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Scoping Review in Public Health

A scoping review of barriers within the cancer care continuum: Addressing screening, diagnosis, and treatment disparities for an equitable future

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Abstract

Introduction: Health equity within the cancer care continuum remains an underexplored concept. To achieve optimal health outcomes at the population level, it is essential to explore health equity and address the disparities embedded within cancer care. Identifying existing barriers is a vital step in understanding the breadth and depth of implementing equitable approaches. This will provide insights into the types of approaches needed to address these disparities.

Methods: This scoping review examines barriers related to cancer screening, diagnosis, and treatment that disproportionately impact underserved and marginalized communities.

Results: The findings indicate that recurring barriers across the cancer care continuum include low health literacy, communication-related challenges, and language proficiency. Specific barriers to diagnostic programs include poor coordination of care, long wait times, and a lack of trust in primary care providers. Addressing these inconsistencies is crucial for the conceptualization and implementation of equitable approaches to eliminate disparities within the cancer care continuum.

Discussion: The review highlights barriers such as low health literacy, language proficiency issues, and poor coordination of care significantly impact cancer outcomes. Tailored interventions, such as culturally appropriate health education, improved patient-provider communication, and integrated care coordination, are essential for addressing these barriers. By implementing these strategies, health equity can be enhanced, leading to better health outcomes for all population segments.

Take-home message: To optimize health outcomes for all individuals, cancer control programs must encompass the full spectrum of diversity within the population. A comprehensive understanding of the obstacles marginalized individuals encounter in accessing care is essential, as it facilitates the implementation of tailored interventions. Consequently, this approach fosters improved health outcomes across the entire population.

Keywords: barriers to screening; barriers to diagnosis; barriers to treatment; health equity; disparities; cancer care; and cancer prevention.

INTRODUCTION

Health equity is achieved when all population members can optimize their health potential [1]. Eliminating systemic, social, and environmental barriers is critical to ensuring all individuals have access to equitable health [1]. Health equity is an essential concept embedded in the cancer care continuum, necessitating addressing cancer-related inequities in screening, diagnosis, and treatment practices, as disparities exist across underserved and marginalized populations [2-3]. Such inequities result in delays in diagnosis, limited treatment options, and high mortality rates for preventable and treatable cancers [4-6]. Prioritizing health equity within the current cancer care landscape ensures that all members can access equitable care for positive health outcomes. Policies, research, and educational practices promoting and enforcing equitable cancer care are necessary for improving cancer-related health outcomes [3]. Future initiatives must focus on equal access to care, eliminating structural barriers, and increasing health equity awareness [3].

Globally, the past decade has seen significant gains in cancer prevention, detection, and treatment, decreasing cancer incidence and mortality rates [7-8]. However, despite these trends, detection, diagnosis, and treatment disparities persist based on geographic location, socioeconomic status, race/ethnicity, and sex/gender [7]. For example, mammography rates are lower among women of lower socioeconomic status (SES) than those of higher SES [9]. More specifically, 51.4% of women from lower SES and 72.8% from higher SES reported having a mammogram within two years [9]. Additionally, African American women have disproportionately higher breast cancer mortality rates and are more likely to be diagnosed with advanced stages of cancer, reducing their treatment options [10]. The homogenous nature of cancer control programs excludes specific population segments, widening the health equity gap.

Although the literature documents the persistence of barriers preventing equitable cancer care outcomes, barriers related to cancer screening, diagnosis, and treatment remain undocumented [10]. Identifying these barriers is imperative for ensuring all cancer patients receive optimal care.

This review aims to identify barriers related to cancer screening, diagnosis, and treatment practices to ensure equitable cancer care for all population members. The guiding question of this review is: What are the barriers to cancer screening, diagnosis, and treatment practices? Answering this will provide better direction for future research initiatives and allow evidence-based practices to increase screening and early diagnosis, reduce cancer incidence rates, and improve health outcomes.

METHODS

Study design

This scoping review was conducted to identify and map the existing literature on barriers within the cancer care continuum. The methodological framework followed the guidelines outlined by Arksey and O'Malley [11] and was further refined using recent advancements in scoping review methodology by the Joanna Briggs Institute (JBI) [12]. This review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [13].

