Disparities in Breast Cancer Diagnostics

Subjects: Health Policy & Services

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Access to medical imaging is pivotal in healthcare, playing a crucial role in the prevention, diagnosis, and management of diseases. However, disparities persist in this scenario, disproportionately affecting marginalized communities, racial and ethnic minorities, and individuals facing linguistic or cultural barriers.

Keywords: breast neoplasms ; radiology ; healthcare inequities ; health policy ; cultural competency

1. Introduction

Securing access to medical imaging is crucial in the promotion and preservation of health, the prevention and management of diseases, the reduction of avoidable disabilities and premature mortality, and the realization of health equity. Regrettably, substantial discrepancies in accessing healthcare and medical imaging services persist, with a disproportionate impact on vulnerable populations.

Cancer is potentially the most manageable disease, and it is currently the first or second most common contributor to premature mortality in most countries of the world. Furthermore, cancer incidence is predicted to double between 2020 and 2070 [1]. The greatest increases are predicted in lower-resource settings, and survival rates in developing countries are often half those of developed countries [2][3]. Breast cancer accounts for 15.5% of all cancer deaths globally and it is the world's most prevalent cancer. At the end of 2020, 7.8 million people were living with the diagnosis of breast cancer, with a mean global incidence of 47.8/100,000 and mortality of 13.6/100,000 [4]. The risk factors for breast cancer are more prevalent in developed countries and the incidence of breast cancer is increasing globally, in line with global development. Mortality rates in countries with a high human development index are low compared to the developing world. Most strikingly, South Korea and Fiji have a similar incidence of breast cancer at approximately 66.0/100,000; however, the mortality rate in South Korea is 6.4/100,000, compared with 41.0/100,000 in Fiji. Nevertheless, breast cancer is one of the most preventable and curable diseases: it can be detected using imaging in the subclinical stage and judicious use of medical imaging in breast cancer screening programs has been shown to have positive effects on morbidity and mortality, offsetting the risks associated with investigations [5][6]. Therefore, the reasons behind the disparities are multifactorial, with imaging playing a key role in detection and treatment [4][7]. One major issue worldwide is the lack of access to healthcare services in low-income and marginalized communities [2][7][8]. These populations often face a variety of barriers to accessing care, including lack of transportation, limited health insurance coverage, and inadequate availability of healthcare providers in their area. As a result, they may not receive timely preventative interventions or treatment for illnesses, leading to more severe health problems [9].

Access to medical imaging, such as mammography, ultrasound, and Magnetic Resonance Imaging (MRI), is also an area where inequalities exist [7]. Some patients may face long wait times for imaging services or are unable to access the services at all due to geographic or financial constraints. Such delays in diagnosis and treatment can significantly impact health outcomes for breast cancer patients.

Furthermore, there are also racial and ethnic disparities in access to medical imaging, with marginalized and low-income populations and ethnic minorities not receiving the information for timely preventative care or the treatment they need, leading to more severe health complications [10].

2. Fund Scientific Mobility and Include Under-Represented Countries in Studies and Artificial Intelligence (AI) Data Capture

In health care policies, addressing intricate challenges necessitates collaborative efforts and shared approaches to identify best practices, standardize them, and subsequently disseminate them for the enhancement of patient care [11]. Scientific mobility is defined as the physical and intellectual exchange of radiologists and researchers across international

borders, encompassing participation in exchange programs, fellowships, collaborative research, and virtual learning opportunities. This initiative aims to foster a global exchange of knowledge, skills, and practices in radiology, significantly benefiting both the individuals involved and the broader medical community [12].

