

Medical Sociology, Educational Access, and Health Outcomes: Understanding Social Determinants in Bo City, Sierra Leone

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Abstract

Health inequalities remain a significant problem in many urban centers of developing countries due to unequal benefits derived from public health interventions. While there have been efforts aimed at improving the state of health intervention in Bo City, Sierra Leone, disparities in health access, educational attainment, and social welfare still exist. The current study seeks to establish the link between various social determinants including education, poverty, gender relations, culture, and health access on health outcomes. This paper seeks to evaluate the relationship between medical sociology and educational access in health behaviors and outcomes. For this reason, a mixed-method research design was used, gathering primary data through surveys of about 200 households and in-depth interviews with 15 key informants, alongside secondary data analysis. It is evident from the findings that lack of education has played a key role in limiting health literacy levels, prevention practices and health service utilization. Poverty, socio-cultural attitudes toward diseases, gender inequality and uneven distribution of health infrastructures have compounded the situation and created health disparities. Health interventions appear to have had higher success rates among communities with higher levels of educational attainment and institutional trust. Marginalized communities within the city of Bo face structural barriers that impede their ability to enjoy good health outcomes. From the above analysis, the study finds out that health interventions can only be effective if issues related to education and broader social context are taken into account. It is recommended that a sociological approach be adopted in designing, implementing and reforming health interventions.

Keywords: sociology; health; inequality; determinant; intervention; education.

Sosiologi Medis, Akses Pendidikan, dan Hasil Kesehatan: Memahami Penentu Sosial di Kota Bo, Sierra Leone

Abstrak

Ketidaksetaraan kesehatan tetap menjadi masalah signifikan di banyak pusat perkotaan di negara berkembang karena tidak meratanya manfaat yang diperoleh dari intervensi kesehatan masyarakat. Meskipun telah ada upaya yang bertujuan untuk meningkatkan keadaan intervensi kesehatan di Kota Bo, Sierra Leone, kesenjangan dalam akses kesehatan, pencapaian pendidikan, dan kesejahteraan sosial masih ada. Studi saat ini berupaya untuk menetapkan hubungan antara berbagai penentu sosial termasuk pendidikan, kemiskinan, hubungan gender, budaya, dan akses kesehatan terhadap hasil kesehatan. Makalah ini berupaya untuk mengevaluasi hubungan antara sosiologi medis dan akses pendidikan dalam perilaku dan hasil kesehatan. Oleh karena itu, desain penelitian metode campuran digunakan, dengan mengumpulkan data primer melalui survei terhadap sekitar 200 rumah tangga dan wawancara mendalam dengan 15 informan kunci, di samping analisis data sekunder. Jelas dari temuan bahwa kurangnya pendidikan telah memainkan peran kunci dalam membatasi tingkat literasi kesehatan, praktik pencegahan dan pemanfaatan layanan kesehatan. Kemiskinan, sikap sosial-budaya terhadap penyakit,

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ketidaksetaraan gender dan distribusi infrastruktur kesehatan yang tidak merata telah memperburuk situasi dan menciptakan kesenjangan kesehatan. Intervensi kesehatan tampaknya memiliki tingkat keberhasilan yang lebih tinggi di antara komunitas dengan tingkat pencapaian pendidikan dan kepercayaan institusional yang lebih tinggi. Komunitas yang terpinggirkan di dalam kota Bo menghadapi hambatan struktural yang menghalangi kemampuan mereka untuk menikmati hasil kesehatan yang baik. Dari analisis di atas, studi ini menemukan bahwa intervensi kesehatan hanya dapat efektif jika masalah yang berkaitan dengan pendidikan dan konteks sosial yang lebih luas dipertimbangkan. Disarankan agar pendekatan sosiologis diadopsi dalam merancang, menerapkan, dan mereformasi intervensi kesehatan.

Kata Kunci: sosiologi; kesehatan; kesenjangan; penentu; intervensi; pendidikan.

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INTRODUCTION

Health inequalities remain one of the most persistent challenges confronting public health systems despite substantial advances in medicine, disease prevention, and healthcare delivery. Differences in health outcomes cannot be explained solely by biomedical conditions or by the availability of healthcare services. Increasingly, health is understood as being shaped by the social, economic, cultural, and political environments in which people are born, grow, live, work, and age. From this perspective, medical sociology provides an important framework for understanding how the organization of society influences patterns of health, illness, healthcare utilization, and responses to public health interventions ([Marmot, 2010](#); [World Health Organization \[WHO\], 2008](#)).

A substantial body of research demonstrates a social gradient in health, whereby people in disadvantaged socioeconomic positions generally experience poorer health outcomes than those in more privileged circumstances. Income, education, employment, housing, gender relations, access to healthcare, and institutional arrangements influence both exposure to health risks and the capacity of individuals and communities to respond to illness ([Braveman & Gottlieb, 2014](#); [Solar & Irwin, 2010](#); [Wilkinson & Pickett, 2009](#)). Consequently, even well-designed health interventions may produce unequal outcomes when implemented in communities characterized by poverty, limited education, weak infrastructure, or restricted access to health services.