Search strategy

A comprehensive search strategy was developed in consultation with a research librarian to ensure the identification of relevant literature. The databases searched included PubMed/Medline, Scopus, and Web of Science. The search was conducted in July 2023 and included articles published from inception to the time of the search. The search strategy was

designed to capture a wide range of studies using a combination of controlled vocabulary (e.g., MeSH terms) and keywords related to cancer care, barriers, screening, diagnosis, treatment, and health equity.

Inclusion and exclusion criteria

Inclusion Criteria

- *Population:* Studies involving individuals from underserved and marginalized communities.
- *Concept:* Studies identifying cancer screening, diagnosis, and treatment barriers.
- *Context:* Studies conducted in various healthcare settings globally.
- *Types of Evidence Sources:* Peer-reviewed articles, systematic reviews, qualitative and quantitative studies, and gray literature such as reports and conference proceedings.
- *Language:* Articles published in English.

Exclusion Criteria

- Studies focusing solely on clinical aspects of cancer without addressing barriers to care.
- Articles that do not provide sufficient data to identify specific barriers.
- Editorials, commentaries, and opinion pieces without empirical data.

Search process

The initial search was conducted in January 2024, with updates in March 2024 to include newly published studies. Two reviewers independently screened titles and abstracts. Full-text articles were retrieved and assessed for eligibility. Discrepancies in article selection were resolved through discussion or consultation with a third reviewer.

Data extraction

A standardized data extraction form was developed and piloted. Data extracted included:

1. *Bibliographic Information:* Author(s), year of publication, and journal.
2. *Study Characteristics:* Geographical location, study design, sample size, and population characteristics.
3. *Barriers Identified:* Specific barriers to screening, diagnosis, and treatment.
4. *Outcomes:* Key findings and recommendations.

Data analysis and synthesis

The data were analyzed using a narrative synthesis approach, allowing for the identification of common themes and patterns across the studies. The barriers were categorized based on the stage of the cancer care continuum (screening, diagnosis, treatment). Frequencies of barriers and their contexts were tabulated. Additionally, thematic analysis was used to identify overarching themes and insights into how these barriers impact health equity.

Quality Appraisal

Although formal quality appraisal is not a mandatory component of scoping reviews, we assessed the methodological quality of included studies using the Mixed Methods Appraisal Tool (MMAT) [14] to ensure a comprehensive understanding of the existing literature's strengths and limitations.

RESULTS

This scoping review identified and synthesized barriers within the cancer care continuum, focusing on screening, diagnosis, and treatment. The findings highlight recurring barriers that disproportionately impact underserved and marginalized communities, contributing to health disparities in cancer outcomes. The results are organized into three main sections: barriers to screening, barriers to diagnosis, and barriers to treatment.

Barriers to screening

The studies identified multifaceted barriers to cancer screening, including financial constraints, low health literacy, time constraints, language barriers, and a lack of culturally sensitive resources. Cost, location of healthcare facilities, and healthcare staff attitudes significantly hinder screening uptake, particularly among low socioeconomic and immigrant populations.

Table 1. Barriers to screening (n = 13).

Authors and year	Geographical Location	Study Design	Findings
Lim & Ojo [11]	Sub-Saharan Africa	Systematic review	Cost, location of healthcare facilities, time required, and staff attitudes hinder screening uptake.
Kim et al. [12]	United States	Quantitative study	Health literacy and primary care are crucial for cervical cancer screening awareness.
Lee [13]	United States	Qualitative study	Financial constraints, time, and language barriers result in low screening uptake.
Fang et al. [14]	United States	Review article	Poor health literacy, preconceptions of screening, and systematic access issues impede screening.
Hislop et al. [15]	Canada	Qualitative study	Barriers for Chinese women include poor English proficiency, lack of culturally sensitive resources, and screening anxiety.
Kagawa & Pourat [16]	United States	Quantitative study	Lack of coverage and low socioeconomic status lead to low screening uptake.
Taylor et al. [17]	United States	Quantitative study	Low health literacy, lack of a primary physician, and cultural insensitivity hinder screening.
Cheng et al. [18]	United States	Survey	Limited English proficiency increases challenges in accessing healthcare services.
De Alba & Sweningson [19]	United States	Quantitative study	Hispanic women with low English proficiency have lower testing referral rates and are more likely to be overdue for testing.
Bruce et al. [20]	United States	Qualitative study	LEP patients face barriers such as a lack of understanding of screening, unawareness of services, and navigation difficulties.
Joung et al. [21]	United States	Prospective study	Low screening rates for colorectal and cervical cancer due to low health literacy and access issues.
Rimer et al. [22]	United States	Report	Patient, provider, and system-related challenges complicate informed decision-making in screening.
Yarnall et al. [23]	United States	Quantitative study	Physicians need 7.4 hours per day to provide adequate preventative services, indicating significant time constraints.

