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Child Healthcare Inequalities in Bauchi State: Implications for Nation-Building in Nigeria

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Abstract

Introduction: Socio-economic inequality in child healthcare access remains a critical public health challenge in Bauchi State, North-East Nigeria, threatening child survival and undermining key pillars of nation-building, including human capital, social cohesion, and state legitimacy. This narrative review synthesizes evidence on socio-economic inequality in child healthcare access in Bauchi State through the integrated lens of the Social Determinants of Health (SDH) framework and nation-building theory.

Methods: A narrative review of literature published between 2020 and 2025 was conducted using Google Scholar and PubMed databases. A total of 80 published articles were initially identified, of which 20 recent and methodologically relevant studies were selected for final synthesis. The theoretical framework was anchored on the World Health Organization Commission on Social Determinants of Health (2008) and nation-building theory.

Results: Household economic status emerged as the most significant contributor to child health inequality in Bauchi State, with the poorest families experiencing the highest risk of under-five mortality. Maternal education, geographic disparities (North-East versus South-West), and health system challenges such as cost barriers and workforce shortages further exacerbate these inequities. These avoidable disparities in child health outcomes undermine human capital development, weaken social cohesion along ethnic and geographic lines, and erode trust in the state.

Conclusion: Equitable access to child healthcare is not only a health sector priority but also a fundamental requirement for sustainable nation-building in Nigeria. Addressing structural determinants through coordinated, multisectoral interventions is essential.

Keywords: Child health, socio-economic inequality, Bauchi State, nation-building, Social Determinants of Health, Nigeria.

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Introduction

The survival and well-being of children under five years of age remain a global concern despite significant advances in public health. Progress in reducing child mortality has been uneven, with stark disparities persisting between and within countries Rebouças et al., 2022. Globally, under-five mortality declined from 93 deaths per 1,000 live births in 1990 to 37 per 1,000 in 2022 United Nations Inter-agency Group for Child Mortality Estimation, 2024. However, an estimated 4.9 million children under five died in 2022 alone, with the vast majority occurring in low- and lower-middle-income countries. Sub-Saharan Africa bears the highest burden, with an under-five mortality rate of 74 deaths per 1,000 live births—more than 14 times higher than that of high-income countries United Nations Inter-agency Group for Child Mortality Estimation, 2024. This persistent burden is driven by pervasive

poverty, weak health systems, and rapid urbanization Glied & D'Aunno, 2023; Okoli, 2022.

The double burden of malnutrition further underscores deep-seated socio-economic inequalities Alaba et al., 2023; Qi et al., 2022. The Social Determinants of Health (SDH) framework has become central to understanding these disparities, as social conditions—including housing, education, food security, and transportation—are critical drivers of health outcomes World Health Organization, 2008. Child health is particularly sensitive to these determinants, with early-life conditions shaping trajectories for lifelong development Lee & Zhang, 2022; Pickett et al., 2022.

Nigeria mirrors this regional crisis, with an under-five mortality rate of 110 per 1,000 live births and contributing the highest absolute number of under-five deaths globally (approximately 858,000 in 2022) Federal Ministry of Health and Social Welfare et al., 2024. A persistent North–South divide exists, with children in the North-West and North-East experiencing higher mortality risks and lower access to healthcare services. In the North-East, where Bauchi State is located, the under-five mortality rate is approximately 127 per 1,000 live births—nearly double the rate observed in the South-West Federal Ministry of Health and Social Welfare et al., 2024. Bauchi State is characterized by high poverty levels, low female literacy, and significant health system challenges.

Evidence consistently shows that child survival is strongly associated with household wealth, maternal education, and geographic location, reflecting systematic exclusion from essential health services. While these relationships are well documented, there remains a need to synthesize the evidence through the SDH framework and explicitly link it to nation-building. Nation-building involves the development of a healthy, educated, and socially cohesive population capable of sustaining economic growth and political stability Adiele & Adiele, 2025. Persistent child health inequalities undermine this process by depleting human capital, fostering social fragmentation, and weakening the social contract between the state and its citizens Adiele & Adiele, 2025.

