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Healthcare Access : A Hybrid Systematic Literature Review and Bibliomertic Analisis

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Abstract−Healthcare Access has been a central focus of research over the past few decades; nevertheless, in-depth investigations of this topic remain limited. This study conducts a Systematic Literature Review (SLR) and a bibliometric analysis of Healthcare Access using articles indexed in the Scopus database from 1990 to 2025, yielding 91,938 publications. The SLR evaluation was carried out on July 30, 2025. Bibliometric analysis with VOSviewer was employed to uncover emerging trends and patterns in the literature. The results indicate that Healthcare Access attracts attention not only in countries with advanced health systems but also in developing countries that face challenges in providing equitable and affordable services. Future research should broaden its scope to countries with developing health systems, such as those in Southeast Asia and Africa. In addition, community participation emerged as a critical factor, with six core attributes: affordability, availability, geographic accessibility, information quality, awareness, and community participation. The study also identifies the need for infrastructure development and deeper community engagement to achieve fair and equitable health outcomes.

Keywords: Healthcare Access; Literature Review; VOSviewer; Bibliometric Analysis

1. INTRODUCTION

Healthcare access refers to the ability of individuals or groups to obtain the necessary healthcare services effectively and efficiently, without financial, geographical, or social barriers. In a global context, disparities in healthcare access pose a significant challenge that affects the quality of life and health of populations across various countries. These disparities are particularly evident in both developed and developing nations, where access to healthcare services is uneven, contributing to significant gaps in health outcomes. Therefore, conducting a Systematic Literature Review (SLR) on healthcare access is crucial to address this gap. SLR provides a comprehensive and objective summary of existing research, helping to deepen the understanding of complex issues related to healthcare access, such as systemic, sociocultural, and individual challenges (Hopp & Rittenmeyer, 2015; Teing, 2007). By synthesizing available evidence, SLRs inform healthcare policies and practices, ensuring decisions are grounded in the best available evidence (Bała et al., 2015; Mertz, 2017). Furthermore, SLRs highlight barriers to healthcare access and propose potential solutions, such as culturally competent care (Clifford et al., 2023; Dawkins et al., 2020). They also offer a global perspective, integrating evidence from various countries, which helps address disparities in healthcare access worldwide (Gil-Gonzalez et al., 2015).

Despite the challenges associated with conducting SLRs, such as the need for significant resources, time, and complex search strategies, their rigorous methodology guarantees the production of high-quality, reliable evidence that can substantially contribute to improving healthcare access (MacFarlane et al., 2022; Pati & Lorusso, 2018). However, existing research on healthcare access has not yet provided a clear, cohesive framework that can guide the identification of future research gaps or highlight how specific healthcare access challenges differ across regions and populations. Therefore, this study aims to address this gap by synthesizing existing research and proposing actionable insights for future studies.

In today's healthcare landscape, conducting an SLR on healthcare access is critically important for advancing evidence-based practices, informing health policy, and supporting decision-making. SLRs provide a comprehensive and transparent summary of existing research, ensuring healthcare providers remain updated with the latest evidence and practices (Murthy et al., 2012; B. C. Wallace et al., 2013). This systematic approach is especially valuable for policymakers, as it aids in navigating complex decisions regarding healthcare system improvements (Amoateng et al., 2024). However, challenges such as the need for significant resources, time, and the complexity of search strategies remain prevalent in SLRs (MacFarlane et al., 2022). Moreover, maintaining current reviews has become increasingly difficult with the rapid growth of biomedical literature and stricter review standards (R. A. Wallace, 2021). Recent trends in automation and the integration of Fast Health Interoperability Resources (FHIR) offer promising solutions to streamline the process (Ayaz et al., 2021; Ruiz & Duffy, 2021). Despite these challenges, SLRs continue to be an essential tool in improving healthcare access and informing policies that can better serve vulnerable populations (Samb et al., 2019).

In the United States, a systematic review revealed significant disparities in access to and provision of geriatric care, particularly influenced by factors such as race, ethnicity, and socioeconomic status (Thomas et al., 2024). Meanwhile, in rural areas, artificial intelligence (AI) is considered to hold substantial potential in bridging healthcare access gaps through the application of telemedicine, predictive models, and other intelligent systems (Balakrishnan et al., 2025). Another study in England emphasized that variability in public transportation travel times, particularly by bus, further exacerbates inequities in access to healthcare facilities (Chen, 2025). Conversely, in low-resource settings, technology-based solutions such as low-cost medical devices, mobile health, and information and communication

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technology (ICT) have been shown to enhance both the affordability and equity of healthcare delivery (Lamichhane & Neupane, 2022).

This study focuses on exploring the current landscape of healthcare access research and evaluating the ongoing relevance of this topic as a focus for future research. This study also reviews the evolution of academic discourse on healthcare access and aims to identify how this work can contribute to the theories of healthcare access practice. The research questions posed are:

RQ1: Is the exploration of healthcare access remain a subject of continued significance for future scientific research?
RQ2: What is the allocation of research investigations related to healthcare access?
RQ3: What are the theoretical and practical implications from the perspective of future research?

This study uses Systematic Literature Review (SLR) and Bibliometric Analysis to answer three research questions. The systematic literature review method is suitable for synthesizing existing research and helping to identify gaps, trends, and future research directions while providing evidence-based insights that can influence policy, practice, and further research. This ensures that conclusions are drawn from a broad and representative sample of studies and highlights areas for further investigation (Hopp & Rittenmeyer, 2015; Teing, 2007). The bibliometric analysis will complement this review by quantifying the distribution and impact of publications related to healthcare access. Using VOSviewer and the Scopus database, this study will analyze publications related to Healthcare Access from various journals, focusing on articles published until July 30, 2025. This methodology enables a comprehensive mapping of the development of this field and provides a deeper understanding of its growth and future research directions.

