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A Clinical Study of Breast Lump in Female Attending Breast Clinic in Tertiary Care Centre With Respect To Socioeconomic Status and Clinical Profile

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Abstract

Introduction: Breast lumps are very common, with **60-80% being benign while** Breast cancer is second most common cancer all over the world and is one of the leading cancers among women. It has high prevalence rate in developed as well as developing nations.

Aims and Objectives

1. To assess the knowledge, attitudes and practices for breast Lump amongst rural and semi-urban women
2. To examine the extent of patient delay among breast Lump patients and to identify factors associated with the delay.
3. To analyse the system delay in the diagnosis and treatment of breast Lump and to find out the main determinants of this delay
4. To explore the quality of life among women with breast Lump and to investigate its relationship with self-efficacy

Material and Method:

Study Design: Quasi Experimental Study

Study Period: 18 Months

Place of study: Department of General Surgery at Tertiary Care Centre.

Sample Size: 300

Result: Among 300 women, the largest subgroup was 21–30 years (31.67%), followed by 31–40 years

(23.33%). The 41–50 and 51–60 brackets were identical at 21.67% each, while 18–20 years constituted 1.67% and 61–70 had no cases.

Discussion: This study aims to generate a comprehensive, real-world profile of women presenting with breast lumps in a resource-constrained setting and to determine how socioeconomic position shapes the clinical journey from first symptom to early outcomes

Keywords: Breast Lump, Core Needle Biopsy, Diagnosis, FNAC, Fibroadenoma, Ultrasonography

Introduction

A breast lump is one of the most common clinical presentations encountered in female patients attending breast clinics. It evokes considerable concern among patients due to the well-established association between breast lumps and breast cancer. The relationship between socioeconomic determinants and healthcare outcomes is especially significant in the realm of breast health, where access to timely diagnosis and treatment can drastically alter the disease trajectory.

In the female population, particularly in resource-constrained settings, socioeconomic status continues to be a defining factor in health-seeking behavior, disease recognition, and clinical outcomes.[1,2]

The etiology of breast lumps is multifactorial, ranging from benign conditions such as fibroadenoma, fibrocystic changes or mastitis, to malignant lesions such as ductal carcinoma 0r lobular carcinoma. While age is a major determinant of the underlying pathology—fibroadenomas are more common in younger women and carcinomas in postmenopausal women—SES plays a critical role in modulating awareness, early detection, and the decision to seek medical care. Women from lower socioeconomic backgrounds often present with breast lumps at a later stage due to lack of education, limited access to health facilities, cultural barriers, financial constraints, and fear of diagnosis, particularly of cancer.

In contrast, women from higher SES tend to be more health-conscious, regularly attend screening programs, and seek earlier medical intervention, which enhances early detection and improves prognosis.[3,4]

Management of breast lumps involves a stepwise approach, beginning with clinical evaluation and progressing through imaging modalities such as ultrasonography and mammography, followed by tissue diagnosis through fine needle aspiration cytology (FNAC), core needle biopsy, or excisional biopsy.

The prognosis of breast lumps depends not only on the pathology but also on the timeliness and completeness of treatment, both of which are heavily influenced by SES. For benign conditions, the prognosis is generally favorable with minimal interventions. Multiple studies have demonstrated that lower SES is associated with a higher stage at presentation, reduced likelihood of receiving definitive treatment, and higher mortality from breast cancer.[7,8]

Incorporating breast health education into existing maternal and child health programs can increase awareness and improve health-seeking behavior. Additionally, financial protection mechanisms such as insurance coverage, conditional cash transfers, and free treatment schemes can help reduce the economic burden on patients from low- income backgrounds.[11,12]

Aims and Objectives

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Materials and Methods

Study Design: The study was conducted as a Quasi experimental project. It aimed to evaluate the socio-economic factors, management strategies, and prognosis of female patients presenting with breast lumps at a breast clinic. The study allowed for the collection of real-time data along with interventions like diagnostic aspiration cytology, core biopsy and therapeutic like surgery, chemotherapy, radiation and or hormonal therapy, while ensuring that data were gathered systematically over the study period. The study focused on assessing knowledge, attitudes, and practices related to breast lumps, delays in diagnosis and treatment, and the quality of life among participants.

