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The Role of Decentralized Health Systems in Shaping Service Quality: A Systematic Review in Low- and Middle-Income Countries

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Abstract

Decentralization has emerged as a prominent strategy for health sector reform in low- and middle-income countries (LMICs), aiming to enhance service quality, efficiency, equity, and responsiveness. This study systematically reviews literature published between 2021 and 2025 to explore the role of decentralized health systems in shaping healthcare service quality across LMICs. Using PRISMA 2020 guidelines, 20 eligible studies were identified and analyzed from databases including PubMed, Scopus, Web of Science, and Google Scholar. Thematic synthesis of findings reveals mixed outcomes: while decentralization improves local responsiveness, enhances community engagement, and strengthens health system performance in some settings, it also exacerbates disparities in others due to uneven institutional capacity, limited fiscal resources, and fragmented coordination. Key performance areas identified include human resource deployment, financing, access to services, and equity in service delivery. The study emphasizes the significance of local capacity-building, efficient resource allocation, and integrated planning in attaining sustainable and equitable healthcare improvements within decentralized systems. This review provides practical insights for policymakers aiming to align decentralization strategies with health equity and service quality objectives.

Introduction

Over the past few decades, decentralization has become a prominent reform strategy in the health systems of low- and middle-income countries (LMICs). Decentralization has been undertaken as part of health-care reform measures in both developed and developing nations to improve access to care, promote efficiency, equity, and quality, and strengthen oversight (George *et al*., 2023). This global movement involves delegating planning or service delivery responsibility from national to local governments, or from big to district facilities. The decentralized health system is defined as the movement of primary decision-making responsibility and authority for health care, such as planning, budgeting, and financial management, from the national government or a large unit of local government to a smaller organization closer to the community (Kesale *et al*., 2022). Decentralization encompasses various approaches such as de-concentration, where responsibilities and authority are shifted from the central government to regional or district levels within the same ministry; devolution, which involves the transfer of powers to lower tiers of government; delegation, wherein semi-autonomous bodies are created to undertake roles previously managed by the Ministry of Health; and privatization, where private entities take over ownership and operational control (Noory *et al*., 2024). In the medical field, decentralization is primarily implemented as a strategy to enhance system performance and

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improve the quality and efficiency of healthcare service delivery.

Many countries have had difficulty in implementing and scaling up decentralization due to issues of availability, price, and service quality. Studies have found no or limited increase in service quality following decentralization (Noory *et al.*, 2024; Rushton *et al.*, 2021). In other studies, certain countries have witnessed significant positive progress as a result of health system relinquishment; in other situations, a decentralised health system has been recentralised due to the perceived failure of the reform. However, mixed evidence may reflect not only different country experiences, but also significant differences in the types of decentralisations studied, methodologies used to assess the impact, and health system concepts/components covered (Sapkota *et al.*, 2023). Furthermore, the precise consequences of decentralization on the performance of healthcare systems are little understood.

Given the diversity of contexts and decentralization models across LMICs, a comprehensive and systematic review of the existing literature is needed to synthesize current findings and identify consistent trends or gaps. Understanding how and under what conditions decentralization contributes to service quality is crucial for policymakers, especially in countries striving to achieve universal health coverage and reduce health inequalities. This study aims to systematically review the relationship between health decentralization and the quality of health services in LMICs. By doing so, it seeks to inform ongoing reforms and guide more effective implementation of decentralization policies in the health sector.

Methods

This research strategy involves conducting a systematic review of the literature. The systematic literature review (SLR) method describes findings from studies published in journals for a specific area of research and inventing originality (Mengist *et al.*, 2020). The author used the Preferred Reporting Items for Systematic Reviews and Meta-analyses

