

The Impact of Social Determinants on Access to Health Services in Developing Countries

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Abstract

Access to healthcare in developing countries is shaped by a complex interaction of social, economic, and geographical factors. Despite global efforts to improve equity in health systems, disparities persist, particularly among low-income populations and those living in rural or remote areas. This study aims to analyse the influence of social determinants, specifically economic status, education level, and geographical accessibility, on access to healthcare services across selected developing regions, including Kazakhstan, India, South Africa, Latin America, Southeast Asia, and Nigeria. The research employed a comparative analysis of secondary data from national health reports, international databases, and recent scientific publications (2018–2025). The study assessed the effects of healthcare financing, educational attainment, and regional infrastructure on healthcare utilisation and outcomes. The results demonstrate that increased public healthcare funding and higher education levels, particularly among women, contribute to improved access and better health outcomes. However, inequalities in resource distribution, low insurance coverage, and rural-urban disparities remain persistent barriers. Economic growth alone does not ensure equitable access without targeted policy measures that address these structural issues. The study concludes that sustainable improvement in healthcare accessibility requires integrated policies focusing on financial protection, investment in education, and development of healthcare infrastructure in rural areas. Strengthening universal health coverage systems and reducing out-of-pocket spending are essential for promoting health equity in developing countries.

Keywords: Health inequalities, Economic barriers, Maternal education, Geographical barriers, Health care reforms

1 Introduction

In developing countries, limitations of resources determine whether people can receive timely treatment and survive treatable diseases. In addition, social determinants of health such as income, education, and geographic location shape people's everyday realities, including access to healthcare. Limited access remains a major barrier to improving population health in both poorer countries struggling with resource shortages and richer ones where market ideologies limit universal health care. In the context of global health inequalities, the study of these factors becomes particularly relevant. Existing research has already shed light on some aspects of this issue.

The study by Otar and Shilmenova (2021) emphasised the significant impact of social determinants on access to healthcare services. According to these authors, social and environmental factors account for approximately 45–60% of variations in the health status of individuals and population groups, as shown by comparative analyses conducted in developing countries between 2018 and 2024. These variations reflect not only differences in living conditions and environmental influences, but also in the social determinants of access to healthcare itself. The same social conditions, such as poverty, unemployment, low levels of education and inadequate housing that contribute to poor health often simultaneously limit people's ability to access the healthcare needed to address these problems. Thus, the social determinants of health and of access to healthcare are interrelated and mutually reinforcing: Unfavourable socioeconomic conditions both cause disease and hinder access to preventive and therapeutic services.

A high level of economic development of a country does not guarantee equality in health, as differences are created by socioeconomic differentiation (Akshataeva et al. 2016; Mukayev et al. 2022). For example, in the United States, most citizens can get medical care, but about 15% of the population is actually deprived of regular medical services, mainly due to the lack of affordable health insurance (Aborode et al. 2025). This example illustrates that

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even in economically developed societies, social and economic inequalities create barriers to access to medical care and exacerbate health inequalities.

Access to healthcare depends on income inequality, funding models, and government involvement. Public systems provide broader access, while insurance-based models are often income-dependent (Teta & Xhafka 2023; Xhafka et al. 2023). Limited funding and unequal distribution of resources remain major barriers to timely healthcare delivery. Within this broader context, Shurenova et al. (2024) assessed the accessibility and quality of primary healthcare in Kazakhstan. In 2022, 16.3 million people were registered in the Mandatory Social Medical Insurance System (MSMIS) system, which is 82.4% of the total population. These data indicate relatively broad coverage and stable financing of the MSMIS, but inequalities persist related to waiting times for certain medical services, regional disparities in health system staffing, and limited accessibility of some diagnostic and therapeutic procedures for low-income population groups. This example illustrates that even where insurance coverage is formally broad, structural and socio-economic factors continue to determine actual access to healthcare.

An assessment of healthcare accessibility in Kazakhstan conducted by Spankulova et al. (2024) revealed significant differences between urban and rural areas. Across the country, rural regions experience a shortage of more than 1,700 healthcare workers, including over 1,000 doctors and 734 nurses, which limits the quality and availability of medical services. More than 200 settlements have no medical facilities at all, and facilities in about 400 villages operate in rented or emergency buildings, while the deterioration of rural primary healthcare infrastructure exceeds 50%. As a result of these conditions, 68.5% of rural residents resort to self-treatment due to limited access to qualified medical care, whereas in urban areas this share is considerably lower, reflecting the relatively better availability of healthcare services in cities. These findings underscore the urgent need to strengthen rural healthcare infrastructure and staffing to ensure equitable access to medical care nationwide.

Kumar (2023) discusses the Indian healthcare system, which faces a shortage of infrastructure and medical personnel especially in rural areas. This situation reflects a common trend observed in many developing countries: Where medical personnel and healthcare facilities are scarce, the system tends to serve primarily those who can afford private health insurance or pay for medical services, leaving the poor and rural populations without adequate healthcare. In such circumstances, the lack of financial and physical accessibility exacerbates existing inequalities, while the wealthier segments of the population benefit from private sector services. Therefore, in order to reduce these disparities, it is necessary to increase public investment and improve the geographical distribution of health resources.

Despite significant government initiatives such as the National Health Mission (NHM) and the Ayushman Bharat, challenges remain. The NHM focuses on strengthening primary healthcare infrastructure, particularly in rural and underserved areas, through the establishment of health and wellness centres, maternal and child health programmes, and community-level services. The Ayushman Bharat programme, launched in 2018, aims to provide financial protection for secondary and tertiary healthcare by covering hospitalisation costs up to 500,000 rupee per family per year for economically vulnerable households. However, both initiatives face implementation challenges including insufficient funding, uneven distribution of facilities, and limited awareness among potential beneficiaries. As a result, a significant portion of the population continues to bear high out-of-pocket costs, which in 2019 accounted for about 55% of total health care expenditures (Kumar 2023). This financial burden particularly affects low-income families and residents of remote areas, who often face the problem of long distances and a shortage of qualified medical personnel. The persistence of high out-of-pocket expenditures, despite the existence of public health programmes, indicates that while these initiatives are important steps towards universal health coverage, they are not yet sufficient to ensure equitable access to healthcare for all. To achieve this goal, India must improve the efficiency of health financing, expand the coverage and quality of primary health care, and ensure a more balanced distribution of health workers across regions.

The Department of Health of the Republic of South Africa (2020) considers the problems of access to healthcare services. Despite constitutional guarantees, a significant part of the population faces barriers to accessing quality healthcare services due to high unemployment and inequality in the distribution of resources. South Africa remains one of the most unequal countries in the world. According to the United Nations and the World Bank, the country's Gini index is around 60, which is higher than almost any other country. This extreme income inequality directly affects access to healthcare, as the wealthy minority can afford private health insurance while the majority must rely on overburdened and underfunded public institutions. The government recognises that inequality can only be reduced by addressing economic disparities or implementing institutional reforms to ensure universal access to healthcare. Accordingly, the Ministry of Health has initiated reforms to overcome structural inefficiencies and improve the quality of healthcare by gradually introducing a National Health Insurance Scheme (NHIS) system, which aims to guarantee equal access to healthcare for all citizens.