This review therefore argues that equitable child healthcare is not only a public health priority but also a fundamental requirement for sustainable nation-building in Nigeria. Specifically, this study aims to examine the socio-economic determinants of child healthcare inequalities in Bauchi State, analyze how education, geography, and health system disparities reinforce these inequalities, assess their implications for human capital development, social cohesion, and state legitimacy, and propose evidence-based policy recommendations.

Methods

Study Design

This study employed a narrative review design to synthesize and interpret existing evidence on the intersection of socio-economic inequality, child healthcare access, and nation-building, with a specific focus on Bauchi State, Nigeria. A narrative approach was considered appropriate due to the complexity and multidisciplinary nature of the topic, allowing for the integration of findings from diverse study designs, including cross-sectional surveys, cohort studies, qualitative research, and systematic reviews.

Search Strategy

A structured literature search was conducted using electronic databases, primarily Google Scholar and PubMed. Key search terms and Boolean operators included: "child health," "under-five mortality," "socio-economic inequality," "healthcare access," "social determinants of health," "nation-building," "Bauchi State," and "Nigeria." These terms were combined using operators such as AND and OR to refine the search.

In addition, a snowballing technique was employed by reviewing the reference lists of selected articles to identify additional relevant studies. Grey literature, including reports from international organizations such as the United Nations and the World Health Organization, was also considered where relevant.

Eligibility Criteria

Inclusion criteria:

- Studies examining socio-economic determinants of child health outcomes or access to healthcare in Nigeria, particularly in the North-East region.

- Studies employing quantitative, qualitative, or mixed-methods approaches.
- Peer-reviewed journal articles and official reports from recognized organizations (e.g., United Nations Inter-agency Group for Child Mortality Estimation, 2024).
- Publications between 2020 and 2025 to ensure relevance to current health and policy contexts.

Exclusion criteria:

- Studies focusing solely on clinical interventions without socio-economic analysis.
- Editorials, commentaries, and opinion pieces without empirical data.
- Publications prior to 2020, except for foundational theoretical documents such as the WHO Commission on Social Determinants of Health report World Health Organization, 2008.

Study Selection Process

The initial search yielded 80 publications. Titles and abstracts were screened for relevance, after which full-text reviews were conducted. Based on the inclusion and exclusion criteria, 20 studies that were most relevant and methodologically robust were selected for final synthesis.

Data Extraction

Data from the selected studies were extracted using a structured approach. Key information included study setting, study design, population characteristics, socio-economic determinants examined, key findings related to child health outcomes, and reported barriers to healthcare access.

Data Synthesis

A thematic synthesis approach was adopted. Findings were organized into key themes, including economic inequality, maternal education, geographic disparities, and health system barriers. These themes were interpreted using an integrated analytical framework.

Theoretical Framework

The analysis was guided by the Social Determinants of Health (SDH) framework developed by the World Health Organization World Health Organization, 2008, alongside core concepts from nation-building theory, including human capital development, social cohesion, and the social contract. This integrated framework enabled a comprehensive interpretation of how socio-economic inequalities in child health contribute to broader challenges in national development.

Limitations of the Review

As a narrative review, this study does not follow the strict methodological protocols of systematic reviews, and therefore may be subject to selection bias. Additionally, the reliance on published literature may exclude relevant unpublished data. However, efforts were made to ensure a balanced and comprehensive synthesis through systematic searching and transparent selection criteria.

Results

This section synthesizes evidence from the reviewed literature on the key drivers of child health inequalities in Nigeria, with a specific focus on Bauchi State. The findings are organized around three major domains consistent with the Social Determinants of Health (SDH) framework: socio-economic factors, education and access to information, and geographic and health system barriers.

Socio-economic determinants of inequality in child healthcare access

Evidence consistently identifies household economic status as the most significant determinant of inequality in child health outcomes, including malnutrition, morbidity, and under-five mortality. Under-five mortality is disproportionately concentrated among the poorest households, with a substantial proportion of deaths occurring within the first year of life. In contrast, access to essential maternal and child health services—such as antenatal care, facility-based delivery, and preventive malaria treatment—is significantly higher among wealthier households Chinwe, 2022.