2. RESEARCH METHODOLOGY

A systematic literature review using a bibliometric approach quantitatively assesses literature to identify trends, patterns, and key research entities within a discipline. By employing frameworks such as PRISMA, this approach ensures a comprehensive and replicable examination of the literature, providing a clear and transparent overview of the topic under study (Chotisarn & Phuthong, 2025). The inclusion criteria are as follows: (1) articles published up to July 30, 2025, (2) publications in English, and (3) focusing on the topic of Healthcare Access. Bibliometric analysis is conducted using VOSViewer, which visualizes bibliographic data to analyze citation networks, author collaborations, and frequently occurring keywords, revealing the intellectual structure and dynamics of the research field. The combination of bibliometric analysis and systematic review helps researchers synthesize empirical findings and map the research activity landscape, including identifying key contributors and emerging trends (Ni & Abdullah, 2025).

The integration of both approaches provides a comprehensive understanding of the development, historical flow, and future direction of the research field, which is particularly beneficial in interdisciplinary studies for gaining deeper insights (Marzi et al., 2025; Wang et al., 2025). Bibliometric analysis is also used for strategic purposes in scientific publication, introduced by (Bertrand, 1972) to evaluate scientific journals based on their economic weight. The initial phase of this scientific examination involves the selection of keywords, which can be done through a macro methodology (top-down), starting from broad search paths to more narrowly defined studies and topics. Therefore, after evaluating the limitations in previous research and the scarcity of studies addressing Healthcare Access, this investigation includes the keyword "Healthcare Access" as the focus in article titles, abstracts, and keyword sections. Additionally, the Scopus database is utilized by researchers for various investigative purposes, including conducting literature reviews, identifying experts in the field, and monitoring research trends.

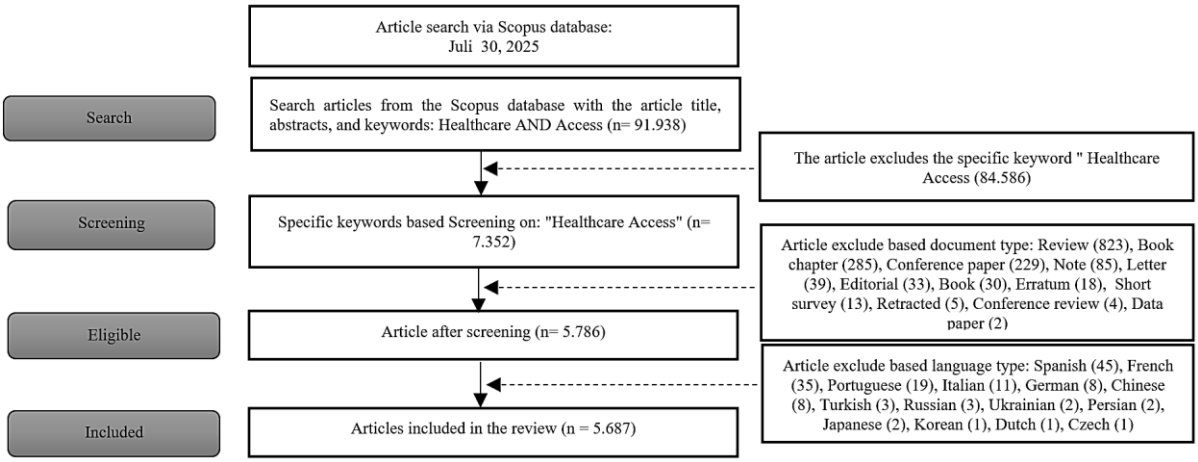

Figure 1. Systematic Literature Review information flow using PRISMA

Based on the search results obtained on July 30, 2025, from the Scopus database using the article title, abstract, and keywords: "Healthcare AND Access" across various academic disciplines, covering publications from 1990 to 2025, the total number of articles on Healthcare Access is 91,938 documents (see Figure 1). Following this finding, a

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screening process was conducted by eliminating documents based on their classification. Articles were excluded based on document type: Review (823), Book chapter (285), Conference paper (229), Note (85), Letter (39), Editorial (33), Book (30), Erratum (18), Short survey (13), Retracted (5), Conference review (4), Data paper (2), and non-English language (141), resulting in a total of 1,707 documents. The filtered results, categorized by document type, yielded 5,687 articles. These documents were then further analyzed in this study to answer *RQ1: Is the exploration of Healthcare Access still a relevant topic for future scientific research? RQ2: What is the current distribution of research related to Healthcare Services? RQ3: What are the theoretical and practical implications from the perspective of future research?*

3. RESULT AND DISCUSSION

3.1 Result

The results of this study focus on findings from 5,687 articles in the Scopus database related to healthcare access. These data were obtained by identifying the number of published articles, publication trends over the years, and journal sources. This study will also highlight the most influential elements in healthcare access, including authors, affiliations, and countries involved.

3.1.1 *RQ1: Is the exploration of Healthcare Access still relevant for future scientific research?*

Based on data extracted from the Scopus database, it can be confirmed that for over three decades, scholarly works on Healthcare Access have consisted of 5,687 articles; this indicates that research on Healthcare Access has been relatively scarce, as shown in Figure 2. The exploration of Healthcare Access began to grow rapidly in the last decade, specifically since 2019.

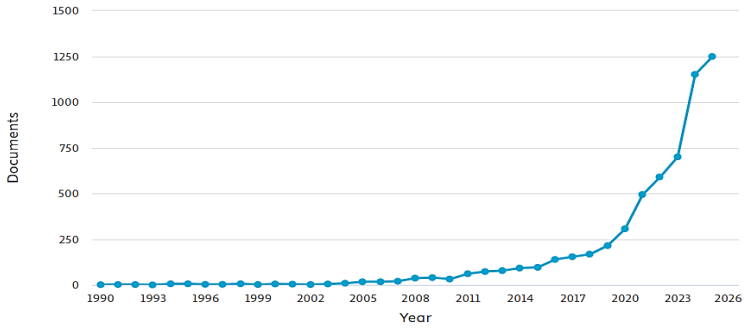

Figure 2. Number of Healthcare access publications

3.1.2 *RQ2: What is the distribution of research related to Healthcare Access?*

The distribution analysis of Healthcare Access research within the 5,687 articles was conducted by classifying the articles based on country, region, affiliation, source, and authors, with a limitation to the top 10 articles in each classification. Understanding the distribution of relevant scholarship on Healthcare Access will be valuable for academics and practitioners in shaping the research agenda for the future, particularly in the sustainable development of the Healthcare Access paradigm.