Hone et al. (2019) highlight that in Brazil, the economic downturn from 2012 to 2017 led to an increase in the adult mortality rate by 8.0%. However, municipalities with high healthcare and social protection expenditures did not experience a significant increase in mortality, which underscores the importance of strengthening healthcare systems.

Sisubalan et al. (2024) show significant differences between South-East Asian countries in the use of antenatal care and delivery in health facilities. The Maldives has the highest rates (96.83% for antenatal care and 99.39% for deliveries in medical facilities), while Bangladesh has the lowest (47.01% and 49.81%, respectively). The authors primarily attribute these differences to women's education, socio-economic status and access to information technology, which influence health awareness and decision-making. However, these are not the only factors that determine access to health services. A broader analysis of the literature shows that disparities in the use of health services in South-East Asia arise from a combination of interrelated factors. Structural and institutional barriers include uneven distribution of health infrastructure, lack of skilled personnel, and fragmented health insurance systems that limit coverage for poorer households (Lim et al. 2023). Economic barriers, such as out-of-pocket payments and inability to afford health insurance or transport to health facilities, also remain prevalent (OECD & World Bank 2023). Geographical barriers, especially in rural or remote areas, limit physical access to healthcare services and increase travel time and costs (Verma & Dash 2020; Yessimov et al. 2021). Finally, informational and educational factors, such as limited health literacy, lack of knowledge about available services, and sociocultural norms that restrict women's mobility, influence patients' ability and willingness to seek medical care.

The study by Asakitikpi (2019) examines the evolution of health policy in Nigeria. Neoliberal health reforms in Nigeria primarily benefited the upper and middle classes, leaving the lower class, which accounts for more than 75% of the approximately 190 million citizens, largely uninsured. These reforms, intended to rebuild public hospitals and make medicine more affordable, have increased costs, making healthcare unaffordable for the lower class. NHIS, which aims to provide universal health insurance, covers only about 10% of the population, suggesting that the current healthcare system remains deeply unequal and does not provide equal access to healthcare.

Our study aims to identify the key factors affecting access to healthcare services. It investigates how the level of healthcare financing and resource allocation affect the availability of healthcare services in developing countries of different world regions. In addition to institutional factors, it examines how education levels, especially among mothers, affect healthcare utilisation. We also assess how geographic location and infrastructure affect access to health services in rural and urban areas. It can help develop targeted strategies and policies to improve the availability and quality of health services in developing countries. Previous studies show that access to healthcare is influenced by several groups of factors: economic factors (level of funding, out-of-pocket expenses), institutional and systemic factors (resource allocation, healthcare infrastructure), educational and social factors (especially maternal education and health literacy), and geographical barriers (distance, transport, urban-rural disparities). Together, these interrelated factors determine the overall accessibility and quality of healthcare services in developing countries.

The study addresses economic barriers, the impact of mothers' education level on the use of healthcare services, and geographical barriers. It compares the availability of healthcare in different regions, considering socio-economic and cultural characteristics. We attempt to identify factors that impede equal access to healthcare services, including differences between urban and rural areas. The objectives of the study were to develop strategies to improve access to healthcare, incorporating the regional context, to formulate recommendations for policymakers, healthcare professionals and educational institutions, and to identify priority areas for further healthcare reforms.

2 Methods

This study is a selective review of the literature examining access to healthcare in developing countries. It is not a comprehensive systematic review due to the broad geographical coverage and diversity of healthcare systems. The aim is to identify key patterns and determinants of healthcare accessibility in developing regions and to synthesise comparative data that could serve as a basis for future in-depth studies focusing on individual countries. The analysis focused on economic, educational, institutional and geographical factors that influence the accessibility and quality of health services.

The following countries and regions were selected for analysis: Kazakhstan, India, South Africa, Latin America, Southeast Asia, and Nigeria. These countries were selected based on several criteria, including their representation of low- and middle-income countries with different healthcare models, the availability of reliable data from official national and international sources, and the existence of specific policy initiatives or reforms, such as PMJAY in India or NHIS in Nigeria, which provide valuable comparative material. The selection also aimed to ensure regional diversity, allowing for a broader understanding of how social determinants influence access to healthcare in different socio-economic and cultural contexts. The study covers the period from 2018 to 2025, allowing for an assessment of post-pandemic dynamics and the long-term effects of healthcare reforms implemented in different regions. It analyses the impact of economic and social factors on health indicators such as service utilisation, maternal and child health outcomes, and national health insurance coverage.

Data from scientific publications, reports, and statistical sources were used for this purpose. The main statistical sources included the official websites of national and international organisations such as the OECD (OECD & World Bank 2023) and the South African Department of Health (Republic of South Africa, Department of Health 2020). The

national statistical services of the surveyed countries, as well as analytical reports prepared by the In On Africa (IOA) organisation, were also utilised (Africa IOA 2024). The study also addressed specific programmes and initiatives, such as The Prime Minister's Jan Arogya Yojana (PMJAY) programme in India (National Health Authority 2017) and the NHIS in Nigeria (Akinyemi et al. 2021). The research process included data collection, data analysis, and interpretation of results.

The first stage was a search and selection of scientific articles containing information on access to healthcare services in the surveyed countries. For this purpose, scientific databases such as PubMed, ResearchGate, Econstor, Ejobs, BMC Public Health, ScienceDirect, and Frontiers in Public Health were used. Official reports were used to study the present state and prospects for the future development of health systems in different regions: "Strategic Plan 2020/21–2024/25" (Republic of South Africa, Department of Health 2020), "Health at a Glance: Latin America and the Caribbean 2023" (OECD & World Bank 2023), and "National Health System Development Report for 2012–2022" (National Scientific Center for Healthcare Development named after Salidat Kairbekova 2024). These reports were selected based on their official status and relevance for the analysis of health systems in South Africa, Latin America and Kazakhstan, respectively.

The following aspects were analysed in the context of the selected countries and regions: the impact of healthcare financing, resource allocation and income on access to healthcare services; how education levels affect health behaviour and outcomes; and the impact of distance to healthcare facilities, transport infrastructure and the distribution of healthcare resources on access to services.

The study used methods of comparative analysis, trend analysis, resource allocation analysis, analysis of population health data, analysis of geographical barriers, correlation analysis, and descriptive statistics. Benchmarking and trend analysis were used to assess healthcare financing and its impact on access to healthcare services. Statistical analysis of resource allocation helped to identify inequalities in access to healthcare services.

Analysis of population health data was used to assess the quality of healthcare services. Geographical barriers were investigated by analysing the density of healthcare facilities and travel time to them. Indicators such as an increase in HAZ (height for age z score) and a decrease in the probability of stunting (HAZ more than 2 SD below median) were assessed. Correlation analyses included the relationship between maternal education and healthcare utilisation, as well as between economic indicators and healthcare accessibility.

Descriptive statistics were used to describe the main characteristics of the data, such as means, standard deviations, and distributions of population health indicators.

