Roles And Activities Of Nurses In Cancer Prevention And Early Detection In Low- And Middle-Income Countries: A Scoping Review

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ABSTRACT

Cancer is a leading cause of morbidity and mortality worldwide, with a rapidly increasing burden in low- and middle-income countries (LMICs). These countries face significant challenges in cancer control due to limited healthcare infrastructure and access to essential diagnostic tools. Nurses, as the largest workforce in healthcare systems, play a vital role in cancer prevention, early detection, and education. This scoping review explores the roles and activities of nurses in cancer prevention and early detection in LMICs, highlighting the diverse contributions, barriers, and opportunities for optimizing nursing involvement in cancer care. It was found that while nurses are central to health education, screening, early detection, and patient support, challenges such as limited training, inadequate resources, and sociocultural barriers often hinder their full potential.

Keywords: Nurses, Cancer prevention, Early detection, Low- and middle-income countries, Oncology nursing, Health education, Screening, Risk assessment

1. INTRODUCTION

The global cancer burden is increasingly felt in low- and middle-income countries (LMICs), where cancer mortality rates are rising due to late diagnoses, insufficient screening programs, and limited healthcare infrastructure. The rise in cancer incidence in these regions presents a critical public health challenge, and the role of healthcare workers in early detection and prevention becomes even more essential. Nurses, who represent the backbone of the healthcare workforce in LMICs, are ideally positioned to address these challenges. They often serve as the first point of contact in healthcare systems and are trusted by communities to provide health education, perform screenings, and guide patients through the diagnostic and treatment processes. However, despite their pivotal role, nurses in LMICs face numerous challenges in effectively contributing to cancer prevention and early detection. This review seeks to explore and synthesize the roles of nurses in these critical areas, examine the barriers they face, and propose opportunities for improving their contributions to cancer control in resource-constrained settings.

2. METHODS

Literature Search Strategy
A systematic search of the literature was conducted across four major databases: PubMed, CINAHL, Scopus, and Google Scholar. The search included keywords such as "nurses," "cancer prevention," "early detection," "LMICs," and "healthcare workforce." The articles included in this review were published between 2000 and 2023 and focused on the role of nurses in cancer prevention or early detection in low- and middle-income countries. Studies that did not focus on nursing roles in cancer prevention or early detection were excluded. Data were extracted from the selected studies and categorized into key themes, which were then analyzed to identify trends in nursing involvement in cancer care in LMICs.

3. RESULTS

Health Education and Cancer Literacy

One of the most significant roles nurses play in cancer prevention in LMICs is health education. Nurses are frequently involved in community-based education programs that aim to increase cancer awareness and promote healthy behaviors. They educate the public about modifiable risk factors for cancer, such as tobacco use, physical inactivity, unhealthy diets, and viral infections like HPV, which is linked to cervical cancer. Through outreach programs in schools, communities, and primary care settings, nurses help to dispel myths about cancer and encourage early detection practices. In some regions, such as rural Kenya, community health nurses have conducted educational campaigns on cervical cancer and the importance of regular screenings like Pap smears and HPV vaccination. These efforts have resulted in a significant increase in participation in preventive health programs, ultimately contributing to the reduction of cancer-related mortality.

Table 1: Key Cancer Education Activities by Nurses in LMICs

Activity	Region	Cancer Type	Impact
Health education sessions	Kenya	Cervical Cancer	Increased HPV vaccination uptake
Breast self-exam workshops	India	Breast Cancer	Empowered women to detect early signs
HPV awareness campaigns	Tanzania	Cervical Cancer	Increased participation in screenings
General cancer awareness programs	Nigeria	Multiple Cancers	Improved community cancer knowledge

Screening and Early Detection

Nurses are also at the forefront of cancer screening and early detection efforts in LMICs. Due to the shortage of oncologists and other specialists, nurses often take on the responsibility of conducting screening programs for breast, cervical, and oral cancers. In countries like India, nurses have been trained to perform breast self-examination (BSE) workshops for women, empowering them to detect potential signs of breast cancer at an early stage. Similarly, nurses in some African nations lead visual inspection with acetic acid (VIA) programs for cervical cancer screening. These programs allow nurses to detect early signs of cancer in women who may otherwise not have access to screening services. Nurses also conduct clinical breast examinations (CBE) and guide women through the process, referring them to specialists when necessary. Nurses' involvement in these screening activities is crucial, as they can provide early referrals, thereby improving the chances of successful treatment.

