Thomas Marcus Owusu

Evaluation Of Social Inequalities in Health on Different Health Indicators Across Several Social Dimensions in Ghana

A mixed method, systematized review

Master's Thesis in International Social Welfare and Health Policy

Oslo Metropolitan University

Faculty of Social Science

12th November 2023

Abstract

Title: Evaluation of Social Inequalities in Health on Different Health Indicators across several social dimensions in Ghana.

Aim: To evaluate the social inequalities in Ghana's health sector on different health indicators across several social dimensions in Ghana.

Background: In recent decades, global health indicators have improved, yet persistent disparities exist, notably in developing countries and disadvantaged socio-economic groups. Health inequality, defined as avoidable disparities, has drawn attention globally. The shift towards health equity aligns with the UN's Sustainable Development Goals. In Ghana, despite efforts, significant health disparities persist, requiring further research. For example, urban areas generally have better health facilities than less urban ones. Existing studies often lack a comparative perspective. It is therefore crucial to assess social health inequalities in Ghana, across various social dimensions for a comprehensive understanding of health equity dynamics.

Method: A mixed method, systematized review of primary studies in Ghana.

Results: Comparing the extracted health indicators from the included studies and the 2018 Global Reference List of 100 Core Health Indicators, it has been established that fourteen (14) health indicators have been covered in terms of analyzing them along the lines of social inequalities in heath.

Discussion: The findings on the fourteen (14) health indicators painted a picture of the presence of wide social gradient that deserves attention. More research is therefore required

to look at the other health indicators from the 2018 Global Reference List Of 100 Core Health Indicators.

Keywords: Social Inequalities, Health Inequality, Health Equity, Health Indicators

Acknowledgement

I wish to express my gratitude to Mr James Kwoku Ahiadome (Majaro) for making my dream to study in Norway a reality. I am most grateful to my supervisor, Einar Øverbye for his significant guidance and supervision to the development of this thesis. Additionally, I want to convey my appreciation to Mr. Emmanuel Adu-Mensah of Ghana Institute of Management and Public Administration (GIMPA) for his proofreading assistance. My final appreciation goes to the Faculty of Social Science and staff of Oslo Metropolitan University for their selfless dedication to academic excellence.

Table of Contents

List Of Abbreviations

NHIS: National Health Insurance Scheme

GDHS: Ghana Demographic and Health Survey

U5M: Under-Five Mortality

GAMA: Greater Accra Metropolitan Area

ANC: Antenatal Care

DTA: Skilled Delivery Attendance

SII: Slope Index of Inequality

RII: Relative Index of Inequality

CHE: Catastrophic Health Expenditure

UHC: Universal Health Coverage

FGDs: Focus Group Discussions

IDIs: In-Depth Interviews

WHO: World Health Organization

GSS: Ghana Statistical Service

GHS: Ghana Health Service

SR: Systematic Review

CHPS: Community Health and Planning Services

MDGs: Millennium Development Goals

SDGs: Sustainable Development Goals

HIV: Human Immune Virus

AIDS: Acquired Immune Deficiency Syndrome

DPT3: Diphtheria-pertusis-tetanus

SES: Socioeconomic Status

CSDH: Commission on Social Determinants of Health

PHC: Primary Health Care

BMI: Body mass Index

CMR: Crude Mortality Ratio

IMR: Infant Mortality Ratio

List Of Tables

List Of Figures

1. INTRODUCTION

1.0 Thesis Outline

This thesis document is in five chapters. This chapter (introduction chapter) and the subsequent background, methods, results, and discussion chapter. The background chapter captured relevance of the study and reviewed various previous studies relating to the variables being studied which are social inequalities on the various health indicators across several social dimensions. As part of the background, theories that served as the frame of the study and the analysis were also specified and discussed with justification.

After the background chapter comes the method chapter which presents and discusses the approaches and methods deployed toward the eventual justification of the aggregative, mixed methods, systematized review approach used. To achieve transparency, reliability and believability, the chapter also contains detailed discussion on the search strategy adopted as well as the process of analysis.

The results chapter contains a summarized details of the characteristics and methodology of the included studies to grant an overview of the data. The chapter also contains the aggregated, thematic findings on the social gradient in Ghana regarding various health problems and how the various authors measured social differences in Ghana to descriptively expose the state of knowledge in the domain.

In the discussion, findings related to the social inequalities in Ghana's health sector on different health indicators across several social dimensions are discussed. After this, indications and shortcomings of the remaining findings are specified and discussed. Finally, the strengths and limitations of the study and conclusions are drawn.

1.1 Problem Statement

In the recent decades, researchers, and major health stakeholders such as the World Health Organisation (WHO) have reported that most health indicators such as infant mortality, longevity, maternal mortality and so on have significantly improved across the globe (Frimpong, 2013). Despite these positive reports, some disparities persist especially in developing countries and among some dis-advantaged socio-economic groups. For instance, according to Barreto (2017), the issue of HIV/AIDS remain a major problem in most African countries. He further reported that even developed countries like the United Kingdom still have significant traces of health disparities persisting in its health sector. Similarly, even in an affluent country like Norway, a study by Norwegian Directorate of Health indicates systematic differences in health. The higher the education and income the group has, the higher the proportion of the group's members have good health (Norwegian Directorate of Health, 2005; Huisman, 2005). Norway as in other western countries, good health status is negatively correlated to socio-economic position. Health inequalities form a social gradient and not only are the lowest social groups being worse off than those at the top, there is a graded pattern: health status improves as one moves up the social scale and social consequences of ill-health among low status groups, are more severe than among more privileged groups. Social inequalities in health remain a serious problem in both low- middle- and high-income countries, both in terms of population health and in terms of expulsion and long-term exclusion from the labour market and associated social, human, and economic costs (Dahl, 2002). This has drawn a lot of researchers and practitioners as well as other stakeholders' attention to this health disparity termed as "health inequality".

1.2. Defining “Health Inequality” And “Health Equity”

Health inequality, according to the WHO Commission on Social Determinants of Health (CSDH), refers to the discernible discrepancies in health outcomes or conditions among various individuals or groups within a given population. These imbalances can stem from a variety of factors, including socioeconomic status, education, race, ethnicity, gender, and geographical location. Essentially, health inequality underscores the uneven distribution of health resources, opportunities, and results. It serves as a descriptive term highlighting the extant variations in health within diverse segments of the population, shedding light on the influence of social determinants on overall well-being.

In contrast, health equity is a normative concept and an objective oriented toward attaining fairness and justice in health. The emphasis here is on ensuring that every individual, irrespective of their background or social circumstances, enjoys equal access to and distribution of health resources and opportunities. Achieving health equity involves addressing the fundamental causes of health disparities, which may encompass systemic and avoidable factors. This necessitates specific interventions, policies, and initiatives actively working to remove obstacles to health and cultivate an environment where everyone has a bona fide and equal opportunity to achieve optimal health. Essentially, health equity represents a proactive approach to constructing a healthcare system and society that nurtures equality in health outcomes (Zhang et al., 2019). Stakeholders in the health sector worldwide have or are pushing for a stronger shift from health inequality to health equity.

Resonating strongly with health equity is the United Nations’ Sustainable Development Goals (SDGs) which holds the principle that no one should be left behind in the process of delivering

any form of social justice (Novignon et al., 2019). The SDGs view health as one of the implicit moral imperatives of social justice which must be valued universally as it is a societal goal justifiable on moral grounds. According to Novignon et al. (2019), for any country to achieve health equity, it must channel some significant efforts into understanding the social determinants of health disparity between the various social groupings such as income/wealth, education, nutrition, water, lifelong learning, sanitation, decent work, fair employment, health care, and aspects of the built and natural environment.

1.3. The Ghanaian context

In Ghana currently, despite considerable attention to the problem of health inequalities, significant disparities persists among social groups which demands extra research attention (Novignon et al., 2019). However, most studies done in this domain had single context, that is they are either focused on rural setting to the neglect of urban settings or vice versa. Those that came close to satisfying this, like that of Bixby et .al (2022) and Zhang et .al (2019) focused on few health indicators and therefore yielding weak establishment of the social gradient. No study directly looked at it from the perspective to establish the difference in health equity dynamics between different social settings using multiple health indicators as achieved by this study. As argued by Saeed (2013), such studies require multiple dimensions of health. This study therefore seeks to evaluate social inequalities in health with Ghana as a case and context on many different health indicators between across several social dimensions such as (urban/rural, high/low income and so on).

1.4 Thesis Aim

This study seeks to evaluate the social inequalities in Ghana's health sector on different health indicators across several social dimensions (urban/rural, high/low income and so on).

1.5 Research Questions

The following questions shall be satisfied by the end of the study:

1. What is the social gradient in Ghana regarding various health indicators?
2. How do various authors measure social differences on health in Ghana?
3. How did the different authors measure health problems in Ghana?
4. What are the reasons for the social gradient, and its change across time?

1.6 Topic and Policy Relevance

Policymakers, researchers, and public health practitioners have long sought not only to improve overall population health but also to reduce or eliminate differences in health based on geography, race/ethnicity, socioeconomic status (SES), and other social factors. This study's findings shall help add to the richness of literature in the domain of health inequalities research toward advancing this sub-area of research. The synthesized findings expand on previous studies in the domain sought to address concepts relevant to the study of health inequalities and inequities. Further, the study, through the thorough literature review done, clarifies some of the key concepts that describe differences in health that sometimes confuses people. Additionally, it reviews thoroughly the methods for gathering and interpreting information on health inequalities. The study also provides an overview of theories commonly employed to explain health differences.

The geographical scope of the study in Ghana presents a suitable location to undertake the focus of the research. Ghana possesses one of the most heterogeneous populations in West

Africa regarding ethnic and religious composition. The major cities in Ghana consist of diverse population sets regarding ethnic, religious denomination, and even citizenship backgrounds. These groups co-exist harmoniously despite their dissimilar (health-related) cultures, beliefs, and practices including forms of social interactions and the norms that facilitate those interactions. Moreover, the recognition of both traditional and modern political leadership makes the country and its diverse communities a suitable choice for this study, especially about the notion of 'linking/institutional social capital' at the heart of the research. These characteristics make the study relevant not only to Ghana but also to countries with similar attributes or characteristics (Amoah, 2017). This is consistent with Amoah's (2017) view that application of elements of social capital to health-related research is innovative and valuable, especially in developing countries. As stated earlier, in Ghana, the majority of related studies have dwelt on the direct relationship between elements of the social relationships and health and well-being to the neglect of how social capital interacts with other determinants of health and even the paths by which it affects health and well-being (Amoah, 2017).

Lastly, this study is motivated by a personal ambition to help alleviate health-induced poverty and to reduce livelihood inequalities through effective health service policies. By this, the author subscribes to the assertion that health is a critical socioeconomic asset that enables impoverished people to cope with, to manage, and even to change their unsatisfactory environments.

2. BACKGROUND

2.0 Chapter Introduction

This chapter focuses on elaborating in detail on the relevance of the topic being explored by the researcher with literature backing as well as presentation and justification of theories that served as the frame to guide the study. Toward achieving this, definitions of key variables, constructs and related concepts are first discussed. After this, relevant knowledge from previous related studies relating to the topic is described toward positing the study strongly in literature. Eventually, reasons for choosing the setting for the study are specified and justified as part of this chapter. Ultimately, the theoretical frameworks used to analyze and understand the results are presented.

2.1 Definitions of Health

The adoption of the World Health Organization's (WHO) definition of health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" is a common approach in health-related research and policy development. This comprehensive definition highlights the holistic nature of health, encompassing not just the absence of illness but also the presence of overall well-being and functioning in various aspects of life. However, it is important to recognize that this definition has also faced criticism and debates from researchers and scholars. Some of the critiques, as mentioned by Arcaya et al. and Lindstrand et al., raise valid concerns: a) *Confusing Happiness with Health*: The WHO's definition of health as "complete physical, mental, and social well-being" might imply that a person can only be considered healthy if they are experiencing high levels of happiness and well-being in all areas of life. This may not always be practical or attainable for everyone, as life circumstances, external factors, and personal experiences can impact one's

overall well-being. Thus, the definition may inadvertently equate happiness with health, leading to potential misinterpretations; b) *Conflicting Nature of Dimensions:* The inclusion of multiple dimensions in the WHO's definition, such as physical, mental, and social well-being, can create challenges in achieving a perfect balance among these elements because individuals may experience conflicts or challenges in one dimension while excelling in another. The complexity of balancing these dimensions in real-life situations may limit the practicality of the all-encompassing nature of the definition; d) *Over-Ambitious and Aspirational:* The aspirational nature of the WHO's definition, striving for "complete" well-being, may be perceived as too ambitious and difficult to achieve in its entirety. Health is influenced by numerous factors, including social determinants of health, environmental conditions, and access to healthcare, making it challenging to attain a state of complete well-being for everyone.