These methods provided a comprehensive analysis of the economic and geographical factors affecting access to healthcare. The results were interpreted in the context of existing health theories, data and models, such as the Andersen model, the social determinants of health theory, and the Universal Health Coverage (UHC) model. The Andersen model describes factors that influence healthcare utilisation, including predisposing, motivating and evaluative characteristics. The theory of social determinants of health emphasises the impact of social and economic conditions, such as income, education and access to resources, on the health of the population. The UHC model is a prescriptive rather than descriptive model that aims to provide financial protection and equal access to healthcare services. As such it is particularly relevant for eliminating inequalities in access to healthcare. These theories and models helped to conduct a comprehensive analysis of economic and geographical barriers affecting the availability of healthcare services in different regions of the world. To achieve new scientific results, methods of comparative analysis and systematic review of studies and articles were chosen. These methods were used to collect and analyse data from various sources, to identify patterns and differences in access to healthcare services in different regions.

3 Economic barriers and access to healthcare

The increase in public healthcare funding in Kazakhstan from 1.1 trillion tenge to 2.8 trillion tenge between 2019 and 2022 has led to an expansion in the volume of medical services provided. As a result, the share of healthcare expenditure in the country's GDP has grown from 2.8% in 2019 to 3.7% in 2022. However, despite this positive trend, this figure remains relatively low by international standards. In most European countries, healthcare spending typically accounts for around 9–11% of GDP, while in the United States, according to the OECD and the World Bank, it reaches approximately 15–18%. This comparison shows that Kazakhstan's investment in healthcare, although growing, still lags significantly behind the levels needed to achieve comparable quality and accessibility of medical services. At the same time, the decline in the share of out-of-pocket healthcare expenditures from 34% in 2018 to 31% in 2022 indicates an increase in the accessibility and affordability of healthcare services for the population (Mitra 2021).

Similar to Kazakhstan, economic factors are key to healthcare accessibility in India. The nation's rapid economic growth has contributed to a reduction in poverty and improved living conditions for many citizens. Per capita GDP increased from 442 USD in 2000 to 2,389 USD in 2022, significantly improving access to healthcare services for most of the population. However, the share of national income for the richest 1% has increased, while the share for the poorest 50% has decreased. This inequality continues to affect access to healthcare, as people with low incomes

struggle to afford necessary services. Public health expenditure in India is low, at around 1.4% of GDP, despite targets to increase it. These low expenditures affect the accessibility and quality of public health services, especially for marginalised groups. Government-funded health insurance schemes, such as the Prime Minister's Jan Arogya Yojana (PMJAY), were introduced to reduce out-of-pocket healthcare expenditure. However, tertiary healthcare remains inaccessible to many middle- and low-income families. The maternal mortality ratio (MMR) in India has declined from 250 per 100,000 live births in 2004–2005 to 103 per 100,000 live births in 2017–2018. This significant decline reflects improvements in maternal health services and access. The infant mortality rate (IMR) decreased from 58 per 1,000 live births in 2004–2005 to 30 per 1,000 live births in 2019. These reductions indicate improvements in health services, access to healthcare, and its quality (Kaur et al. 2025).

Also in South Africa (SA), economic factors substantially affect access to healthcare. The country's dual public-private healthcare system exacerbates disparities, as private facilities serve a minority of the population while public facilities struggle to meet the growing demand for services. This imbalance is further highlighted by the declining dependence on public healthcare: in 2024, approximately 71% of the population relied on public services, compared to 74% in 2022 (Africa IOA 2024; Willie et al. 2024). The economic gap and income inequality mean that only a minority can afford quality private healthcare, while the majority relies on overburdened public services.

In May 2024, national health insurance was introduced with the aim of expanding insurance coverage and strengthening the provision of health services in the public sector. However, given the short period since its introduction, no noticeable improvements have been observed yet, and its initial impact is likely to be limited to the public sector rather than the health care system as a whole (Africa IOA 2024; Willie et al. 2024).

The private sector in South Africa significantly outperforms the public sector in terms of available resources. In 2024, it accounted for 37% of general practitioners, 59% of specialist doctors, 38% of nurses and 28% of hospital beds, even though only 17% of South Africans have real access to private healthcare due to the high cost of services. This underscores the imbalance in the distribution of human and infrastructure resources and increases the pressure on the public system (Africa IOA 2024). As shown in Figure 1, a significant majority of healthcare beneficiaries still rely on the public sector in 2022 and 2024, indicating that public institutions are overburdened and underfunded.

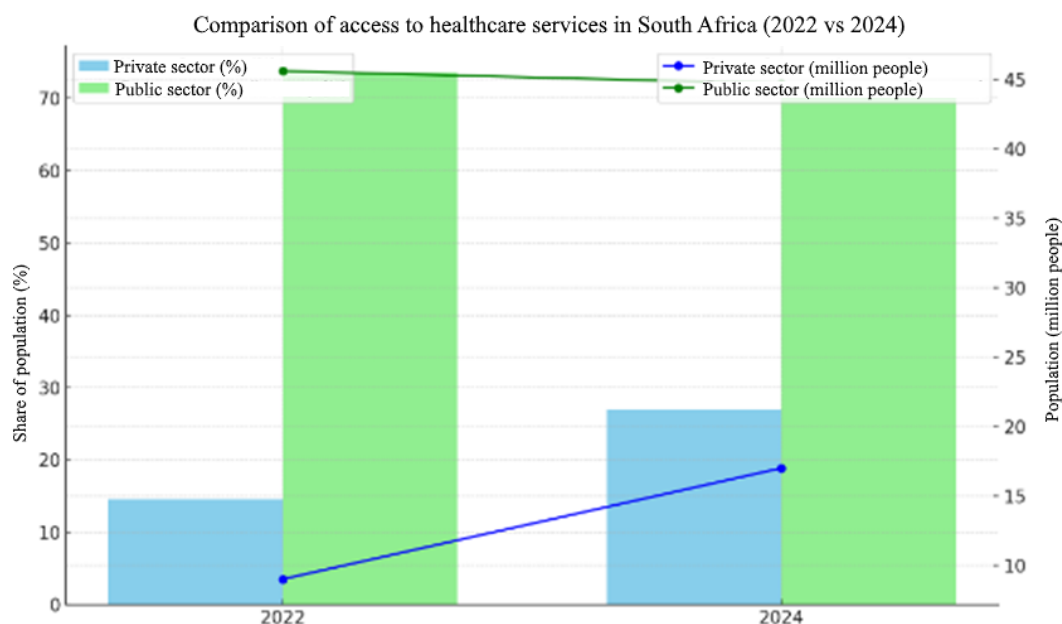


Figure 1: Comparison of the share and size of the South African population using public and private healthcare services in 2022 and 2024. Source: Africa IOA (2024); Willie et al. (2024).

In 2022, only 14.6% of the population (9.0 million people) used private healthcare schemes, while 73.6% (45.6 million people) relied on public institutions. By 2024, the share of the private sector increased to 27% (17 million people), while the share of the public sector decreased to 71% (44.7 million people). Despite the growth of private sector coverage, public healthcare continues to serve most of the population, which keeps the problem of its overload and insufficient funding relevant (Africa IOA 2024; Willie et al. 2024).