At the macro level, broader socio-economic indicators, including national income and financial

inclusion, are significantly associated with maternal and child survival outcomes Ekeagwu et al., 2023; Gao et al., 2023. These inequalities are also evident at the sub-national level. In Bauchi State, a study conducted in Tafawa Balewa Local Government Area reported that 89.2% of households identified the high cost of healthcare as the primary barrier to access. Poverty was strongly associated with delayed healthcare-seeking, child malnutrition, and increased maternal and child mortality Abdulhamid et al., 2025.

In addition to absolute poverty, relative deprivation has been shown to negatively influence child development. Evidence indicates that perceived socio-economic disadvantage may have significant adverse effects on children's socio-emotional development, particularly in highly unequal settings Lee & Zhang, 2022. Overall, the poorest households remain at the highest risk of poor child health outcomes, while wealthier households consistently demonstrate better access to healthcare services Okoli, 2022.

Findings from other sub-Saharan African settings further support these patterns. Women who report financial constraints as a major barrier are significantly less likely to seek healthcare for childhood illnesses. Similarly, social and household factors, including decision-making autonomy and household size, influence healthcare-seeking behavior Ahinkorah et al., 2022.

Disparities in education and access to health information

Parental education, particularly maternal education, is a critical determinant of child health outcomes. Children born to mothers with little or no formal education face significantly higher risks of morbidity and mortality compared to those whose mothers have higher levels of education Okoli, 2022. Education enhances health literacy, improves decision-making capacity, and promotes timely healthcare utilization.

Socio-economic status, as measured by both household wealth and educational attainment, plays a major role in shaping health outcomes. Studies consistently show that mortality is concentrated among children from the poorest and least educated households Chinwe, 2022; Ekeagwu et al., 2023. Additionally, maternal age at first birth is an important factor, with younger mothers (particularly those aged 19 years or below) associated with higher risks of adverse child health outcomes Okoli, 2022.

In Bauchi State, where female literacy levels remain low, disparities in education represent a major barrier to improving child health outcomes.

Geographic and health system barriers

Geographic location remains a significant determinant of child health inequality in Nigeria. Children in the North-West and North-East regions face substantially higher risks of under-five mortality compared to those in the South-West. In particular, the North-East region, where Bauchi State is located, continues to experience poor health outcomes due to structural and systemic disadvantages Okoli, 2022.

These geographic disparities reflect long-standing inequalities in infrastructure development, economic opportunities, and distribution of healthcare resources Adiele & Adiele, 2025.

Health system factors further exacerbate these inequalities. Common barriers include high out-of-pocket healthcare costs, shortages of essential medicines, inadequate health workforce, and poor quality of care. Even in areas where health facilities are geographically accessible, these systemic challenges limit effective utilization of services.

Evidence from Bauchi State indicates that the presence of healthcare facilities does not necessarily translate into access, as financial and quality-related barriers remain significant constraints Abdulhamid et al., 2025. Similarly, findings from other African contexts show that healthcare utilization for childhood illnesses remains suboptimal, with less than half of affected children receiving appropriate care in some settings Ahinkorah et al., 2022.

Summary of key findings

Overall, the evidence demonstrates that child health inequalities in Bauchi State are driven by interconnected socio-economic, educational, and health system factors. Poverty, low maternal education, and geographic disadvantage interact to limit access to healthcare services and contribute to poor child health outcomes.

Discussion

This review demonstrates that socio-economic inequalities in child healthcare access in Bauchi State extend beyond a public health concern and represent a significant threat to nation-building in Nigeria. Using an integrated analytical lens that combines the Social Determinants of Health (SDH) framework and nation-building theory, the findings highlight how economic disadvantage, educational disparities, geographic inequalities, and health system failures interact to undermine human capital development, social cohesion, and state legitimacy.

Socio-economic inequality and the depletion of human capital

Consistent with the SDH framework, household economic status emerged as the most significant determinant of child health outcomes. Evidence shows that under-five mortality is disproportionately concentrated among the poorest households, particularly within the first year of life Okoli, 2022. At the local level in Bauchi State, the high cost of healthcare remains a dominant barrier, with 89.2% of households identifying financial constraints as the primary obstacle to accessing care Abdulhamid et al., 2025. Similar findings from other sub-Saharan African contexts demonstrate that financial barriers significantly reduce the likelihood of seeking care for childhood illnesses Ahinkorah et al., 2022.