While the WHO's definition has its limitations, it continues to be widely used as a guiding principle for health promotion and policy development globally. It serves as a reminder of the holistic approach needed to address health issues and the importance of considering various dimensions of well-being in health-related interventions. However, researchers and policymakers should also be aware of the critiques and complexities associated with such a comprehensive definition and strive to incorporate practical and context-specific approaches to improve health outcomes and reduce health inequalities.

2.1.1 Health Inequalities Versus Health Inequities

Health inequality refers to differences in health among individuals or groups, encompassing any measurable aspect of health that varies across socially relevant groupings. This term does not inherently imply a moral judgment on whether the observed differences are fair or just.

On the other hand, health inequity or health disparity specifically denotes an unjust difference in health. It is a type of health inequality that highlights the presence of systematic and avoidable differences in health that could be eliminated through reasonable means. Health inequities are often associated with social group differences, such as those based on race, ethnicity, socio-economic status, or other factors. When these health differences are preventable and unnecessary, allowing them to persist is considered morally unjust (Arcaya et al., 2015).

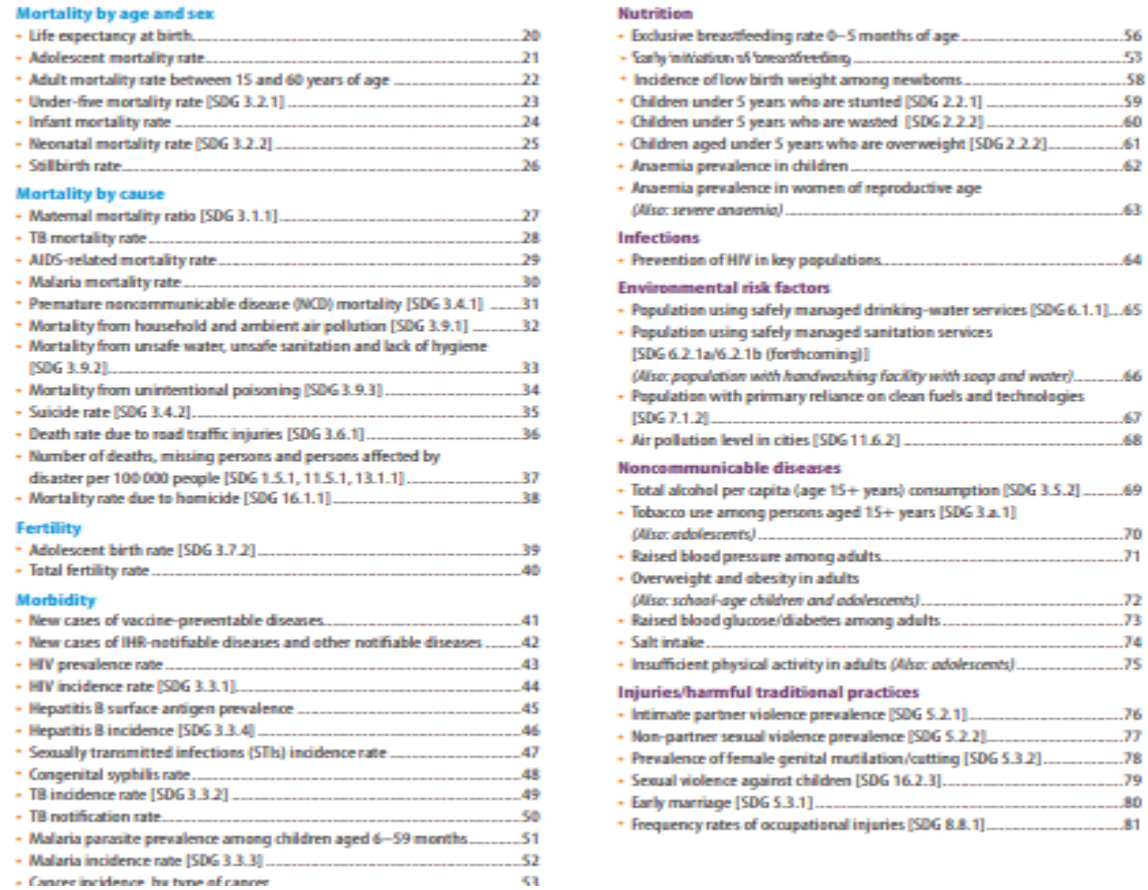
The key distinction between "inequality" and "inequity" lies in the moral judgment associated with the latter. While both terms describe differences in health, "inequity" requires a value judgment that deems the observed health disparity as wrong or unfair, indicating a call for action to address and eliminate the underlying unjust factors contributing to the disparities (Arcaya et al., 2015).

It is important to recognize and address health inequities to ensure that all individuals and groups have equal opportunities to attain optimal health and well-being, regardless of their social backgrounds or circumstances. By acknowledging and working to eliminate health inequities, societies can strive for a more just and equitable distribution of health resources and outcomes (Arcaya et al., 2015).

2.2 Health Indicators

According WHO (2018), health indicators refers to summary measures that capture relevant information on various attributes and dimensions of health status and performance of a health system. These indicators are used as a way of measuring specific health characteristics in each population. This study was guided by “The 2018 Global Reference List Of 100 Core Health Indicators (plus health-related SDGs)” prescribed by The World Health Organization

(WHO). It is a standard set of core health indicators identified and prioritized by the world health organization and other health stakeholders at the global and national levels to provide accurate guide on the health situation and trends (World Health Organization, 2018). Aside from the 100 core health indicators, it also includes additional health-related SDGs for reference by users. The list is categorized into four main domains which are health status, risk factors, service coverage and health systems. The figure below contains the 100 core health indicators: a) Health status indicators which covers core indicators such as mortality by age, sex and cause (including the sixteen mortality related indicators of the health and health related SDGs plus the core morbidity and fertility indicators); b) Risk factors indicators which covers nutrition, environmental, behavioural, injuries and violence; c) Service coverage indicators covers a range of health services such as reproductive health, immunization, maternal health, new-born, child and adolescent, HIV, tuberculosis, non-communicable diseases, malaria, neglected tropical, mental health, substance abuse and other diseases; d) Health systems indicators covers health dynamics such as health facility density and distribution, health workforce, health information and quality and safety of care, health security capacity. Figure 2.1 below contains a Summary of the 100 Core Health Indicators (Plus Health-Related SDGs).



Mortality by age and sex
- Life expectancy at birth 20
- Adolescent mortality rate 21
- Adult mortality rate between 15 and 60 years of age 22
- Under-five mortality rate [SDG 3.2.1] 23
- Infant mortality rate 24
- Neonatal mortality rate [SDG 3.2.2] 25
- Stillbirth rate 26

Mortality by cause
- Maternal mortality ratio [SDG 3.1.1] 27
- TB mortality rate 28
- AIDS-related mortality rate 29
- Malaria mortality rate 30
- Premature noncommunicable disease (NCD) mortality [SDG 3.4.1] 31
- Mortality from household and ambient air pollution [SDG 3.9.1] 32
- Mortality from unsafe water, unsafe sanitation and lack of hygiene [SDG 3.9.2] 33
- Mortality from unintentional poisoning [SDG 3.9.3] 34
- Suicide rate [SDG 3.4.2] 35
- Death rate due to road traffic injuries [SDG 3.6.1] 36
- Number of deaths, missing persons and persons affected by disaster per 100 000 people [SDG 1.5.1, 11.5.1, 13.1.1] 37
- Mortality rate due to homicide [SDG 16.1.1] 38

Fertility
- Adolescent birth rate [SDG 3.7.2] 39
- Total fertility rate 40

Morbidity
- New cases of vaccine-preventable diseases 41
- New cases of IHR-notifiable diseases and other notifiable diseases 42
- HIV prevalence rate 43
- HIV incidence rate [SDG 3.3.1] 44
- Hepatitis B surface antigen prevalence 45
- Hepatitis B incidence [SDG 3.3.4] 46
- Sexually transmitted infections (STIs) incidence rate 47
- Congenital syphilis rate 48
- TB incidence rate [SDG 3.3.2] 49
- TB notification rate 50
- Malaria parasite prevalence among children aged 6–59 months 51
- Malaria incidence rate [SDG 3.3.3] 52
- Cancer incidence, by type of cancer 53

Nutrition
- Exclusive breastfeeding rate 0–5 months of age 56
- Early initiation of breastfeeding 53
- Incidence of low birth weight among newborns 58
- Children under 5 years who are stunted [SDG 2.2.1] 59
- Children under 5 years who are wasted [SDG 2.2.2] 60
- Children aged under 5 years who are overweight [SDG 2.2.2] 61
- Anaemia prevalence in children 62
- Anaemia prevalence in women of reproductive age *(Also: severe anaemia)* 63

Infections
- Prevention of HIV in key populations 64

Environmental risk factors
- Population using safely managed drinking-water services [SDG 6.1.1] 65
- Population using safely managed sanitation services [SDG 6.2.1a/6.2.1b (forthcoming)] *(Also: population with handwashing facility with soap and water)* 66
- Population with primary reliance on clean fuels and technologies [SDG 7.1.2] 67
- Air pollution level in cities [SDG 11.6.2] 68

Noncommunicable diseases
- Total alcohol per capita (age 15+ years) consumption [SDG 3.5.2] 69
- Tobacco use among persons aged 15+ years [SDG 3.a.1] *(Also: adolescents)* 70
- Raised blood pressure among adults 71
- Overweight and obesity in adults *(Also: school-age children and adolescents)* 72
- Raised blood glucose/diabetes among adults 73
- Salt intake 74
- Insufficient physical activity in adults *(Also: adolescents)* 75

Injuries/harmful traditional practices
- Intimate partner violence prevalence [SDG 5.2.1] 76
- Non-partner sexual violence prevalence [SDG 5.2.2] 77
- Prevalence of female genital mutilation/cutting [SDG 5.3.2] 78
- Sexual violence against children [SDG 16.2.3] 79
- Early marriage [SDG 5.3.1] 80
- Frequency rates of occupational injuries [SDG 8.8.1] 81

Figure 2.1: Summary of the 100 Core Health Indicators (Plus Health-Related SDGs)

Source: WHO (2018)

2.3 The Health Care System in Ghana

2.3.1 Structure of the Ghana Health Service

Kanmiki et al. (2018) provided a summary on the structure of the Ghana Health Service (GHS). According to him GHS was formally established and made independent from the country's Ministry of Health (MoH) in the year 1996 through the Ghana Health Service and Teaching Hospital Act. Its core duty is the management and organization of health services in Ghana, except for the Teaching hospitals and Military hospitals. The GHS council is the highest authority in the health service of Ghana and is charged to provide both strategic and administrative advice (Sumah & Baatiema, 2019).

Next to the council is the Director-General who is the administrative head of the service. There exist ten divisional directorates at the national level whose power and authority is almost at the same level as the regional directors (Abor et al., 2008). Regional directors are responsible for the day-to-day management and administration of health services at the regional level and are supported by a regional health management team. At the district level, the district director of health services heads the district health management team and has overall responsibility over all health facilities and programs at that level. There exists a management accountability relationship between the MoH, the GHS headquarters and the regional and district health administrations (Abor et al., 2008). Regions and districts are assisted in setting strategic plans with objectives and deliverables that are clear and quantifiable (Sumah & Baatiema, 2019). Figure 1 shows the structure of the Ghana Health Service.

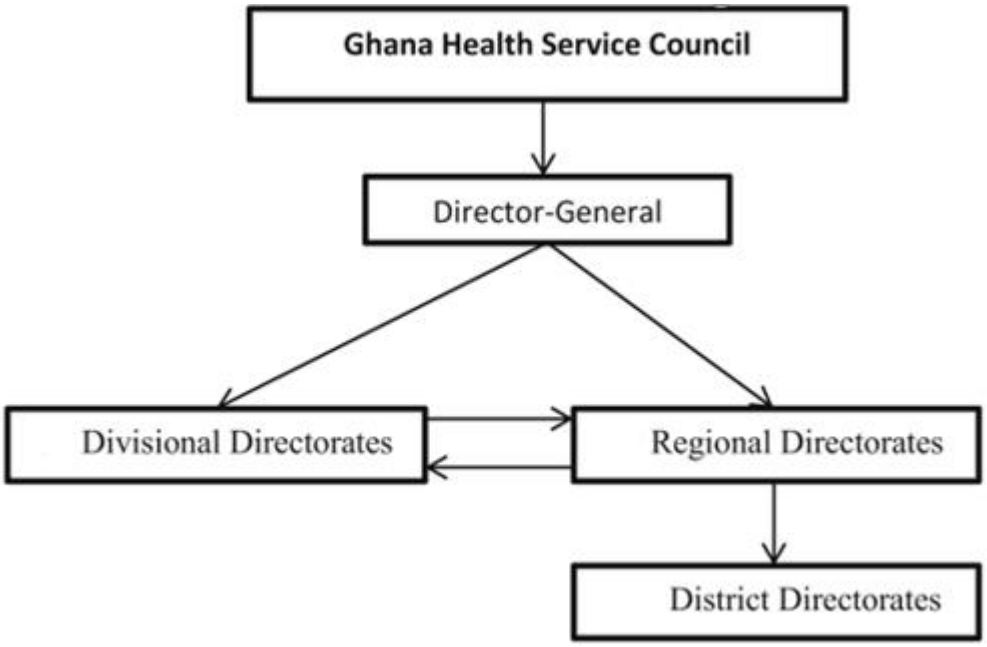


Figure 2.2 Structure of the Ghana Health Service

Source: Kanmiki et al. (2018)

2.3.2 Primary Health Care (PHC) System in Ghana

Primary Health Care (PHC) in Ghana is structured to serve the rural and urban population according to priority (Saeed, 2013). The rural areas which are mostly deprived of permanent health infrastructures have been prioritized with programs such as the Community Health Planning Service (CHPS), which aims to transform clinic-based primary health care and reproductive health services to community-based health services. Most CHPS workers are mobile and move from community to community to educate community members on preventive practices as well as administer curative services. Ghana has embarked on training health workers especially for the need of rural areas.