Also in Latin America, economic factors play a significant role in access to healthcare, but with regional differences. In Latin America and the Caribbean (LAC), healthcare financing dynamics vary considerably between countries. According to OECD data (2023), between 2010 and 2019 the average annual growth in health expenditure in the region reached 4.9%, exceeding the average economic growth rate of 3.1%. This growth was particularly

noticeable in upper-middle-income countries such as Chile, Mexico, Brazil and Argentina, where expanded fiscal capacity and the development of public insurance systems allowed for increased investment in the health sector. In contrast, lower-income countries, notably Nicaragua, Honduras and Guyana, experienced slower growth due to structural budget constraints and dependence on international aid. Although the average regional per capita health expenditure (1,155 USD in purchasing power parity terms) remains well below the OECD average (3,999 USD in PPP terms), there are significant differences between LAC countries. In 2019, total health expenditure as a percentage of GDP ranged from 4.4% in Nicaragua to 9.6% in Uruguay, while the regional average was 6.9%. Public and compulsory health insurance together cover approximately 57% of total health expenditure and voluntary insurance programmes cover approximately 11%, leaving a significant portion of expenditure to be paid directly by households.

The correlation between per capita GDP and per capita health expenditure suggests that quality healthcare is often a luxury good, accessible mainly to wealthy populations and countries. Middle-income countries with stable economic growth tend to increase their per capita health expenditure, while poorer countries and countries with stagnant economies, such as Nicaragua, Barbados and several Caribbean microstates, can barely afford to finance even basic health services. This disparity reinforces the perception that in many parts of the region, quality healthcare remains a privilege rather than a necessity.

High out-of-pocket costs continue to push many people into poverty across Latin America and the Caribbean (LAC): Every year, 1.7% of the population becomes newly poor, and 12.7% fall below the poverty line due to medical expenses. The COVID-19 pandemic has further exacerbated these inequalities. Consultations for chronic conditions such as diabetes and hypertension fell sharply in Chile, Mexico and Peru while cancer screening and treatment were delayed, leading to higher mortality rates. Some governments have responded by increasing health budgets: Guyana by 99%, Saint Vincent and the Grenadines by 71%, Antigua and Barbuda by 43% and Argentina by 42%, while others, notably Suriname and Uruguay, have cut spending due to financial crises and reliance on extra-budgetary mechanisms. Overall, the experience of Latin America confirms that economic growth alone does not ensure equitable access to healthcare. Without targeted redistribution measures and sustained investment in public systems, improvements in health care primarily benefit higher-income groups, perpetuating inequality and the financial vulnerability of poorer households (OECD & World Bank 2023).

An analysis of South-East Asia has shown that economic factors play a decisive role in shaping access to health services, with each country facing specific structural and financial constraints. Universal health coverage (UHC), as defined by the World Health Organisation (WHO), aims to ensure that all people receive the health services they need, from prevention and treatment to rehabilitation and palliative care, without facing financial hardship. Achieving this goal does not necessarily require a fully publicly funded system, as in the case of the British National Health Service. Instead, countries in South-East Asia use mixed approaches that combine tax funding, social insurance, and private contributions. Governments in the region have made formal commitments to achieve UHC, but progress has been mixed. Thailand has achieved near-universal coverage since 2002 through three public programmes, while Indonesia has expanded its national insurance (JKN) since 2014.

In contrast, Vietnam, the Philippines and Malaysia allocate less than 9% of total public expenditure to health care, limiting access to services and financial protection. Out-of-pocket (OOP) expenditure remains high, at around 40% of current health expenditure in Vietnam, 44.7% in the Philippines, 37% in Malaysia and 32% in Indonesia, indicating incomplete risk protection and continued vulnerability to medical impoverishment. The fragmentation of the system further undermines equity. In Thailand, differences between the universal health insurance programme, the civil servant health insurance programme and the social health insurance system lead to disparities in service packages and payment rules while in Vietnam, medication costs place a constant financial burden on patients despite extensive insurance coverage. Rising costs associated with population ageing and technological innovation also add to the financial pressure. Singapore is a special case. With a total fertility rate of around 0.97 and projections that a quarter of its citizens will be aged 65 and above by 2030, its demographic profile mirrors that of high-income countries in East Asia and Europe. To ensure long-term sustainability, governments in the region are increasingly adopting innovative fiscal and management strategies, including targeted taxes on tobacco and alcohol, digitisation of administrative processes, and strengthening of legal and procurement mechanisms that enhance accountability and efficiency (Lim et al. 2023).

Economic constraints and the structure of financing mechanisms in Nigeria likely contribute to low coverage rates. Despite the existence of the National Health Insurance Scheme (NHIS, established in 2006), participation remains concentrated among formal sector workers, while the majority of the informal and poor population faces barriers to access; as a result, overall coverage remains low, and out-of-pocket (OOP) payments account for the bulk of health care expenditures. Abdullahi and Gunawardena (2021) show that approximately 70% of payments are OOP and that the vast majority of the population is uninsured, highlighting the need for financing reform to strengthen financial protection. This study also found that age, education and religion influence access to public facilities, while marital status, income and employment were not statistically significant in this sample; however, the national funding picture shows that accessibility remains a limiting factor for many households. In Gombe State, access to public

facilities is high in the towns of Gombe and Kumo ($\approx 84\%$), but in Billiri, about 34% of households report poor access, illustrating marked intra-state disparities.

In Kazakhstan and India, public funding for health care has increased significantly thanks to government budget expenditures and the expansion of social health insurance, which has improved access to services. In Kazakhstan, the introduction of mandatory social health insurance (MSHI) has significantly increased public health expenditure (approximately doubling between 2019 and 2021), while in India, public health spending has increased only slightly (to approximately 1.6–1.8% of GDP by 2021–2022) despite large programs such as PM-JAY. In India, rapid economic growth has coincided with a marked reduction in multidimensional poverty and improved living conditions for many people, contributing to improved utilization of health services; however, funding remains insufficient to ensure equity. Despite overall progress, both countries still face challenges of resource scarcity and inequities in access. In Kazakhstan, the shortage is most acute outside major cities, particularly in rural and economically less developed southern regions (e.g., Zhambyl, Almaty, and Kyzylorda), where the density of health facilities and number of staff lag behind the national average, and over 80% of doctors work in cities. In India, low public spending and income inequality continue to limit access for marginalized groups, particularly scheduled tribes and castes, the rural poor and residents of remote/tribal areas, who have lower insurance coverage and face persistently high financial barriers even after the introduction of PM-JAY.

Kazakhstan and India exhibit similar urban-rural disparities in the availability of healthcare services. While both have seen increased public funding, they continue to face significant challenges with resource scarcity and geographical inequities. In rural areas of Kazakhstan, a shortage of healthcare professionals and facilities means that residents are forced to travel to cities to seek medical care. In India, the problem of accessibility is particularly acute in rural and conflict-affected areas, where a large proportion of villages do not have outpatient care and vaccination within a 2 km radius. Both countries face the problem of long travel times to healthcare facilities, which exacerbates the accessibility of healthcare services.