Over the past decade, international scientific mobility has witnessed significant growth in both the European Union (EU) and the United States, encompassing medical students, academic faculty members, and postgraduate medical trainees [12][13]. This growth aligns with the EU's ambition to become a leading knowledge-based economy, and the US universities' prominence in global higher education [14]. As part of this vision, the EU has issued recommendations to promote mobility, emphasizing a broader perspective encompassing enhanced job opportunities, reduced poverty levels, and the free movement of people and ideas, implementing guidelines that facilitate the mobility of researchers across various European academic centers [14]. However, the implementation of effective scientific mobility programs is fraught with challenges, primarily due to the scarcity of funding and institutional limitations [15]. Implementing policy changes necessitates robust leadership, revised governance frameworks, and heightened institutional independence. Within the radiology domain, global entities like the Radiological Society of North America (RSNA) and the European Society of Radiology (ESR) can assume a pivotal role in engaging local centers in international scientific initiatives [12]. By offering support and resources, these societies can ensure that individuals from underrepresented regions are included in global radiology initiatives. This inclusion not only enriches the individuals' expertise but also contributes to a more comprehensive understanding of medical imaging and diagnosis worldwide [12]. Moreover, international training opportunities facilitated by these societies contribute to breaking down barriers and building bridges between different cultures and healthcare systems. The exchange of knowledge, techniques, and experiences between radiologists from various parts of the world enriches the collective understanding of medical imaging and diagnosis, leading to more comprehensive and inclusive healthcare solutions. This kind of scientific mobility could be co-funded by departments through the clinical income trainees generate by spending a percentage of their time delivering clinical radiology aligned to the host unit's financial strategy [15].

Academic institutions offer fellowships in global radiology, focusing on training radiologists in addressing healthcare needs in low-resource settings [16]. These fellowships often include rotations in underserved areas, both domestically and internationally.

Exchange programs between institutions in high-income and low-income countries enable radiologists to experience healthcare delivery in vastly different contexts. For instance, the exchange program between the Massachusetts General Hospital and institutions in sub-Saharan Africa [17] allows participants to engage directly with the challenges of delivering radiology services in resource-limited settings: this firsthand experience is crucial in forming advocates who understand the nuances of healthcare disparities and can effectively lobby for policy changes that promote diversity and cultural competence in healthcare. The mobility of researchers and clinicians facilitates the inclusion of remote and underrepresented communities in clinical studies indeed: such inclusion is crucial to ensure that research outcomes are generalizable and applicable to diverse populations.

A program called "Radiologists Without Borders" [18] sends radiologists to underserved areas where they not only provide essential diagnostic services but also engage in teaching and capacity-building activities. By working in diverse cultural settings, these radiologists gain a deeper understanding of the unique healthcare challenges faced by these communities. The program has been instrumental in advocating for improved diagnostic resources in these regions, directly influencing policy changes aimed at increasing resource allocation. Radiologists and researchers involved in such initiatives can share their experiences and strategies through publications, conferences, and policy discussions, thereby contributing to the formulation of comprehensive and inclusive imaging guidelines.

In addition to being the first step toward policy changes for the radiology of tomorrow, mobility remains a crucial factor in the personal growth and future employability of medical researchers, promoting the appreciation of diversity and the ability to effectively engage with and embrace other cultures, which is fundamental for fostering high-quality doctor-patient relationships. Working in different cultural contexts enhances radiologists' ability to communicate effectively with patients from various backgrounds: such improved communication is essential for advocating for policies that are sensitive to cultural differences, thereby enhancing patient care and compliance with screening programs. Moreover, scientific mobility fosters international collaborations, leading to the exchange of best practices and innovative approaches to cancer imaging: such exchanges can inspire new policy initiatives as learning from countries where successful breast cancer screening programs have been implemented can inform policy changes in regions struggling with accessibility and affordability issues [19].

3. Ensure Cultural Competency

Cultural competence is a key aspect of providing high-quality healthcare to diverse patient populations. The concept of cultural competence involves understanding the unique cultural, social, and linguistic needs of patients and tailoring healthcare services accordingly [20]. There is growing recognition of the importance of cultural competence in healthcare, including in radiology [21].

There are several strategies that radiologists can use to enhance their cultural competence and provide culturally sensitive care to diverse patient populations. One of the most important strategies is ongoing cultural education and training: this involves learning about language, customs, traditions, and beliefs of the patient population they serve [22]. By doing so, radiologists can better understand the cultural context of their patients and tailor their services to meet their unique needs. Cultural education and training can take many forms, including attending cultural competency workshops, participating in online courses, and reading relevant literature.

