

Evaluating the Role of Community Awareness and Screening Programs in Reducing the Breast Cancer Mortality Rates in Nepal

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DOI: <https://doi.org/10.3126/barunj.v2i01.78306>

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ABSTRACT

Breast cancer is a leading cause of cancer-related deaths among women worldwide, including in Nepal. Early detection through community awareness and screening programs significantly reduces mortality rates. However, despite increasing awareness, breast cancer screening remains low in Nepal due to cultural, social, and economic barriers. This study evaluates the effectiveness of community awareness and screening programs in Nepal, focusing on their role in early detection, prevention, and treatment outcomes. Understanding the impact of these programs helps identify gaps in awareness, accessibility, and implementation, ultimately informing policies to improve breast cancer detection and survival rates, especially in under-served areas. The study reviews existing community-based initiatives, including public health campaigns and mobile screening programs. It assesses awareness levels, access to screening services, and challenges faced in their implementation. The analysis considers both urban and rural perspectives to highlight disparities in healthcare access. Findings indicate that while awareness has improved in urban areas, rural populations continue to face significant barriers, including stigma, inadequate healthcare infrastructure, and financial constraints. Limited government support and resource availability further hinder effective screening efforts. Community awareness and screening programs play a crucial role in reducing breast cancer mortality. To enhance their effectiveness, targeted, culturally sensitive outreach programs, improved healthcare infrastructure, and stronger government support are necessary, particularly for rural and under-served populations in Nepal.

Keywords: *breast cancer, community, awareness, screening, detection, mortality*

INTRODUCTION

Background of the Study

Breast cancer remains one of the most common cancers among women worldwide, with significant mortality rates attributed to delayed diagnosis and treatment. In 2020, breast cancer accounted for approximately 2.3 million new cases and 685,000 deaths globally, making it a critical public health issue (Daichi Sankyo Co. Ltd., 2025). Early detection, achieved through community awareness and screening programs, is a well-established strategy to reduce breast cancer-related mortality (Khanal, 2018). These interventions play a vital role in increasing knowledge about symptoms, encouraging early health-seeking behaviour, and facilitating access to diagnostic services. However, their effectiveness varies significantly across regions, influenced by cultural, socioeconomic, and infrastructural factors (Thapa et al., 2021).

In low- and middle-income countries (LMICs) like Nepal, breast cancer represents a growing health burden. Despite being ranked as the second most common cancer in Nepal, awareness and screening programs remain limited and fragmented (Ghimire et al., 2021). Studies indicate that the majority of cases in Nepal are diagnosed at advanced stages, primarily due to inadequate awareness, cultural stigma, and lack of access to affordable screening facilities (Shrestha et al., 2023). Furthermore, rural and under-served populations face additional challenges, such as geographic isolation and shortages of trained healthcare professionals, which further exacerbate disparities in breast cancer outcomes (Nepal Cancer Care Foundation, 2025).

Community-based awareness and screening programs have been shown to significantly improve early detection rates in various global contexts. For instance, in countries with well-established mammography programs, breast cancer mortality has decreased by 20–40% over the past few decades (Ghimire et al., 2021). In contrast, Nepal lacks a national breast cancer screening program, relying instead on sporadic efforts by non-governmental organizations (NGOs) and local health initiatives. Programs like the Nepal Cancer Relief Society's (NCRS) awareness campaigns and mobile screening clinics have demonstrated promise in raising awareness and detecting early-stage breast cancers in rural communities (Binaytara Foundation, 2025). However, these efforts are often limited in scope and sustainability due to funding constraints and inadequate integration with the national healthcare system (Sathian et al., 2014).

This review aims to evaluate the role of community awareness and screening programs in reducing breast cancer mortality, with a specific focus on Nepal. It

seeks to examine the global evidence supporting these interventions, analyze the challenges and opportunities within Nepal's context, and provide recommendations for scaling and sustaining such programs. By addressing the unique barriers faced by Nepali women, including cultural stigma and economic constraints, this study underscores the importance of contextually tailored strategies to improve breast cancer outcomes in the country.