Barriers to diagnosis

Barriers to timely cancer diagnosis were predominantly related to access to primary care, health literacy, and the quality of the patient-care-provider relationship. Delays in diagnosis were often attributed to challenges in scheduling appointments, long wait times, geographical barriers, and poor coordination of care. Stigma and mistrust of healthcare providers also emerged as significant factors.

Table 2. Barriers to Diagnosis (n = 6).

Authors and year	Geographical Location	Study Design	Findings
Neal et al. [24]	Worldwide	Systematic review	Delays in diagnosis lead to severe symptoms, poor survivorship, and low well-being.
Richards et al. [25]	Worldwide	Systematic review	Strong association between delayed diagnosis and poorer survivorship outcomes.
Brand et al. [26]	Worldwide	Systematic review	Barriers include health literacy, access to primary care, inaccurate diagnoses, and poor care coordination.
Cassim et al. [27]	Worldwide	Systematic review	Scheduling challenges, appointment availability, and poor patient-care provider relationships delay diagnosis.
Ambroggi et al. [28]	United States	Narrative review	Geographical proximity to healthcare facilities significantly affects diagnosis timeliness.
Schabath & Cote [29]	United States	Report	Future oncology research needs to address racial, ethnic, and LGBTQ inequalities.

Barriers to Treatment

Barriers to cancer treatment included financial constraints, lack of health insurance, low health literacy, and insufficient social support. Fragmented healthcare systems and long wait times for treatments like radiation therapy were highlighted. Additionally, specific challenges, such as understanding treatment options and managing side effects, were more pronounced among patients with low health literacy.

Table 3. Barriers to treatment (n = 5).

Authors and year	Geographical Location	Study Design	Findings
Ward et al. [30]	United States	Quantitative study	Financial constraints and lack of coverage impede timely care and treatment.
Miller et al. [31]	United States	Quantitative study	Fragmented healthcare, poor coordination, and insufficient representation contribute to treatment disparities.
Hendren et al. [32]	United States	Quantitative study	Lack of social support, uninsurance, financial constraints, and communication issues hinder access.
Gillan et al. [33]	Canada	Systematic review	Distance and wait times affect access to radiation treatment, leading some patients to forgo therapy.
Bourgeois et al. [34]	Canada	Qualitative study	Low health literacy leads to difficulties in understanding treatment, following procedures, and managing side effects.

These tables summarize the included studies, categorizing them by the barriers identified in screening, diagnosis, and treatment within the cancer care continuum.

DISCUSSION

Barriers to screening

Significant resources have been invested in implementing primary and secondary care preventative measures to reduce cancer incidence rates and increase screening uptake [15]. However, the optimization of cancer-related preventative measures remains low, necessitating the identification of barriers that impede utilization to improve cancer-related health outcomes. Lim & Ojo [15] found that the cost of healthcare services, the location of healthcare facilities, the time required to access care, and healthcare staff's attitudes are significant barriers to cervical cancer screening uptake.

Other factors identified in the literature contributing to poor screening uptake include cost, lack of health insurance, language barriers, and infrequent visits to primary care providers [16-18]. Screening rates are lower among newcomers compared to non-newcomers, primarily due to difficulties with language, access, and lack of culturally sensitive resources [19-21]. Limited language proficiency has been heavily documented as a hindrance to preventative health-seeking behaviors within the United States [22-23]. Bruce et al. [24] note that looking solely at sociodemographic factors does not comprehensively explain why patients with limited English proficiency are less likely to engage in preventative cancer screening behaviors. Examining language independently provides better insight into health disparities in cancer screening [24].