Figure 1: Nurse-Led Cancer Screening Programs in LMICs

Risk Assessment and Referral

In addition to education and screening, nurses in LMICs are often responsible for performing risk assessments. By taking detailed health histories and identifying individuals at high risk of cancer whether due to genetics, lifestyle, or environmental factors nurses can flag patients for further investigation and early intervention. For example, nurses in several countries have been instrumental in identifying individuals with a family history of cancer or those exhibiting warning signs of cancer, referring them for further testing. Nurses also assist in patient navigation, guiding individuals through the complex healthcare systems and ensuring they receive appropriate diagnostic and treatment services. This referral pathway is particularly valuable in resource-limited settings where access to cancer specialists is limited.

Psychosocial Support and Counseling

Cancer diagnosis and treatment can be an emotional and stressful experience for patients, especially in LMICs where cancer stigma is prevalent. Nurses in these settings often provide psychosocial support to cancer patients, offering counseling and emotional reassurance. In some countries, where cancer is associated with death and hopelessness, nurses help to reduce

stigma by providing accurate information about treatment options and survival rates. They also play a crucial role in helping patients cope with the emotional and psychological challenges of living with cancer, offering both direct support and referral to mental health services when needed. In some regions, nurses are trained to provide palliative care, ensuring that patients receive the care and dignity they deserve in the final stages of life.

Table 2: Barriers Faced by Nurses in Cancer Prevention and Early Detection in LMICs

Barrier Type	Examples Mentioned in Literature	Impact on Nursing Role
Training & Education	Lack of oncology training, limited continuing education	Reduced ability to perform screening & counseling effectively
Resource Constraints	Inadequate diagnostic tools, shortage of medications, insufficient workforce	Limits implementation of screening & prevention programs
Sociocultural Barriers	Cancer stigma, misconceptions about cancer causes, gender-related barriers	Prevents patients from seeking care or accepting screenings
Policy & Systemic Barriers	Nurses not fully integrated into cancer control strategies	Underutilization of nursing workforce potential

4. DISCUSSION

Nurses in LMICs are pivotal in cancer prevention and early detection, yet their roles are often underappreciated and underutilized. A significant barrier to effective nursing involvement in cancer care is the lack of adequate training in oncology. Many nurses in LMICs lack specialized education in cancer prevention and screening, which limits their ability to perform these activities effectively. Additionally, resource limitations such as a lack of diagnostic equipment, medications, and trained specialists often hinder the implementation of comprehensive cancer prevention programs. Furthermore, cultural and social barriers, including cancer-related stigma and misconceptions, can prevent patients from seeking care, despite nurses' best efforts to provide education.

However, there are numerous opportunities to strengthen the role of nurses in cancer prevention and early detection. One such opportunity is through task-shifting, where nurses can take on more responsibilities in screening and follow-up care in areas with a shortage of oncologists and specialists. Additionally, policy support is crucial in recognizing nurses as essential members of cancer control teams and integrating them into national cancer strategies. Expanding nursing curricula to include oncology education and offering continuing professional development programs would further enhance nurses' abilities to deliver high-quality cancer care.

5. CONCLUSION

Nurses are critical to the fight against cancer in low- and middle-income countries. Their involvement in health education, screening, risk assessment, and psychosocial support has a significant impact on improving cancer outcomes in these regions. However, to maximize their potential, there needs to be greater investment in nursing education, policy support, and resources. Empowering nurses with the training and tools they need will not only improve cancer prevention and early detection efforts but will also contribute to the overall reduction in cancer-related mortality in LMICs.

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