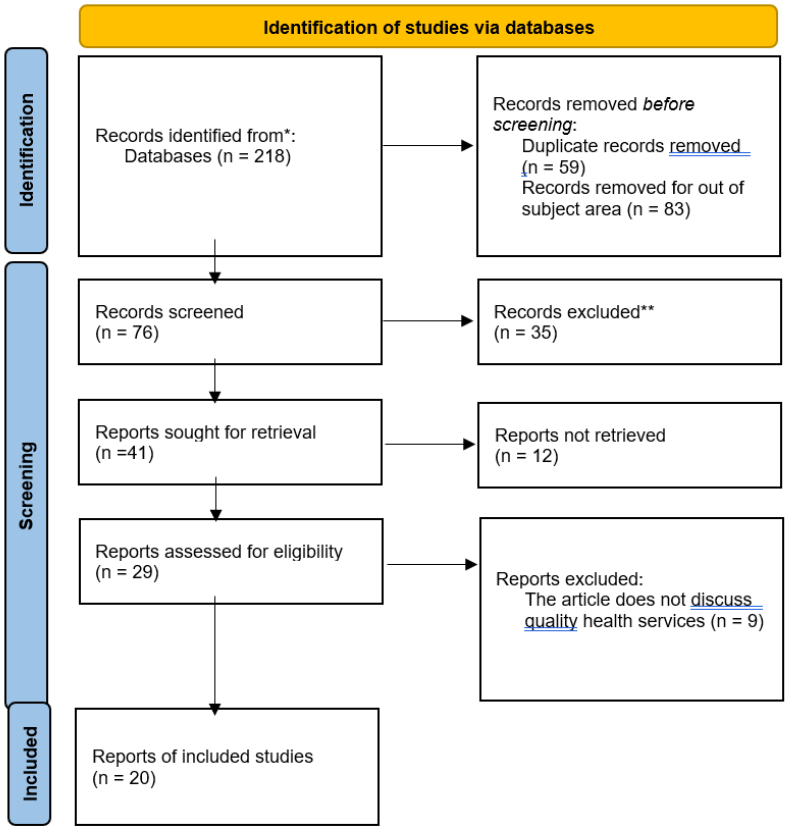

Figure 1. 2020 PRISMA Methods

(PRISMA) 2020 to ensure systematic literature reviews that are transparent, reproducible, and scientifically adequate (Page *et al*., 2021). A comprehensive literature search was conducted using electronic databases including PubMed, Scopus, Web of Science, and Google Scholar. The search covered articles published from 2021 to 2025 using a combination of keywords such as *"health decentralization"*, *"service quality"*, *"healthcare delivery"*, *"low- and middle-income countries"*, and *"LMICs"*. The following criteria were used in selecting the qualifying articles: (i) The article had to be on the impact of decentralization on quality health care; (ii) it had to be original published articles; (iii) it had to be conducted in lower and middle-income countries as defined by the World Bank; (iv) Written in English and (v) Article published between 2021 and 2025. Articles were excluded if they: (i) focused on decentralization outside the health sector; (ii) were conceptual, opinion-based, or commentary articles; (iii) were not accessible in full text. Data extraction was applied to determine which data were involved in the study, which included many of the variables used to evaluate research papers (Nussbaumer-Streit *et al*., 2023). Data was analyzed using content analysis, which aids comprehension by examining the text of each article and its literature references (Popenoe *et al*., 2021). Data analysis entailed collecting and combining information about references, country, population, intervention, outcome, and study design. Figure 1 illustrates the flow diagram of the PRISMA method.

Results and Discussion

Table 1. Characteristics of Included Studies

No.	Ref	Country	Population	Intervention	Comparison	Outcome	Study Design
1.	Rushton *et al*., 2021	Nepal	Nepal Health Systems	The effects of changing Nepal's constitution towards a federal system	Health systems from a unitary to a federalised structure	Changes in the structure, organization, and performance of the health system	Longitu dinal
2.	Dodd *et al*., 2021	Phillipines	Community health worker	Health system decentralization and its influence on governance and administration of CHW programs	Differences across geographic settings (inter-municipal comparisons); no formal control group, but variation between cities/provinces acts as an implicit comparison	Variations in CHW experiences, quality of training, financial/ human resource allocation, and political influences on program governance	Quali tative
3.	Setiawan *et al*., 2022	Indonesia	Local government	Local government capacities	Three types of capacities	Administrative, fiscal, and political complementary and effectively improve the local government's achievement in delivering public services.	Quanti tative