Secondary and tertiary care is classified as purely curative and offers a range of hospital services, depending on the defined status of the institutions (Saeed, 2013). The secondary and tertiary health care level is sub-divided into several different categories depending on their range of service. A teaching hospital, for example, takes both referral cases and serves as a first point of contact. The military and police hospitals of Ghana serve as tertiary healthcare infrastructures, serving both as first point of contact and referral institutions but do not serve as teaching hospitals. Secondary and tertiary health care delivery in Ghana is mostly an income generating area of health. Most of the services in these institutions are available at the cost of patients only. These tertiary institutions also operate on private bases as profit making institutions by offering curative services to non-insured people on a out-of-pocket basis (Saeed, 2013).

2.3.2.1 Challenges Facing the Primary Health Care (PHC) System in Ghana

According to MoH (2020), one major challenge impeding primary health care is uneven access to healthcare services by the population. This is due to lack or inadequate health facilities in some localities as well as inadequate health professionals and facilities to make health care delivery service comprehensive. For this reason, service availability and quality of care is poor in most communities and therefore below expectation (Pratt, 1917). For instance MoH (2020) reported that avoidable maternal and new-born deaths remains a major challenge. Further, even though DPT3 (diphtheria-pertussis-tetanus) coverage is over 95%, other vaccination coverages are still below standard. Other underperforming indicators are paediatric HIV and AIDs, tuberculosis case, Under-nutrition, micronutrient deficiencies resulting in anaemia and obesity in children (8%) and in pregnant women puts them at risks of death, high presence of hypertension and diabetes among the general population.

Additionally, the sector is challenged by finance availability. Until recently, this was not a challenge much as most public health interventions were supported by the country's development partners. However, recently several development partners have withdrawn their support (Adisah-Atta, 2017). MoH (2020) estimated that Ghana will need an average of US$350 million per year to fund its vaccine and other commodity commitments in co-payments and transition out of arrangements by 2027. The government non-wage budgetary allocation to health other than National Health Insurance Scheme (NHIS) and total budget as a percentage of GDP has reduced significantly. The NHIS currently covers about 36% of Ghana's population. This means over 64% of the population are directly able to access basic health care services. This is largely because significantly large areas, especially rural communities do not have health facilities.

2.4 Concepts for Operationalizing the Study of Health Inequality

According to Arcaya et al. (2015), health inequalities can be looked at along the lines of Group-Level Differences/Social Group, Social Position and geographic location.

Group-level differences refer to inequalities in health outcomes, behaviors, or traits observed among various segments within a population based on factors like income, education, or occupation (Arcaya et al., 2015). This examination involves statistically analyzing averages or distributions, for instance, comparing the average body mass index (BMI) between different income brackets. In contrast, social groups are defined by societal, historical, or cultural elements, based on shared characteristics like race, ethnicity, religion, or socioeconomic status. Investigating health disparities within social groups encompasses understanding their broader context, including historical backgrounds, societal norms, and the impact of issues like discrimination or systemic inequalities (Arcaya et al., 2015). For example, studying how historical events such as slavery, segregation, or the caste system influence health outcomes among diverse social groups falls within the realm of social group analysis.

2.4.1 Health Inequalities based on Group-Level Differences/ Social Group Versus Overall Health Distribution

Arcaya et al. (2015) highlights two primary approaches to studying health inequalities within and between populations. The first involves analyzing disparities in health outcomes at a group level, such as comparing the average body mass index (BMI) between socio-economic classes. This approach offers insights into societal health inequalities. The second approach focuses on understanding health disparities in the context of historical and cultural backgrounds, like exploring racial and ethnic health differences in the United States due to past slavery and segregation, or the impact of the caste system on social status, education,

and health outcomes. Viewing health differences through the lens of social groups aids in guiding interventions, addressing equity issues, and enhancing our comprehension of health factors. Additionally, observing health disparities along racial, ethnic, and socio-economic lines in various countries emphasizes the widening gap and the necessity of studying group-level health differences. Understanding these disparities involves creating meaningful groupings based on societal divisions within each unique society.

2.4.2 Health Inequalities Based on Income Position

According to Arcaya et al. (2015), studying inequalities within and between populations can also be done by observing health disparities along the lines of poverty, which can be defined in an absolute sense by comparing a given income to a static benchmark, or in a relative sense by comparing a given income to the overall distribution of incomes in a population. Absolute poverty definitions rely on a fixed monetary threshold called a poverty line, though this threshold in generally specific to year, country, and household size. Those with incomes falling below the threshold are considered impoverished. On the other hand, relative poverty is defined by comparing a given income to the distribution of income in a population. For example, those earning less than 30% of the national per capita income might be considered relatively impoverished, meaning that the poverty definition changes as average income increases. Among other distinctions between the two ways of defining poverty, it is important to note that a relative poverty definition may classify a greater proportion of a population as impoverished, especially in countries with high levels of income inequality.

2.4.4 Geographic Health Inequalities: Place Versus Space

Geographic setting, not just social group, plays an important role in shaping health. Differentiating the concepts of space and place helps us to better understand the different

ways in which geography can affect health. Space deals with measures of distance and proximity such that exposure to spatially distributed health risks and protective factors will change according to an individual's precise location (Arcaya et al., 2015). For example, air pollution that exacerbates asthma symptoms would be an example of a health risk that is distributed across space. Proximity to landfills, crime clusters, and health clinics are other examples of spatially patterned health risks and protective factors. In contrast, place refers to membership in political or administrative units, such as school districts, cities, or states. Many governments run programs and policies that affect health, such as food assistance programs or tax policies, are specific to administrative units and operate uniformly within their boundaries. As a result, the health impacts of a wide range of programs and policies do not depend on residents' precise physical location, but rather on membership in a given political or administrative unit. Concepts of space and place are often treated as exchangeable, and it is easy to see why. Political and administrative units are geographically defined such that people in the same place are often also very close together in space. However, if we imagine an example in which individuals are simultaneously exposed to health risks from a polluting local factory and to health benefits from a village aid program, the conceptual differences become clear. In this example, moving farther from a point source of pollution could improve health, regardless of whether the move was to a location inside or outside the village boundaries. In contrast, maintaining aid would be contingent on residing within village boundaries regardless of where within the village a person lived. Observed geographic health disparities may be driven by processes that are rooted in space, place, or both. From a research standpoint, the studies one might propose to understand geographic health inequalities should account for whether hypothesized health risks are spatial versus place-based. From a policy perspective, programs and interventions could more effectively

target geographic health disparities if space and place were both explicitly considered (Arcaya et al., 2015).

2.5 Models on Health Equity

In the process of framing this study, extensive research and analysis of various theoretical frameworks were conducted to identify the most fitting and comprehensive approach. Among the array of theories explored were Social Determinants of Health (SDH) theory, Integrative Framework for Population Health Equity and the Health Equity Framework (HEF). SDH Theory emerged as the most pertinent and suitable choice due to its alignment with thus study in terms of assumptions and constructs. Further, its selection was based on the framework's close correspondence to the central themes and goals of the research, as its constructs and underlying assumptions directly resonate with the direction and objectives of this investigation. The SDH was favored over other theoretical models due to its robust applicability and relevance in addressing the core aspects and goals underpinning this study, providing a strong foundation and guidance for the research's exploration of health equity.

2.5.1 The Health Equity Framework

The Health Equity Framework (HEF), developed by Peterson et al. (2021), offers a comprehensive model to understand health outcomes and inequities. It is centred on three key concepts: health equity as a core focus, interconnected spheres influencing health, and a life-course perspective. HEF emphasizes fair access to resources beyond individual behaviours, identifying four spheres influencing health: structural, relational, individual, and physiological factors. It highlights the complex interplay of multi-level influences and the historical and life-course perspective's role in understanding health disparities. This

framework guides interventions to focus on societal and structural determinants, shifting attention from individual-level factors to broader contexts.

Within the HEF, systems of power significantly shape health outcomes by distributing resources and opportunities, either perpetuating health inequities or promoting health equity. Institutions and governmental policies influence health disparities, underscoring the need to enact health equity policies at different levels. Relationships and networks, a crucial aspect, can act as protective factors or sources of poor health outcomes based on the nature of connections and support provided. Individual factors, such as attitudes and behaviors, interact with societal influences, contributing to health outcomes. Moreover, physiological pathways play a significant role in influencing health outcomes, being influenced by social, economic, and environmental factors, but challenging to modify directly. The HEF also highlights the importance of a life-course perspective, recognizing the cumulative impact of experiences across generations and stages of life, crucial for understanding and addressing health disparities.

HEF underscores the importance of addressing systemic factors and historical influences to achieve health equity. Interventions should focus on dismantling barriers, addressing social determinants of health, and promoting fair resource distribution and opportunities to reduce health disparities. Figure 2.3 depicts the The Health Equity Framework

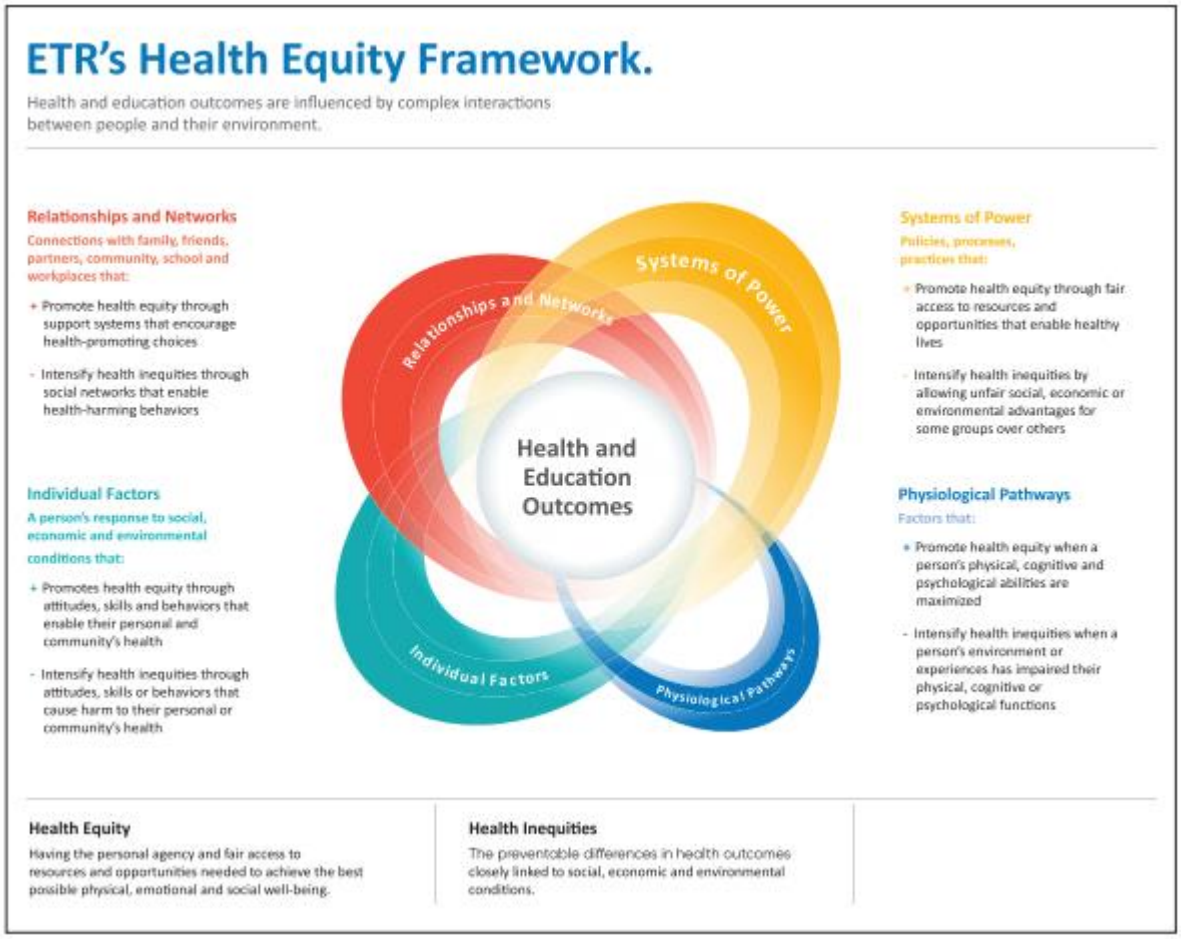


Figure 2.3: The Health Equity Framework

Source: Peterson et al. (2021)

2.5.2 Social Determinants of Health (SDH) Theory

Social Determinants of Health (SDH) Theory is a framework that explains how the conditions of daily life affect health outcomes. SDH theory recognizes that health is not only determined by biological or medical factors, but also by the social and environmental factors that people are exposed to throughout their lives. SDH theory aims to identify and address the root causes of health inequalities and promote health equity (Brochier et al., 2023).