These structural challenges are particularly important in low- and middle-income countries, where financial barriers, inadequate healthcare infrastructure, unequal geographical access, and limited health information frequently affect healthcare utilization ([Farmer, 2004](#); [Peters et al., 2008](#)). Across Sub-Saharan Africa, health-system limitations can compound these social disadvantages ([Oleribe et al., 2019](#)). Evidence also shows that the use of maternal and preventive health services is shaped by combinations of socioeconomic position, financial protection, and household or individual characteristics rather than by service availability alone ([Amu et al., 2023](#); [Seidu et al., 2022](#)).

Education is especially important because it affects people's capacity to obtain, understand, evaluate, and use health information. Greater educational exposure can strengthen health literacy, awareness of disease-prevention practices, understanding of medical advice, and the ability to navigate healthcare institutions ([Nutbeam & Lloyd, 2021](#)). Evidence from African countries and Sierra Leone also indicates that educational attainment interacts with wider socioeconomic conditions in shaping health outcomes and healthcare utilization ([Adegoke et al., 2022](#); [Kangbai et al., 2022](#)). Education should therefore be understood not as an isolated determinant but as one factor operating within a broader social environment.

Sierra Leone provides an important setting for examining these relationships. The country's health system has been shaped by periods of social and political disruption, including civil conflict and the Ebola

epidemic, which exposed weaknesses in healthcare infrastructure and highlighted the importance of community trust, local knowledge, and social conditions in disease control ([Jalloh et al., 2017](#); [Raven et al., 2018](#); [Richards, 2016](#)). Although reforms and public health programs have sought to strengthen services, inequalities related to poverty, education, transportation, and place of residence continue to affect people's ability to obtain timely and appropriate care.

Within Sierra Leone, Bo City and the wider Bo District provide a particularly relevant context for this analysis. Recent empirical evidence from Bo District shows that education, household resources, healthcare access, and other enabling conditions influence maternal and child healthcare-seeking decisions, with important differences between urban and rural settings ([Viah et al., 2026](#)). National evidence likewise indicates that financial barriers remain unevenly distributed across socioeconomic groups ([Sesay, 2026](#)). These findings suggest that the existence of health services does not necessarily result in equal utilization when households face different social and economic constraints.

Health literacy and community knowledge are also important in Bo. Research conducted in urban and rural Bo District has identified substantial variation in knowledge of health risks and barriers to accessing care, including cost and limited access to appropriate services ([Ignatowicz et al., 2020](#)). At the same time, digital and mobile communication initiatives in Sierra Leone demonstrate how appropriately designed communication can extend access to health information and support engagement with health services ([Chukwu et al., 2023](#)). These findings reinforce the importance of examining education together with the social and institutional conditions through which health information is received and acted upon.

Public health interventions in Bo further demonstrate the importance of social context. Research on insecticide-treated bed nets documented changes in child bed-net use following a national distribution campaign in Bo City ([Ranasinghe et al., 2015](#)), while a mixed-methods study in Bo found high acceptability of malaria vaccination alongside the importance of local knowledge and attitudes toward malaria and vaccines ([McCoy et al., 2021](#)). More recent evidence from Njala University's Bo-area campus also links educational and sociodemographic characteristics with knowledge and use of insecticide-treated nets ([Williams et al., 2025](#)). These studies show that preventive programs operate through interactions among knowledge, education, trust, access, and the practical conditions of everyday life.

Despite this growing literature, an important gap remains. Existing studies have established relationships between education, socioeconomic conditions, healthcare access, maternal health, disease prevention, and health-seeking behaviour in Sierra Leone and other Sub-Saharan African settings. Recent studies have also examined specific dimensions of healthcare utilization and preventive behaviour in Bo District ([Ignatowicz et al., 2020](#); [Viah et al., 2026](#)). However, these factors are frequently investigated separately or within particular areas of health service use. Less attention has been given to how educational access interacts with poverty, cultural beliefs, gender relations, institutional trust, and healthcare accessibility to influence the effectiveness of public health interventions within the urban social environment of Bo City.

Against this background, the present study examines the relationship between medical sociology, educational access, social determinants, and health outcomes in Bo City, Sierra Leone. Specifically, it investigates how education, socioeconomic conditions, cultural beliefs, gender relations, institutional trust, and access to healthcare influence health literacy, health-seeking behaviour, healthcare utilization, and participation in public health interventions. By combining quantitative and qualitative evidence at the local urban level, the study seeks to provide an integrated understanding of why public health interventions may produce different outcomes across social groups in Bo City and how greater attention to education and broader social conditions may contribute to more equitable and effective health interventions.

The Impact of Educational Access on Health Literacy and Health-Seeking Behavior in Bo City, Sierra Leone

Access to education is one of the key factors that influences health literacy and health-seeking behavior among people in urban settings such as Bo City, Sierra Leone. From a medical sociological perspective,

education is an important social determinant of health because it affects people's ability to obtain, understand, appraise, and use health information, including information about disease prevention, nutrition, sanitation, reproductive health, and timely use of professional care ([Nutbeam & Lloyd, 2021](#)). People with stronger health literacy are generally better positioned to make informed health decisions, whereas limited literacy can create barriers to understanding and using health information.