First, the distribution of scientific investigations related to Healthcare Access, categorized by country or region, is dominated by the United States with 2,776 articles, the United Kingdom with 569 articles, Canada with 466 articles, Australia with 399 articles, India with 281 articles, China with 265 articles, South Africa with 170 articles, Brazil with 143 articles, France with 141 articles, and Germany with 132 articles (see Figure 3).

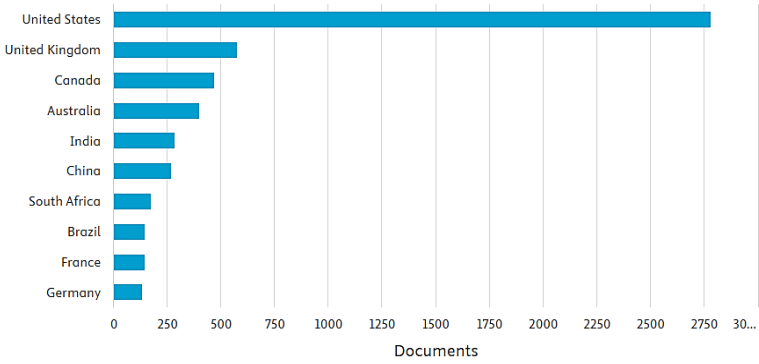

Figure 3. Number of articles by country or region (Top 10 countries)

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Researchers will also analyze the relationships between the countries involved in Healthcare Access research using VOSviewer software. This stage is essential in formulating a systematic prospective research agenda. Findings from VOSviewer highlight the interactions between countries in research on the topic of Healthcare Access (see Figure 4).

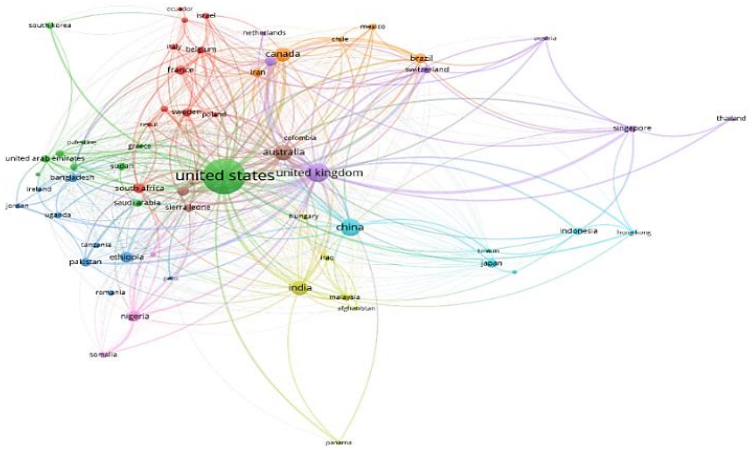

Figure 4. Visualization of country network

Second, the distribution of research related to Healthcare Access based on institutional affiliation is dominated by the University of Toronto (Canada) with 126 articles, Harvard Medical School (United States) with 124 articles, University of Washington (United States) with 121 articles, University of California, San Francisco (United States) with 112 articles, London School of Hygiene & Tropical Medicine (United Kingdom) with 110 articles, Johns Hopkins Bloomberg School of Public Health (United States) with 92 articles, The University of North Carolina at Chapel Hill (United States) with 82 articles, Harvard T.H. Chan School of Public Health (United States) with 82 articles, University of California, Los Angeles (United States) with 81 articles, and UCSF School of Medicine (United States) with 79 articles (see Figure 5).

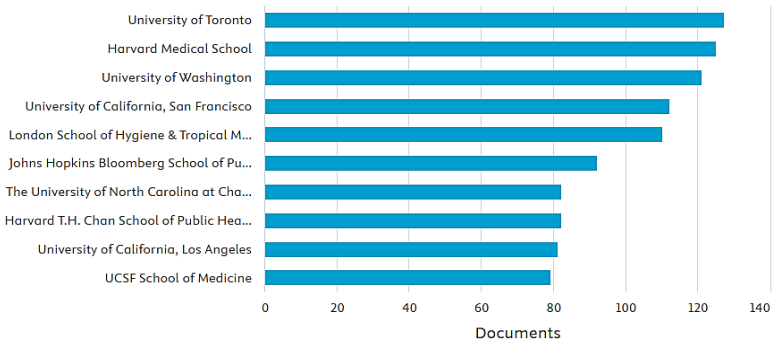

Figure 5. Visualization of institutional affiliation network

Third, the distribution of research related to Healthcare Access based on publication sources is dominated by the journal *Plos One* with 148 articles, *BMC Public Health* with 146 articles, *International Journal of Environmental Research and Public Health* with 137 articles, *BMC Health Services Research* with 133 articles, Frontiers in Public Health with 110 articles, *BMJ Open* with 95 articles, *International Journal for Equity in Health* with 83 articles, *Social Science and Medicine* with 73 articles, *Healthcare Switzerland* with 59 articles, and *Journal of Racial and Ethnic Health Disparities* with 54 articles (see Figure 6).

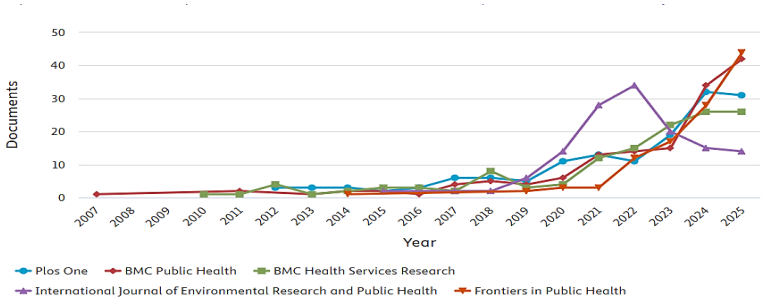

Figure 6. Number of articles by publication source (Top 10 sources)

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Fourth, the distribution of research focused on Healthcare Access based on authors does not show a clear dominance. Among the top 10 authors, 9 of them are as follows: Mokdad, A.H. wrote 25 articles; Ahinkorah, B.O. wrote 21 articles; Hay, S.I. wrote 20 articles; Samy, A.M. wrote 16 articles; Naghavi, M. wrote 15 articles; Seidu, A.A. wrote 15 articles, while Arabloo, J.; Fischer, F.; and Rawaf, S. each wrote 14 articles (see Figure 7).