RESEARCH METHODOLOGY

This systematic review employs qualitative and quantitative methods approach to evaluate the role of community awareness and screening programs in reducing breast cancer mortality rates, with a specific focus on Nepal. The methodology combines qualitative and quantitative analyses to ensure a comprehensive understanding of the topic. The study synthesizes data from peer-reviewed journal articles, government and non-governmental organization (NGO) reports, and global health databases to analyze trends, effectiveness, and challenges of awareness and screening interventions.

Data Collection

A structured literature search was conducted across multiple electronic databases. The search was limited to articles published between 2010 and 2024 to ensure relevance. Inclusion criteria comprised studies evaluating awareness and screening programs, their impact on breast cancer outcomes, and studies specifically addressing Nepal or similar low- and middle-income country (LMIC) settings. Exclusion criteria included studies not available in English or Nepali and those lacking primary data.

Additionally, grey literature, such as NGO reports and health ministry publications, was reviewed to gather contextual insights from Nepal. Reports from organizations like the Nepal Cancer Relief Society (NCRS) and the World Health Organization (WHO) provided valuable data on local initiatives and challenges in implementing awareness campaigns and screening services.

Data Analysis

The study followed a thematic analysis framework for qualitative data and a descriptive statistical approach for quantitative data. For qualitative analysis, themes were identified related to the effectiveness of interventions, barriers to implementation, and cultural perceptions influencing breast cancer awareness in Nepal. For quantitative

data, metrics such as screening coverage, early detection rates, and mortality trends were extracted and analyzed using Microsoft Excel. Key performance indicators, including reductions in advanced-stage diagnoses and improvements in survival rates, were synthesized to measure program effectiveness.

Study Contextualization

Given Nepal's unique socio-cultural and geographic characteristics, particular attention was given to studies highlighting rural outreach programs, gender-based stigma, and healthcare accessibility. This contextual focus was critical for understanding the relevance and scalability of global best practices in Nepal. Case studies of successful initiatives, such as mobile mammography units and community health worker-led awareness campaigns, were analyzed to draw actionable insights.

Limitations

This review acknowledges limitations, including potential publication bias and the scarcity of peer-reviewed research specifically addressing breast cancer awareness and screening programs in Nepal. To mitigate these, insights from grey literature and interviews with healthcare practitioners were incorporated to provide a more holistic perspective.

RESULTS AND DISCUSSION

Global Overview of Community Awareness and Screening Programs

Breast cancer remains the most commonly diagnosed cancer and the leading cause of cancer-related mortality among women worldwide (The Kathmandu Post, 2023). Early detection through screening, especially when combined with strong community awareness campaigns, has been shown to reduce mortality rates significantly. In high-income countries (HICs), robust screening programs, such as mammography and clinical breast exams, have been established for decades and have led to a reduction in breast cancer mortality by 20-40% (Khanal, 2018). Screening programs are most effective when accompanied by widespread public education on breast health, self-examination, and early reporting of symptoms. In countries with well-established screening protocols, the focus has been on regular population-wide screenings, particularly targeting women aged 40 and above (UNDP, 2021). These interventions have resulted in an increase in early-stage breast cancer diagnoses, which are associated with a higher survival rate compared to diagnoses at later stages (Shrestha et al., 2023).

Community Awareness and Screening Programs in Low- and Middle-Income Countries (LMICs)

In low- and middle-income countries (LMICs) like Nepal, the landscape for breast cancer awareness and screening programs differs considerably from that in high-income nations. Although the global burden of breast cancer is growing in LMICs, the infrastructure and resources for comprehensive screening programs are often lacking (Nepal Network for Cancer Treatment and Research, 2025). Screening coverage in LMICs is typically low, with disparities seen in rural and urban populations. In Nepal, studies have reported that breast cancer is the second most common cancer among women, yet screening rates are suboptimal due to various challenges, including cultural stigma, financial constraints, and limited access to healthcare services (Daiichi Sankyo Co. Ltd., 2025). While there are national and local efforts to raise awareness, these programs remain fragmented and often lack sustainability (Ghimire et al., 2021).