The social determinants of health (SDH) encompass the non-medical factors influencing health outcomes, including conditions of birth, growth, work, and living environments

influenced by societal forces like economic policies and social norms. They notably shape health inequities, with a clear link between lower socioeconomic positions and poorer health. These determinants, spanning income, education, employment, housing, and access to healthcare, significantly impact health, often outweighing healthcare and lifestyle choices in influencing health outcomes (Brochier et al., 2023). Addressing these factors collectively across various sectors is crucial to improve overall health and diminish persistent health disparities. Figure 2.4 depicts the Social Determinants of Health (SDH) Theory

Figure 2.4: Social Determinants of Health (SDH) Theory

Brochier et al. (2023)

2.5.3 Integrative Framework for Population Health Equity

The integrative population health equity framework draws from six primary approaches and models: social determinants of health, the life-course viewpoint, community-based participatory research (CBPR), social marketing, health in all policies, and connecting clinical practice with community-based health promotion (Trinh-Shevrin et al., 2015).

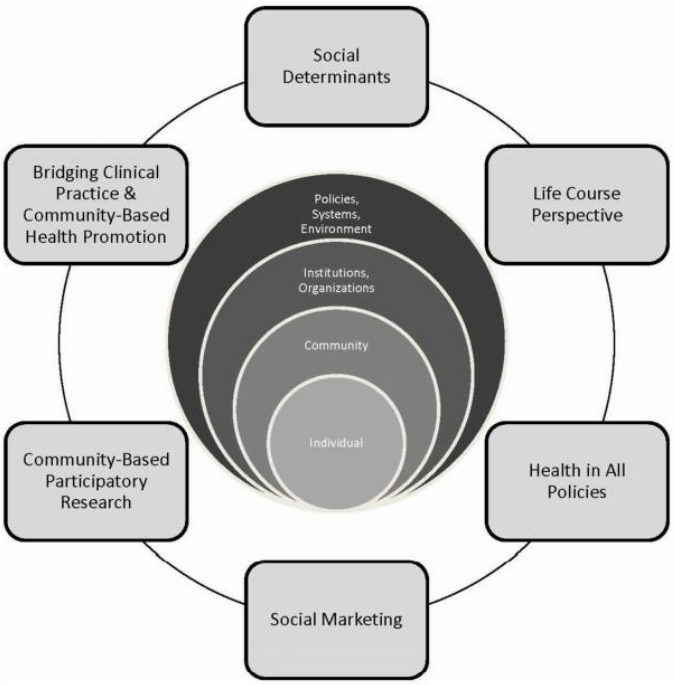


Figure 2.5: Integrative Framework for Population Health Equity

Source: Trinh-Shevrin et al. (2015)

3. METHOD

According to Pollock & Berge (2018), in choosing the suitable method for a study, the researcher must endeavour to select elements that aligns well with the formulated research questions. This study adopted a systematic review approach. Hong (2018, p.4) defined systematic review as "the application of strategies that limit bias in the assembly, critical appraisal, and synthesis of all relevant studies on a specific topic". According to Spindler (2007), for the systematic review to qualify as a research methodology, the process must be executed in a manner that satisfies credibility, believability and validity. Like any other form or kind of study design/method, a review´s suitability depends mostly on on what is done, what is uncovered, clarity of the process as well as the transparency of the review (Hong, 2018). For this reason, the sub-sequent headings detail the type of review and how it was executed with justification. Further, the steps taken in the literature search and inclusion

process will be reported to ensure a clear and transparent process. Finally, the process of the synthesis and thematic analysis of the data will be described.

3.1 Reviews and Their Relevance

A review is basically a phase in research where the researcher combs through already done studies that relate to the current study toward serving as a guide for the study, establishing research gaps and backing up the core arguments of the study (Pollock & Berge, 2018). According to Hong (2018), reviews are crucial because it is the only proven means for establishing what is already known within a particular research domain and what is not yet explored or adequately explored. Beyond this, it can help inform policy (Pollock & Berge, 2018). For this reason, it is accepted to synthesize viewpoints and findings from many different earlier studies. It has been used by some researchers to investigate the research question with more substance than some primary studies. Review is particularly useful when one wants to gain richer insight into a domain where research is quite diverse and multidisciplinary (Polanin et al., 2017), as is the area of focus in this thesis. Therefore, in this context, review is not only for the purpose discussed above, but is being deployed as a research methodology.

3.1.1 Review Approaches

According to Pollock & Berge (2018), two major types of review approaches exist. They are the Interpretative Approach and the Aggregative Approach. The former focuses on developing concepts and theories and not mere data summarization, which is the focus of the latter. In other words, the aggregative approach summarizes the findings of multiple previous studies that are closely related toward answering a very more precise or narrow research question. Some studies have also combined both approaches (Polanin et al., 2017). This study

is basically aggregative as the researcher seeks to summarize previous findings centering around social inequalities in Ghana's health sector on different health indicators among low and high- income population. However, interpretive elements can be found in the discussion of the findings.

3.1.2 Review Types

As established earlier, specifying and justifying a suitable method for a review is crucial toward adequately addressing the limits of the study's research question and the intended applications of the review (Pollock & Berge, 2018). Several types of literature review methodology exist and therefore so is review methods (Victor, 2008). This thesis solely describes review types used in this thesis (systematic reviews and systematized reviews), their suitability, and associated methods.

3.1.2.1 Systematic Reviews

A Systematic Review (SR) is a tried and tested methodology that is used to synthesize empirical data from previous studies through a pre-determined inclusion criteria based on the current study's research questions (Polanin et al., 2017). SR researchers attempts to make the method valid and reduce bias when choosing and interpreting studies by ensuring transparency, being stringent and systematic in their approach (Pollock & Berge, 2018). Once it is approached in this manner, the synthesized results become very reliable and, for that matter, may inform decision making. The method is therefore particularly excellent when trying spot gaps in a certain research domain and has become well-embraced means of providing information in evidence-informed decision making (Hong, 2018). Looking at the fact that this study seeks to explore what is known, spot research gaps and possible areas for policy recommendations, SR aligns well with the goals and direction of this study.

Martinic et al. (2019) prescribed some guidelines for successful application of this methodology. According to him, to successfully deploy SR, the research must first come out with well-formulated research questions and transparent exhibition of all sources used to identify the included materials. To satisfy this prescription, this study provided clear research questions under section 1.1 and a transparent report of sources searched (section 3.2.2).

Secondly, an SR methodology must provide detailed information on the search strategy used toward achieving a key research requirement which is replicability. This was done by providing information on sources of the articles such as article databases and search platform used, search date, as well comprehensive copy of the deployed search strategy.

Thirdly, Martinic et al. (2019) prescribed that the researcher also adds inclusion and exclusion criteria used as part of the study document. This also includes the methods of the materials screened for inclusion or exclusion. Penultimately, a SR contains a critical appraisal of the quality of the included materials (Victor, 2008). Although this study has included a quality appraisal aspect, implementing peer reviewal as an inclusion criterion, this does not substitute a full quality appraisal (Nunn & Chang, 2020). For this reason, the review done here is not a complete SR. Lastly, an SR should detail how data analysis and synthesis was executed. As established, even though this study takes the form of the SR methodology, it cannot fully claim to be a systematic review but rather a systematized review pattern.

3.1.2.2 Systematized Reviews

A systematized review is more of a hybrid methodology that include aspects of a systematic review but not wholly (Nunn & Chang, 2020). This review method is often utilized in post-graduate student work in appreciation of how the systematic review requirements, such as two or more researchers or a full quality appraisal, cannot be fulfilled. The outcome of this

process generally models that of a systematic review and grants the researcher to showcase understanding of the process and ability to carry out the components (Nunn & Chang, 2020). Nonetheless, this method cannot claim to be fully comprehensive, a central part of the systematic review and therefore has a larger probability of bias than rigorous systematic reviews.

3.1.3 Mixed Methods Review

A mixed method review, is a kind of review that either involves studies that were done using the mixed methods approach or seeks to sieve ideas from various types of data (qualitative and quantitative data) (Nunn & Chang, 2020). Most of the studies reviewed for this study are quantitative in nature. Such studies tend to yield a more generalizable outcome even though the quantitative data have been criticized as being too superficial. Qualitative data are rather considered by most experts as being very in-depth in terms of understanding the problem being investigated, even though criticized as not being representative enough. With these observations on quantitative and qualitative, this study decided to combine both approaches. This allowed for both richer descriptions of the issues (qualitative) and realization of more generalization.

Critics of the mixed methods have warned researchers on the fact that they need to advance their research skills if they can make better utilization of the mixed methods toward adequately satisfying both the qualitative and quantitative requirements (Aromataris & Pearson, 2014). However, mixed method reviews supply a possibly comprehensive picture of the available research on the topic. In summary, this study took the form of a mixed method systematized review.

3.2 Search Strategy

In this section the steps provided by Martinic et al. (2019) are followed to describe the search process in order to present a transparent description of how the included studies were identified.

3.2.1 Inclusion and Exclusion Criterion

In line with Martinic et al.'s (2019) prescription for implementing SR, this section presents the inclusion and exclusion criteria. Table 3.1 contains a summary of the inclusion and exclusion criteria for used.

Table 3.1: Inclusion and Exclusion Criteria

Inclusion	**Exclusion**
Studies that focused on the social inequalities in the health sector on different health indicators.	Studies not focused on the social inequalities in the health sector on different health indicators.
Conducted on Ghana	Not conducted on Ghana
Either qualitative or quantitative or both	Review or conceptual
Published in peer reviewed journals	Not Published in a peer reviewed journal
Published between 2000 and 2023	Published before 2000

Common inclusion and exclusion criteria include stating the aim and methodology of the studies and criteria pertaining to the research quality (Pollock & Berge, 2018). As social inequalities in the health sector on different health indicators is the focus of the study, the first criteria were to include studies exploring social inequalities in the health sector on different health indicators. This was deemed suitable because there is empirical support of social inequalities in the health sector on different health indicators from earlier studies. However, the researcher admits that this may constitute a limitation as there is no follow-up

research on social inequalities in the health sector on different health indicators to confirm the assertions and conclusion from these studies.

Secondly, as indicated in the table 3.1, geographic criteria were used to sieve out studies that lacked the Ghanaian context. This is because this study sought to focus on health inequalities that centered on a specific country which is Ghana. However, studies from other countries helped in the overall discussion done especially in situations where comparison was necessary.

Thirdly, only papers published in peer reviewed journals were used. This is because papers published in peer reviewed journals have proven to have satisfied the attributes of scientific research, therefore the data and information they hold are more trustworthy for the review done in here. Papers not published in peer reviewed journals tend to lack scientific rigor and cannot be trusted. Despite recommendations by Martinic et al. (2019) a quality appraisal was not carried out, due to the time and size limitations of the thesis. Lastly, a time limit was set to exclude papers published before the year 2000 to ensure currency and relevancy of the information that formed part of the review data to the current situation.

3.2.2 The Search Process

Another major prescription from Martinic et al. (2019) is being transparent in terms of reporting of the search strategy. To satisfy this prescription, preliminary searches were done toward helping the researcher to familiarize himself with the literature in the domain and as well as discovering more possible search terms. A large variation of search terms for social inequalities in the health sector on different health indicators were used. This process resulted in determining the search terms that yielded the best search output in terms of meeting the research question. Search terms that produced weak hits were excluded. After

doing preliminary test searches, the search terms selected were social inequalities in Ghana's health sector, social inequalities on health indicators across several social dimensions in Ghana or variations of this and a search string was determined.