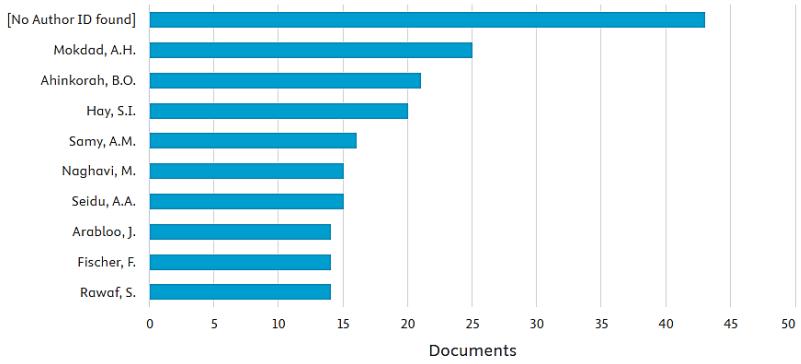

Figure 7. Number of publications by author (Top 10 authors)

3.1.3 *RQ3: What are the theoretical and practical implications from the perspective of future research?*

An examination was conducted on 5,687 articles obtained from the Scopus repository. VOSviewer was used to show that the results have both theoretical and pragmatic implications for future Healthcare Access research. The results of the metadata analysis using VOSviewer will help researchers and practitioners better understand the assumptions and findings related to Healthcare Access. The bibliometric analysis results using VOSviewer can highlight which variables have been extensively researched by previous researchers and which variables have yet to be explored in depth, providing a foundation for future studies. From a practitioner's perspective, the results of the literature analysis using VOSviewer will assist practitioners in applying Healthcare Access sustainably in the future and promoting Healthcare Access practices for organizations worldwide.

From Figure 8, several frequently occurring terms were detected, such as healthcare access (4514), middle aged (3789), epidemiology (2924), health services accessibility (2528), socioeconomics (1314), psychology (1126), healthcare access (1118), health care disparity (1104), public health (1050), risk factor (1040), and others.

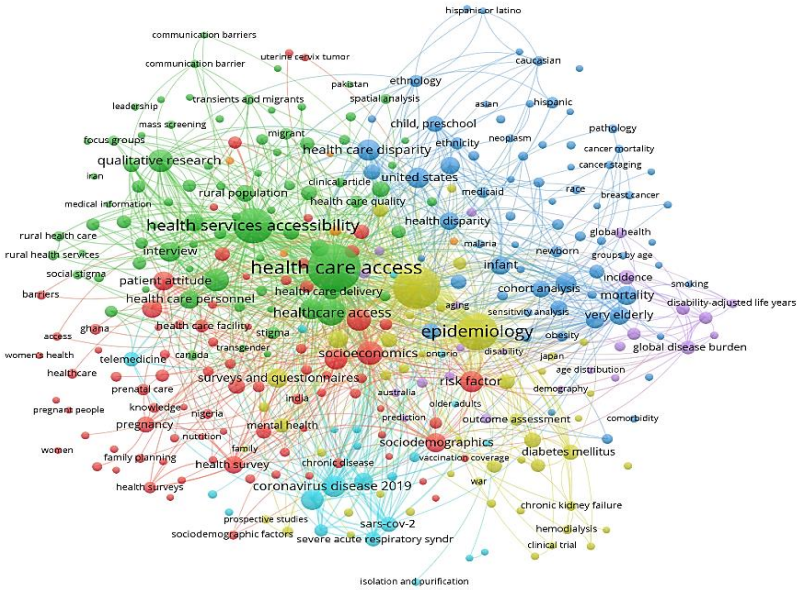

Figure 8. Co-occurrence framework and representation of key termsTabel

Table 1. Keywords by authors

Rank	Keyword	Total Link Strength
1	Healthcare access	4514
2	Middle aged	3789
3	Epidemiology	2924
4	Health services accessibility	2528
5	Socioeconomics	1314

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Rank	Keyword	Total Link Strength
6	Psychology	1126
7	Healthcare access	1118
8	Health care disparity	1104
9	Public health	1050
10	Risk factoor	1040

3.2 Discussion

The pioneering study was conducted by (Kitzhaber, 1990) titled "Oregon Act to allocate resources more efficiently. The proposal would guarantee healthcare access to all," marking the beginning of the term now known as Healthcare Access. Currently, the development of research on Healthcare Access is beginning to attract the attention of many academics, focusing on increased availability, Digital Health, affordability, Quality of Healthcare Services, Health Policy, and Government Regulations (Salmon et al., 2025) (Bocean & Vărzaru, 2025); (Pierrakos et al., 2023); (Zheng et al., 2025); (Listyaningrum & Lubis, 2025). Additionally, the research also covers the effectiveness of health policies, such as national health insurance programs, and the role of technology in facilitating access, such as the use of telemedicine or online healthcare platforms (Luvinga & Kessy, 2024).

Since the 1990s, literature on healthcare services has been limited, largely due to the scarcity of research published in reputable journals. This gap presents opportunities for future researchers to contribute significantly to the field. Expanding this research is crucial to broadening the understanding of healthcare services, as it influences both personal behavior and the development of healthcare service frameworks. Such work will also facilitate a deeper understanding of the practical and sustainable implementation of healthcare access across various sectors.

The findings suggest that the topic of Healthcare Access has garnered attention not only in countries with advanced healthcare systems but also in developing nations that face substantial challenges in providing equitable and affordable healthcare services to all segments of the population. Research conducted in countries such as India, China, and Brazil highlights efforts to improve access in resource-limited regions. In contrast, contributions from developed countries like the United States and the United Kingdom focus on addressing access gaps within more established and complex healthcare systems, underscoring the global relevance of this issue.