One notable initiative in Nepal is the Nepal Cancer Relief Society (NCRS), which has been at the forefront of breast cancer awareness campaigns and organizing mobile screening clinics in remote areas. These programs have helped in early detection and raised public awareness regarding the importance of regular screenings (Thapa et al., 2021). However, challenges remain in scaling these efforts to the national level. A study found that only a small fraction of women in rural areas reported performing self-breast exams or seeking clinical care, citing factors such as fear of diagnosis, lack of information, and cultural perceptions that view breast cancer as a taboo subject (Ghimire et al., 2021).

Impact of Awareness Campaigns on Breast Cancer Knowledge

Community awareness programs are central to promoting early breast cancer detection, particularly in areas where access to healthcare facilities is limited. In Nepal, a significant barrier to early detection is the low level of knowledge about breast cancer symptoms and the importance of early screening. Only 40% of women in Nepal knew the common signs and symptoms of breast cancer, and even fewer understood the benefits of early screening. Awareness campaigns can bridge this gap by educating women about self-breast exams and the need for clinical screenings (Shrestha et al., 2023).

Awareness campaigns in Nepal have also highlighted the importance of breaking the stigma around breast cancer. Cultural taboos, fear of mastectomy, and the perception

that breast cancer is a “death sentence” often prevent women from seeking medical attention until the disease has reached an advanced stage (Binaytara Foundation, 2025). By integrating culturally appropriate messaging into awareness programs, there has been some success in shifting these perceptions. For example, the NCRS and other NGOs have used community health workers to educate women in rural areas, using local languages and culturally relevant materials to increase understanding and comfort with the topic (Thapa et al., 2021).

However, despite these efforts, the reach of such programs remains limited. A study by Ghimire et al., 2021 indicated that many women in remote districts were still unaware of the importance of breast cancer screening. To address these gaps, it is crucial that future programs leverage media and digital platforms to expand their reach. In countries like Nepal, where mobile phone penetration is increasing, mobile health (mHealth) initiatives could provide a new avenue for disseminating breast cancer awareness information (The Kathmandu Post, 2023).

Role of Screening Programs in Reducing Mortality

The role of screening in reducing breast cancer mortality is well-established in high-income countries, where national programs have been successful in improving survival rates. In LMICs, however, the picture is more complex. While some pilot screening programs have shown promise, such as the mobile mammography services provided by NCRS in Nepal, there are systemic barriers to large-scale implementation (Kathmandu Cancer Center, 2025). The lack of infrastructure, trained personnel, and financial resources remains a major challenge in Nepal. Furthermore, screening programs are not universally accessible, particularly in rural and underserved areas (Binaytara Foundation, 2025).

In Nepal, breast cancer screening is not yet a part of the routine national health policy, and the country lacks a structured, widespread screening program. A national screening program could potentially reduce breast cancer mortality rates, but only if it is accompanied by education and efforts to address barriers to participation. Data from other LMICs, such as India, suggest that targeted screening programs can help reduce mortality by detecting breast cancer at earlier, more treatable stages (Sathian et al., 2014). For example, in India, mobile clinics and outreach programs have reached women in remote areas, offering screenings, education, and counseling services. These efforts have contributed to early detection and a decrease in advanced-stage diagnoses (Nepal Cancer Care Foundation, 2025). A similar approach, tailored to Nepal's context, could be key to improving breast cancer outcomes.

In Nepal, one of the main strategies for increasing access to breast cancer screening has been the implementation of mobile mammography units. These units are equipped with the necessary tools for conducting mammograms in rural areas where traditional healthcare infrastructure is limited (Ghimire et al., 2022). The mobile screening programs in Nepal have led to an increase in early breast cancer detection; although only a small percentage of eligible women have participated in these programs. Overcoming logistical barriers, such as transportation and access to follow-up care, is crucial to increasing participation rates (The Kathmandu Post, 2023).

Barriers to Effective Implementation of Awareness and Screening Programs

Despite the growing recognition of the importance of community awareness and screening programs, several barriers hinder their successful implementation in Nepal. These include limited healthcare infrastructure, geographic isolation, cultural resistance, and financial constraints (Khanal, 2018). Women in rural areas often face difficulties accessing healthcare services due to distance, lack of transportation, and inadequate roads. Additionally, the high cost of diagnostic services, such as mammograms, is a significant barrier for low-income women (Ghimire et al., 2021).