Educational disadvantage can interact with other forms of social marginalization to weaken access to reliable health information and confidence in health institutions. Evidence from Sierra Leone's Ebola response showed that gaps in knowledge, misconceptions, and low trust shaped how communities understood and responded to public health guidance, underscoring the importance of sustained health education and community engagement ([Jalloh et al., 2017](#); [Raven et al., 2018](#)).

Educational attainment also affects how people utilize healthcare facilities. Educated individuals may be better positioned to engage with preventive and maternal healthcare services such as antenatal care, skilled delivery, postnatal care, family planning, and routine consultations. In Sierra Leone, maternal healthcare research has found that socioeconomic characteristics, including educational attainment, are associated with the utilization of maternal health services ([Kangbai et al., 2022](#)). These findings indicate that education can influence risk awareness and health-related decision-making as well as access to formal care.

Moreover, education contributes to communication between health service providers and clients. Health literacy affects people's ability to understand medication instructions, treatment recommendations, and preventive messages, while appropriately designed communication technologies can widen access to health information. Evidence from Sierra Leone also shows the practical importance of mobile and digital communication in large-scale sexual and reproductive health interventions ([Chukwu et al., 2023](#); [Nutbeam & Lloyd, 2021](#)).

Finally, education also operates indirectly through socioeconomic pathways such as employment, income, and social mobility, which influence access to food, safe water, sanitation, and healthcare. Cross-country evidence from Africa identifies education as an important factor in the relationship between social investment and population health outcomes ([Adegoke et al., 2022](#)). Broader human development evidence similarly emphasizes the close relationship between education, living standards, and people's capabilities to achieve better health and well-being ([United Nations Development Programme \[UNDP\], 2022](#)).

Another way in which health literacy may be strengthened in Sierra Leone is through the use of digital and mobile communication. Mobile health messaging, interactive voice response, radio, and other communication channels can extend health information beyond conventional facilities, although unequal access to digital technologies remains an important concern. A large-scale mHealth intervention in Sierra Leone illustrates both the opportunities and the design trade-offs involved in using digital communication to expand health information and engagement ([Chukwu et al., 2023](#)).

All in all, one of the main reasons explaining health disparities and the differences in healthcare usage in Bo City, Sierra Leone, has to do with the limited access to education. Hence, any intervention strategy seeking long-term success needs to focus on developing health literacy, promoting positive behaviors, and creating trust in healthcare facilities.

Income Inequality and Access to Healthcare Services in Bo City, Sierra Leone

In Bo City, Sierra Leone, there is income disparity that impacts people's access to healthcare. Being an urban area situated in the south part of the country, Bo City represents a significant gap between high-income earners who are engaged in formal jobs and low-income people who survive from informal trade, agricultural activities, and casual work. The income disparity in Bo City leads to unequal access to healthcare services.

People with low incomes in Bo City may face direct and indirect costs related to consultation, transportation, diagnostic tests, and medicines. Even when public services are nominally available, financial

constraints can delay care or limit the range of services that households are able to use. Recent national evidence from Sierra Leone shows that financial barriers to healthcare remain unequally distributed by socioeconomic characteristics, including economic status and education ([Sesay, 2026](#)).

In contrast, higher-income residents are generally better able to absorb the costs of private facilities, medicines, and transport. This contributes to unequal patterns of access and creates conditions in which the quality and timeliness of care can depend on household resources. Evidence from Sierra Leone confirms that financial barriers remain an important obstacle to equitable healthcare access, particularly among socioeconomically disadvantaged groups ([Sesay, 2026](#)).

It should also be stressed that informal and peri-urban communities face health challenges associated with both poverty and the urban environment. Poor housing, inadequate sanitation, limited access to clean water, and constrained access to services can combine to increase health vulnerability. Such patterns are consistent with broader evidence on the relationship between urban inequality, infrastructure, and health risks in rapidly growing cities ([UN-Habitat, 2020](#)).

In conclusion, income inequality is a structural determinant of health in Bo City that negatively affects the health status of poor residents due to their inability to afford medical assistance and treatment.

Effectiveness of Public Health Interventions in Disease Prevention and Control in Bo City, Sierra Leone

Health programs have been critical in the control and prevention of diseases in Bo city of Sierra Leone, specifically those that are concerned with the prevention of communicable diseases such as malaria, cholera, tuberculosis, and vaccine preventable diseases. In the recent five years, interventions from the government and its partners have ensured improvement in immunization practices, hygiene, surveillance of diseases, and awareness among the population on the importance of health programs. These measures have contributed to decreasing the rates of diseases as well as increasing health awareness among the locals.

Immunization and child health services remain important components of Sierra Leone's national health priorities. Their effectiveness, however, depends not only on the availability of vaccines and services but also on local access, communication, confidence, and the capacity of the health system to reach underserved communities ([Ministry of Health and Sanitation, 2021](#)).

Malaria prevention programs based on insecticide-treated bed nets provide a concrete example from Bo City. A citywide study found a substantial increase in reported bed-net use among children under five following a national long-lasting insecticidal-net distribution campaign, while also emphasizing the need to sustain consistent use and address remaining disparities ([Ranasinghe et al., 2015](#)).