Study Setting: The study was carried out in the Department of Surgery at Tertiary Care Centre. The institution serves a predominantly rural and semi-urban population, making it an ideal setting for investigating the socio-economic and cultural factors influencing breast lump management. The breast clinic within the department provided access to a steady stream of patients, ensuring a robust sample for the study

Study Sampling: A purposive sampling method was employed to select participants who met the inclusion criteria. This non-probability sampling technique was chosen to ensure that the study focused on individuals who could provide relevant information about breast lumps and their management. All eligible patients attending the breast clinic during the study period were invited to participate, and their responses were recorded systematically.

Study Sample Size: The sample size was determined using the complete enumeration method. All patients meeting the inclusion criteria and attending the breast clinic during the study period were included. This approach ensured a comprehensive representation of the target population, allowing for detailed analysis of the socio- economic and clinical factors associated with breast lumps.

Inclusion Criteria

- Female patients aged 18 years and above
- Patients clinically diagnosed with a breast lump.
- Willingness to participate in the study and provide informed consent.

Exclusion Criteria

- Patients unwilling to participate in the study.
- Patients who absconded or were lost to follow-up.

Data Analysis

The collected data were compiled and analyzed using Microsoft Excel (2018 version). Descriptive statistics, including frequencies and percentages, were used to summarize categorical variables. Continuous variables were analyzed using appropriate statistical measures. The data were interpreted to identify trends, correlations, and significant findings related to breast lump management and patient outcomes.

Result

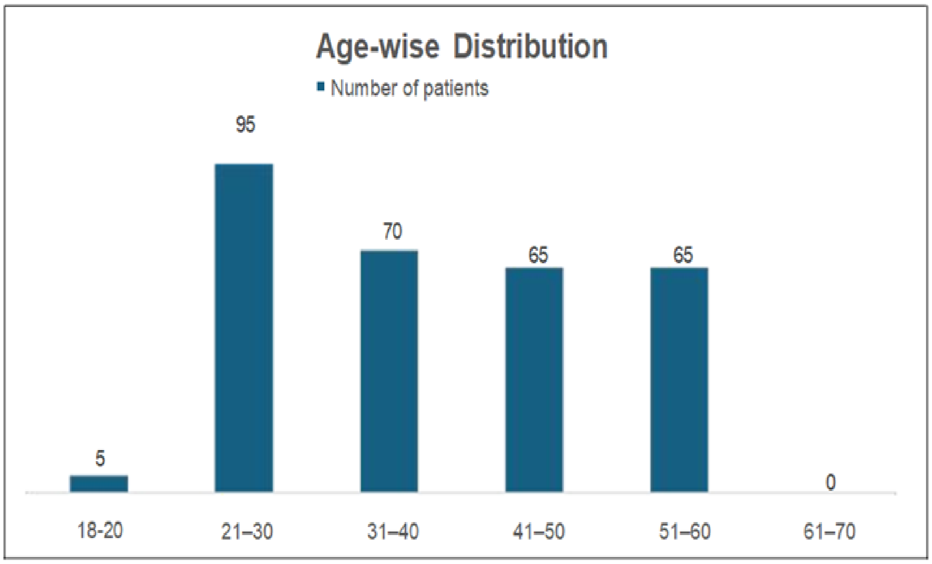
Age-wise Distribution of Patients

Among 300 women, the largest subgroup was 21–30 years (31.67%), followed by 31–40 years (23.33%) . The 41–50 and 51–60 brackets were identical at 21.67% each, while 18–20 years constituted 1.67% and 61–70 had no cases. This age profile suggests a clinic caseload spanning reproductive to perimenopausal ages, where benign lumps (e.g., fibroadenoma, fibrocystic change) are frequent but malignancy risk begins to rise in the 40s–60s. The dual peak across 30s–50s supports the need for ultrasound-first strategies in younger women and mammography-centric pathways for older patients, along with tailored counseling on fertility, lactation, and endocrine issues when cancer is diagnosed.