The type of cancer being screened for also introduces unique challenges. For instance, Bruce et al. [24] report that patients with limited English proficiency often struggle to understand the practices around undergoing a colonoscopy for colorectal cancer and frequently decline the procedure. Other factors influencing preventative-seeking behavior among these patients include knowing where to access care, scheduling appointments, and effectively communicating health concerns to their care provider [18]. There is also a growing need to increase the population's knowledge about when and how often specific cancer screenings should be done. For example, women informed about the recommended timeframe for Pap tests had higher screening rates than those unaware of the suggested intervals [18]. This underscores the importance of health education in increasing the uptake of preventative measures such as cervical cancer screening.

Addressing barriers to screening is pivotal for early detection, preventing late-stage cancers, and reducing mortality rates [25-27]. Recommended interventions to increase screening utilization include virtual options, less intrusive screening methods, and culturally competent care [24]. Despite the efforts to implement primary and secondary preventative measures, barriers such as cost, lack of health insurance, and language barriers continue to exist, reducing the effectiveness of these measures and limiting population-level gains.

Barriers to diagnosis

Cancer detection is crucial in the cancer care continuum, as timely care significantly increases survival rates. Prompt detection reduces mortality rates for various cancers, including breast, colorectal, brain, neck, prostate, and bladder cancers [28,29]. However, barriers to diagnosis can result in late-stage diagnosis and mortality [29]. Identifying these barriers is critical for improving early diagnosis programs and cancer control strategies.

Brand et al. [30] identified nine barriers to early cancer diagnosis in their systematic review. The predominant barriers included health literacy and knowledge about cancer risk factors and symptoms. Access to primary care was another significant barrier, as patients struggled to book appointments and faced travel-related challenges [30]. The studies did not specify whether these difficulties were due to the limited availability of appointment slots or challenges navigating the booking process. This distinction is crucial for developing appropriate interventions. Inaccurate diagnoses were also a barrier, as physicians often ruled out or failed to consider cancer as a possible diagnosis, leading to delays in detection [30]. Poor coordination of care further delayed referrals for treatment after detection [30]. Additional barriers included geographical, financial, and sociocultural factors, limited access to diagnostic resources, and cancer-related stigma [30].

Similarly, Cassim et al. [31] found that several factors delay cancer detection, such as scheduling challenges, availability of appointments, delays in visiting primary care providers, appointment wait times, and long referral times. These barriers were common across several national health systems [31]. Developing solutions to these common barriers would improve cancer burden alleviation globally. The quality of the patient-care provider relationship was also identified as a strong predictor of timely diagnosis. Lack of trust often led patients to withhold health status details or delay seeking care until symptoms intensified [31]. Strengthening these relationships is essential to reduce the lag between symptom onset and diagnosis.

Geographic proximity to care is another recurring theme. Ambroggi et al. [32] found that patients traveling longer distances for care were often diagnosed at later stages. Similarly, rural patients were more likely to receive late-stage diagnoses than urban patients [32]. Addressing distance-related barriers can involve remote care options and increasing the availability of services and resources.

Despite tremendous progress in establishing effective cancer detection practices over the last decade, these gains are not fully realized due to persistent barriers. Developing tailored interventions to address diagnostic barriers is critical for improving cancer management strategies and increasing survivorship.

Barriers to treatment

Advances in oncology have significantly improved cancer survivorship due to the availability and advances in treatment options [34]. However, such gains are not experienced equally across all populations due to disparities. For example, African American patients have lower surgery rates compared to Caucasian patients [35]. Ensuring equitable cancer care and identifying treatment-related barriers are crucial for reducing disparities and ensuring gains are experienced across all populations [35].

Hendren et al. [36] examined barriers to cancer care and found that communication, limited support, and lack of medical insurance coverage impeded patients' access to treatment. Participants reported difficulties in asking questions about their treatment, limited familial or spousal support, and challenges completing insurance documentation [36]. Addressing these challenges can reduce disparities among ethnic groups and ensure equitable access to cancer care. Most literature focuses on identifying barriers to screening and diagnosis, with limited studies describing barriers to specific treatments [37]. However, Gillan et al. [37] identified distance and wait times as significant barriers to radiation treatment, with some patients forgoing treatment due to prolonged wait times.