These observations further reinforce the notion that the principles of Healthcare Access are pertinent not only in advanced healthcare systems but also in developing countries that encounter significant barriers in ensuring equitable and affordable healthcare for all. The concept of Healthcare Access remains highly relevant across nearly all nations striving to integrate these principles and develop more inclusive healthcare models.

The distribution of research in the top 10 publications reveals that the topic of Healthcare Access attracts the interest of academic institutions from countries with advanced healthcare systems, such as Canada (University of Toronto) and the United States (Harvard Medical School, University of Washington, University of California, San Francisco, Johns Hopkins Bloomberg School of Public Health, among others). It also garners global attention from institutions that focus on health research at an international level.

Based on the results of mapping and reviewing previous research, a gap has been identified where most studies have been conducted in countries with advanced healthcare systems, such as Canada (University of Toronto) and the United States (Harvard Medical School, University of Washington, University of California, San Francisco, Johns Hopkins Bloomberg School of Public Health, and others) (see Figure 2 and Figure 4). Therefore, future research needs to be conducted in countries or regions with developing healthcare systems, such as Southeast Asia or Africa, which may be underrepresented in this mapping. Countries like Indonesia, Malaysia, or African nations, which face different health challenges, need more attention. This study has the potential to fill this gap by providing a deeper understanding of Healthcare Access, defining access as an individual's ability to obtain the necessary medical services, which is critical to improving health outcomes, particularly in underserved regions (Arif et al., 2025). Access is often hindered by various barriers such as geographic distance, limited healthcare infrastructure, and financial constraints, which are more prominent in rural and underserved areas (Kumar et al., 2025b). The integration of factors such as affordability, availability of healthcare providers, as well as geographic and administrative factors (Campaña et al., 2025; Day et al., 2025) In this study, the integration of factors such as affordability, availability of healthcare providers, as well as geographic and administrative factors, can help improve the equitable distribution of healthcare services that can be universally applied and analyzed for effectiveness in different contexts. Therefore, it is important to develop further research in the context of countries with specific health challenges, so that the solutions developed can be better adapted and implemented across various regions, including developing countries that require more attention in the field of healthcare (Kumar et al., 2025b; M. Li et al., 2025).

The findings from studies on healthcare access conducted by previous researchers show that attention should be given to the fundamental aspects that are key attributes to the success of healthcare access, namely those grounded in equity and inclusivity, which emphasize values such as affordability, availability, geographic accessibility, information accessibility, awareness and education, and social barriers and discrimination. Below are the attributes of healthcare access from various references (see Figure 9).

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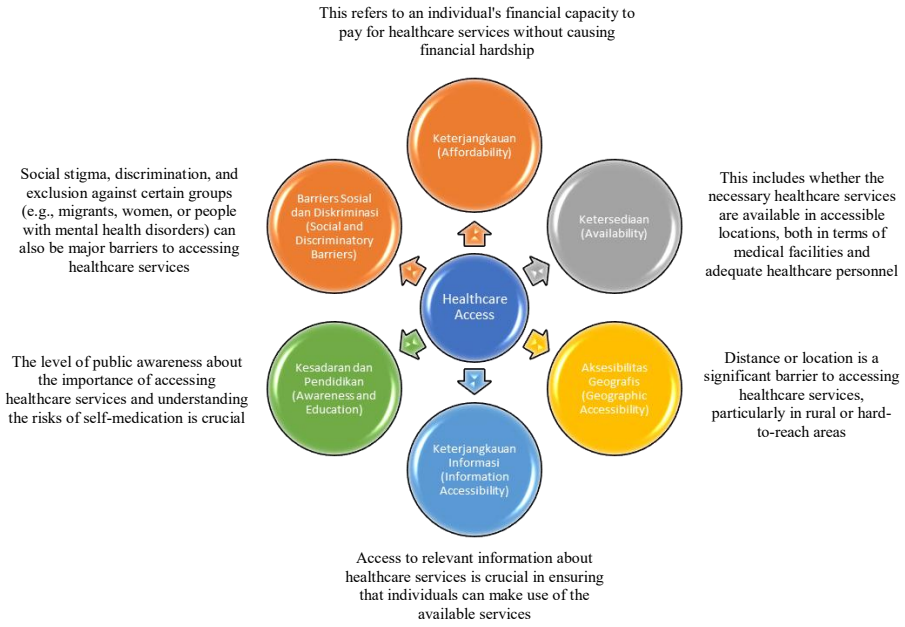

Figure 9. Healthcare Access Attribute
(Pradhan & De, 2025a, Kumar et al., 2025b, Arif et al., 2025, Atem et al., 2025, Day et al., 2025, Campaña et al., 2025, Khanal, 2025, M. Edward, Shadrack, et al., 2025, Asante et al., 2025, Kumar et al., 2025c, Chauhan et al., 2025, M. Li et al., 2025)

Healthcare access refers to an individual's ability to obtain necessary medical services, which is influenced by various factors that determine the ease or difficulty of accessing healthcare services. Healthcare access is distinguished by several key attributes: Affordability, which refers to an individual's financial ability to pay for healthcare services without causing economic hardship; Availability, which includes the presence of sufficient healthcare facilities and providers to meet the community's needs; Geographic Accessibility, which pertains to the proximity and ease of transportation to healthcare facilities, especially critical in rural and remote areas; Information Accessibility, which involves how easily individuals can obtain accurate information about available healthcare services; Awareness and Education, which refers to the community's knowledge of the importance of medical care and how to access it; and Social and Discriminatory Barriers, which include social obstacles and discrimination that hinder access, such as stigma toward certain groups or cultural barriers (Kumar et al., 2025c; Pradhan & De, 2025b). These attributes highlight the importance of integrity, equality, and inclusivity in healthcare provision, ensuring that all individuals, regardless of their social, economic, or geographic background, have equal opportunities to access the care they need. These factors are interrelated and contribute to the overall experience individuals face when attempting to access effective healthcare (Kumar et al., 2025c).

The conceptual model of healthcare access is based on principles that involve a holistic approach to healthcare, which not only includes the provision of medical services but also efforts to overcome structural barriers that prevent access. This model emphasizes the importance of collaboration between governments, healthcare providers, and communities to create a fair and sustainable system that ensures healthcare services are available, affordable, and accessible to all segments of the population, including the most marginalized groups (Pradhan & De, 2025b).

