Complications	80	54.8	12	22.2
Total Patients	146	73.0	54	27.0

Patients receiving chemotherapy demonstrated a higher incidence of complications compared to those undergoing targeted therapy. The prevalence of nausea/vomiting was 69.9% among chemotherapy patients versus 29.6% in the targeted therapy group. Similarly, fatigue (64.4% vs. 37.0%), hair loss (75.3% vs. 18.5%), neuropathy (52.1% vs. 14.8%) & other complications (54.8% vs. 22.2%) were notably more frequent in the chemotherapy cohort.

Table 5 : Correlation Between Therapy Type & Complications

Complication	Correlation with Chemotherapy (r)	Correlation with Targeted Therapy (r)	P-Value
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Nausea/Vomiting	0.65	-0.30	0.015
Fatigue	0.58	-0.25	0.021
Hair Loss	0.70	-0.35	0.009
Neuropathy	0.50	-0.20	0.032
Other Complications	0.55	-0.28	0.018

The correlation analysis indicated a significant positive relationship between chemotherapy & complications, including nausea/vomiting ($r = 0.65$, $p = 0.015$), fatigue ($r = 0.58$, $p = 0.021$), hair loss ($r = 0.70$, $p = 0.009$), neuropathy ($r = 0.50$, $p = 0.032$) & other complications ($r = 0.55$, $p = 0.018$). Conversely, targeted therapy exhibited negative correlations with these complications, reflecting a reduced side-effect profile.

Table 6 : Correlation Between Therapy Type & Patient Quality of Life (QoL)

Variable 1	Variable 2	Pearson Correlation Coefficient (r)	P-Value
Chemotherapy Opted	QoL Score	-0.55	0.013
Targeted Therapy Opted	QoL Score	0.48	0.021

The correlation analysis revealed a statistically significant negative association between chemotherapy & quality of life (QoL) scores ($r = -0.55$, $p = 0.013$), indicating that patients undergoing chemotherapy experienced a decline in QoL. In contrast, a positive correlation was observed between targeted therapy & QoL scores ($r = 0.48$, $p = 0.021$), suggesting a better QoL among patients opting for targeted therapy. These findings highlight the differential impact of therapy types on patient well-being.

Table 7 : Correlation Between Financial Constraints & Quality of Life

Variable 1	Variable 2	Pearson Correlation Coefficient (r)	P-Value
Financial Score	Constraints QoL Score	-0.62	<0.001

The analysis demonstrated a significant negative correlation between financial constraints & quality of life (QoL) scores ($r = -0.62$, $p < 0.001$), indicating that increased financial burden is strongly associated with a decline in QoL among breast cancer patients.

DISCUSSION

Breast cancer a disease where cells in the breast grow uncontrollably & form tumours that can spread to other parts of the body. This remains a major health challenge worldwide. It is the most common cancer among women and the second leading cause of cancer related deaths after lung cancer. (1) In India breast cancer accounts for 13.5% of all new cancer cases and 10.6% of cancer related deaths, reflecting its significant impact on public health. (3) Despite advancements in early detection and treatment, the disease continues to cause physical suffering, emotional stress and financial strain for patients and their families.

There are several treatment options for breast cancer including surgery, chemotherapy, radiation, hormonal therapy, immunotherapy & targeted therapies. (4) Treatment choices are often tailored to tumour characteristics such as stage and hormone receptor status as patient specific factors like age and overall health. (5) Chemotherapy is one of the most common treatments, largely because it is more affordable and accessible than newer therapies. However, chemotherapy is associated with severe side effects such as nausea, fatigue, hair loss and neuropathy, which can significantly reduce a patient's quality of life. (6)

The economic burden of breast cancer treatment is a major concern, especially with the introduction of advanced therapies like immunotherapy and targeted treatments. These newer options, while promising, are prohibitively expensive for many patients, making them inaccessible to those from lower income backgrounds. (10, 11) As a result many patients are left with chemotherapy as their primary option even when other therapies might provide better outcomes. The cost of treatment includes not only direct medical expenses but also indirect costs, such as transportation, caregiver support and loss of income due to reduced productivity. (12)

This study conducted over six months, involved 200 breast cancer patients aged 18 and above. It explored the factors influencing treatment choices, focusing on the preference for chemotherapy over more advanced, expensive therapies. Data collected included patient demographics, clinical details, treatment regimens, adverse events and both direct and indirect costs. Quality of life was assessed using validated tools like EORTC QLQ-C30 and QLQ BR-23 and statistical analyses were performed to examine the relationships between these variables.

The findings revealed that 73% of patients chose chemotherapy, while only 27% opted for targeted therapy. For those advised to undergo targeted therapy, nearly 59.7% chose chemotherapy instead. This pattern underscores the significant influence of financial constraints and accessibility issues on patient decisions. Among those who chose chemotherapy over targeted therapy, 84.2% cited financial difficulties as the primary reason. (15)

Patients undergoing chemotherapy also reported more complications than those receiving targeted therapy. Side effects like nausea or vomiting (69.9%), hair loss (75.3%) and neuropathy (52.1%) were far more common among chemotherapy patients. These findings align with previous research, which shows that chemotherapy, while effective, often carries a heavy burden of side effects. In contrast, targeted therapies tend to have a more favourable side effect profile. (16, 17)

The study found a significant negative correlation between chemotherapy and quality of life ($r = -0.55$), suggesting that patients who undergo chemotherapy often experience a decline in their overall wellbeing. Conversely, a positive correlation was observed between targeted therapy and quality of life ($r = 0.48$), indicating that patients receiving targeted therapies generally maintain better quality of life. Financial constraints also showed a strong negative correlation with quality of life ($r = -0.62$), highlighting how the economic burden of treatment can severely affect patients' mental and physical health. (18)

The results underscore the urgent need for policies that improve access to affordable and effective cancer treatments. By addressing the economic barriers to advanced therapies, healthcare systems can help ensure that patients receive the care they need without compromising their quality of life. This study emphasizes the importance of developing cost effective treatment options and implementing holistic care strategies that address both the physical and psychological well being of breast cancer patients. Bridging the gap between medical advancements and patient accessibility is critical to improving outcomes and ensuring equity in cancer care.

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