Hygiene and sanitation initiatives can improve community knowledge and reduce exposure to disease, but their long-term effectiveness is constrained when safe water, sanitation infrastructure, and basic urban services remain inadequate. These structural limitations are consistent with wider evidence on unequal infrastructure and health risks in rapidly growing urban areas ([UN-Habitat, 2020](#)).

Disease surveillance and community-based health programs can improve the early detection and reporting of outbreaks, but their effectiveness depends on adequate staffing, training, financing, and institutional capacity. Strengthening these elements is therefore a continuing priority within Sierra Leone's health sector strategy ([Ministry of Health and Sanitation, 2021](#)).

To conclude, public health interventions within Bo City have shown some success in improving disease prevention efforts. Nonetheless, the sustainability of the aforementioned initiatives is dependent upon the improvements in the capacity of the health sector.

LITERATURE REVIEW

Scholarly research in medical sociology and health inequalities has grown considerably within the last few decades, as researchers have realized that issues of health are very much related to the sociological environment. The following synthesis of the literature on health inequalities draws themes from the existing studies that highlight ways in which society influences health outcomes and the efficiency of health policy.

Social Determinants of Health and Structural Inequality

The main idea discussed within the academic literature is the importance of social determinants as key drivers of health outcomes. The [World Health Organization \(2008\)](#) claims that inequalities in health originate in the circumstances of being born, growing up, living, working, and aging of people, and that these circumstances do not happen at random but as a result of structures such as governance, economy, and social stratification.

The social gradient in health has been discussed in detail by [Marmot \(2010\)](#), who showed that higher steps in the socioeconomic ladder correlate with better health indicators. Inequality itself was found to be one of the major drivers of poor health outcomes regardless of differences between countries and health care systems. [Braveman and Gottlieb \(2014\)](#) highlight the structural nature of social determinants and emphasize the futility of addressing them via healthcare system alone.

[Wilkinson and Pickett \(2009\)](#) continue with this trend as they conclude that health outcomes for the population tend to be poorer in societies marked by extreme inequality because of the presence of psychological stress, lower levels of social solidarity, and greater risks.

Poverty, Education, and Access to Healthcare

Poverty and its effect on healthcare use constitute another essential area for discussion among authors. According to [Peters et al. \(2008\)](#), lack of finances is still considered one of the leading determinants that prevent people from using available services. Besides, even when the required services exist, indirect costs related to traveling to healthcare providers, time off work, or other additional expenses hinder their usage.

Education is consistently identified as an important social determinant of health. Cross-country evidence from Africa shows that education is associated with population health outcomes and can strengthen the effect of health-related investment ([Adegoke et al., 2022](#)). Evidence from Sierra Leone likewise indicates that educational attainment is one of the socioeconomic characteristics associated with maternal healthcare utilization ([Kangbai et al., 2022](#)).

[UNDP \(2022\)](#) emphasizes that human development is multidimensional and that deprivations in education, living standards, and access to opportunities are interrelated. From a health perspective, this means that interventions aimed at improving well-being should not be limited to healthcare services alone but should also address the wider social conditions that shape people's capabilities.

Cultural Beliefs, Health-Seeking Behaviour, and Medical Pluralism

A large number of articles discuss cultural beliefs and medical pluralism as factors affecting health behavior. According to [Helman \(2007\)](#), patients construct illness out of culture, which means that people perceive symptoms in accordance with certain socially constructed belief systems. In Africa, it is quite common for illness to be associated with spirits, social relationships, or supernatural elements, affecting treatment decisions.

[Langwick \(2011\)](#) discusses the phenomenon of simultaneous usage of traditional medicine and biomedical treatment in Tanzania, a practice that is fairly common throughout Sub-Saharan Africa. The former is favored because healers are available, culturally relevant, and effective. [Peters et al. \(2008\)](#) claim

that, depending on the way such cooperation develops, it may support formal healthcare provision or cause complications.

[Richards \(2016\)](#), in examining the case of the Ebola epidemic in Sierra Leone, emphasizes the significance of mistrust of formal health services and community-based perceptions of disease. This example illustrates the need to incorporate cultural beliefs when devising public health interventions.

Gender Relations and Health Inequalities

Gender is yet another dimension in this body of literature. According to [Sen and Östlin \(2008\)](#), gendered power relations play a crucial role in shaping access to health care services, vulnerability to risk factors, and overall health status. Women, especially in poor countries, encounter several structural constraints like lack of financial independence, movement restrictions, and lack of control over decision making at home. [WHO \(2011\)](#) goes further to point out that the well-being of mothers is highly dependent on gender inequality in societies with poor provision of education and health care services to women. Evidence from Sub-Saharan Africa shows that women empowerment through education and job creation leads to better health status for mothers and their children.

Levels of Educational Attainment and Health Literacy in Bo City, Sierra Leone

Health education is considered an important factor in health literacy and health-seeking behavior in medical sociology and public health research. Education affects the ability of people to find, understand, evaluate, and use information about their health. [Nutbeam and Lloyd \(2021\)](#) describe health literacy as a social determinant that extends beyond basic reading skills to include the knowledge and capabilities needed to navigate health information and services. Educational inequality can therefore contribute to differences in health awareness, prevention, and care utilization.