In South Africa and Latin America, economic factors significantly influence access to healthcare, but in different ways. In South Africa, a long-standing two-tier (public-private) system concentrates a disproportionate share of doctors and beds in the private sector, while most people rely on under-resourced public services. It is this structural division, rather than the existence of a public system, that exacerbates inequality when the public sector is chronically underfunded relative to needs. Financing and implementation remain contentious and will take years, so short- and medium-term gains in equity still depend on improving public sector financing and efficiency in a weak macro-fiscal environment. India is poorer in per capita terms than South Africa, but has recently shown stronger growth and significantly lower levels of measured income inequality, which helps explain why fiscal capacity and distributional pressures on the health system differ between the two countries.

In contrast, in Latin America per capita health expenditure grew faster than per capita GDP between 2010 and 2019, but average expenditure remains significantly lower than in the OECD and the financing structure still relies heavily on private payments. As noted earlier, in 2019, OOP expenditure accounted for about one-third of total health expenditure in LAC and pushed approximately 1.7% of the population below the poverty line and 12.7% below the extreme poverty line, sending a clear signal for deeper reform of financial protection. These last two features are not unique to Latin America. Around the world, including many middle-income countries, health care costs tend to grow faster than the economy, and high out-of-pocket costs for patients often lead to catastrophic expenditure and impoverishment if there are no robust universal health insurance mechanisms in place. This is evidenced by notable exceptions among middle-income countries: Countries that finance robust universal health insurance systems have much lower shares of out-of-pocket spending (e.g., Thailand and Costa Rica), demonstrating that financial protection depends on policy, not just income levels.

In South-East Asia, UHC is a policy goal, but progress has been uneven: In many countries, OOP expenditure still exceeds 30% of current health expenditure, a level associated with an increased risk of financial hardship, mainly due to limited public budgets and fragmented pooling mechanisms. This situation is not unique to South-East Asia; high out-of-pocket expenditure is common in many low- and lower-middle-income countries. Nigeria illustrates these broader constraints associated with low income. Coverage under the national scheme remains very low (estimated to be often below 5–7%), and households finance approximately 70% of health care costs directly out of pocket—both indicating limited pre-payment and pooling. Although oil revenues are substantial, fiscal constraints and problems with scheme design/implementation keep financial protection low; reforms are needed to expand mandatory, prepaid and progressively financed coverage to reduce the OOP burden.

In all regions considered, access to healthcare is determined not only by income levels, but also by the way in which systems are financed. Where inequality is high and out-of-pocket payments prevail, ensuring equitable access typically requires pre-funding, co-funding (general taxation and/or social health insurance) with progressive (i.e., income-related), contributions and equal payments, as well as strategic purchasing to improve efficiency. Global monitoring of UHC shows that countries that reduce catastrophic out-of-pocket expenditure while expanding service coverage rely on stronger pre-payment and pooling; conversely, growth without such reforms rarely provides financial

protection. Additional, non-health measures that reduce income inequality (e.g., skills and workforce development) can improve households' ability to pay for healthcare, but they are no substitute for progressive health financing.

4 Correlation between education and healthcare utilisation

Education is critical in the utilisation of maternal and child health services in India. Maternal education is directly linked to child health outcomes: Educated mothers are more likely to seek antenatal care, choose to deliver in a health facility, and ensure their children are fully immunised. The study shows that uneducated mothers have higher infant mortality rates and poorer child health outcomes. This highlights the importance of family education as a factor that improves health behaviour and outcomes (Agarwal & Yadav 2022).

Among women with secondary or higher education, 73.7% attended at least four antenatal check-ups, while among illiterate women this figure was significantly lower. These differences remain even after taking into account household income, indicating that education remains an independent factor influencing the use of antenatal care. Moreover, most antenatal services in the public sector are provided free of charge or at minimal cost, suggesting that financial barriers alone do not explain the observed differences. Similar trends were observed for other indicators among women with secondary or higher education, including visits to skilled health personnel for antenatal care (93.8%), receiving two or more tetanus toxoid injections (88.1%), and giving birth in a health facility (97.0%) (Barman et al. 2019).

Also in South Africa, education plays a crucial role in the use of maternal and child health services. National data show that only a small proportion of mothers have no education. The majority have at least some secondary or higher education. In a random effects regression analysis, each additional year of maternal education is associated with an increase of approximately 0.08 standard deviations in the child's age-adjusted height z-score (HAZ) after controlling for household income and other socio-economic variables. Larger household size is associated with poorer child health outcomes, largely because families with more children tend to be poorer and less educated. Non-linear effects identified by the probit model show that a one-year increase in maternal education reduces the probability of stunting by 1.83% overall. This underscores the crucial role of maternal education in improving child health. Mothers with higher levels of education are better informed about health practices and have higher child caretaking skills (Ohonba et al. 2019; Yessimov et al. 2020).

Shifting the focus to Latin America, it is observed that also here the level of education is an important determinant of health services utilisation. In Latin America, the average number of years of schooling for mothers is 7.28 years, higher than in Africa and Asia, and this has a positive impact on children's health. The prevalence of stunting is 19.9%, which is lower than in Africa (29.2%) and Asia (30.5%). Wasting (low weight for height) is also low at 2.4%, compared to 13.2% in South and South-East Asia and 7.2% in Sub-Saharan Africa (Le & Nguyen 2019). Table 1 presents summary statistics on key maternal characteristics and child health outcomes in eight Latin American countries: Brazil, Mexico, Chile, Argentina, Peru, Colombia, Uruguay, and Costa Rica. These countries were selected because they represent the main subregions of Latin America and have reliable, comparable data from international sources. Panel A focuses on maternal characteristics such as education level and age, while Panel B presents child health indicators, including anthropometric z-scores and the prevalence of forms of malnutrition (stunting, wasting and underweight) among children under five years of age. Z-scores are based on Le and Nguyen (2019) and WHO Child Growth Standards (WHO 2025) for boys and girls aged 0–59 months, which define normal growth as being within ± 2 standard deviations (SD) from the median for the reference population.

Table 1: Summary statistics of maternal characteristics and child anthropometric indicators, mean and standard deviation (SD), in Latin America (Brazil, Mexico, Chile, Argentina, Peru, Colombia, Uruguay, Costa Rica).

Metric	Average value (SD)
Panel A: Characteristics of the mother	
Mother's education (years in school)	7.283 (4.341)
Age of the mother (years)	25.833 (5.642)
Panel B: Child health outcomes	
Height-for-age z-score (HAZ)	-0.984 (1.314)
Weight-for-height z-score (WHZ)*	0.038 (1.099)
Weight-for-age z-score (WAZ)	-0.604 (1.244)
Stunting (HAZ < -2 SD), proportion	0.199 (0.399)
Wasting (WHZ < -2 SD), proportion	0.024 (0.153)
Underweight (WAZ < -2 SD), proportion	0.117 (0.321)

Note: *we retain WHZ (not BMI-for-age) because WHO recommends WHZ for defining wasting in children under five; BMI-for-age is used primarily for other age ranges and for overweight/obesity surveillance.

Source: Le and Nguyen (2019); WHO (2025).