Table 1: Age-Wise Distribution of Patients

Age group (years)	Number of patients	Percentage (%)
18–20	5	1.67
21–30	95	31.67
31–40	70	23.33
41–50	65	21.67
51–60	65	21.67
61–70	0	0.00
Total	300	100.00

Graph 1: Age-Wise Distribution of Patients



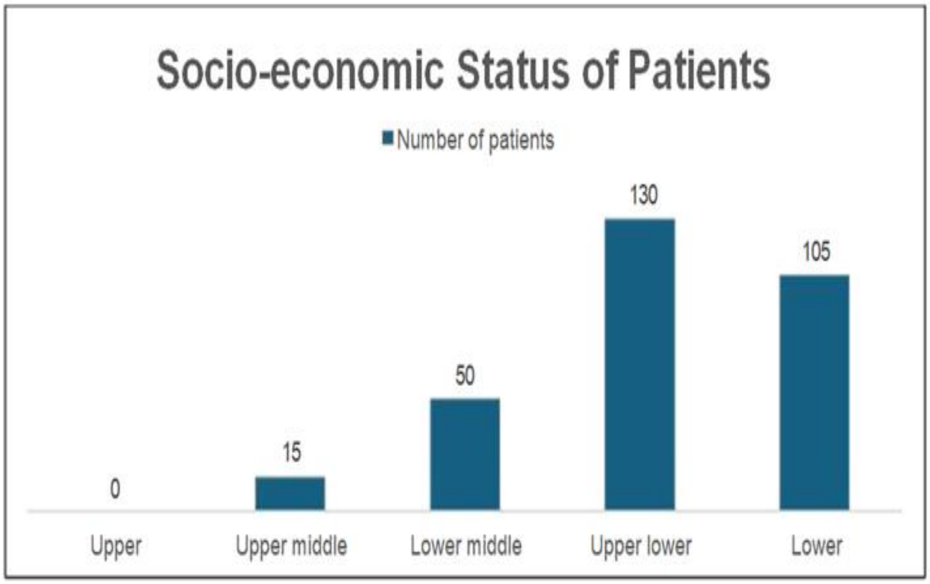
Socioeconomic Status of Patients

The cohort is heavily weighted toward lower SES: Upper lower (43.33%) and Lower (35.00%) together comprise 78.33%. Lower middle adds 16.67%, while Upper middle is 5.00% and Upper is 0%. This concentration implies greater exposure to financial barriers, transport/logistical hurdles, and health-literacy gaps, which can lengthen diagnostic and treatment intervals. Consequently, SES should be treated as a core stratifier in analyses of stage at presentation, modality uptake, complications, and quality of life. Programmatically, navigation services, scheme enrollment, and outreach may mitigate inequity by compressing delays and improving treatment completion.

Table 2: Socio-Economic Status of Patients

Class	Number of patients	Percentage (%)
Upper	0	0.00
Upper middle	15	5.00
Lower middle	50	16.67
Upper lower	130	43.33
Lower	105	35.00
Total	300	100.00