4.	Noory *et al*., 2024	Sudan	418 household members	Implementation of the healthcare decentralization policy in Sudan	Perceptions and conditions of access, affordability, and quality of healthcare before decentralization	Perceived decline in access, affordability, and quality of healthcare services after decentralization, increased privatization, closure of facilities, and reduced capacity of devolved facilities	Mixed methods
5.	Birru *et al*., 2024	Lesotho	Healthcare workers	Lesotho's Primary Health Care Reform (LPHCR) is a decentralization initiative transferring healthcare management from the central Ministry of Health to district-level authorities.	Pre-reform centralized healthcare management	Perceived impact of decentralization on the six WHO health system building blocks: service delivery, health information systems, access to essential medicines, health workforce, financing, and leadership/ governance.	Quali tative
6.	Atisa *et al*., 2021	Africa	Africa	Decentralization	Impact decentralization	Identification of sustainability outcomes in decentralized governance—economic development, environmental protection, social equity, reduced civil conflict, improved living standards	Quali tative
7.	Maket & Naibei, 2025	Kenya	23 Kenyan counties	Fiscal decentralization	Variation across counties in levels of fiscal decentralization and GDP; no centralized control group, but comparative effects across differing fiscal capacities	Availability of healthcare resources: number of medical personnel and hospital beds per 10,000 people	Quanti tative
8.	Singh *et al*., 2024	India	18 non-special category states of India,	Fiscal decentralization	Variation across states and over time in levels of fiscal decentralization and institutional quality (no explicit centralized control group)	Public service delivery outcomes in the health and education sectors	Longi tudinal

9.	Feldhaus *et al*., 2023	India	Health managers	Decentralization	Variation in levels of decision space and institutional capacity across different districts and blocks	Decentralization improves effectiveness and efficiency	Mixed methods
10.	Siburian, 2024	Indonesia	Indonesian provincial-level data	Decentralization	Decentralization and health outcome	Local governments that implement unique local health programs recognized under decentralization laws can improve regional health outcomes. The findings also suggest that ethnic diversity harms regional health outcomes.	Quanti tative
11.	Bojanic & Collins, 2021	OECD and non-OECD countries	OECD and non-OECD countries	Decentralization	Countries or periods with lower levels of decentralization;	Income inequality, including its variation with economic development and decentralization mix	Quanti tative
12.	Cao *et al*., 2023	China	Chinese local governments	Fiscal decentralization	Variation in levels of local government debt and fiscal decentralization across regions and over time	Public health outcomes and the bidirectional effects between fiscal decentralization and local government debt	Mixed methods
13.	Chen *et al*., 2021	Uganda	Managers	Decentralization	Comparison between de jure (policy-based) and de facto (reported) decision space, and between facility types (e.g., large vs. small facilities)	Managerial performance indicators, including essential drug availability, performance management, and quality improvement	Quanti tative
14.	Dougherty *et al*., 2022	OECD Countries	OECD Countries	Administrative decentralization in healthcare decision-making and expenditure assignment across levels of government	Different levels of decentralization (centralized, moderately , and decentralized, highly decentralized systems)	Health care spending levels and life expectancy	Quanti tative
15.	Bossert *et al*., 2022	Colombia and Chile	Municipalities in Colombia and Chile	Health system decentralization and financial reform policies	Equity of funding allocation	Equity in health system funding allocation; sustainability of equitable funding over time	Longi tudinal

16.	Moner-Girona *et al*., 2021	Sub-Saharan Africa	Rural healthcare facilities	Electrification of health facilities	Current state of unelectrified health facilities vs. electrified scenarios using PV systems	Improved healthcare access (reduced travel time by ~50 minutes for 281 million people); cost analysis of PV installation and operation (EUR 484 million investment)	Quanti tative
17.	Miranda-Lescano *et al*., 2023	57 developed and developing countries	57 developed and developing countries	Central and subnational government expenditure on health and education	Variations in levels of government spending across countries and over time	Human Development Index (HDI) and its dimensions: life expectancy, education, and income	Quanti tative
18.	Gadisa, 2022	Ethiopian	Ethiopian health sector	Decentralization	Health sector condition	improved financial mechanisms	Quali tative
19.	Joshi *et al*., 2023	Sub-Saharan Africa	Health care workers	Decentralization	Comparison between centralized vs. decentralized service delivery	Acceptability of decentralized childhood TB diagnosis among HCWs	Quali tative
20.	Ajisegiri *et al*., 2021	Nigeria	National and subnational health authorities	Implementation of national NCD policies	Comparison between national-level policy intent and subnational-level implementation effectiveness	Alignment of NCD policy with decentralized structures; effectiveness of coordination, financing, and integration into primary healthcare (PHC); progress toward national NCD targets	Quanti tative

Sources: Author's analysis of cited studies in the table

Decentralization produces diverse and distinct reactions, with more positive benefits in more developed regions compared to less developed ones. The impacts varied depending on the level of growth of subnational governments, their available resources, demographic factors, the design and management of health systems, and the resources redistributed during the decentralization process (Bojanic & Collins, 2021). More significant benefits were identified in the more developed regions (south). In contrast, the northern areas, defined by disadvantaged cities with limited basic infrastructure and resources, had less obvious consequences of decentralization. Healthcare accessibility challenges, such as cost and transportation concerns, were more common in the south, particularly in less developed regions. This evidence highlights the importance of healthcare accessibility, encompassing factors such as travel distance and time (Oliveira *et al*., 2023). This underscores the importance of accessibility as a core element of health equity, especially in geographically and economically marginalized communities.