In Latin America and the Caribbean, under-five mortality rates have fallen significantly from 33 per 1,000 live births in 2000 to 16 per 1,000 in 2020, a period that coincided with a steady rise in maternal education levels and broader access to public health programmes. Mothers with higher levels of education are more likely to have access to healthcare, vaccines and nutritious diets for their children, which reduces the risk of mortality. This confirms that social determinants such as maternal education have a significant impact on child mortality rates (Chivardi et al. 2023).

In Southeast Asia, similarly, education levels have a significant impact on access to healthcare. Education increases the probability of inpatient visits in the public sector by 1%. Higher levels of education, measured as years of schooling, correlate with greater use of medical services. An additional year of schooling in Vietnam increases the number of inpatient visits by 0.9–1.1% in the public sector and by 0.5% in the private sector. This relationship reflects the cumulative effect of education, where each additional year of formal education leads to greater health awareness and more interaction with formal healthcare institutions. Among the mechanisms explaining the impact of education on the use of health services in Vietnam is participation in health insurance programmes, the probability of which increases by 2.9–3.2% with each additional year of education. This increase has been observed over the past two decades, especially since the early 2000s, when Vietnam expanded national health insurance in parallel with a rapid increase in the level of education among young adults. These findings suggest that steady increases in education levels during this period directly contributed to increased demand for health services and their affordability (Dang 2018).

Maternal education significantly reduces child mortality (Díaz Pérez 2025; Mamed-Zade 2021). In Vietnam, an additional year of schooling leads to a 21.54% reduction in under-five mortality and a 22.24% reduction in infant mortality. More educated mothers are generally better informed about the importance of prenatal care, vaccination, hygiene and nutrition, which directly affects the health of their children. In addition, such mothers are more likely to seek medical care, use preventive and curative services, and better follow doctors' recommendations (Wu 2022).

In a cross-sectional descriptive study by Bello et al. (2022) conducted in Nigeria, 185 newly delivered mothers from two health facilities were surveyed to assess maternal health literacy (MHL), utilisation of maternal healthcare services, and pregnancy outcomes. Results indicated that more than one-third (41.6%) of participants had inadequate MHL. Utilisation of maternal healthcare services was found to be moderate. For example, only 55.7% of participants were registered for antenatal care (ANC) at or before 14 weeks of pregnancy, and 59.5% received three doses of the tetanus vaccine. Nonetheless, a majority (85.9%) attended ANC with a skilled birth attendant. Alarming, nearly half (49.2%) of the participants experienced what the authors defined as a poor pregnancy outcome. The study further found that MHL was significantly associated with the utilisation of maternal healthcare services ($p < .05$) and also significantly associated with sociodemographic characteristics including educational level, age, occupation and income of the participants. The authors conclude that improving MHL through targeted training by health workers may enhance the use of maternal healthcare services and improve pregnancy outcomes.

Also in India and South Africa, maternal education had a significant, quantifiable impact on the use of maternal and child health services and on child development outcomes. In India, women with secondary or higher education are much more likely than less educated ones to use essential services, for example 73.7% attend ≥ 4 antenatal check-ups; 93.8% seek skilled personnel for antenatal care; 88.1% receive ≥ 2 tetanus toxoid injections; and 97.0% give

birth in health facilities. Differences remain even after accounting for household income, indicating an independent effect of education. In South Africa, panel regressions show that each additional year of maternal education is associated with an increase in children's HAZ of ~ 0.08 SD, and probit estimates indicate a 1.83% reduction in the probability of stunting for each additional year. These relationships are reported after controlling for income and other socio-economic covariates, confirming the conclusion that higher maternal education is associated with better child growth and service utilisation beyond the influence of income.

In Latin America, multi-country evidence shows that higher maternal schooling is consistently linked to better child health outcomes, though the magnitude varies considerably across contexts. Comparative data covering Brazil, Mexico, Chile, Argentina, Peru, Colombia, Uruguay, and Costa Rica indicate an average of 7.3 years of maternal education, which corresponds to lower regional prevalence of stunting (19.9%) and wasting (2.4%) compared with low- and middle-income countries in other regions, although disparities remain between wealthier countries (e.g., Chile, Uruguay) and poorer ones (e.g., Guatemala, El Salvador) (Le & Nguyen 2019; OECD & World Bank 2023). Similar associations have been reported in Southeast Asia, where analyses from Vietnam and the Philippines find that each additional year of maternal education increases the probability of health-service utilisation by roughly 1% and reduces child mortality by about 20%, though results depend on sampling design and adjustment for household characteristics (Dang 2018). In Nigeria, studies demonstrate that mothers with tertiary education display significantly higher awareness of child-health practices and substantially greater use of professional obstetric and immunisation services (Bello et al. 2022). While the direction of association between maternal education and child health is robust, its strength differs across countries and methodological approaches, underscoring the need to interpret findings with attention to data quality, model specification, and the confounding influence of correlated socioeconomic variables such as income and household size (Barman et al. 2019; Le & Nguyen 2019).

To deepen the analysis of what country-level characteristics correlate with access to health services, we include Table 2 summarising key metrics of the study.

Table 2: Summary indicators for selected countries, OOP = out of pocket.

Country/ Region	GDP per capita (PPP, int.\$)	Mean years of schooling	Health expend. (% of GDP)	OOP expend. (%)	Gini index
Kazakhstan	\$30,765 (2022)	12.1 (2022)	3.2% (2021)	32.1% (2021)	27.5 (2021)
India	\$9,209 (2023)	6.7 (2022)	2.9% (2021)	47.1% (2021)	32.5 (2022)
South Africa	\$16,090 (2022)	10.5 (2022)	8.3% (2021)	7.3% (2021)	63.0 (2014)
Nigeria	\$5,862 (2023)	7.2 (2022)	3.4% (2021)	72.1% (2021)	35.1 (2018)
Brazil (LatAm)	\$17,046 (2022)	8.3 (2022)	9.8% (2021)	27.5% (2021)	48.9 (2022)
Mexico (LatAm)	\$22,810 (2022)	9.3 (2022)	5.6% (2021)	42.1% (2021)	38.3 (2022)
Indonesia (SE Asia)	\$14,660 (2022)	8.7 (2022)	3.1% (2021)	33.3% (2021)	37.9 (2023)
Thailand (SE Asia)	\$19,949 (2022)	8.1 (2022)	4.4% (2021)	8.8% (2021)	39.4 (2022)

Source: OECD and World Bank (2023); Mitra (2021); Lim et al. (2023); Barro-Lee Educational Attainment Dataset (2025).

The level of education of mothers has a significant impact on the use of health services and the health outcomes of children in all regions considered. Educated mothers are more likely to seek medical care, are better informed about the importance of preventive measures, and provide better care for their children. This leads to a reduction in child mortality and improves the overall health of children. Continued investment in education, especially for women, is needed to improve health outcomes and ensure equal access to quality health services.