Graph 2: Socio-Economic Status of Patients



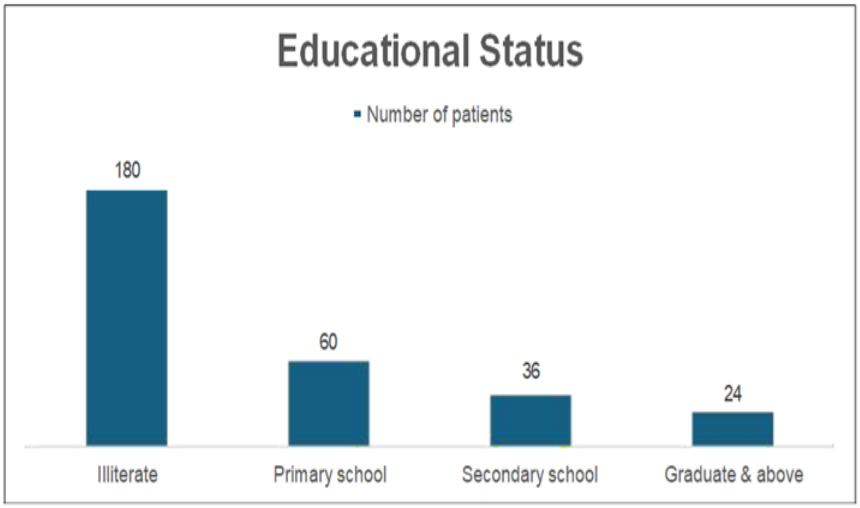
Educational Status

Illiteracy is high (60.00%), with 20.00% educated to primary, 12.00% to secondary, and 8.00% graduate & above. Limited formal education can impede symptom recognition, consent comprehension, and adherence to multimodality therapy. It also intersects with SES, potentially magnifying patient delay and system navigation challenges. Clinical implications include using plain-language, visual aids, teach-back methods, and involving caregivers. For malignant cases, simplified treatment roadmaps and reinforced follow-ups (calls/SMS) can reduce abandonment and improve completion of chemotherapy and radiotherapy.

Table 3: Educational Status

Education level	Number of patients	Percentage (%)
Illiterate	180	60.00
Primary school	60	20.00
Secondary school	36	12.00
Graduate & above	24	8.00
Total	300	100.00

Graph 3: Educational Status



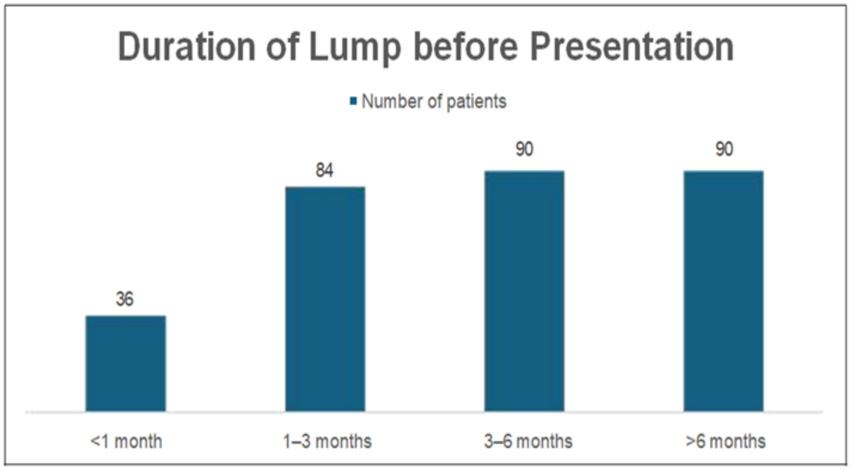
Duration of Lump before Presentation

Delayed presentation is common: 60.0% arrived after >3 months (split equally between 3–6 months: 30.0% and >6 months: 30.0%). Only 12.0% presented within <1 month, and 28.0% within 1–3 months. Such delays raise the chance of advanced stage and nodal involvement, worsening prognosis. Likely contributors include cost, travel time, low symptom awareness, and fear. Interventions should target community education, streamlined fast-track diagnostic pathways, and navigation for lower-SES/low-literacy patients to shorten both patient and system intervals.