Decentralization negatively impacted the availability of resources and access to healthcare, contributing to greater disparities among population groups (Noory *et al*., 2024). The misallocation of financial resources led to a disjointed and inequitable health system, where access, utilization, and resource availability—as well as cost control—were closely tied to the economic status of each region (Qin *et al*., 2024). Wealthier areas were better positioned to increase their funding capacity, thereby deepening the divide between affluent

and disadvantaged areas (Haemmerli *et al*., 2021). This deepening divide illustrates that decentralization alone is not sufficient to ensure universal health coverage.

The closeness between local authorities and the communities they serve enables subnational governments to recognize and respond more effectively to the specific health service needs of their populations. This localized understanding is crucial for effective resource allocation and contributes to enhancing overall population health. Policymakers hold a central responsibility in shaping health strategies (Sigüenza & Artabe, 2022). When healthcare delivery costs are aligned with regional demographic and structural factors, it can lead to significant gains in system efficiency (Mbau *et al*., 2023). In Indonesia, for example, local governments are increasingly forming strategic partnerships with BPJS Kesehatan, the national health insurance agency, to co-finance and expand coverage. Contracts are utilized as tools for health service purchasing, though they must be closely monitored to avoid inefficiencies (Puspandari *et al*., 2025). However, some gaps persist, such as the failure of the JKN scheme to consistently integrate reproductive health and contraceptive access into service delivery, undermining long-term public health objectives (Wahyudi *et al*., 2022). Strengthening the capacity of local governments to analyze and act on these needs is therefore critical to achieving more equitable and efficient health outcomes. In the healthcare sector, delivering patient-centered care is vital for enhancing results and ensuring favorable experiences for individuals (Satoto *et al*., 2025). Healthcare providers willing to re-refer their patients to the hospital are the ones who engage with it. Therefore, to increase the willingness to re-refer patients, hospital management must foster stronger engagement with referring healthcare providers, especially by improving communication and coordination between specialists and primary care practitioners (Wijaya & Antonio, 2024). This collaborative approach not only enhances continuity of care but also strengthens the effectiveness of referral networks under the decentralized system.

Variations in community preferences also reflect unequal service environments. In suburban areas of Java, families predominantly choose formal medical facilities such as hospitals and Puskesmas. Conversely, many rural or remote populations still depend on traditional medicine (Pakaya *et al*., 2024). These differences indicate that, beyond financing and infrastructure, cultural and behavioral factors must be incorporated into decentralized health strategies to ensure inclusiveness and effectiveness.

Decentralization also intersects with social determinants of health. Local governments often control sectors such as education, sanitation, and infrastructure, all of which impact health outcomes. However, budget constraints frequently lead to ranking of physical infrastructure over less visible but equally critical investments, such as nutrition programs or preventive care. For example, decentralized nutrition policies—such as front-of-package labeling to prevent non-communicable diseases—are only effective when adequately funded and implemented at the local level (Siyam *et al*., 2025). Without these capacities, the planned preventive public health benefits may not be realized, and health inequities may develop. Furthermore, decentralized regulation of food labeling may result in fragmented policy enforcement, especially in areas with weak governance or limited monitoring infrastructure. It is particularly problematic considering the growing prevalence of obesity and diet-related disorders, which disproportionately affect low-income areas.

The degree of regional development is considered a key determinant in achieving improved health service outcomes. In contrast to more advanced subnational governments, less developed regions often lack sufficient technical expertise, administrative infrastructure, and managerial competence (Bossert *et al*., 2022). These limitations are further compounded by restricted financial resources, making it difficult for them to manage and deliver health services effectively. As a result, these areas face heightened vulnerability and are at greater risk of systemic inefficiencies (Oliveira *et al*., 2023). To address this imbalance, it is essential to implement targeted interventions that strengthen institutional capacity, enhance fiscal

support, and foster local leadership to improve the quality and accessibility of healthcare services.