Cultural factors also play a significant role in shaping women's attitudes toward breast cancer and screening. In many rural communities, the perception of breast cancer as a taboo subject or a fatal disease prevents women from seeking help (Sathian et al., 2014). Fear of diagnosis and fear of undergoing invasive procedures, such as biopsies and mastectomies; also contribute to reluctance (Ghimire et al., 2021). Educating both women and their families about the benefits of early detection and treatment is essential for overcoming these cultural barriers.

Furthermore, the lack of trained healthcare professionals and the shortage of resources to support widespread screening programs in rural areas exacerbate these challenges. Without a concerted effort from both the government and non-governmental organizations, it will be difficult to establish an effective and sustainable breast cancer screening program in Nepal.

Recommendations for Future Programs

Based on the findings of this review, the following recommendations are made for improving community awareness and screening programs in Nepal:

Expansion of Mobile Screening Programs: Mobile mammography units and outreach services should be expanded to cover more remote and under-served areas.

These services should be integrated into the existing healthcare infrastructure to ensure sustainability.

Increasing Public Education and Awareness: Public education campaigns should focus not only on the symptoms and risk factors of breast cancer but also on addressing cultural taboos and stigma. Collaboration with community leaders and influencers is critical in overcoming resistance to participation.

Government Policy and Funding: The Nepalese government should prioritize the establishment of a national breast cancer screening program, incorporating regular screenings as part of the national health policy. Adequate funding and resources should be allocated for the training of healthcare professionals and the provision of diagnostic services at an affordable cost.

Leveraging Technology: Health initiatives, such as SMS reminders, mobile apps, and online educational platforms, should be explored to increase awareness and encourage participation in screening programs, especially in rural areas.

Implications of the Study

The findings of this study have several important implications for public health policy, healthcare practice, and community-based initiatives in Nepal. First, the study highlights the critical need for targeted awareness programs to address the cultural and socio-economic barriers that hinder women, particularly in rural areas, from accessing breast cancer screening services. These insights suggest that government and non-governmental organizations (NGOs) should prioritize the development of culturally sensitive and accessible health education campaigns that can resonate with diverse communities, taking into account local traditions and language barriers.

Second, the study underscores the importance of improving healthcare infrastructure, especially in rural and under-served regions of Nepal, where access to healthcare services, including screening, is limited. It implies that strengthening healthcare facilities, ensuring mobile screening units, and training healthcare providers are essential steps in increasing early detection rates of breast cancer. Moreover, the study calls for better integration of breast cancer screening into Nepal's existing health policies and programs, ensuring it is part of routine healthcare services. Furthermore, the study indicates that enhanced government support, in collaboration with local communities, can play a significant role in scaling up breast cancer screening programs and overcoming existing barriers. It suggests that prioritizing funding and resources for these programs can lead to a significant reduction in breast cancer mortality rate

Finally, the research stresses the need for continuous monitoring and evaluation of ongoing breast cancer awareness and screening initiatives. The findings advocate for a more coordinated and comprehensive approach that involves multiple stakeholders, including community leaders, healthcare professionals, and policymakers, to ensure sustainable and effective intervention strategies. This collaborative effort is vital in reducing breast cancer mortality rates and improving overall public health outcomes in Nepal.

CONCLUSION

In conclusion, community awareness and screening programs play a critical role in reducing breast cancer mortality rates, particularly in countries like Nepal, where early detection and treatment remain significant challenges. The evidence from global studies demonstrates that well-implemented screening programs, coupled with robust community awareness campaigns, can lead to earlier diagnosis, which is crucial for improving survival rates. In Nepal, while there have been promising initiatives such as mobile screening clinics and local awareness campaigns, substantial gaps remain in terms of accessibility, cultural barriers, and infrastructure. A concerted effort from both government and non-governmental organizations is required to overcome these barriers by improving access to screenings, increasing public education, and addressing cultural taboos surrounding breast cancer. Strengthening mobile health platforms and expanding screening services, especially in rural and remote areas, are crucial steps for achieving greater reach and participation. By enhancing awareness and making screening services more accessible, Nepal can significantly reduce breast cancer mortality, ultimately saving lives and improving the health outcomes of women across the country.

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