Table 4: Duration of Lump before Presentation

Duration	Number of patients	Percentage (%)
<1 month	36	12.0
1–3 months	84	28.0
3–6 months	90	30.0
>6 months	90	30.0
Total	300	100.0

Graph 4: Duration of Lump before Presentation



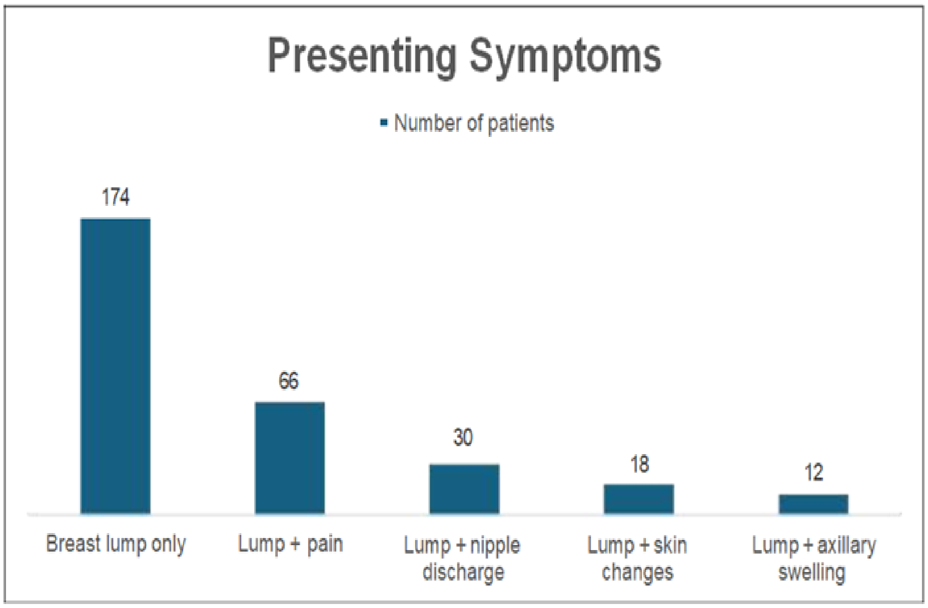
Presenting Symptoms

Most presented with breast lump only (58.0%). The remainder had a lump plus pain (22.0%), nipple discharge (10.0%), skin changes (6.0%), or axillary swelling (4.0%). Alarm features—skin changes and axillary swelling—may indicate locally advanced disease or nodal spread and warrant expedited work-up. The dominance of palpable lumps underscores a symptom-driven rather than screening-detected population. Protocols should ensure same-day triple assessment (clinical, imaging, tissue) and clear red-flag triage to minimize loss to follow-up and accelerate treatment decisions

Table 5: Presenting Symptoms

Symptom	Number of patients	Percentage (%)
Breast lump only	174	58.0
Lump + pain	66	22.0
Lump + nipple discharge	30	10.0
Lump + skin changes	18	6.0
Lump + axillary swelling	12	4.0
Total	300	100.0