Addressing barriers to cancer treatment is vital as it affects treatment adherence. Some barriers have a ripple effect, making it critical to ensure all patients have access to high-quality oncology care. Bourgeois et al. [38] found that low health literacy negatively impacts treatment trajectories. Patients with low health literacy struggle to comprehend important health information, follow treatment procedures, manage side effects, and access additional resources [38]. This results in poor treatment adherence. Healthcare providers often fail to recognize patients with low health literacy and use technical language, hindering the patient's ability to participate actively in their treatment plan [38]. Delays in understanding their condition's severity and timely treatment's importance can have severe implications, potentially leading to rapid disease progression [38]. These challenges are further compounded among patients with comorbidities [38]. Addressing health literacy is crucial for improving treatment adherence and survivorship.

Study limitations

This study has certain limitations. Including all cancer types focuses on examining barriers across the entire cancer continuum. However, recognizing the heterogeneity among different cancer types is essential, as specific barriers may vary. Future research should aim to identify barriers unique to each cancer type, enabling tailored interventions. Such targeted strategies will likely yield significant improvements in survivorship and reductions in mortality. Additionally, including papers

by a single reviewer increases the risk of bias. Despite these limitations, this study provides valuable insights into the barriers within the cancer continuum that must be addressed to achieve optimal health outcomes across different population segments.

Implications of the review

Over the last decade, the cancer care continuum model has achieved several successes. However, not all populations have experienced these outcomes [34]. Barriers to cancer screening, diagnosis, and treatment prevent optimal cancer outcomes. The findings of this review illustrate that low health literacy, communication-related challenges, and language proficiency are often mentioned in the literature as barriers perpetuating disparities within the cancer care continuum. Introducing culturally appropriate health education materials in multiple languages to serve patients from different communities can help reduce communication barriers [39]. To improve understanding and comprehension, oncologists should avoid medical jargon when explaining procedures and treatments to patients [40]. An effective practice commonly used in medicine is the teach-back method, where the provider asks the patient to explain their diagnosis or treatment in their own words to demonstrate understanding [40]. Implementing health literacy programs effectively increases knowledge and treatment adherence among cancer patients [40].

Furthermore, the findings illustrate that diagnostic programs must capture underserved populations by addressing barriers such as poor coordination of care, wait times, and lack of trust in primary care providers. Integrating care coordinators within the cancer care continuum to assist patients with booking appointments and directing them to support services can improve care coordination [41]. Establishing trusting relationships between patients and primary care providers is critical for prompt screening and diagnosis. Trusting relationships are established when patients feel heard by their physicians, their knowledge and experience about their illness are validated, and they play an active role in their treatment process [42]. Physician training focusing on patient-centered care can improve patient-provider dynamics.

This review addresses a gap in the literature by identifying inconsistencies within cancer screening, diagnosis, and treatment programs that disproportionately impact underserved and marginalized populations. There is a great need for the conceptualization of equitable approaches within oncology, and addressing the barriers outlined in this study is a significant cornerstone of this process [14]. Integrating tailored approaches reflecting the population's heterogeneity can effectively eliminate disparities and achieve optimal gains within the field of oncology. Future research initiatives should focus on conceptualizing equitable approaches within a cancer care continuum model.

CONCLUSION

This review underscores the need for comprehensive research to provide insights into barriers to specific treatments within the cancer care continuum. Identifying and eliminating these barriers is crucial for increasing treatment adherence and ensuring equitable access to high-quality oncology care. The findings highlight that low health literacy, communication-related challenges, and language proficiency are significant barriers that perpetuate disparities in cancer screening, diagnosis, and treatment.

To achieve optimal gains in oncology, it is imperative to implement equitable approaches that address these disparities. Tailored interventions that reflect the population's diverse needs can help eliminate barriers and improve cancer-related health outcomes. Future research initiatives should focus on developing and conceptualizing equitable approaches within a cancer care continuum model, ensuring that all individuals can access the best possible care regardless of their background.

Implementing culturally appropriate health education materials, avoiding medical jargon, and employing methods like the teach-back technique can improve patient understanding and treatment adherence. Additionally, integrating care coordinators and fostering trusting relationships between patients and primary care providers are essential to achieving health equity in cancer care.

Overall, this review highlights the urgent need to address the inconsistencies and barriers within cancer screening, diagnosis, and treatment programs that disproportionately impact underserved and marginalized populations. By focusing on equitable approaches, the field of oncology can move towards a more inclusive and effective cancer care continuum, ultimately improving health outcomes for all.

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