Beyond material deprivation, relative poverty also plays a critical role. Perceived socio-economic disadvantage has been shown to negatively affect children's socio-emotional development Lee & Zhang, 2022, further compounding long-term outcomes. These findings illustrate how socio-economic inequality directly limits access to essential healthcare services and contributes to poor child health outcomes.

From a nation-building perspective, these disparities represent a depletion of human capital. Children who experience malnutrition, illness, or limited access to healthcare are more likely to face impaired cognitive development and reduced educational attainment, ultimately diminishing their productivity in adulthood. This perpetuates intergenerational cycles of poverty and constrains economic growth. The widespread identification of cost as a primary barrier reflects systemic inadequacies in financial risk protection mechanisms, thereby undermining the development of a healthy and productive workforce.

Educational disparities and the erosion of social cohesion

Parental education, particularly maternal education, plays a critical role in mitigating the effects of poverty. Children born to mothers with little or no formal education face significantly higher risks of morbidity and mortality Okoli, 2022. Education enhances health literacy, promotes timely healthcare-seeking behavior, and increases women's decision-making autonomy.

In Nigeria, socio-economic inequalities in education are closely aligned with geographic and socio-cultural divisions. Evidence shows that child health outcomes are disproportionately worse among the poorest and least educated populations Chinwe, 2022; Ekeagwu et al., 2023. Additionally, younger maternal age at first birth is associated with increased risk of adverse child health outcomes Okoli, 2022.

In the context of Bauchi State, where female literacy remains low, these disparities reinforce broader patterns of marginalization. Health inequalities are not randomly distributed but often reflect underlying ethnic, regional, and socio-economic divisions. The concentration of poor health outcomes in the North-East contributes to perceptions of neglect and exclusion, which may weaken trust in state institutions.

From a nation-building perspective, such disparities erode social cohesion. When large segments of the population experience systematic disadvantage, it undermines the development of a shared national identity and may foster social fragmentation. Addressing educational inequalities is therefore essential not only for improving child health outcomes but also for strengthening social unity and stability.

Geographic inequalities, health system failures, and the social contract

Geographic location remains a major determinant of child health inequality in Nigeria. Children in the North-East and North-West regions face significantly higher risks of under-five mortality compared to those in the South-West Okoli, 2022.

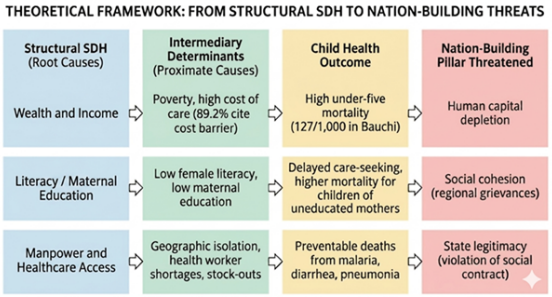

Figure 1

These disparities reflect long-standing structural inequalities in infrastructure, economic opportunities, and healthcare resource allocation Adiele & Adiele, 2025.

Health system challenges further exacerbate these inequalities. Key barriers include high out-of-pocket healthcare costs, shortages of essential medicines, inadequate healthcare workforce, and poor quality of care Beli et al., 2024. Even where healthcare facilities are physically accessible, these systemic challenges limit effective utilization.

Within Bauchi State, the coexistence of geographic proximity to facilities and persistent barriers to utilization highlights the complexity of healthcare access. Evidence indicates that financial constraints and quality-related issues significantly reduce healthcare-seeking behavior Abdulhamid et al., 2025. Similar patterns observed in other African settings show that a substantial proportion of children do not receive appropriate care for illnesses Ahinkorah et al., 2022.

From a nation-building perspective, these failures represent a violation of the social contract. The state is expected to provide basic services that ensure the welfare of its citizens. When access to essential healthcare is determined by wealth or geographic location, it undermines public trust and weakens state legitimacy. Persistent health inequities therefore pose a significant challenge to the development of a stable and cohesive nation.

Gender and cultural dynamics as intersecting determinants

Gender norms and cultural practices further shape healthcare access and utilization. Maternal education and autonomy are critical determinants of child health outcomes Okoli, 2022. In settings such as Bauchi State, where female literacy is low and women's decision-making power may be constrained, delays in seeking care for childhood illnesses are common.