Several studies included in this study found that decentralization—particularly devolution, which transfers responsibility to elected local governments—can result in more responsive and needs-based service delivery. Decentralization, by moving decision-making closer to the community, typically enables the development of locally relevant health initiatives, enhances oversight, and facilitates faster responses to health emergencies (Dodd *et al*., 2021; Noory *et al*., 2024; Setiawan *et al*., 2022). Decentralization—when accompanied by sufficient autonomy, resource control, and management capacity—can significantly improve service quality and health outcomes (Birru *et al*., 2024).

This complexity is demonstrated by the impact of decentralization on public service delivery in Indonesia's health infrastructure sector. A study of analytical, operational, and political capacities revealed that none of the three characteristics alone significantly improved service outcomes (as assessed by sanitation coverage). Furthermore, political capacity—defined by legislative oversight and local political behavior—sometimes had a negative impact, implying that unrestrained political authority can damage service delivery. Nonetheless, synergy across these dimensions is critical: when analytical, operational, and political capacities interact, they can strengthen one another and improve government effectiveness (Setiawan *et al*., 2022).

Decentralization has various advantages, including empowering community members to participate in health care delivery. By engaging in CHW programs, CHWs motivated by a desire to care can experience a sense of fulfillment, develop their relationships and networks, enhance their standing within their communities, and acquire new health-related skills and knowledge. Some argue that decentralization in the Philippines helps democratize healthcare by increasing community participation, responsiveness to local problems, and the inclusion of marginalized views. However, obtaining these potential benefits is a challenging process, with some healthcare workers and non-governmental organizations (NGOs) describing the Philippines' current devolution of healthcare as ineffective in improving access, efficiency, and the quality of health services (Dodd *et al*., 2021). In Lesotho, by contrast, decentralization led to concrete improvements in primary care—driven by stronger district leadership, data-informed decision-making, and better procurement of essential supplies (Birru *et al*., 2024).

Fiscal decentralization adds another layer of complexity. Fiscal Decentralization in Kenya may exacerbate socioeconomic disparities, as evidenced by limited access to healthcare resources. Furthermore, the study reveals that county revenue and county gross domestic product have a significant impact on the availability of healthcare resources, with higher county economic productivity benefiting the availability of healthcare resources. In contrast, lower county revenue acts as an impediment (Maket & Naibei, 2025). Similarly, in China, local governments are responsible for funding infrastructure, healthcare, education, and the development of public services. This obligation often leads to a disconnect between fiscal power and accountability, compelling local governments to incur substantial debt to cover funding gaps (Cao *et al*., 2023). This misalignment between fiscal responsibility and accountability poses risks for long-term sustainability.

Moreover, the effectiveness of fiscal decentralization is closely tied to the broader governance environment. Fiscal decentralization will be most effective if an environment is created that prioritizes judicial independence, provides access to justice for marginalized populations, promotes alternative dispute resolution mechanisms, reduces case backlogs, and leverages technology for increased accessibility (Singh *et al*., 2024). For example, healthcare decentralization in Sudan has undoubtedly hindered the central goal of reducing public health risks, particularly among the most vulnerable populations. Access to healthcare has been claimed to have declined due to facility closures, reverse service transfers, and inadequate capacity in devolved facilities. Finally, privatized services

were reported to be strengthened as a result of healthcare decentralization (Noory *et al*., 2024). Decentralization in the Philippines is also criticized more broadly for limiting the state's role, exacerbating inequalities between communities, and increasing the influence of potentially corrupt local political leaders (Dodd *et al*., 2021). Decentralization in Africa often fails to address the triple bottom line of sustainability, which encompasses economic, social, and environmental prosperity that meets present demands without depriving future generations in indigenous-populated regions (Atisa *et al*., 2021). Without addressing structural inequities, decentralization risks becoming a vehicle for fragmentation rather than reform.

Conclusion

This systematic review concludes that decentralization in LMICs produces varied effects on health service quality, shaped largely by the context-specific interplay of institutional capacity, fiscal resources, and governance structures. While decentralization has the potential to improve efficiency, responsiveness, and access—particularly when local governments are empowered with adequate authority and resources—it can also deepen inequalities when implementation lacks strategic coordination and capacity-building. Evidence suggests that decentralization performs best when aligned with broader health system reforms, supported by clear accountability mechanisms and inclusive planning processes. The sustainability and equity of decentralized reforms depend on political will, sufficient local investment, and strong intergovernmental coordination. For LMICs pursuing decentralization as a pathway to improved service quality and universal health coverage, this review highlights the need to address disparities in local capacity and to embed equity considerations at every stage of reform planning and implementation.

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