5 Geographical barriers to access to healthcare services

In Kazakhstan there is a pronounced disparity in the availability of healthcare services between urban and rural areas. Figure 2 shows the density of healthcare facilities per 10,000 population from 2000 to 2022. The green line represents urban areas, where institution density remained relatively stable and mostly above the WHO minimum benchmark (blue line). The yellow line represents rural areas, which rose until 2008 and then declined as reforms prioritized consolidation of smaller clinics into larger, multidisciplinary hospitals located mainly in urban centres (Shaltynov et al. 2021). This structural shift reduced rural facility density even as some facility categories grew in absolute number because of population increase and the expansion of mobile medical services.

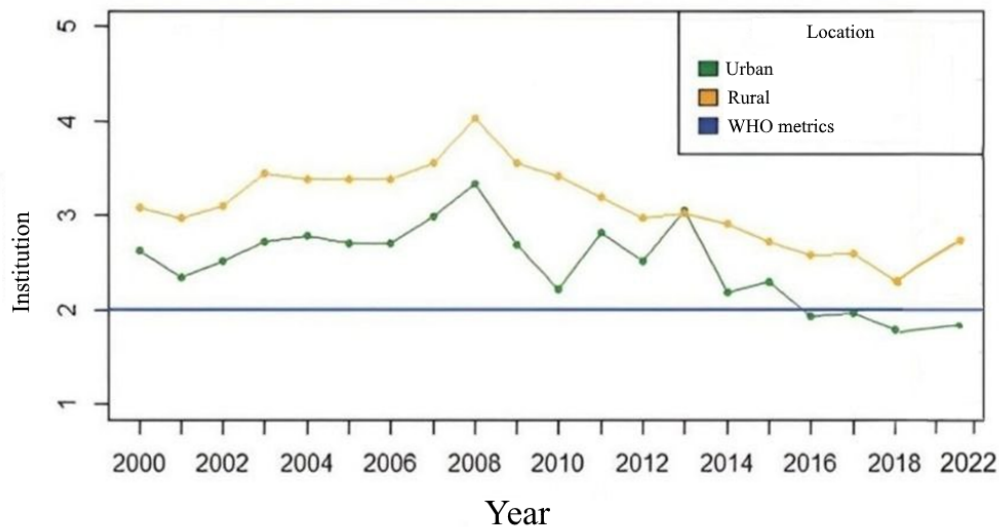


Figure 2: Density of healthcare facilities per 10,000 population in Kazakhstan (2000–2022). Green = urban areas; Yellow = rural areas; Blue = WHO minimum benchmark. Source: National Scientific Center for Healthcare Development named after Salidat Kairbekova (2024); Shaltynov et al. (2021).

According to the National Report on the Development of the Healthcare System for 2012–2022, in 2022 there were 1,132 primary healthcare organisations in urban areas (each serving on average 10,000–100,000 people) and 5,022 facilities in rural areas (each serving on average 1,505 people). Although per-capita facility density declined after 2008, the total number of rural facilities increased relative to 2000, partly due to demographic growth and the introduction of mobile units that in 2022 covered 1,889 settlements, expanding geographic reach and mitigating some accessibility gaps (National Scientific Center for Healthcare Development named after Salidat Kairbekova 2024; Shaltynov et al. 2021).

Despite these gains, access to specialised care in rural areas remains limited. The density of primary healthcare facilities is comparatively higher while consultative and diagnostic services are scarcer, and staffing shortages, especially of general practitioners, family doctors, district paediatricians and social workers persist (Shora & Rakhmetova 2024). There are insufficient medical facilities in many villages (about 850 affected), a shortfall of roughly 2,000 rural medical staff, and 45.8% of rural residents must travel to cities for care; more than 3 million people remain without health insurance (Spankulova et al. 2024).

Geography also has a significant impact on access to health services in India, especially in rural and conflict-affected areas. The problem is particularly pronounced with respect to outpatient care and vaccinations, as 11% of villages do not have these services within a 2 km radius; however, this figure falls sharply to only 0.5% when the zone is extended to 5 km. Delivery and inpatient treatment remain less accessible, as 11% and 12% of villages do not have these services within 5 km. At the same time, 63.33% of pedestrians, 22.22% of motorcyclists, 30.55% of public transport passengers, and 23.88% of private car users have a travel time exceeding three hours to reach inpatient care (Verma & Dash 2020). Although these figures reveal certain spatial disparities, they are not extreme when viewed in the broader context of countries with comparable levels of development. Given India's vast population and territorial diversity, such indicators demonstrate relatively good spatial coverage of primary care. It is unrealistic for every small village to have a full health centre, and the observed travel distances are consistent with international norms for lower-middle-income countries. Therefore, while geographical factors continue to constrain healthcare access for some rural populations, the overall reach of India's healthcare network reflects a considerable improvement over the past two decades.

Also in South Africa, geographical accessibility significantly affects access to healthcare services. In rural districts such as O.R. Tambo and Alfred Nzo, there is a shortage of hospital beds and medical facilities. A significant shortage of ambulances also exacerbates the situation: There are only 0.4 ambulances per 10,000 people in the Eastern Cape province, which is significantly below the national standard of 1 per 10,000. Many women in remote areas do not attend antenatal care due to long distances and a lack of healthcare providers, leading to higher maternal mortality rates. The number of people covered by healthcare programmes increased only slightly, from 8.6 million in 2012 to 8.9 million in 2021, reflecting stagnation in service expansion. Considering that the population grew during this period, the proportion of citizens covered by these schemes has in fact declined marginally, from approximately 16% to 15%. In some districts, there is less than one hospital bed per 1,000 people, while the shortfall in ambulance

availability amounts to 32% of the required number to meet national standards (Willie & Maqbool 2023). Also in South Africa, a lack of hospital beds and ambulances in rural areas leads to high maternal mortality rates. The problem is particularly acute in remote provinces such as the Eastern Cape, Limpopo, and KwaZulu-Natal, where the combination of mountainous terrain, poor road networks, and limited emergency transport significantly extends travel times to healthcare facilities. Studies show that in the Eastern Cape, nearly 46% of pregnant women travel more than an hour to reach maternity care, and only 63% of rural households are within a 5-kilometer radius of a primary healthcare centre (Willie & Maqbool 2023). These delays are associated with higher maternal and perinatal mortality, particularly where emergency obstetric care is concentrated in a few regional hospitals.

In Latin America, geographical factors have an equally significant impact on access to healthcare. Distance to healthcare centres remains a major barrier, especially in rural areas, where long distances and inadequate transport infrastructure make it difficult to access routine or preventive care. Inequalities between rural and urban areas are manifested in limited transport options and a lack of medical facilities in remote areas, which exacerbate the problem of healthcare accessibility (Gómez Trujillo et al. 2025).

Most indigenous communities in Peru (87.54%) do not have health facilities nearby, and the average time it takes to reach the nearest health facility is 0.96 hours via motorized transport. Only 45.93% of communities are within the “golden hour” (less than 1 hour) of travelling time to a health facility, which is critical for emergency care. 62.70% of communities are within 2 hours’ drive, but 15.44% require more than 8 hours, indicating serious barriers to healthcare access. In total, there are 1,043 indigenous communities in Peru. Only 130 of them (12.46%) have a health facility, while 913 (87.54%) remain without one (Hernández-Vásquez et al. 2022).

