Factors influencing time to treatment initiation for breast cancer in Ethiopia

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Abstract

Breast cancer remains a major public health challenge in Ethiopia, where women often present late. This multi-centre cross-sectional study was conducted at three tertiary hospitals between among 458 women with histologically confirmed breast cancer. Using the accelerated failure time (AFT) models, we found that rural residence, low breast cancer literacy, traditional healer use, multiple healthcare visits (≥3), and lack of suspicion or referral from first providers were strongly associated with prolonged diagnostic and treatment delays. Targeted community education, strengthened referral pathways, and improved early diagnostic capacity are urgently needed to reduce delays and improve timely breast cancer care in Ethiopia.

Introduction

- Breast cancer mortality remains disproportionately high in LMICs—up to 40–60%—mainly due to delayed diagnosis and limited access to care.
- In Ethiopia, breast cancer is highly burdensome, and delays across the care pathway often lead to advanced-stage presentation and poorer outcomes.
- Breast cancer is a potentially treatable cancer if diagnosed at an early stage
- Limited cancer literacy, socio-cultural beliefs, weak referral systems, and poor access to diagnostic services major contributors to prolonged delays.
- Although Ethiopia has national guidelines aimed at improving early diagnosis, substantial delays continue to be reported.
- This study examines factors influencing delays across the entire breast cancer care continuum in Ethiopia

Methods and Materials

- Multi-center cross-sectional study was conducted .
- 458 women aged ≥18 years with histologically confirmed breast cancer who had initiated any form of cancer treatment.
- Data were collected using interviewer-administered questionnaire and a review of medical records between July and September 2024, in Ethiopia
- We analysed five care intervals using the Pathways to Treatment model, with factors categorized under Andersen's model.
- AFT models (Weibull & log-logistic) estimated Time Ratios with 95% CIs. Model fit used AIC/BIC; VIF < 5 confirmed no multicollinearity.

Results

- Over half (58.7%) presented with late-stage disease.
- Women with low breast cancer literacy experienced a median time to treatment (TTI) of 283 days.
- Use of traditional healing before diagnosis was associated with a prolonged median TTI of 385 days(Fig1).

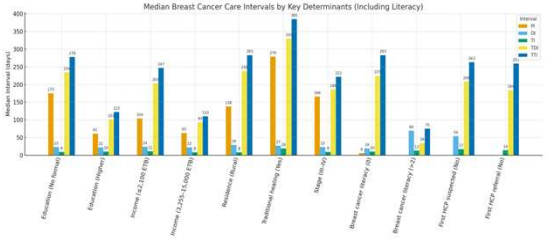


Figure 1: Comparison of Median Time Intervals (PI, DI, TI, TDI, TTI) Across Major Determinants of Breast Cancer Care

Results.....

Factors associated with the Patient Interval (PI):

- Women from rural areas had longer PI (TR = 1.84), and those treated at Black Lion Hospital also had longer PI (TR = 2.26).
- Seeking traditional healing before diagnosis had 2.2 times longer PI.
- Women with low literacy had 1.9–2.8 times longer PI
- A painless breast lump was associated with nearly a twofold increase in PI (TR = 1.95).

Factors associated with the Diagnostic Interval (DI):

- Women who visited three or more healthcare providers (HCP) before receiving a diagnosis had longer DI (TR = 3.13).
- If the first HCP did not suspect cancer, diagnosis time tripled (TR = 3.07).
- Patients managed at Black Lion Hospital had longer diagnostic intervals (TR = 2.09).

Factors associated with the Treatment Interval (TI):

- Women aged ≥60 years had shorter TI (TR = 0.62)
- Unmarried women experienced longer TI (TR = 1.46)
- Women from the lowest-income households had longer TI (TR = 1.48)
- Patients at Jimma University and Black Lion Hospital had shorter treatment intervals
- Women who sought traditional healers after diagnosis had 2.25 times longer TI (TR = 2.25)

- Lower breast cancer literacy, consulting traditional healers before diagnosis, absence of referral from the first HCP, and being managed at Black Lion Hospital were consistently associated with prolonged TDI and TTI .

Discussion

Delays in breast cancer care in Ethiopia were influenced by a combination of individual, socio-cultural, and health-system factors. Women with low breast cancer literacy, those using traditional healing, and those presenting with painless symptoms experienced longer delays across several intervals. Fragmented referral pathways, lack of cancer suspicion at first contact, and consulting multiple providers before diagnosis also contributed to prolonged diagnostic intervals. Rural residence and site-level variations further shaped timeliness, reflecting disparities in access and diagnostic capacity. Overall, the study demonstrates that delays arise from interconnected barriers throughout the care continuum rather than a single point of failure.

Conclusions

- Delays in breast cancer care in Ethiopia arise from multiple social, economic, and health-system barriers.
- Low breast cancer literacy, reliance on traditional healing, and weak referral pathways contribute to prolonged diagnostic and treatment intervals.
- Strengthening community awareness, engaging traditional healers, Health care worker capacity building for clinical breast examination, and expanding financial and diagnostic support are key to achieving timely, equitable breast cancer care.

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