3.2.1 Affordability

Affordability is a critical factor in healthcare access, as it significantly influences an individual's ability to obtain necessary medical services. It is a multifaceted concept, shaped by both subjective perceptions and objective economic factors. For instance, affordability is often viewed subjectively, depending on an individual's financial situation and their perception of whether they can afford healthcare services (Beal & Foli, 2021). In many cases, disparities in income, employment status, and geographic location create significant barriers to accessing healthcare, with individuals from lower-income backgrounds or underserved areas facing greater challenges in affording medical care (Al Eker et al., 2025). A key aspect of affordability involves insurance coverage, or the lack thereof. While health insurance is intended to reduce financial burdens, underinsurance remains a widespread issue. Many individuals, despite having insurance, still face high out-of-pocket costs, limiting their access to necessary healthcare (Lavarreda et al., 2011). This situation is further exacerbated by the rising costs of healthcare services, including essential medications, which can lead to catastrophic expenses, pushing individuals into financial hardship. The price of medications, in particular, has a direct impact on affordability and often limits access to essential treatments (Antoñanzas et al., 2017; Mathewos Oridanigo et al., 2021).

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Policy interventions such as the Affordable Care Act (ACA) in the United States aim to improve healthcare affordability by expanding insurance coverage and reducing costs. However, despite these efforts, financial barriers remain, particularly for vulnerable populations such as low-income families and those living in rural areas (Gilchrist et al., 2024). While these policies have led to improvements, the persistent affordability challenges highlight the need for targeted interventions that focus on expanding coverage, reducing out-of-pocket expenses, and addressing the unique needs of underserved communities (Robertson-Preidler et al., 2020). To tackle these challenges, a comprehensive approach that includes financial protection, service availability, and quality improvement is necessary to enhance healthcare access and equity (Haggerty & Levesque, 2015). Furthermore, addressing affordability must involve special attention to vulnerable groups, such as individuals with disabilities, the elderly, and those in rural or economically disadvantaged areas, to ensure that they can access affordable and timely healthcare services (Hailemariam et al., 2016). In conclusion, affordability remains a pivotal issue in healthcare access, requiring continued efforts to reduce financial barriers and ensure equitable access for all individuals.

3.2.2 Availability

Availability is a fundamental aspect of healthcare access, referring to the presence of healthcare services and resources that individuals can access when needed. It ensures that health services are present and operational for those who require them. This dimension is crucial in promoting equitable healthcare access and is recognized as one of the key elements of access alongside affordability, accessibility, acceptability, and adequacy (McIntyre, Thiede, & Birch, 2009). Without the availability of services, individuals may face delays or be unable to receive essential medical care, significantly impacting their health outcomes.

Several factors influence the availability of healthcare services. The allocation of resources, such as financial, human, and infrastructural, plays a pivotal role. Inadequate resources, particularly in underserved areas, can severely limit the availability of healthcare services (Hegazy et al., 2024). Furthermore, geographic distribution is another critical factor. Rural and remote areas often struggle with insufficient healthcare facilities due to logistical and financial constraints, leading to disparities in healthcare access (Abbas & Bin Talib, 2024). Additionally, the presence of healthcare infrastructure, including hospitals, clinics, and medical equipment, directly impacts the availability of services. Regions with well-developed infrastructure tend to offer better access to healthcare, ensuring timely and adequate care ((Raeesi et al., 2025)Loosli, Davis, Muwonge, & Lembo, 2021). Despite the importance of availability, several challenges hinder its improvement. Financial constraints, particularly in low- and middle-income countries (LMICs), restrict the availability of healthcare services, further exacerbating disparities in access (Raeesi et al., 2025). A shortage of healthcare professionals, especially in rural and underserved regions, can also impede service availability ((Abbas & Bin Talib, 2024). In addition, operational issues such as inadequate staffing, lack of medical supplies, and poor maintenance of healthcare facilities can affect the effectiveness of available services (Hegazy et al., 2024).

The availability of healthcare services directly influences health outcomes and equity in access. Disparities in service availability contribute to health inequities, especially among vulnerable populations. When services are readily available, individuals are more likely to seek and receive timely care, leading to improved health outcomes (Nguyen et al., 2023). Therefore, ensuring the availability of healthcare services is essential for achieving equity in healthcare access and improving overall public health. To address these challenges, policymakers need to focus on equitable resource distribution, infrastructure development, and workforce training to enhance the availability of healthcare services (McIntyre et al., 2009). Additionally, innovative solutions such as telehealth, mobile health units, and community health programs can help improve healthcare availability, particularly in rural and underserved areas (Wood et al., 2024). These approaches can enhance healthcare delivery, ensuring that services are accessible to all individuals, regardless of their location or socioeconomic status. In conclusion, availability is a crucial component of healthcare access. Ensuring that healthcare services are present and operational requires addressing challenges such as resource allocation, geographic distribution, and operational inefficiencies. By focusing on these factors, healthcare systems can improve the availability of services, contributing to more equitable healthcare access and better health outcomes for all populations.

3.2.3 Geographic Accessibility

Geographic accessibility refers to how easily individuals can reach healthcare services based on their location. It is influenced by factors such as distance, travel time, and transportation availability, all of which significantly impact healthcare utilization and health outcomes (Ramadina et al., 2021). The physical distance to healthcare facilities and the time required to travel can deter individuals from seeking timely medical care, often leading to poorer health outcomes (Humphreys & Smith, 2009). Transportation is also a critical component, especially in areas where public transport is scarce or costly. Additionally, geographic accessibility tends to be worse in rural and remote regions due to fewer healthcare facilities and limited infrastructure (J. Edward & Biddle, 2017). Even urban areas can face accessibility issues, particularly for marginalized populations, if transportation networks are poorly connected or designed (Sapkota et al., 2024).