The review approach used, that is the aggregative approach, demands thorough combing of multiple databases as well as some other relevant supplementary sources. This contrasts the interpretive review, of which theoretical sampling is more suitable. The Table 3.2 below contains the included databases combed as prescribed by Martinic et al. (2019).

Table 3.2: Included Databases

Name Of Database	**Description**
MedCrave	To bring current medical research to enrich the study
MDPI	To bring in the Social Sciences aspect of this study
Science Publishing Group	To bring in studies with both medical and Social Sciences focus
Creative Commons Attribution	To bring in current research on health
African Centre for Economics and Finance	To bring in the Social Sciences aspect of this study
Ghana Statistical Service (GSS) and Ghana Health Service (GHS)	To bring in secondary data to inform the discussions and conclusions
World Health Organization (WHO)	To enable situating the study in global health principles
PLOSONE	To bring current science and medical research to enrich the study
Elsevier	To bring in current research on health
BMC Research	To bring current medical research to enrich the study
BioMed Central	To bring current medical research to enrich the study

The literature combing happened between 22nd November 2022 and ended 30th April 2023

The researcher chose not to use the broader data bases provided through OsloMet, such as Oria, Medline, Academic Search Ultimate and Science Citation Index. Even though the researcher is aware that it is possible that many other data bases could have been searched (such as the ones above) due to limitation of the study to Ghana's context in addition to time and/or capacity constraints. the researcher chose these, being aware that some possible important studies may have been overlooked.

3.2.2.1 Selection Process

Beyond all discussed earlier, Martinic et al. (2019) further prescribed specification of how the various studies were sieved for inclusion and exclusion. The search resulted, as always, resulted in a specified number of hits. After sieving for duplicates, the title and abstract, a specified number of studies were screened and excluded. The excluded studies were done mostly based on difference in focus, as many studies focused solely on only one variable and were interested in some other inter-construct/inter-variable relationships that is different from that of this study.

The second highest basis for excluding some studies is geographic context. Further, more studies further were excluded based on context differences. To ensure a triangulated search method, backward searches, an assessment of the references of all included studies, was also utilized to identify possible relevant studies not found in database searching. Eventually after several re-screenings, some studies were confirmed as being suitable for the direction and focus of this study.

3.3 Thematic Analysis

Finally, Martinic et al. (2019) recommended detailed descriptions of data analysis and synthesis. For the analysis, Clarke & Braun (2015) six stages of thematic analyses was

deployed as the guidance frame. According to this framework the processing of merging and summarizing qualitative and quantitative research is achievable in two ways; a) analyzing qualitative data first toward developing a theory to be used subsequently for explaining any possible variance in the quantitative findings or b) synthesizing quantitative findings first which are then explored in the qualitative data. This study used or followed the latter approach.

The whole six stage process was followed first for the quantitative studies before that of the qualitative studies. In this manner, findings from the qualitative studies were used to aid and interpret the quantitative studies. This was done to meet earlier mentioned consideration of the quantitative study's ability to provide more generalizable results, and qualitative studies ability to provide detailed descriptions.

The first stage of the data syntheses, which is familiarizing with the data, was executed by detailing, and extracting all information from the various studies found to be relevant for this study. For the quantitative review, data was summarized into evidence tables which includes study aim, context, results, methodology and determinants considered in the studies or question asked (in qualitative studies).

The second step of data syntheses, which coming out with initial codes, was done by going through the synthesized results and coding each result with an abridged explanatory code. At this stage, the codes were mostly just like in the words of the original studies, even though they were thoroughly summarized to toward coming out with relevant themes.

The third step of the analysis, searching for themes, was initiated by looking for those that are more similar among the studies and the similar ones were fused to form an overarching theme. This is consistent with the aggregative approach which basically prescribes

combination of information from the included studies to build a more suitable and reliable resultant knowledge about the problem being studied. This process was quite complex as the original coding process yielded numerous different codes as result of the variation in variables used in the quantitative studies. The process was very iterative between the studies toward coming out with various definitions of original authors as well as achieving consistency and coherency.

The fourth step of the analysis, reviewing themes, was done after initial themes were developed. The data set, coded data and themes were re-read toward achieving alignment between the data in each theme. Through this, new superior arching themes were developed with sub-themes to better suit the data.

The fifth step of analysis, defining and naming themes, refers to the process of refining the themes detailed in the analysis and analyzing the data constructing the themes. This was achieved by detailing the analysis under each selected theme. Through this, further refinement was done through fusing of themes where possible and detailing the analysis of what developed each theme.

4. RESULTS

Firstly, in results section 4.1, information on the included studies is provided to grant an overview on included studies. Subsequently, in section 4.2 the various included studies are reviewed and discussed in detail to expose the problem studied, the methodology deployed by the researcher(s), key findings, and evaluation of the methods.

4.1 Characteristics and Methodology of Included Studies

4.1.1 Country of Origin

This sub-section highlights some valid limitations of the thesis based on the inclusion of studies solely from Ghana, West Africa. Indeed, the narrow geographical scope of the research can introduce potential limitations and should be acknowledged by the authors. The paragraphs below discuss each limitation in more detail.

The fact that the studies included in the thesis are solely from Ghana raises concerns about the generalizability of the findings to other third world countries. Health disparities and health inequalities can vary significantly across different regions and countries due to variations in socio-economic conditions, cultural practices, healthcare systems, and other contextual factors. By only focusing on Ghana, the thesis might not fully capture the complexities and diversity of health inequalities in other third world nations.

Further, since the thesis is primarily based on Ghanaian studies, it becomes challenging to directly transfer the findings and conclusions to other third world countries. Each country faces unique challenges in addressing health inequalities, and solutions that work well in one context may not necessarily be effective in another. Therefore, the transferability of the findings to other third world countries need to be approached with caution.

Finally, concentrating solely on Ghanaian studies may skew the overall results and conclusions of the thesis towards the specific context of Ghana. Health inequalities can be influenced by various factors, including political, economic, and cultural dimensions, which can differ significantly between countries. By not considering a broader range of third world countries, the thesis may miss out on critical insights and patterns that could emerge from a more diverse dataset.

4.1.2 Population, Settings, and Methodology in the Studies

As a country-specific review, the studies used for this thesis's review was quite limited as compared to if the study had taken an international outlook. However, the study consisted of several definitions on related variables, measurement instruments, health indicators, institutional settings, methodologies, and reporting strategies. This made the synthesis, comparisons and data generalizations done quite difficult. Below is a summary of some of the differences across studies are observed. Some studies focused on only sections of the country such as the north only, south only and so on whilst others had a broader setting. For instance, one study compared health indicators using data from both northern and southern Ghana. Another study, however, limited its confines to the Greater Accra Region only. One study focused on only urban areas and another combined data from both urban and rural settings. Another study compared informal sector and the public sector. This shows that the different studies included had varying population, settings, and methodology.

4.2 Previous Studies on Social Inequalities in Health on Different Health Indicators in Ghana

The set of previous studies presented and reviewed in the sub-sections below provide valuable insights into social inequalities in health and various health indicators in Ghana. These studies cover a wide range of topics related to health disparities and health equity,

shedding light on the factors that contribute to health inequalities in the country. The table 4.1 below contains a list of the included studies.

Table 4.1: Summary of Previous Studies on Social Inequalities in Health on Different Health Indicators in Ghana

s/n	Author	Title	References
1	Owusu (2014)	An assessment of Regional and Gender equity in healthcare coverage under different healthcare policies in Ghana	Owusu, G. (2014). An assessment of Regional and Gender equity in healthcare coverage under different healthcare policies in Ghana. *Ghana Journal of Geography*, *6*(2014), 42–62.
2	Ekholuenetale & Barrow (2021)	Inequalities in out-of-pocket health expenditure among women of reproductive age: after-effects of national health insurance scheme initiation in Ghana	Ekholuenetale, M., & Barrow, A. (2021). Inequalities in out-of-pocket health expenditure among women of reproductive age: after-effects of national health insurance scheme initiation in Ghana. *Journal of the Egyptian Public Health Association*, *96*(1), 1–14.
3	Bixby et al. (2022)	Quantifying within- city inequalities in child mortality across neighbourhoods in Accra, Ghana: a Bayesian spatial analysis	Bixby, H., Bennett, J. E., Bawah, A. A., Arku, R. E., Annim, S. K., Anum, J. D., Mintah, S. E., Schmidt, A. M., Asabere, C. A.-, Robinson, B. E., Cavanaugh, A., Mensah, S. A.-, Owusu, G., Ezzati, M., & Baumgartner, J. (2022). Quantifying within- - city inequalities in child mortality across neighbourhoods in Accra , Ghana : a Bayesian spatial analysis. *BMJ*, *12*(e054030), 1–11.
4	Novignon et al. (2019)	Socioeconomic inequalities in maternal health care utilization in Ghana	Novignon, J., Ofori, B., Tabiri, K. G., & Pulok, M. H. (2019). Socioeconomic inequalities in maternal health care utilization in Ghana. *International Journal for Equity in Health*, *18*(141), 1–11.
5	Saeed (2013)	Assessing the Influential Factors on the Use of Healthcare: Evidence from Ghana	Saeed, B. I. I. (2013). Assessing the Influential Factors on the Use of Healthcare : Evidence From Ghana.

			International Journal of Business and Social Science, *4*(1), 12–20.
6	Frimpong (2013)	The Quest for Equity in the Provision of Health Care in Ghana	Frimpong, P. B. (2013). The Quest for Equity in the Provision of Health Care in Ghana. *African Review of Economics and Finance*, *4*(2), 254–272.
7	Adisah-atta (2017)	Financing Health Care in Ghana: Are Ghanaians Willing to Pay Higher Taxes for Better Health Care? Findings from Afrobarometer	Adisah-atta, I. (2017). Financing Health Care in Ghana : Are Ghanaians Willing to Pay Higher Taxes for Better Health Care ? Findings from Afrobarometer. *Social Sciences*, *6*(90), 1–19.
8	Zhang et al. (2019)	Trends and projections of universal health coverage indicators in Ghana, 1995-2030: A national and subnational study	Zhang, C., Shafiur Rahman, M. D., Mizanur Rahman, M. D., Yawson, A. E., & Shibuya, K. (2019). Trends and projections of universal health coverage indicators in Ghana, 1995-2030: A national and subnational study. *PLoS ONE*, *14*(5), 1–19.
9	Sumankuuro et al. (2017)	The use of antenatal care in two rural districts of Upper West Region, Ghana	Sumankuuro, J., Crockett, J., & Wang, S. (2017). The use of antenatal care in two rural districts of Upper West Region, Ghana. *PLoS ONE*, *12*(9), 1–18.
10	(Ghana Statistical Service (GSS), Ghana Health Service (GHS), 2018)	Ghana Maternal Health Survey 2017: Key Findings	Ghana Statistical Service (GSS) & Ghana Health Service (GHS) (2018). Ghana Maternal Health Survey 2017 : Key Findings. In *GSS, GHS, and ICF*.

4.2.1 Review of Owusu's (2014) Assessment of Regional and Gender Equity in Healthcare Coverage Under Different Healthcare Policies in Ghana

Owusu (2014) held an extensive inquiry into healthcare accessibility in Ghana, specifically assessing the impact of the National Health Insurance Scheme (NHIS) initiated in 2005. The study aimed to identify variations in healthcare access based on gender and region, utilizing data extracted from Afrobarometer surveys conducted between 1999 and 2012.

It must be noted here that the word “region” as used in this study differs from the generic meaning of the word. Ghana, as a country, is administratively divided into sixteen regions; hence the use of the word must not be confused with the generic sense of it.

4.2.1.1 Methodology

Owusu (2014) employed a specific methodology, the details of which are outlined below. The research relied on Afrobarometer survey records spanning the years 1999 to 2012, a widely recognized and accepted data source in the field of social science research. A crucial aspect of the study involved statistical examination, where a variety of statistical methodologies, including the Mann-Whitney U Test and calculations of regional growth rates, were employed. These methods played a pivotal role in scrutinizing the trends in healthcare access. Furthermore, the research included group comparisons as a key component. A deliberate analysis of healthcare access patterns was conducted across ten distinct regions in Ghana, with a specific focus on gender (male/female). This approach facilitated a comprehensive exploration of evolving disparities in healthcare access.