One way that radiologists can work towards cultural competence is through cultural sensitivity training [23][24]. Such training may include learning about cultural beliefs and values, communication styles, and health practices that are specific to different cultures. Recently, Davis KM. et al. [24] published the educational strategies to achieve equitable breast imaging care in diverse populations such as the US, where significant health disparities persist in breast imaging. Validated strategies include diversifying the breast imaging workforce, understanding the needs of distinct groups in a diverse population, cultural sensitivity and bias training, and fostering awareness of the existing issues in screening mammography access, follow-up imaging, and clinical care. Currently, there is no centralized radiology curriculum focusing on breast health disparities available to residents, breast imaging fellows, or practicing breast radiologists but, by understanding these differences, radiologists can better tailor their care to meet the needs of patients from diverse backgrounds.

Developing culturally sensitive communication also means that radiologists should be aware of their own cultural biases and be able to communicate effectively with patients from diverse backgrounds. This can include using appropriate language and interpretation services, as well as being aware of nonverbal communication and cultural differences in communication styles.

Several organizations have developed resources and guidelines to help radiologists improve cultural competence. The American College of Radiology (ACR) has established a Diversity and Inclusion Commission, which provides guidance on strategies to increase diversity and promote cultural competence in radiology practices. The RSNA has also developed resources and guidelines to help radiologists provide culturally competent care.

Radiologists can benefit from cultural sensitivity training to address health disparities experienced by minority populations. Developing an understanding of the cultural differences and similarities among minority patients is vital for establishing a trustworthy patient-provider relationship. To promote behavioral changes institutionally, imaging centers can implement cultural sensitivity training for physicians, trainees, nurses, technologists, and front-desk staff [25]. For gender and sexual minority patients, breast radiologists should use appropriate transgender terminology and breast imaging centers can provide gender-neutral facilities to create an inclusive and respectful environment [25].

Clinicians also require cultural sensitivity and knowledge of screening mammography regimens unique to the LGBTQ+ community to effectively address health disparities in these populations [23]. Recently, Corso et al. [26] conducted a systematic review to evaluate the impact of breast cancer on transgender populations, revealing that male-to-female individuals exhibited a higher risk of developing breast cancer compared to cisgender men. Although the risk was lower than that observed in cisgender women, it remained substantial. Given the absence of established guidelines for breast cancer prevention specific to transgender populations, individuals undergoing gender transition may benefit from regular breast or chest examinations. This recommendation underlines the importance of culturally sensitive healthcare practices that consider the unique needs and vulnerabilities of transgender individuals within the LGBTQ+ community. As clinicians work to bridge health disparities in this population, understanding these risk factors and advocating for tailored screening approaches becomes paramount.

To provide equitable care to diverse patient populations, healthcare providers must understand both conscious and unconscious biases. Conscious biases are intentional, while unconscious biases occur when individuals unknowingly rely on assumptions or stereotypes to make decisions about individuals, groups, or situations [10]. Unconscious biases are pervasive and can worsen health disparities and result in substandard breast care despite positive intentions from providers [10]. The Implicit Association Test is an effective tool that can be accessed online to test one’s own unconscious

bias [8]. Additionally, providers should implement evidence-based medical practices and avoid stereotypes, and institutions can offer formal education to reduce the effects of unconscious bias [10].

Another strategy for enhancing cultural competence is diversifying the radiology workforce [27]. To promote a more diverse workplace that reflects the patient population, it is critical that radiology environments are both diverse and free from hostility, exploitation, and unequal treatment. Strategies to increase diversity in the breast imaging workforce include recruiting and retaining a more diverse population of radiology residency and breast imaging fellowship applicants, staff in breast imaging facilities, and promoting an inclusive workplace [12][21].

Finally, modification of the imaging suite is an important strategy to enhance cultural competence. For instance, including equipment and facilities that accommodate patients of different body types or religious beliefs, such as the use of female-only imaging rooms for certain patients [22]. Provision of culturally appropriate environments can help patients feel more comfortable and reduce anxiety during imaging procedures.

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