Household dynamics, including family size and caregiving responsibilities, also influence healthcare-seeking behavior. Evidence suggests that women with more children may develop greater familiarity with healthcare systems, which can influence care utilization patterns Ahinkorah et al., 2022. However, structural gender inequalities continue to limit women's access to resources and decision-making power.

The SDH framework emphasizes that addressing these upstream determinants—including gender inequality and educational disparities—is essential for improving health outcomes World Health Organization, 2008. From a nation-building perspective, promoting gender equity is fundamental to achieving inclusive development. Empowering women not only improves child survival but also contributes to broader social and economic progress.

Conclusion

This review demonstrates that socio-economic inequality in child healthcare access in Bauchi State reflects deeper structural inequalities within Nigeria. When examined through the combined lens of the Social Determinants of Health (SDH) framework and nation-building theory, these disparities undermine human capital development, weaken social cohesion, and erode state legitimacy. The persistence of unequal health outcomes across regions highlights the existence of divergent health realities within the country. Addressing these inequities is essential for achieving inclusive development and sustainable nation-building in Nigeria.

Limitations of the Review

This narrative review has several limitations. The reliance on secondary data means that the findings are dependent on the quality and availability of existing studies. The limited availability of recent primary data specific to Bauchi State constrains the contextual depth of the analysis. In addition, the narrative review methodology, while useful for synthesizing diverse evidence, is inherently subject to selection bias. Furthermore, many of the included studies are cross-sectional in nature, limiting the

ability to draw causal inferences. Future research should incorporate longitudinal designs to better understand trends in child health outcomes and include qualitative approaches to capture the lived experiences of vulnerable households.

Recommendations

Informed by the SDH framework and the evidence reviewed, the following recommendations are proposed:

The government and development partners should pilot a subsidized health insurance scheme targeting the poorest households in Bauchi State, leveraging existing structures such as the National Health Insurance Authority to improve financial access to care.

There is a need to strengthen the supply chain for essential medicines, particularly in rural areas, to address persistent stock-outs of key child health commodities.

The deployment of community health workers should be expanded, especially in underserved rural communities, to improve early diagnosis, treatment of childhood illnesses, and nutritional screening.

A coordinated, multisectoral human capital development strategy should be implemented, involving sectors such as health, education, agriculture, and social protection, to address the broader determinants of child health.

Policies aimed at improving female education should be strengthened, including enforcement of compulsory education and the introduction of targeted incentives to support girls' school attendance in low-literacy areas.

Efforts should be made to improve health workforce distribution and retention in rural areas through incentives such as housing, hardship allowances, and career development opportunities.

Health financing policies should be reviewed to prioritize equity, with greater emphasis on reducing out-of-pocket expenditure and improving financial risk protection for vulnerable populations.

Investments in water, sanitation, and hygiene infrastructure should be scaled up in high-burden communities to reduce preventable childhood illnesses.

A robust monitoring and evaluation system should be established to track health inequalities and inform policy decisions, including the development of data dashboards for regular reporting.

Finally, strengthening governance structures, promoting accountability, and enhancing community engagement are essential to ensure that health and social policies translate into meaningful improvements in child health outcomes.

What is Known About This Topic

Socio-economic inequalities in child healthcare access in Bauchi State threaten Nigeria's nation-building by depleting human capital, eroding social cohesion, and violating the social contract. Addressing structural determinants through multisectoral interventions is imperative for child survival equity and national stability.

Authors' Contributions

Idris Muhammad Bose conceptualized and led the study team. Tabitha Ngyal developed methodology and led data collection and analysis. Abubakar Yakubu drafted the manuscript, while Abubakar Musa reviewed the draft manuscript.

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Conflict of Interest Statement

The authors declare no competing financial interests or personal relationships that could have influenced this work.

Implications for Practice and Policy

Overall, this review highlights that child health inequalities in Bauchi State are driven by interconnected structural and intermediary determinants. Addressing these challenges requires a multisectoral approach that targets poverty reduction, improves access to education, strengthens health systems, and promotes gender equity. Such interventions are essential not only for improving child health outcomes but also for advancing sustainable nation-building in Nigeria.

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