Research on health literacy provides a strong basis for understanding the relationship between education and health behavior. [Nutbeam and Lloyd \(2021\)](#) argue that limited health literacy can restrict people's ability to understand health information, navigate services, and make informed decisions. Conversely, stronger health literacy can support engagement with preventive care, reproductive health information, treatment guidance, and other forms of health communication.

The relationship between education and healthcare utilization is particularly relevant in Sierra Leone. [Kangbai et al. \(2022\)](#) found that socioeconomic characteristics, including educational attainment, were associated with the use of maternal health services in Kailahun District. Research conducted during the Ebola epidemic further demonstrates that trust in health workers and institutions shaped community responses and the functioning of the health system ([Raven et al., 2018](#)). Together, these findings show that education, socioeconomic position, and institutional trust can interact in shaping healthcare decisions.

The Ebola outbreak also demonstrated the importance of public knowledge and communication during health crises in Sierra Leone. A national survey found substantial variation in Ebola-related knowledge, misconceptions, attitudes, and preventive practices before the outbreak peak, showing why accurate and accessible public health communication is essential during epidemics ([Jalloh et al., 2017](#)).

Health communication research further emphasizes that information is useful only when people can access and understand it. Health literacy therefore affects communication between patients, communities, and health institutions ([Nutbeam & Lloyd, 2021](#)). In Sierra Leone, digital and mobile health initiatives have also demonstrated how text, voice, radio, and related communication channels can be designed to extend sexual and reproductive health information at scale ([Chukwu et al., 2023](#)).

The literature also links education with broader socioeconomic and health outcomes. [UNDP \(2022\)](#) treats education as a central dimension of human development because it expands capabilities and opportunities that influence living standards. In addition, cross-country evidence from African countries finds that education is associated with important population health outcomes and interacts with health expenditure in shaping health performance ([Adegoke et al., 2022](#)).

These relationships indicate that education can influence health through multiple pathways rather than through knowledge alone. Educational opportunities can affect employment, income, social participation, and the ability to obtain healthcare and healthy living conditions. Evidence from African countries supports the view that education and health investment are jointly important in explaining mortality and life-expectancy outcomes ([Adegoke et al., 2022](#)), while the [UNDP \(2022\)](#) similarly situates education and living standards within a broader human-development framework.

Digital technologies provide an additional pathway through which education and health communication can intersect. In Sierra Leone, [Chukwu et al. \(2023\)](#) documented the design and implementation of a large-scale sexual and reproductive health mHealth intervention using channels such as text messaging, interactive voice response, and radio. Their analysis also highlights practical trade-offs in technology access, reach, and implementation, which are important when considering digital health communication among unequal urban populations.

Although research on education and health is extensive, recent studies have also begun to document specific dimensions of health knowledge, access, and healthcare-seeking in Bo District. For example, local evidence has examined community knowledge and barriers to care as well as the social and enabling factors associated with healthcare decisions ([Ignatowicz et al., 2020](#); [Viah et al., 2026](#)). However, these dimensions are often examined separately. The present study therefore focuses on how educational access relates to health literacy and healthcare utilization while considering the broader social context of Bo City.

Health Systems, Trust, and Public Health Intervention Effectiveness

Increasing numbers of studies are emerging around the subject of the effect of health system quality and institution's level of social trust in influencing the success of public health programs. According to [Kruk et al. \(2018\)](#), health systems should be characterized by their effectiveness, not merely accessibility and quality of healthcare.

[Raven et al. \(2018\)](#) show that the Ebola epidemic placed extraordinary pressure on Sierra Leone's health workers and health system and that trust, fear, institutional support, and working conditions shaped responses to the crisis. This evidence reinforces the importance of institutional trust and health-system capacity for the effectiveness of public health programs.

As [Oleribe et al. \(2019\)](#) state, health systems in most African countries are characterized by fragmentation, insufficient funding and lack of coordination which makes them inefficient in implementing public health programs. Such inefficiency can be related to the presence of social inequality in these countries.

Urbanization and Health Inequalities in African Cities

The theme of urbanization has gained importance in the literature on health inequality in recent years. The fast-paced development in African urban areas has been associated with the emergence of informal settlements with high levels of overcrowding, poor sanitation, and inadequate provision of health care facilities. According to [UN-Habitat \(2020\)](#), urban inequality is increasingly becoming a cause of health disparities in developing countries.

Rapid urbanization can intensify health inequalities when infrastructure and health systems do not expand at the same pace as population growth. Across African health systems, resource constraints and uneven capacity can limit service delivery ([Oleribe et al., 2019](#)), while [UN-Habitat \(2020\)](#) emphasizes that urban inequality, inadequate basic services, and informal settlement conditions can create unequal exposure to health risks. Bo City reflects several of these pressures as its population and service needs continue to grow.

Bo City is an example of this pattern in which health facilities have not matched the rate of population growth in terms of development.

Synthesis of Literature and Identified Gap

There is widespread agreement across studies about the fact that health outcomes are determined by a range of interrelated factors, including social, cultural, economic, and gender factors, as well as health system functioning. Unfortunately, existing studies largely explore the role of these factors at the macro-level, both for the national case and cross-country comparison cases.