Graph 5: Presenting Symptoms



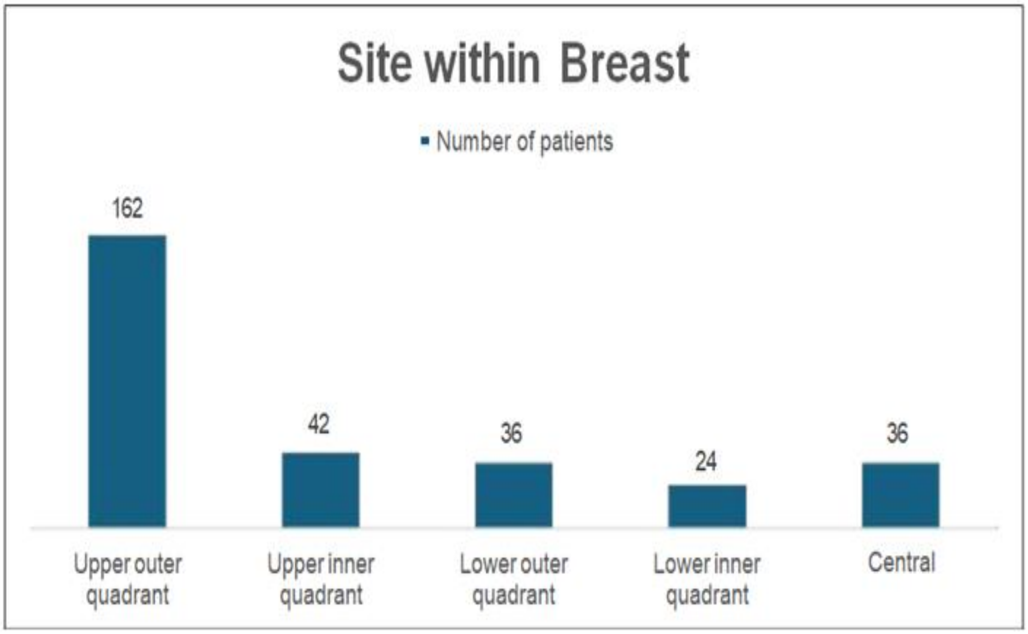
Site within Breast

Lesions clustered in the upper outer quadrant (54.0%), followed by upper inner (14.0%), lower outer (12.0%), central (12.0%), and lower inner (8.0%). The UOQ predominance aligns with higher glandular density and lymphatic drainage patterns. Site has practical implications for cosmesis, incision placement, sentinel node mapping, and radiation planning. Central lesions may necessitate nipple– areola complex considerations, while lower inner quadrant surgeries can influence post-op contour. Preoperative counseling should integrate quadrant-specific expectations.

Table 6: Site within Breast

Site	Number of patients	Percentage (%)
Upper outer quadrant	162	54.0
Upper inner quadrant	42	14.0
Lower outer quadrant	36	12.0
Lower inner quadrant	24	8.0
Central	36	12.0
Total	300	100.0

Graph 6: Site within Breast



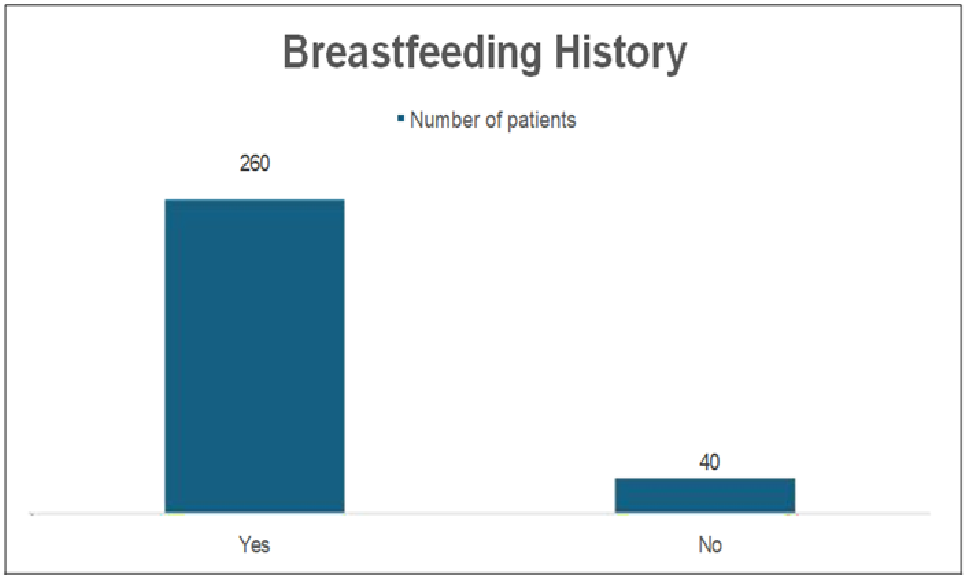
Breastfeeding History

Breastfeeding was common (86.7%), with 13.6% reporting no lactation history. High breastfeeding prevalence is generally associated with reduced lifetime breast cancer risk, though individual presentation depends on multiple modifiers (age, parity, genetics). In clinical workflow, recent or ongoing lactation can affect imaging interpretation and symptomatology. For young mothers, prioritize ultrasound, ensure safe biopsy pathways, and provide reassurance about evaluation during lactation.