4.2.1.2 Key Findings

The ensuing paragraphs delineate the principal findings derived from the study conducted by Owusu (2014). The period from 1999 to 2012 witnessed a noteworthy augmentation in overall healthcare coverage, a phenomenon intricately linked to the implementation of the National Health Insurance Scheme (NHIS). This observed progression resonates with analogous advancements discerned in low-income countries within the same temporal framework. Notwithstanding the substantial nationwide advancements, the investigation spotlighted enduring incongruities among various regions. Notable differentials in healthcare access were conspicuous, with regions such as Greater Accra and Ashanti manifesting a more pronounced

degree of access in stark contrast to socioeconomically disadvantaged areas, exemplified by Volta and Northern Ghana. Furthermore, a meticulous examination of gender-specific dynamics in healthcare access revealed discernible differentials. Over the course of the study, a conspicuous shift in trends was observed, denoting discernible ameliorations in healthcare access for females relative to their male counterparts. This gender-based disjunction constitutes a salient aspect of the study's overarching findings.

4.2.1.3 Methodology Evaluation

The study employed robust statistical techniques, including appropriate statistical tests, to highlight differences between demographic groups and calculate regional growth rates. The utilization of Afrobarometer survey data substantially reinforced the study's findings' credibility and reliability.

4.2.1.4 Conclusions and Recommendations of the Study

The study acknowledged the substantial progress facilitated by the NHIS, indicating a considerable improvement in healthcare access nationwide. However, it underscored enduring regional disparities, signifying the unmet objective of achieving universal healthcare coverage by 2012. This emphasizes the need to address persisting challenges, particularly concerning regional and gender-based discrepancies.

The study's recommendations highlighted the ongoing significance of efforts to mitigate these disparities. It suggested that other African nations contemplate adopting similar health insurance frameworks. Furthermore, the study advocated for further research to unravel the multifaceted factors influencing healthcare access, encompassing cultural, economic, and geographical dimensions.

4.2.2 Review of Ekholuenetale & Barrow's (2021) Study on Inequalities in Out-Of-Pocket Health Expenditure Among Women Of Reproductive Age: After-Effects Of National Health Insurance Scheme Initiation In Ghana

Ekholuenetale & Barrow's (2021) studied the disparities in out-of-pocket health expenditure among women of reproductive age in Ghana, specifically focusing on maternal healthcare services.

4.2.2.1 Methodology

Methodologically, the research draws upon the 2014 Ghana Demographic and Health Survey (GDHS) data, encompassing 9,002 women. It employs statistical tools such as Lorenz curves and the concentration index to scrutinize inequities predicated on neighbourhood socioeconomic disadvantage.

4.2.2.2 Key Findings

The revelations arising from the study impart substantive insights into critical aspects of the healthcare landscape. Firstly, concerning health insurance coverage, the study discloses that approximately 66.0% of women of reproductive age in Ghana enjoy coverage under health insurance. This statistic underscores a notable coverage gap, suggesting that a substantial proportion of women in this demographic lack the protective umbrella of health insurance.

Secondly, the research brings to light significant disparages in out-of-pocket health expenditures among women based on their respective neighbourhood socioeconomic statuses. Notably, women residing in neighbourhoods with lower socioeconomic advantages bear a disproportionately higher burden of out-of-pocket health expenses. This trend is particularly pronounced in the realm of maternal healthcare services, except for family planning, where an intriguing reversal in the pattern is observed.

Thirdly, despite the existence of official exemptions for specific maternal healthcare services, the study elucidates the persistence of inequalities in out-of-pocket health expenditures. These disparities are attributed to multifaceted factors, prominently including inadequate access to healthcare facilities. This inadequacy precipitates indirect costs for women seeking healthcare, contributing to the enduring asymmetries in out-of-pocket expenditures within the realm of maternal healthcare services.

4.2.2.3 Methodology Evaluation

Methodologically, the research employs robust statistical techniques to examine the disparities in out-of-pocket health expenditures linked to socioeconomic factors. However, limitations are acknowledged due to the reliance on secondary data and the inherent constraints of a cross-sectional study design, which may restrict a comprehensive causal understanding.

4.2.2.4 Conclusion and Recommendations

The study's findings underscore the challenges in achieving equitable access to maternal healthcare services, revealing persistent inequalities in out-of-pocket health expenditures. The conclusion emphasizes the imperative need for fortifying the National Health Insurance Scheme (NHIS) in Ghana, addressing the causes behind out-of-pocket healthcare expenses, improving healthcare facility accessibility, and regulating health insurance to minimize indirect costs for healthcare services.

4.2.3 Bixby Et Al.'s (2022) Study on Quantifying Within-City Inequalities in Child Mortality Across Neighbourhoods in Accra, Ghana: A Bayesian Spatial Analysis

Bixby et al.'s (2022) examined child mortality within the Greater Accra Metropolitan Area (GAMA) in Ghana, focusing on the disparities across various neighbourhoods. It employed a

robust methodology and census data to delve into these inequalities and understand the correlation between child mortality and socioeconomic indicators.

4.2.3.1 Methodology

The study utilized detailed census data from 2010, including birth histories of over 700,000 women aged 25-49 living in GAMA. This data enabled a fine-grained analysis of under-five mortality (U5M) at a neighbourhood level. Summary birth history data was used to estimate child mortality, a method validated for U5M estimation. They applied Bayesian methods, allowing shared information across spatial units to obtain robust estimates for individual neighbourhoods. This allowed for detailed insights into U5M across all neighbourhoods within GAMA.

4.2.3.2 Key Findings

The research uncovered several noteworthy observations. Within the Greater Accra Metropolitan Area (GAMA), variations in child mortality rates were apparent across different neighbourhoods. Surprisingly, some urban and industrial areas showed higher child mortality rates despite having relatively better socioeconomic indicators. Conversely, certain economically disadvantaged areas exhibited lower rates of under-five mortality (U5M).

The analysis revealed specific correlations between U5M and various socioeconomic factors, with subtle differences between urban and peri-urban areas. In peri-urban zones, U5M had inverse correlation with indicators like housing quality and women's education levels. However, these correlations in urban areas were either weaker or exhibited a reversed trend.

Significant differences in U5M were documented across the 12 districts of GAMA, with particular municipalities within these districts showing high levels of within-district inequality in child mortality.

The study highlighted potential health challenges in more affluent neighbourhoods. This suggests that a higher socioeconomic status in urban areas may not necessarily lead to lower child mortality rates, indicating the presence of complex localized factors influencing the health outcomes of children.

The research emphasized the need for localized interventions and tailored approaches to combat child mortality. It suggested the necessity of investing in services in peri-urban neighbourhoods while addressing specific conditions in densely populated and industrial areas.

4.2.3.3 Methodology Evaluation

The methodologies employed in this study seem sound and robust. The use of census data and Bayesian methods provided a comprehensive analysis of U5M at a fine spatial scale. The study's findings align with the complex nature of urban inequalities, particularly in understanding child mortality trends, and provide insights into potential negative health externalities in urban settings.

4.2.3.4 Conclusion and Recommendations

This study presents a comprehensive analysis of child mortality disparities within GAMA, utilizing robust methodologies and emphasizing the significance of addressing localized health disparities to reduce child mortality effectively. It advocates for more localized, targeted interventions to tackle these disparities and improve child survival efforts in urban areas, particularly in the Greater Accra Metropolitan Area.

4.2.4. Novignon Et Al.'s (2019) Study on Socioeconomic Inequalities in Maternal Health Care Utilization in Ghana

Novignon et al. (2019) investigated socioeconomic disparities in maternal healthcare service utilization in Ghana, focusing on antenatal care (ANC) visits and skilled delivery attendance (DTA). The research utilized a quantitative approach, employing a combination of data analysis, statistical techniques, and decomposition methods to explore the factors contributing to inequalities in accessing these healthcare services.

4.2.4.1 Methodology

The study used a quantitative analysis of data collected over a period from 2008 to 2014. It applied sophisticated statistical methods and decomposition analysis to investigate the extent of wealth-related inequalities in ANC visits and DTA. The decomposition analysis aimed to identify and quantify the contribution of various factors, such as wealth quintile, educational level, access to the National Health Insurance Scheme (NHIS), age groups, place of residence, and region, to these inequalities. The research focused on understanding the impact of different variables on the observed disparities.

4.2.4.2 Key Findings

The study found significant wealth-related disparities in at least four ANC visits and skilled delivery attendance. These inequalities suggested that women from wealthier households had more access to these services compared to women from poorer backgrounds. However, the findings also indicated a reduction in these disparities in 2014 compared to 2008, signifying a positive trend in mitigating these gaps over time.

The decomposition analysis highlighted the substantial role of the NHIS in addressing socioeconomic inequality. It showed that the NHIS contributed significantly to reducing the wealth-related disparities in ANC visits and DTA. Removing financial barriers through the

NHIS, especially for pregnant women, played a crucial role in improving access to maternal healthcare services for women from less privileged backgrounds.

Education was identified as another significant factor contributing to the observed disparities. Women's education level impacted their decision to seek maternal healthcare during pregnancy. The study suggested that addressing educational disparities, especially among women from poorer households, could potentially reduce inequalities in accessing maternal healthcare services.

4.2.4.3 Methodology evaluation

The methodologies employed in the study, including statistical analysis and decomposition techniques, were found to be sound as they eventually led to addressing of the research objectives.

4.2.4.4 Conclusion and Recommendation

The findings provided insights into the multifaceted factors contributing to inequalities in maternal healthcare service utilization and recommended key areas, such as NHIS coverage and education, for targeted policy interventions to bridge these gaps.

4.2.5 Saeed's (2013) Assessment of the Influential Factors on the Use of Healthcare: Evidence from Ghana

Saeed's (2013) investigated the influential factors affecting the use of healthcare in Ghana using data from the Global Ageing and Adult Health survey conducted in 2003. The research employs a binary logistic regression model in R to examine factors impacting healthcare utilization. Key factors analyzed include education, insurance, employment, income, and health status.

4.2.5.1 Methodology

The study utilizes a binary logistic regression model to analyze data from the survey. It identifies variables like education, insurance, employment, income, and health status to understand their impact on healthcare utilization. The model helps determine the association between these factors and the likelihood of individuals using healthcare services in Ghana.

4.2.5.2 Key Findings

The study presents several noteworthy findings. Firstly, in the realm of education, Ghanaians lacking formal education exhibited a greater likelihood of availing healthcare services in comparison to individuals who had completed primary or junior high school. Moving on to the aspect of insurance, those without insurance coverage manifested a higher probability of accessing healthcare services than their counterparts with voluntary or mandatory insurance. Additionally, in the context of employment, self-employed and informally employed individuals demonstrated a heightened tendency to utilize healthcare services when contrasted with those employed in the public sector. Lastly, regarding health status, a surprising revelation emerged – individuals categorized as being in very good health were less inclined to seek healthcare services than their counterparts in other health categories.

4.2.5.3 Methodology Evaluation

The methodologies used, including the binary logistic regression model, are sound and appropriate for analyzing categorical data with two possible outcomes. The findings suggest a complex interplay of socio-economic factors influencing healthcare use in Ghana.

The study's findings are insightful, indicating that certain socio-economic factors—such as education, insurance status, employment, and health status—play significant roles in determining healthcare utilization. The unexpected finding that individuals in very good

health are less likely to seek healthcare services may suggest either a reluctance to access care or a higher perception of not needing immediate medical attention among this group.

Moreover, the study successfully identifies disparities in healthcare utilization, particularly concerning education and insurance coverage. The findings shed light on potential areas for targeted interventions to improve healthcare access and utilization in Ghana.

However, the study fails to address the potential impact of age on healthcare utilization, which could be a notable oversight considering age often correlates with healthcare needs. Additionally, the research could benefit from a more comprehensive analysis of other socio-demographic variables that might influence healthcare use, contributing to a more nuanced understanding of the issue.

4.2.5.4 Conclusion and Recommendations

Their study provides valuable insights into the complex relationship between socio-economic factors and healthcare utilization in Ghana, offering potential directions for policy initiatives aimed at improving healthcare access and equity in the country.

4.2.6 Frimpong's (2013) Study on the Quest for Equity in the Provision of Health Care in Ghana

Frimpong (2013) investigated the impact of health care reforms in Ghana since the colonial era on key health outcomes. The research aims to assess the effectiveness of these reforms in reducing health inequities.

4.2.6.1 Methodology

The study uses historical data spanning from the colonial era to the post-reform period, examining the evolution of Ghana's health care system across three distinct phases. It

employs graphical representations and regression models to assess health outcomes and shortfall inequalities, using data from reputable sources like the United Nations Department of Economic and Social Affairs, World Development Indicators, and the United Nations Population Division.

Philosophical and theoretical perspectives on equity in health care, including libertarian, utilitarian, communitarian, egalitarian, and deliberative democratic viewpoints, are explored to frame the discussion.

4.2.6.2 Key Findings

The research reveals varying impacts of health care reforms on different health indicators in Ghana. Crude mortality rates show a continuous reduction post-reform. However, the impact on infant mortality and life expectancy was negative. Post-reform, there is an increase in shortfall inequalities for infant mortality and life expectancy, suggesting health inequities persist or worsen.