While national and regional studies have examined Sierra Leone's health system, Ebola recovery, and major social determinants, emerging Bo District research tends to focus on particular health conditions or specific forms of healthcare utilization ([Ignatowicz et al., 2020](#); [Viah et al., 2026](#)). Less attention has been given to how education, poverty, cultural beliefs, gender relations, institutional trust, and healthcare accessibility interact within everyday urban life to shape the effectiveness of public health interventions.

The current paper contributes to this literature by studying these social phenomena at the micro-level, within the urban environment of Bo City in Sierra Leone.

METHODS

Research Design

Mixed-method research approach has been used in this research. The mixed-method research design is considered most appropriate in this research because it enables one to have an all-round comprehension of the role that the social environment plays on public health intervention success in Bo City, Sierra Leone. Combining numerical and interpretive methods has ensured a broad scope of the research, thereby increasing its validity.

The research has employed the use of convergent parallel approach design in which the researcher gathers information using qualitative and quantitative methods separately and analyzes them independently, comparing the results at last in order to interpret the final findings.

Study Area

The research was carried out in the Bo City of the Southern Province of Sierra Leone. Bo City is a fast-growing urban area with a varied socioeconomic composition and inadequate health facilities. The Bo City is an appropriate place for studying how structural and social factors affect the success of public health interventions.

Study Population

The sample group comprised residents from Bo City, health care professionals, as well as other interested parties who play a role in the delivery of public health programs. This was done because these individuals have been exposed to health care programs.

Sampling Technique and Sample Size

The study utilized a multi-stage sampling method. In the quantitative analysis, simple random sampling was used to choose household respondents to ensure that the sample was representative from various communities. For the qualitative analysis, purposive sampling was used to choose healthcare professionals and key informants according to their level of knowledge and experience.

The sample size was chosen depending on the principles of feasibility and data saturation for qualitative data collection, and statistical significance for quantitative data collection. A total number of about 200 household respondents were sampled while in-depth interviews involved 15 key informants.

Data Sources and Instruments

Primary Data

Primary data was collected through:

- Structured surveys for household surveys (quantitative data)
- Semi-structured interviews of health care professionals and community leaders (qualitative data)
- Focus group discussions among select community participants to gather group perceptions

The survey comprised questions about socioeconomic circumstances, access to healthcare facilities, knowledge of health programs, and utilisation patterns. The interview guide contained questions about perceptions about public health programs, cultural practices, and institutions.

Secondary Data

Secondary data were sourced from:

- Ministry of Health and Sanitation in Sierra Leone
- Publications from the World Health Organization
- Peer-reviewed academic journals listed in Scopus and PubMed databases
- Policy papers published by international development agencies such as the World Bank and UNICEF

Data Collection Procedures

The gathering of data was done through several stages. Firstly, the quantitative survey was undertaken amongst chosen households with the assistance of research assistants. Qualitative interviews and focus groups were then carried out once initial analyses of cleaned data had been performed.

Interviews were held either in English or in Krio, and all were recorded before being transcribed for further analysis. Surveys were carried out using structured questionnaires depending on the mode of communication.

Data Analysis

Quantitative data were analyzed by using descriptive statistics and inferential statistics. In order to summarize the findings, frequencies and percentages were computed and cross tabulations were created. Statistical packages were used for analyzing quantitative data (for example SPSS).

For qualitative data thematic analysis approach was adopted. Thematic analysis involved coding of the data and finding out recurring themes from the data. These themes were related to issues of health care access, culture, socio-economic status, and public health interventions.

Analysis of both types of data took place simultaneously while interpreting the results.

Validity and Reliability / Trustworthiness

Validity and reliability measures have been adopted using various methods. In terms of quantitative data, pilot testing of the questionnaire was performed for better validity and reliability purposes. As far as the qualitative data is concerned, credibility was achieved through triangulation. Triangulation included interviews, focus groups, and secondary sources.

Ethical Considerations

Ethical approval was sought from the respective local bodies before initiating data collection. Informed consent has been taken from all participants. Confidentiality was strictly observed throughout the

process. Anonymity was guaranteed, and there was no use of any personal identifier in the database. Participation in the study was purely optional and could be withdrawn anytime without consequences.

Limitations of the Methodology

However, there were a few limitations that had an impact on the study. These included those that had to do with time and possible bias with regards to answers being given since some individuals could respond to questions in a manner which would reflect their social desirability. Logistical constraints when it came to reaching some communities could also have played a role.

RESULTS

This part of the research gives an overview of the study's findings in a methodical and objective fashion, incorporating not only numerical data from surveys but also qualitative insights gleaned from interviews. These findings are categorized by topic.

Socioeconomic Characteristics of Respondents

The quantitative findings showed that a significant proportion of respondents were engaged in low-income and informal employment.

Category	Frequency	Percentage (%)
Low-income households	124	62.0
Middle-income households	58	29.0
High-income households	18	9.0
Formal employment	64	32.0
Informal employment	136	68.0

The results indicate that most respondents were in low-income and informal employment categories.

Access to Healthcare Services

Findings on healthcare access showed variation across income and location groups.

Access Level	Frequency	Percentage (%)
Easy access	72	36.0
Moderate access	88	44.0
Limited access	40	20.0

A majority of respondents reported moderate to limited access to healthcare services.