Geographic accessibility plays a crucial role in health outcomes, as it directly influences the utilization of healthcare services. The greater the distance to healthcare services, the lower the utilization rates and the higher the likelihood of delayed diagnoses and treatments, which increases the burden of disease (Hierink et al., 2021). Poor geographic accessibility is linked to increased mortality and morbidity, especially in low-income and minority

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populations who already face significant barriers to care (Launay et al., 2019). Technological and policy interventions, such as Geographic Information Systems (GIS) and telemedicine, can help overcome geographic barriers by enhancing the measurement of accessibility and enabling remote care delivery (Huang-Fu et al., 2024). Additionally, improving transportation infrastructure, increasing healthcare facility distribution, and supporting local primary care services are key strategies to enhance geographic accessibility and promote health equity (Auld et al., 2023).

3.2.4 Information Accessibility

Information accessibility in healthcare refers to the ease with which both patients and healthcare providers can obtain and use health-related information. It is essential for effective healthcare delivery, patient engagement, and informed decision-making (Bantom et al., 2016). Digital health technologies, such as electronic health records (EHRs), telemedicine, and mobile health (mHealth) applications, have greatly enhanced information accessibility by providing real-time access to patient data and facilitating communication between providers (Othman et al., 2025). Health information systems (HIS) are critical in managing and sharing patient data; however, challenges like non-interoperable systems and limited digital literacy can hinder their effectiveness (Culjak et al., 2007). Furthermore, ensuring web accessibility by adhering to guidelines like the Web Content Accessibility Guidelines (WCAG) is crucial to making health resources usable for individuals with disabilities (Fernandes et al., 2023).

Despite the advancements in digital health technologies, several challenges persist in improving information accessibility. The digital divide remains a significant issue, particularly between rural and urban areas, and between developed and developing countries, limiting access to electronic health technologies (Bantom et al., 2016). Privacy and security concerns related to the accessibility of health data also pose a challenge, as it is critical to ensure that patient information is protected while being accessible to authorized users (Kingsford et al., 2017). Additionally, the lack of interoperability between health information systems can impede the seamless exchange of data across different platforms (Arega & Sharma, 2024). To address these challenges, telemedicine and mobile services can improve access, especially in underserved areas, while enhancing digital literacy among both healthcare providers and patients is crucial for maximizing the benefits of these technologies (Othman et al., 2025). Developing comprehensive regulatory frameworks to support digital health technologies can also help address many of these existing issues (Patil et al., 2024).

3.2.5 Awareness and Education

Awareness and education play essential roles in improving healthcare access by empowering individuals with the necessary knowledge and skills to effectively navigate the healthcare system. Education directly influences health outcomes by informing people about disease prevention, management, and healthy behaviors. For instance, the Education and Health Initiative (EHI) raises awareness about the impact of education on health outcomes through strategic communication and policy outreach (Zimmerman et al., 2018). Furthermore, awareness of healthcare services and their availability can positively affect patient satisfaction and perceived access, as demonstrated in the West Bank, where patients reported positive perceptions of healthcare services (Al Eker et al., 2025). Health literacy, the ability to access, understand, and use health information, is critical for making informed health decisions. Individuals with higher health literacy tend to experience better health outcomes and utilize healthcare services more efficiently (Rosário et al., 2025).

Educational interventions, such as digital and virtual education, are cost-effective methods to improve health awareness, especially in low-income communities. Digital tools can provide information on disease management and healthy practices, overcoming barriers to healthcare access (Yukselen et al., 2023). Community-based medical education (CBME), where medical students deliver healthcare in underserved areas, helps bridge healthcare gaps while enhancing students' clinical skills and cultural competency (Sirisha et al., 2024). Additionally, patient and family education about health conditions and care practices is vital for reducing readmission rates and improving self-care abilities (Kucukakgun & Can, 2023). However, challenges such as socioeconomic status, geographic location, and cultural barriers continue to affect healthcare access (Raghavan et al., 2025). Addressing these barriers through targeted educational interventions can significantly improve health outcomes and reduce health disparities (Phan Huu & Gandhi, 2025).

3.2.6 Social and Discriminatory Barriers

Social and discriminatory barriers in healthcare significantly affect the quality of care and access to services for marginalized populations. Social determinants of health (SDoH), such as economic stability, education, neighborhood environment, and social context, contribute to disparities in healthcare access. Financial barriers, including lack of insurance or high out-of-pocket costs, prevent many individuals from seeking necessary care (Emilio Carrillo et al., 2011). Lower educational levels are linked to poorer health literacy, hindering patients' ability to navigate the healthcare system and understand medical instructions (Kapalu & Wilkes, 2023). Additionally, living in areas with inadequate housing, limited access to healthy food, and poor educational resources exacerbates health disparities (Golden, 2023). Furthermore, marginalized groups often lack supportive social networks, further contributing to health inequities (Nishioka, 2022). Discrimination in healthcare, whether explicit or implicit, based on race, ethnicity, gender, sexual orientation, or immigration status, also plays a significant role in limiting access to care. Explicit discrimination includes prejudicial actions or comments by healthcare providers, while implicit bias involves unconscious attitudes that

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influence interactions with patients, leading to differential treatment and poorer health outcomes for minority groups (Zemouri et al., 2024).

The impact of discrimination in healthcare leads to several negative consequences, including foregone care and mistrust in the healthcare system. Patients who experience discrimination are more likely to avoid seeking care, resulting in delayed diagnoses and treatment (Rivenbark & Ichou, 2020). This mistrust, rooted in historical and ongoing discrimination, hinders healthcare access, particularly for vulnerable populations (Bigby, 2007). Additionally, discriminatory practices contribute to poorer health outcomes and exacerbate existing health disparities (Ó Cathaoir, 2024). Addressing these barriers requires policy reforms that promote health equity, community-based interventions to provide culturally competent care, and training healthcare providers to recognize and address implicit biases and health literacy issues (da Silva et al., 2025). By tackling the root causes of discrimination and addressing the social determinants of health, healthcare systems can ensure equitable access to care for all individuals.

Overall, access to healthcare services is influenced by various interacting factors, and each of these elements needs to be addressed to ensure that all individuals, especially those in vulnerable groups, can effectively access the care they need.