The multivariate analysis, which includes controls for GDP per capita, presents mixed impacts on health outcomes and equity in health care provision. The effects of the reforms are inconsistent across different health indicators, indicating potential complexities and ambiguities in their impacts.

The study implies that despite reforms, health inequities persist and may even have intensified in certain areas. The introduction of user fees in the health care system does not appear to have produced significant positive outcomes, especially in reducing infant mortality and improving life expectancy.

4.2.6.3 Methodology Evaluation

The study employs historical data and theoretical frameworks, utilizing graphical representations and regression analyses. These methodologies offer a comprehensive approach to understanding the impact of health care reforms on various health indicators. Further, the findings indicate disparities in the impacts of reforms on different health outcomes, suggesting potential limitations or complexities in the system changes and their consequences.

The study's empirical methodologies were found to be sound, as reputable data sources and regression analyses were used. However, the complexity of health care systems and various influencing factors might necessitate more nuanced analyses for a comprehensive understanding.

4.2.6.4 Conclusion and Recommendations from the Study

The study presents valuable insights into the effects of health care reforms in Ghana, suggesting that reforms might not have uniformly improved health outcomes and may have even exacerbated health inequities in certain areas. The findings imply the need for further investigation and potentially a re-evaluation of the approaches taken in health care financing and delivery in Ghana to address persistent health inequities.

4.2.7 Adisah-atta's (2017) study on Financing Health Care in Ghana: Are Ghanaians Willing to Pay Higher Taxes for Better Health Care? Findings from Afrobarometer

Adisah-Atta's (2017) studied the willingness of Ghanaians to pay higher taxes or user fees to support increased government spending on public healthcare. The research aimed to understand whether demographic factors, access to health services, perceptions of

healthcare, government performance, and perceived corruption correlate with the willingness to pay or oppose higher taxes.

4.2.7.1 Methodology

The study adopted a quantitative approach, conducting a survey to collect data from respondents. The survey primarily revolved around a question asking if individuals would support or oppose paying higher taxes or user fees for healthcare. The analysis involved examining various demographic factors, such as rural vs. urban residency, education levels, income status, and occupation. It also delved into perceptions of government performance, trust in public officials, and the impact of perceived corruption in different government institutions.

4.2.7.2 Key Findings

The study produced significant findings, the foremost being the willingness of Ghanaians to pay higher taxes for healthcare, with only 35% expressing support. This figure stands out as notably lower compared to other African countries and developed nations like the United States and Canada. Examining demographic factors, a surprising discovery emerged: rural dwellers demonstrated a higher willingness (45%) to pay increased taxes, in contrast to their urban counterparts (37%). Despite gender and educational levels showing no substantial impact on the willingness to pay, occupation revealed a robust statistical relationship.

Additionally, the study delved into the intricate relationship between government performance, corruption, and support for higher taxes. Positive evaluations of government officials were positively correlated with a willingness to support increased taxes. Conversely, perceived corruption within government institutions exerted a negative influence on perspectives regarding higher taxes. Notably, the study emphasized that trust in institutions,

particularly in the President and Parliament, was strongly linked to the willingness to pay higher taxes.

4.2.7.3 Methodology Evaluation

The methodologies were found to be sound, utilizing a quantitative survey approach to gather data. The study employed statistical analysis to assess correlations between various factors and the willingness to pay higher taxes for healthcare. The findings reveal significant insights into the complex relationship between governance, public trust, and willingness to contribute financially to the healthcare system.

The results are intriguing, notably due to the surprising higher willingness to pay taxes among rural dwellers. This might reflect their recognition of the challenges in accessing healthcare and their desire for improved services. The low percentage of overall support for higher taxes, despite healthcare challenges, highlights the critical role of government performance and perceived corruption in influencing public sentiment.

4.2.7.4 Conclusion and Recommendations from The Study

The study concluded that Ghanaians' willingness to pay higher taxes for healthcare is more influenced by perceptions of government performance, trust in institutions, and the transparency of the tax system rather than demographic factors or healthcare difficulties. The study recommends that the Ghanaian government should focus on improving transparency, accountability, and trust in governance to encourage voluntary compliance and enhance domestic revenue generation for healthcare.

4.2.8 Zhang Et Al. (2019) Study On Trends And Projections Of Universal Health Coverage Indicators In Ghana, 1995-2030: A National And Subnational Study

Zhang et al. (2019) presented a comprehensive analysis of health service indicators and financial risk protection in Ghana, covering the period from 1995 to projected data for 2030. It explores various dimensions, including Slope Index of Inequality (SII) in health service indicators, trends and projections of catastrophic health expenditure and impoverishment, inequality in catastrophic health expenditure, and subnational incidence of catastrophic health expenditure.

4.2.8.1 Methodology

The study utilizes various methodologies, encompassing. Firstly, the calculation of the Slope Index of Inequality (SII) and Relative Index of Inequality (RII) is employed to evaluate health service disparities among distinct socioeconomic groups. Secondly, the study involves determining catastrophic health expenditure and impoverishment thresholds, relying on non-food consumption percentages as a basis for assessment. Lastly, the research includes an analysis of trends and projections in health service indicators and financial risk protection, providing a comprehensive understanding of the dynamics over time.

4.2.8.2 Key Findings

The study revealed several key findings. Firstly, in terms of Health Service Indicators, there have been notable improvements in health service coverage, particularly in maternal and child health indicators. These positive changes are attributed to initiatives such as the National Health Insurance Scheme (NHIS) and endeavours aimed at achieving the Millennium Development Goals (MDGs). Notably, the utilization of maternal care services has increased, partly due to insurance coverage exemptions for pregnant women under the NHIS.

Secondly, the study underscored persistent Inequalities and Challenges despite overall progress. Disparities persist, with the economically disadvantaged facing more catastrophic

health expenditure (CHE) and encountering barriers in accessing health services. The research indicates that individuals from wealthier and more educated backgrounds are more likely to avail themselves of maternal health services, thus contributing to the existing inequality gap.

Thirdly, the study highlighted Subnational Disparities, revealing regional differences in health service access. The Northern region lags behind in this regard, facing challenges arising from limited infrastructure and healthcare resources, which hinder the residents' ability to access healthcare.

Lastly, the study reported a Reduction in Catastrophic Health Expenditure from 1995 to 2015. While there was a significant decrease in the incidence of catastrophic health expenditure during this period, the study noted that the poor still bear a disproportionately higher burden of catastrophic spending compared to the wealthier segments of the population.

4.2.8.3 Methodology Evaluation

The methodologies used, such as SII and RII calculations and the threshold determination for catastrophic health expenditure, provide a robust framework for assessing disparities and financial risks. The study's approach was found to be sound in analyzing longitudinal trends and projections, allowing for a comprehensive evaluation of health service indicators and financial risks in Ghana.

4.2.8.4 Conclusion and Recommendations from the Study

The study acknowledges Ghana's remarkable progress in enhancing healthcare coverage and reducing out-of-pocket expenses through initiatives like the NHIS. However, it emphasizes the importance of addressing persisting inequalities, especially in maternal and child health services, and suggests a multi-sectoral approach involving various stakeholders to achieve Universal Health Coverage (UHC) and tackle disparities.

4.2.9 Sumankuuro et al. (2017) study on the use of antenatal care in two rural districts of Upper West Region, Ghana

Sumankuuro et al. (2017) investigated maternal and neonatal health issues in a rural area in Ghana using a mixed-methods approach involving Focus Group Discussions (FGDs) and in-depth interviews (IDIs). The participants included expectant mothers, non-pregnant women, opinion leaders, youth, and health professionals.

4.2.9.1 Methodology

The FGDs and IDIs allowed for a comprehensive understanding of the community's perspectives. It provided a qualitative exploration of the challenges and cultural beliefs surrounding pregnancy, childbirth, and maternal health. The study leveraged qualitative data collection techniques, allowing for a rich, nuanced understanding of the community's experiences.

4.2.9.2 Key Findings

The extensive findings of the study revealed several key themes, providing insights into various aspects of maternal health and well-being. Firstly, the theme of Risky Activities emerged, indicating that pregnant women were actively engaged in physically demanding tasks such as climbing trees, logging wood, and illegal mining, despite the inherent dangers to their health and the well-being of their pregnancies.

Secondly, the study highlighted a concerning Lack of Support for expectant mothers, both from their families and the community. This lack of support compelled pregnant women to persist in physically demanding tasks throughout their pregnancies.

Thirdly, Cultural Beliefs played a significant role in shaping maternal health outcomes. The community's reliance on traditional beliefs and practices, including the use of local herbs and

spiritual interventions, was found to contribute to negative health outcomes for both mothers and babies.

Fourthly, a Preference for Home Birth was identified as a notable theme. Some women expressed a preference for giving birth at home due to factors such as distance from healthcare facilities, cost considerations, and a belief in the skills of traditional birth attendants.

Fifthly, the study brought attention to Healthcare Challenges, indicating that difficulties in accessing healthcare services and the absence of healthcare workers were contributing factors to adverse health outcomes for pregnant women.

Sixthly, the theme of Alcohol Consumption and Other Risk Factors was noted. Some women substituted recommended diets with alcohol consumption, thereby increasing risks during pregnancy and childbirth.

Lastly, the study delved into the complex issue of Maternal Mortality and Neonatal Complications. It identified a range of complications, including pre-eclampsia, anaemia, HIV infections, mental health issues, and their collective impact on the health of both mothers and new-borns.

4.2.9.3 Methodology Evaluation

The methodologies utilized in the study were found to be sound. The use of qualitative methods, such as FGDs and IDIs, allowed for an in-depth exploration of community perspectives. However, it's important to note the limitations inherent in qualitative research, such as potential underestimation of cultural issues and generalizability to other communities.

4.2.9.5 Conclusion and Recommendations from the study

Overall, the findings suggest that a comprehensive approach is needed to address the tensions between modern healthcare practices, cultural beliefs, and economic challenges. The study emphasizes the necessity of health education programs targeted at young people and men, understanding cultural values, and providing accessible and culturally appropriate healthcare facilities and services to ensure safer pregnancies and birth outcomes.

4.2.10 Ghana Statistical Service and Ghana Health Service's (2018) study on Ghana Maternal Health Survey 2017: Key Findings

(Ghana Statistical Service (GSS), Ghana Health Service (GHS), 2018) a comprehensively analysed various health indicators, primarily focusing on maternal and child health, pregnancy outcomes, abortion, childhood mortality, and healthcare seeking behaviors. The methodologies employed in this study involved surveying women aged 15-49 to gather data on maternal health, pregnancy outcomes, and mortality rates.

4.2.10.1 Methodology

The study employed survey-based data collection from women aged 15-49. They used questionnaires, adapted from the WHO's verbal autopsy instrument, to collect information about women's deaths. They also performed a Physician Review. Six physicians reviewed the collected verbal autopsy data, filled out death certificates, and coded causes of death. The study analyzed the survey data, utilizing various statistical techniques to derive health indicators and trends.

4.2.10.2 Key Findings

The findings of the study were extensive and revealed several key themes. In terms of maternal health, a significant percentage of women were found to receive postnatal checks

within two days of delivery, indicating adequate care for new mothers. The study also highlighted a correlation between the place of birth and follow-up care for new-borns, as most infants born in health facilities received postnatal checks within the same timeframe.

In the realm of abortion knowledge and practice, the research uncovered that a considerable proportion of women possessed knowledge about abortion. However, access to legal and safe abortion services seemed limited, leading a significant number of women to resort to medical methods or traditional birth attendants.

The study delved into childhood mortality rates, revealing a decline in infant and under-5 mortality rates since 1988. Despite this positive trend, neonatal mortality rates remained relatively stable. Additionally, the research emphasized the impact of birth intervals on under-5 mortality rates, noting that shorter intervals led to higher mortality rates. This underscored the importance of spacing children at least 36 months apart.

The maternal mortality ratio was estimated at 310 deaths per 100,000 live births, indicating a concerning aspect of maternal health. Furthermore, the study brought attention to regional disparities in maternal mortality, shedding light on variations in healthcare outcomes across different geographic areas.

4.2.10.3 Evaluation of the Methodology

The methodologies used, including surveys and verbal autopsy questionnaires, provide a broad spectrum of data. The reliance on physician review for coding causes of death is a robust approach in ensuring the accuracy of findings. The study's insights emphasize the importance of adequate postnatal care, the impact of birth intervals on childhood mortality, and disparities in maternal mortality across different regions.

4.2.10.4 Conclusion of the study

The findings depict both progress and areas needing improvement in maternal and child healthcare in Ghana. It emphasizes the significance of healthcare facilities for birth-related services and the necessity of proper postnatal care for mothers and new-borns, while also shedding light on issues related to abortion practices, maternal mortality, and regional variations in health indicators.