Utilization of Public Health Interventions

Service Type	Utilization Rate (%)
Immunization services	78.0
Maternal health services	64.0
Sanitation and hygiene programs	52.0
Health education campaigns	46.0

Immunization services recorded the highest utilization rate, while health education campaigns recorded the lowest.

Awareness of Public Health Programs

Awareness Level	Frequency	Percentage (%)
High awareness	85	42.5
Moderate awareness	73	36.5
Low awareness	42	21.0

Cultural Beliefs and Health Practices (Qualitative Findings)

- Some of the respondents indicated dependency on traditional practitioners before accessing health facilities.
- A number of respondents indicated their belief that there were spiritual reasons for some illnesses.
- The community used both herbal medicine alongside biomedicine.
- The focus group discussions showed that cultural beliefs informed initial health-seeking behavior.

Trust in Health Institutions

Trust Level	Frequency	Percentage (%)
High trust	70	35.0
Moderate trust	90	45.0
Low trust	40	20.0

Qualitative responses indicated concerns related to past health crises and perceived quality of care.

Gender and Health Decision-Making

- 58% stated that they required the consent of their household members prior to obtaining health care services.
- 31% stated that they made independent decisions.
- 11% stated that decision-making was done jointly.
- It was found through interviews that the dynamics of the household played a role in decision-making.

Summary of Key Quantitative Patterns

- Respondents were mainly poor earners.
- Access to health care among respondents was moderate to restricted.
- Immunization services had the highest level of utilization.
- Health education had a lower engagement level.
- The respondents' level of trust in health institutions was moderate.
- These observations are only stated as facts without any explanation or interpretations.

DISCUSSIONS

In this part, the findings of the study are explained by connecting them with other studies available in the literature related to medical sociology, health inequalities, and public health initiatives. This discussion also highlights the significance of the findings, their limitations, and further scope for future research.

Interpretation of Key Findings

Based on the findings, SES, health service availability, beliefs, trust in institutions, education availability, and gender relations play an important role in using health services and participation in public health interventions in Bo City. The high rates of poverty and informal work reported by the respondents could be perceived as structural factors that have an impact on the health condition of the individuals in the community.

In addition, according to the research, health literacy and health-seeking behaviors were strongly related to educational opportunity. Respondents with more education reported greater knowledge of disease

prevention and stronger engagement with formal health services, whereas those with limited education described greater difficulty understanding medical advice and navigating care. This pattern is consistent with the broader understanding of health literacy as a social determinant that shapes people's ability to access, understand, and use health information and services ([Nutbeam & Lloyd, 2021](#)).

Thirdly, the difference in the number of respondents and their average/poor availability of health services shows that the availability of the services does not equate to the equal access to them. The above-mentioned finding corresponds to the assumption that there are several characteristics of health service accessibility.

In addition to this, education proved to be important in terms of health outcomes concerning mothers and children. Educated women were observed to have more chances of benefiting from antenatal care, birth attendant services, and vaccination services when compared to those women who did not receive any education. Education helps in enhancing awareness and decision making concerning reproductive health.

Additionally, it became clear that there was a correlation between differential uptake of immunization services and other public health services on account of differences in perception, awareness, and education level among various people. Even though the utilization of immunization services was quite satisfactory, the uptake of health education services was quite low especially among those people who never benefited from any form of formal education before.

It also came out clearly that public health initiatives including health education programs were very successful in communities which had a high literacy rate. It was easier for people with formal education to understand information regarding prevention of diseases such as Ebola and COVID-19, hygiene issues, and reproductive health awareness. Lack of education prevented success of these health campaigns in marginalized urban populations.

This is in line with the claims by [WHO \(2008\)](#) and [Marmot \(2010\)](#) regarding the fact that health does not depend on healthcare systems alone but on larger economic and social environments. In this instance, the differences in education, healthcare facilities and incomes illustrate that the health experience becomes unequal due to the presence of inequities and hence supports the thesis by Wilkinson & Pickett (2009), which states that social and health inequalities are highly connected.

In conclusion, this study has illustrated that access to education remains a key determinant of health along with the factors of socioeconomic status, institutional trust and healthcare access. Improving the educational system in conjunction with public health initiatives will be an important way of addressing the problem of inequalities and health service use in urban areas.

Comparison with Existing Literature

These results are consistent with [Peters et al. \(2008\)](#), who identify financial and structural barriers as major constraints on access to healthcare in developing countries. They also align with evidence that weaknesses in African health systems can compound social disadvantage ([Oleribe et al., 2019](#)). The strong relationship observed between educational access and health behavior is further consistent with health-literacy research showing that education and related capabilities influence how people understand and use health information and services ([Nutbeam & Lloyd, 2021](#)).

Speaking about cultural issues concerning traditional healers, one might draw upon the information presented by [Helman \(2007\)](#) and [Langwick \(2011\)](#). In addition, the role of traditional medicine in people's health problems is illustrated with the results obtained by [Richards \(2016\)](#) during his study of post-Ebola Sierra Leone when the influence of cultural factors was found. According to the available literature, poor education leads to reliance on informal methods of health care, since people do not possess adequate biomedical knowledge.