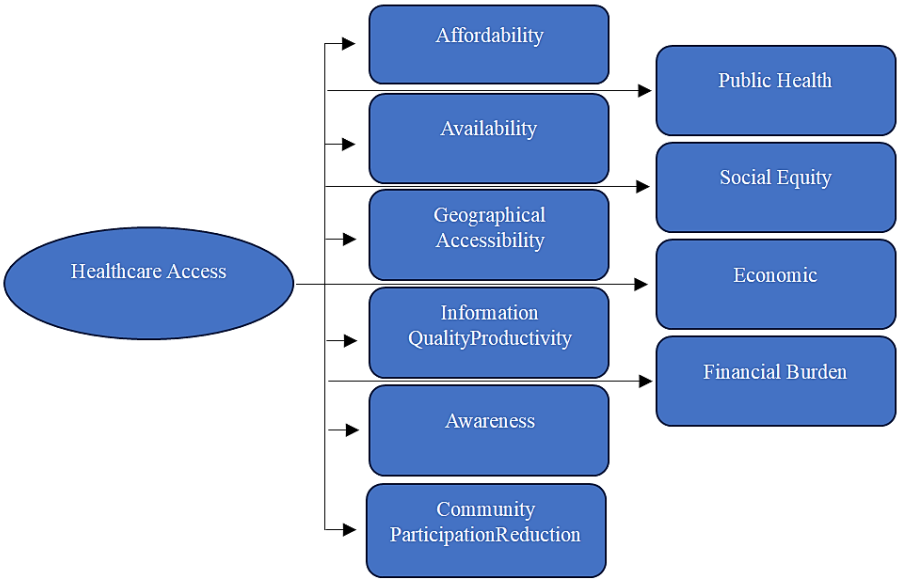

Figure 10. Conceptual model of Healthcare Access

This article also presents healthcare access. The conceptual model integrates values such as affordability, availability, geographic accessibility, and information quality. These values form the foundation for leaders to make more informed decisions in the planning and management of healthcare systems. In this context, information accessibility and awareness of health rights become key factors influencing the policies implemented. Additionally, the support from various stakeholders in providing equitable services will strengthen the effectiveness of the healthcare access model developed. Leaders need to consider these factors to create an inclusive, fair system that can optimally reach all segments of society.

Healthcare access is a critical determinant in achieving better public health outcomes, social welfare, social justice, and economic stability. It influences several key variables, such as affordability, availability, geographical accessibility, information quality, awareness, and community participation. Affordability is a major factor impacting access to healthcare; financial barriers can exacerbate inequalities, particularly for disadvantaged populations, making policy interventions essential to improve affordability and ensure equitable access (Lang et al., 2016). Availability of healthcare services and resources is another key determinant; the centralization of services, particularly in rural areas, can reduce access, necessitating the expansion of healthcare service availability to address these disparities (Humphreys & Smith, 2009). Geographical accessibility also plays a significant role; distance, travel time, and transportation issues affect access, especially in rural areas, although innovations such as telemedicine and mobile health services have helped mitigate these challenges (Higgs, 2004). Additionally, information quality influences healthcare access, as poor information can hinder individuals from utilizing available healthcare services effectively (Govender & Penn-Kekana, 2009). Awareness of available health services and information is crucial for improving healthcare access and utilization, as higher awareness levels often lead to increased use of health services (Al Eker & Imam, 2025). Lastly, community participation in healthcare planning and delivery ensures that healthcare services meet the needs of local populations, enhancing accessibility and effectiveness (Al Eker & Imam, 2025).

The impact of healthcare access extends beyond the individual level, influencing broader societal outcomes. Public health is directly enhanced when healthcare access is improved, leading to better health outcomes, reduced disease burden, and higher service utilization, contributing to achieving Universal Health Coverage (UHC) (Loosli et al., 2021). Social welfare benefits when individuals can maintain their health and productivity through improved

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healthcare access, which is particularly critical for vulnerable populations (Lang et al., 2016). Social justice is supported by equitable access to healthcare, ensuring that all individuals, regardless of their socioeconomic status, can receive the necessary services to maintain health (Al Eker & Imam, 2025). Lastly, economic outcomes are positively impacted by access to healthcare, as healthy populations are more productive, and reducing the burden of disease can lower healthcare costs, improving economic stability (Humphreys & Smith, 2019).

In conclusion, healthcare access, encompassing affordability, availability, geographical accessibility, information quality, awareness, and community participation, plays a crucial role in improving public health, social welfare, social justice, and the economy. Addressing barriers to access, especially for disadvantaged populations, is essential for achieving equitable healthcare and better societal outcomes (Al Eker & Imam, 2025; Higgs, 2004; Humphreys & Smith, 2009; Lang et al., 2016).

4. CONCLUSION

This investigation analyzes 5,687 academic publications from the Scopus repository and reveals five key conclusions. First, research related to Healthcare Access has been relatively scarce, beginning to grow rapidly in the last decade, specifically since 2019. Second, research on Healthcare Access has attracted attention not only in countries with advanced healthcare systems but also in developing countries that face significant challenges in providing equitable and affordable healthcare services to all segments of the population, although its distribution remains inconsistent. Third, research on healthcare access is not only conducted and concentrated in countries with advanced healthcare systems like Canada and the United States. Therefore, future research should be conducted in countries or regions with developing healthcare systems, such as Southeast Asia or Africa, which may be underrepresented in this mapping. Countries like Indonesia, Malaysia, or nations in Africa, which face different health challenges, need further exploration. Fourth, the attributes of healthcare access need to distinguish community participation aspects, resulting in six key attributes: Affordability, Availability, Geographic Accessibility, Quality of Information, Awareness, and Community Participation. Fifth, a conceptual model of Healthcare Access has been developed in this research, particularly contributing to the reduction of disease burden and increased service utilization. Improving access ensures healthcare equity and supports economic productivity. Overcoming access barriers is crucial to achieving well-being and health equity. Finally, the researchers also acknowledge certain limitations in this study. First, this study only uses publications from the Scopus database, which may have limitations in terms of generalizability. Future research is expected to combine findings from both Scopus and Web of Science databases to enhance the coherence of research results. Future studies could delve deeper into the domain within this discipline to enrich findings. Lastly, although the researchers have applied rigorous methodologies to reduce interpretation bias, future studies may use new research techniques that complement the results of this study.

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