Table 7: Breastfeeding History

History	Number of patients	Percentage (%)
Yes	260	86.7
No	40	13.3
Total	300	100.0

Graph 7: Breastfeeding History



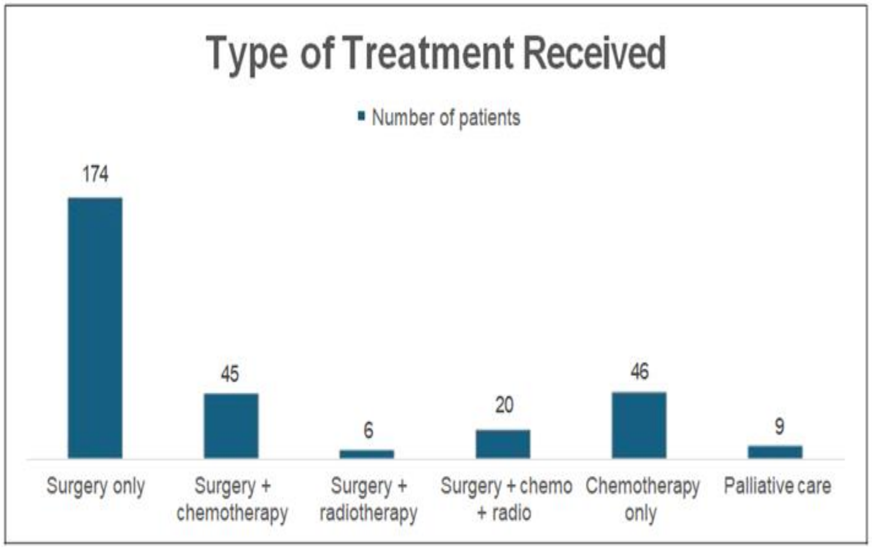
Type of Treatment Received

Most patients underwent surgery only (60.0%). Multimodality pathways included surgery + chemotherapy (15.0%), surgery + chemo + radiotherapy (6.7%), and surgery + radiotherapy (2.0%). Chemotherapy only (15.3%) and palliative care (3.0%) represent non-surgical approaches, likely reflecting advanced disease, comorbidity, or patient preference. Note: The summed counts (306) and percentages (≈102%) exceed totals, implying overlap or categorization at multiple time points. If categories are meant to be mutually exclusive, reconciliation is needed; if not, label as —patients may appear in more than one modality.

Table 8: Type of Treatment Received

Treatment modality	Number of patients	Percentage (%)
Surgery only	174	58.0
Surgery + chemotherapy	45	15.0
Surgery + radiotherapy	6	2.0
Surgery + chemo + radio	20	6.7
Chemotherapy only	46	15.3
Palliative care	9	3.0
Total	300	100.0

Graph 8: Type of Treatment Received



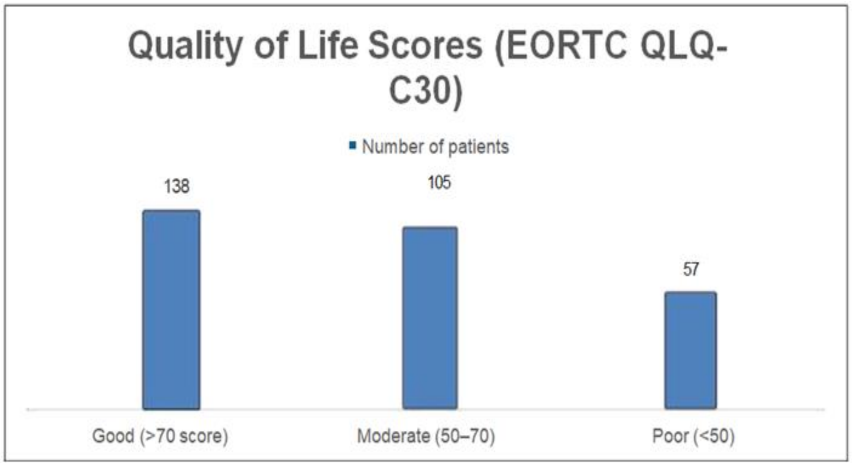
Quality of Life Scores (EORTC QLQ-C30)