There are 504 palliative care services in Colombia, of which 77% (393 services) are primary care services. The highest number of such services is found in the Caribbean region (108), followed by the Central region (85) and the District of Columbia, Bogotá (74). The Orinoquia and Amazonia regions have the lowest rates of both primary and specialised palliative care, and in some areas these services are completely absent, due to their remote location and underdeveloped health infrastructure. The average density of primary palliative care services in Colombia is 1.82 per 100,000 inhabitants. This is below the international standard (2 per 100,000) as defined by Sánchez-Cárdenas et al. (2024). Overall, palliative care services cover only 41% of the country’s population, with Bogota having the highest coverage (79%) and the Orinoquia and Amazon regions having the lowest (29% and 18%, respectively) (Sánchez-Cárdenas et al. 2024).

In Latin America, the interaction between population density, infrastructure development, and healthcare network organisation produces sharp spatial inequalities. Long distances and inadequate transport infrastructure make it difficult to access healthcare services, especially in rural and mountainous areas. For instance, in Bolivia and Ecuador, the proportion of rural residents living within a one-hour travel radius to the nearest hospital is only 52% and 58%, respectively, compared with 89% in urban areas. Travel time is strongly correlated with population density, meaning that low-density areas, such as the Amazon basin or Andean highlands, face the highest physical barriers to care. Countries that maintain a decentralised model, such as Costa Rica, which has small local health centres (EBAIS) in nearly every village, report much higher rates of preventive visits and routine screening coverage than those that rely on a few large hospitals spaced widely apart, such as Argentina and Brazil (Gómez Trujillo et al. 2025; OECD & World Bank 2023). A similar situation was observed in Peru, where a large proportion of indigenous communities do not have healthcare facilities nearby, highlighting serious barriers to access. Specifically, Hernández-Vásquez et al. (2022) found that only 45.93% of indigenous settlements are located within one hour of a healthcare facility, while 15.44% require more than eight hours to reach one, reflecting the dual influence of topography and settlement dispersion.

A comparable pattern exists in Colombia, where Sánchez-Cárdenas et al. (2024) reported that the Orinoquia and Amazonia regions, characterised by vast low-density territories, lack both primary and specialised care services, leaving entire populations dependent on mobile or intermittent outreach teams. Similarly in Mexico, Gómez Trujillo et al. (2025) identified distance, road quality and transport costs as primary barriers to paediatric healthcare, with rural children being one third as likely to attend regular check-ups as those in urban areas. Thus, geographical accessibility in Latin America is not merely a function of physical distance but results from the interplay between settlement patterns, transport infrastructure, and the design of healthcare systems. Densely populated countries with decentralised networks (e.g., Costa Rica and Chile) achieve greater spatial equity, while sparsely populated states with centralised tertiary systems (e.g., Bolivia, Peru, and Colombia) face persistent inequalities despite progress in mobile medicine and telehealth initiatives. Also in Nigeria, geographical factors have a significant impact on access to healthcare (Ihnatenko et al. 2020; Madraimov et al. 2025).

Analysis of Nigeria demonstrates that also here, geographical factors have a significant impact on access to healthcare services. The country has 23,640 healthcare facilities of which 85.8% are primary, 14% secondary, and 0.2% tertiary. Rural areas face significant challenges in access to healthcare, leading to delays in treatment, increased severity of illness, and higher maternal and child mortality rates (Otu 2018). The number of comprehensive emergency obstetric care facilities in Nigeria varies considerably between cities, reflecting both population density

and disparities in healthcare infrastructure. In Lagos, which has an estimated population of over 15 million, there are 796 such facilities, equivalent to approximately 5.3 facilities per 100,000 population, whereas Maiduguri, with a population of about 1 million, has only 26 facilities, or roughly 2.6 per 100,000. This indicates significant inequality in the spatial distribution of healthcare resources even across urban areas. The capacity of these facilities also differs: Those in Lagos are larger and better equipped, often serving as referral or teaching hospitals, whereas those in Maiduguri are typically small-scale institutions with limited bed capacity and staff availability. The average travel time to the nearest emergency obstetric facility ranges from 13 minutes in Maiduguri to 46 minutes in Kaduna, depending on the time of day, road conditions, and traffic. The percentage of women within a 30-minute travel distance to a facility varies widely, from 33% in Aba to over 90% in several metropolitan centres such as Lagos and Ibadan. When adjusted for population distribution, this means that in cities like Lagos, over 13 million women of reproductive age have timely access to emergency obstetric services, whereas in Kaduna and other northern cities, large segments of the population remain underserved. The proportion of women aged 15–49 years within reach of a facility also varies considerably by city and time frame: in Maiduguri, 94% of women are within 15 minutes of a facility, while in Kaduna, only 64% are within the same time frame (Banke-Thomas et al. 2024).

Geographical accessibility of healthcare services remains a significant problem in all the regions surveyed. In rural areas, there is a shortage of healthcare facilities and staff, resulting in long travel times and difficulties in accessing care. Improvements in healthcare infrastructure and resource allocation are needed to ensure equal access to healthcare services for all segments of the population, especially in remote and rural areas.

6 Conclusions

The study showed that economic factors are key to access to healthcare services in developing countries. The main results showed that the increase in public healthcare financing in Kazakhstan from 1.1 trillion KZT (2018) to 2.8 trillion KZT (2020) reduced out-of-pocket expenditure from 34% (2018) to 31% (2022) of total current health expenditure, but distributional issues remain. In India, economic growth has helped reduce poverty and improve living conditions, but inequality and resource allocation remain a problem in both countries. South Africa and Latin America also face significant economic barriers, exacerbated by a dual healthcare system, high out-of-pocket costs, and extreme levels of income inequality. In Nigeria, access to healthcare remains low, and around 70% of healthcare payments are made out-of-pocket, highlighting the need to reform healthcare financing mechanisms.

In Kazakhstan and India, there have been significant increases in healthcare financing, which has led to improved access to healthcare services. However, despite these improvements, issues of resource allocation and inequalities in access remain significant barriers. Also in South Africa and Latin America, economic factors have a significant impact on access to healthcare, but in unique ways. In Southeast Asia, universal health coverage aims to provide financial protection and equal access to services, but economic and social disparities complicate its achievement.

To strengthen healthcare systems, it is necessary to increase the share of pooled/public health spending (general taxation and mandatory social health insurance) in GDP and shift financing away from out-of-pocket payments, alongside more efficient and equitable resource allocation to ensure equal access to quality services. Education levels, especially among women, should be raised through health-awareness programmes. Transport infrastructure and access to healthcare facilities in rural areas should be developed, including the construction and modernisation of facilities and the provision of resources and staff. These measures are particularly relevant for improving the situation in remote areas.

The lack of data for some regions can distort the overall picture, which can be overcome by conducting additional research and data collection. Economic crises and political instability can affect the availability of healthcare services, which should be addressed in the development of long-term sustainable healthcare strategies.

To improve research outcomes, it is necessary to assess how digital technologies such as telemedicine, electronic health records, and other tools can improve access to and quality of healthcare. It is also necessary to analyse the effectiveness of existing programmes and propose improvements. Further research is needed on the impact of education, income, and other social factors to develop more targeted health interventions.

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