In the end, the gender findings are consistent with [Sen and Östlin \(2008\)](#), who emphasize that gendered power relations shape access to resources, healthcare, and decision-making. The study's findings on women's education and autonomy also accord with Sierra Leonean evidence showing that socioeconomic characteristics, including educational attainment, are associated with maternal healthcare utilization ([Kangbai et al., 2022](#)).

Explanation of Unexpected or Notable Findings

It is noteworthy that immunization services had higher reported utilization than several other public health interventions in this study. One possible explanation is that vaccination programs are comparatively visible and institutionally established. More generally, the pattern is consistent with the argument that health literacy can support informed engagement with preventive health information and services ([Nutbeam & Lloyd, 2021](#)).

It seems clear that while the trust in the health institution remains moderate despite the past shortcomings in the health sector, it shows how this institution has succeeded in regaining trust after reforms following the Ebola virus outbreak although not sufficient for high levels of institutional trust among different communities. In addition, higher education increases institutional trust since educated people can understand reforms made within the health sector.

Low engagement in health education could reflect a mismatch between communication methods and community preferences, as well as differences in literacy. Both explanations are consistent with the broader health-literacy literature, which shows that limited ability to access and understand health information can hinder engagement with preventive messages and health services ([Nutbeam & Lloyd, 2021](#)).

Practical Implications

Based on the results obtained, efforts towards improving the state of public health in Bo City should be much more than increasing access to health services. In terms of applying health policies, factors such as socio-economic setting, cultural belief system, gender relations, and education must all be considered since they greatly influence health literacy. Community-based health education, building confidence in health institutions, educating people, and minimizing indirect costs associated with health care become very critical at this point.

Recommendations for Future Research

Additionally, future research could adopt longitudinal methods to help assess changes in health behavior as well as the effectiveness of interventions. Localized ethnographic methods need to be applied in future research for the purpose of examining how culture affects health care and illness. Thirdly, comparisons between urban and rural areas within Sierra Leone will provide insights into the structures in each region that may affect health care. Also, research focusing on health communication practices via digital media in urban areas as well as access to education and its impact on health outcomes will be valuable in improving health education.

From the above analysis, it is evident that there are a number of factors affecting health outcomes in Bo City.

LIMITATIONS OF THE STUDY

There were various limitations associated with this study, which are to be taken into consideration while analyzing the results. First and foremost, this study used a cross-sectional methodology, which means that all the information was collected only at one particular moment. Therefore, changes cannot be identified, which makes it impossible to identify long-term patterns and trends.

Furthermore, even though the methodology was a mixed one, there still was the limitation concerning the limited sample size, owing to the lack of resources and the required amount of time for research. While the statistical data from the quantitative sample is valid and interesting, there are some population segments in Bo City, which have not been covered because of the sample size issue.

Moreover, the fact that some self-report data was gathered from people using questionnaires and conducting interviews raises the question of social desirability bias in data collection, since such an approach does not always lead to completely accurate responses.

Lastly, there were time restrictions, which had an effect on the depth of field engagement and amount of data collected. Adequate time would have enabled the researcher to sample more and engage in more in-depth qualitative interaction with various community members.

Fourthly, there were some aspects of the research that depended on secondary data from different sources, which had differences in terms of the scope, accuracy, and freshness. The methodology used to collect the data in all the analyzed literatures might have affected the consistency of comparative analysis.

Finally, the research only took place in Bo City. As such, the results cannot be generalized to other locations in rural or urban settings in Sierra Leone and beyond. Nonetheless, the results are useful and insightful regarding urban health inequalities, but must be considered under the social and geographical context.

All the same, effort was put in to ensure that the methodology used was rigorous through triangulation, accurate sampling, and combination of qualitative and quantitative techniques.

CONCLUSION

Indeed, through this study, an effort was made to assess the role played by the social context on the efficiency of public health programs in Bo City, Sierra Leone. This research has brought to light the fact that health-related issues and the adoption of public health measures depend on the combination of several factors ranging from socioeconomic status, accessibility to healthcare facilities, beliefs held, trust, and gender issues. Both quantitative and qualitative data collected in this research clearly indicate that members of lower socio-economic classes have more difficulties accessing healthcare services as compared to their counterparts in higher socio-economic classes. In addition, differences in terms of awareness, belief system, and interpretations of illnesses played a critical role in the way health services were adopted.

The study also reveals that there are different measures of efficiency associated with various public health interventions depending on the nature of the program. While some programs like immunization seem to have gained more success in terms of uptake, others such as preventive measures and health education do not seem to have had a similar measure of success.

The relevance of the current paper is in contributing to the sociological examination of health inequalities in a city environment. In essence, the study reiterates the assertion that for there to be improvements in the general health situation of communities, there is need for more consideration of structural factors in addition to biomedical solutions. The research is conducted in Bo City, thus providing evidence which can guide health planning and policy formation.

For future purposes, health institutions need to pay more attention to promoting health education among the communities, building trust among the people and eliminating socioeconomic barriers that hinder accessibility. Other areas of future research include examining the longitudinal effects of health behavior, comparative analysis between urban and rural environments and adopting culturally responsive methods in health programs.

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Conflict of Interest Statement

The author declares that there is no conflict of interest regarding the research, authorship, and publication of this article.

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