At assessment, 46.0% reported good QoL (>70), 35.0% moderate (50–70),and 19.0% poor (<50). A one-in-five poor QoL burden highlights the need for proactive symptom control, rehabilitation, and psychosocial support. Embedding routine PROMs with rapid response (pain, nausea, fatigue, lymphedema) and social-financial counseling could uplift scores. Analyses stratified by stage, treatment modality, SES, and education will identify inequities and targets for supportive interventions across the care pathway.

Table 9: Quality of Life Scores (Eortc Qlq-C30)

QOL category	Number of patients	Percentage (%)
Good (>70 score)	138	46.0
Moderate (50–70)	105	35.0
Poor (<50)	57	19.0
Total	300	100.0

Graph 9: Quality Of Life Scores (Eortc Qlq-C30)



Discussion

This study aims to generate a comprehensive, real-world profile of women presenting with breast lumps in a resource-constrained setting and to determine how socioeconomic position shapes the clinical journey from first symptom to early outcomes. Specifically, it evaluates the association between socioeconomic status and (i) stage at presentation and initial treatment choice, and (ii) key process intervals—patient delay (symptom to first contact) and system delay (first contact to treatment)—while also describing educational level, occupation, marital status, symptom patterns, laterality and quadrant distribution, and menstrual/reproductive history. In parallel, it quantifies the diagnostic yield of FNAC/core biopsy, characterizes early treatment-related complications, and captures patient-reported quality of life using a standardized instrument. It establishes baseline metrics for pathway performance stage mix, time-to-biopsy/treatment, and adjuvant initiation—that can be tracked over time and compared across subgroups to identify bottlenecks and monitor improvement. It informs targeted interventions—one-stop triple assessment, case navigation and financial support for low-SES patients, extended-hours or outreach clinics for agricultural workers and homemakers, standardized receptor testing, and protocolized supportive care—that are directly responsive to observed barriers and toxicities. It provides actionable data to advocate for institutional and policy changes (ring-fenced diagnostic funds, transport vouchers, performance dashboards) that can shift detection earlier, increase treatment completion, and improve survivorship.

The study's aim is not merely descriptive; its significance lies in supplying the precise, locally grounded evidence needed to convert a symptomatic, late-presenting caseload into a faster, fairer, and more effective breast-care pathway.

Conclusion

This study delivers a comprehensive, real-world portrait of women presenting with breast lumps in a resource-constrained breast clinic and traces, with numerical clarity, how social determinants shape clinical trajectories and early outcomes. The demographic core is unmistakably young to midlife: almost one third are 21–30 years (31.67%) and a further quarter 31–40 years (23.33%), with premenopausal women forming 62.0% of the cohort. This age structure, combined with 86.7% reporting past breastfeeding and underscores the operational need to integrate reproductive counseling, lactation-aware imaging, and oncofertility discussions into routine pathways. Sixty percent of patients seek care after more than three months of symptoms, and a further 52.0% start treatment only after four weeks of system contact, a two-interval drag that amplifies disease burden, costs, and psychosocial stress.

Finally, it bears emphasizing that progress is plausible and measurable. If the proposed pathway reduces the share of patients presenting after three months from 60.0% to below 40%, and increases the proportion starting treatment within four weeks from 48.0% to above 70%, the stage profile should tilt toward I–II disease even within one to two years.

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