4.3 Findings on The Social Inequalities in Health on Different Health Indicators in Ghana

The search done resulted in 721 hits. After sieving for duplicates, the title and abstract, 505 studies were screened and excluded. The excluded studies were done mostly based on difference in focus, as many studies focused solely on only one variable and were interested in some other inter-construct/inter-variable relationships that is different from that of this study.

The second highest basis for excluding some studies is geographic context. Further, 127 studies further excluded based on context differences. To ensure a triangulated search method, backward searches, an assessment of the references of all included studies, was also utilized to identify possible relevant studies not found in database searching. Eventually after several re-screenings, ten studies were confirmed as being suitable for the direction and focus of this study.

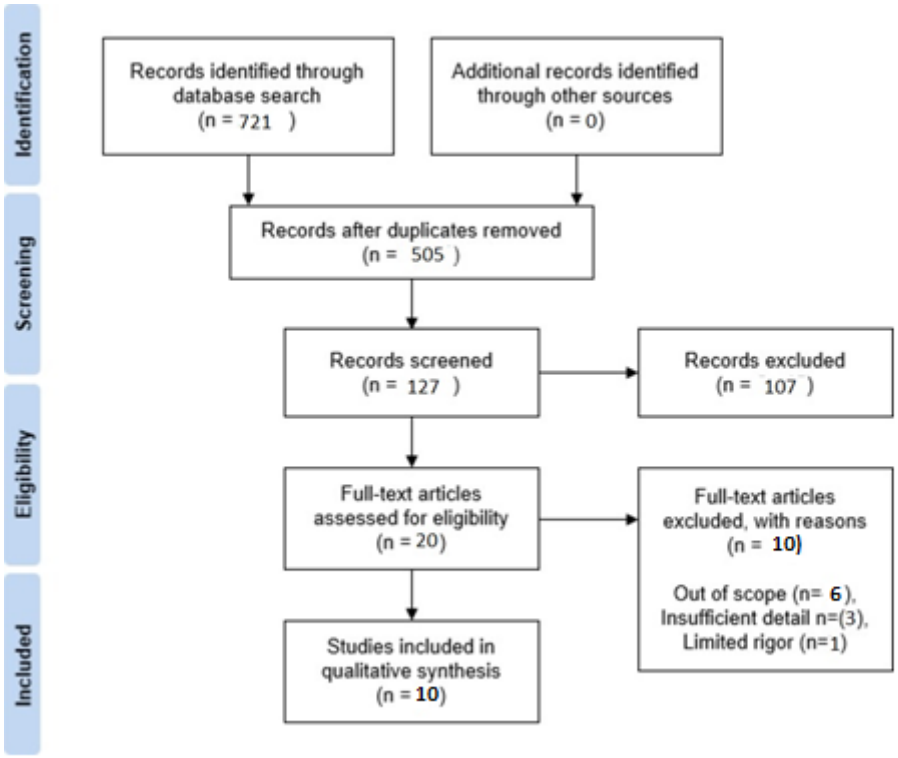


Figure 4.1 PRISMA Flow Chart of the Screening Process

From the review, different social inequalities on different health indicators were uncovered. Below is a tabulated summary of the health indicators extracted from each study. It summarizes the key health indicators identified in each study, providing a concise overview of the varied disparities, improvements, and challenges in healthcare access and outcomes in Ghana. The table 4.2 below contains the list of studies included and the generic health indicators extracted. Table 4.3 provides the specific health indicators specified in each study.

Table 4.2: List of Studies Included and The Generic Health Indicators Extracted

s/n	Study	Health Indicators
1	Owusu's (2014) Study	- Healthcare access disparities based on gender and region - Increased healthcare coverage after NHIS implementation - Regional disparities in healthcare access - Gender-based disparities in healthcare access
2	Ekholuenetale & Barrow's (2021) Study	- Disparities in out-of-pocket health expenditures among women based on socioeconomic status - Significant coverage gap in health insurance - Inequalities persist in maternal healthcare expenses
3	Bixby Et Al.'s (2022) Study	- Significant disparities in child mortality across neighbourhoods in Greater Accra - Socioeconomic correlations in child mortality - Inequalities across districts in child mortality
4	Novignon Et Al.'s (2019) Study	- Wealth-related disparities in antenatal care and skilled delivery attendance - NHIS contribution to reducing wealth-related disparities in maternal healthcare
5	Saeed's (2013) Study	- Factors impacting healthcare utilization: education, insurance, employment, income, and health status - surprising findings related to education and healthcare use
6	Frimpong's (2013) Study	- Varied impact of health reforms on health outcomes - Potential exacerbation of health inequities in certain areas
7	Adisah-Atta's (2017) Study	- Only 35% support for higher taxes for healthcare - Influential factors: government performance, trust, and perceived corruption
8	Zhang Et Al. (2019) Study	- Substantial improvements in health service indicators - Persisting disparities, especially in catastrophic health expenditure
9	Sumankuuro et al. (2017) Study	- Risky activities during pregnancy - Influence of cultural beliefs on healthcare - Challenges in accessing healthcare services
10	Ghana Statistical Service & Ghana Health Service (2018)	- Maternal health indicators: postnatal checks, childhood mortality rates, and disparities in maternal mortality across regions

Table 4.3: Specific Health Indicators Specified in Each Study

Generic Health Indicators	**Specific Indicators extracted from each study**	**Studies Highlighting the Indicator**
Mortality Rates	Infant mortality rate (IMR), Maternal mortality ratio, Under-5 mortality rate, Crude mortality rates	Bixby et al. (2022), Zhang et al. (2019), Ghana Maternal Health Survey 2017
Life Expectancy	Life expectancy at birth	Ghana Maternal Health Survey 2017
Access to Healthcare	Healthcare coverage, Disparities in healthcare access by region and gender, Out-of-pocket health expenditures, Utilization of maternal healthcare services	Owusu (2014), Ekholuenetale & Barrow (2021), Novignon et al. (2019), Zhang et al. (2019), Ghana Maternal Health Survey 2017
Environmental Health Factors	Impact of environmental conditions on child mortality across neighbourhoods, Potential negative health externalities in urban areas, regional disparities in health service access, Environmental conditions affecting maternal and neonatal health, regional disparities in maternal mortality	Bixby et al. (2022), Sumankuuro et al. (2017), Ghana Maternal Health Survey 2017

These indicators play crucial roles in assessing and understanding the health status and healthcare accessibility within a population, providing valuable insights for policymakers and healthcare professionals to address disparities and improve health outcomes. Below is a brief description of each each sub-indicator extracted from the studies:

1. Infant Mortality Rate (IMR): The IMR measures the number of infant deaths (under one year of age) per 1,000 live births in a given year. It is a critical indicator of the overall health and well-being of infants within a population (Vincent, 2016).
2. Maternal Mortality Ratio: The Maternal Mortality Ratio measures the number of maternal deaths per 100,000 live births due to complications during pregnancy, childbirth, or within 42 days after termination of pregnancy, regardless of the duration and site of the pregnancy (Sumankuuro et al., 2017).

3. Under-5 Mortality Rate: This rate measures the probability of a child born in a specific year or period dying before reaching the age of five. It reflects the overall health and well-being of young children within a population (Marmot, 2015).
4. Crude Mortality Rates: These rates represent the total number of deaths occurring in a population, often standardized per 1,000 individuals, without accounting for age or other demographic factors.
5. Life Expectancy at Birth: Life expectancy at birth is an estimation of the average number of years a new-born is expected to live, based on current mortality rates.
6. Healthcare Coverage: Refers to the extent of the population covered by healthcare services, such as the proportion of individuals with health insurance or access to healthcare facilities.
7. Disparities in Healthcare Access by Region and Gender: Examines differences in healthcare access among different geographical regions and between genders, highlighting potential inequalities in healthcare availability and utilization.
8. Out-of-Pocket Health Expenditures: Indicates the expenses individuals pay directly for healthcare services, not covered by insurance or other prepaid mechanisms.
9. Utilization of Maternal Healthcare Services: Measures the extent to which pregnant women access and use healthcare services during pregnancy, including antenatal care visits, skilled attendance at birth, and postnatal care.
10. Impact of Environmental Conditions on Child Mortality across Neighbourhoods: Explores the influence of environmental factors within specific regions or neighbourhoods on child mortality rates.

11. Potential Negative Health Externalities in Urban Areas: Indicates adverse health effects within urban areas that might not align with expectations based on better socioeconomic conditions.
12. Regional Disparities in Health Service Access: Highlights differences in access to healthcare services among various regions, often pointing out inequalities in healthcare provision.
13. Environmental Conditions Affecting Maternal and Neonatal Health: Examines the influence of environmental factors on the health of both mothers and new-borns.
14. Regional Disparities in Maternal Mortality: Focuses on variations in maternal mortality rates among different regions, signalling potential inequalities in maternal health services and outcomes.

5. DISCUSSION

Consistent with the aggregative approach, this study has collated findings from primary research that focused on social inequalities in health with Ghana as the setting. As evident in the results, the findings varied significantly among the studies reviewed. Strength of correlations was very diverse across the reviewed/included studies that each brought out an indicator almost totally different from others. However, certain indicators were more supported across studies than others or provided more clear indications. The sub-headings below discuss each of the extracted health indicators.

5.1 Discussion on Infant Mortality Rate (IMR)

The investigation into social health disparities in Ghana as revealed by the study leverages a compilation of diverse scholarly works that highlight the pivotal nature of the Infant Mortality

Rate (IMR) as an indicator of the overall health and well-being of infants. These studies collectively underscore the prevalence of variations in IMR across different regions and socioeconomic strata, indicating pronounced social inequalities within Ghanaian society. This emphasizes the crucial need for targeted interventions aimed at reducing infant mortality rates and addressing disparities across the nation. For instance, Owusu's (2014) study revealed disparities in healthcare access across regions and gender, potentially contributing to differing infant mortality rates in various areas of Ghana. Furthermore, Novignon et al. (2019) analysis on wealth-related disparities in maternal healthcare service utilization, focusing on Antenatal Care (ANC) visits and skilled delivery attendance. Their research emphasized the influence of socioeconomic status on maternal health services, indirectly impacting IMR disparities. In addition, Ekholuenetale & Barrow's (2021) study uncovered economic disparities and their effects on infant health outcomes. Sumankuuro et al.'s (2017) research delved into the factors contributing to a social gradient in maternal health, exposing issues such as lack of support, cultural beliefs, and challenging economic conditions that impact expectant mothers. These maternal health factors may indirectly influence infant health and, consequently, IMR disparities. Combined, these studies provide multifaceted insights into the factors influencing healthcare access, utilization, and disparities within Ghana, emphasizing the urgent need for comprehensive interventions to address the pronounced disparities in IMR and infant health outcomes across different regions in the country.

5.2 Discussion on Maternal Mortality Ratio

The studies contributing to the exploration of the Maternal Mortality Ratio (MMR) within Ghana highlight the alarming disparities in maternal mortality, which serves as a critical

measure of women's health and access to quality healthcare during pregnancy, childbirth, and the postpartum period. These findings collectively underscore the existence of a significant social gradient in healthcare access, indicating challenges faced by women from less privileged socioeconomic backgrounds in accessing adequate maternal healthcare services, consequently leading to higher maternal mortality rates. For instance, Novignon et al. (2019) study on wealth-related disparities in maternal healthcare service utilization, emphasizes Antenatal Care (ANC) visits and skilled delivery attendance. Their study revealed considerable differences in the utilization of maternal health services based on economic status, indicating that women from more affluent backgrounds were more likely to access essential maternal healthcare services, potentially contributing to reduced maternal mortality. Additionally, the Ghana Statistical Service and Ghana Health Service's joint research in 2018 shed light on the disparities in maternal healthcare, particularly in disadvantaged regions. Their study suggested that regions with lower economic status and limited healthcare infrastructure experienced higher maternal mortality rates due to challenges in accessing quality maternal healthcare services. Moreover, Sumankuuro et al. (2017) explored the multifaceted factors influencing maternal health outcomes, emphasizing the impact of cultural beliefs, economic conditions, and inadequate support systems, particularly affecting expectant mothers. These challenges directly relate to the heightened maternal mortality rates in disadvantaged regions, further underscoring the critical role socioeconomic factors and regional disparities play in maternal health outcomes. The research collectively indicates a clear social gradient in maternal mortality rates, emphasizing the urgent need to address the disparities in maternal healthcare access, particularly for women from less privileged backgrounds, to mitigate the disproportionately higher maternal mortality rates within Ghana.

5.3 Discussion on Under-5 Mortality Rate

The Under-5 Mortality Rate (U5MR), a pivotal indicator reflecting the health and well-being of young children, exhibits considerable variations based on socioeconomic factors within the Ghanaian context, as indicated by the reviewed studies. This measure provides critical insights into the health outcomes of children under the age of five and serves as an important marker of healthcare access and quality, particularly among vulnerable populations. The studies highlighted an evident social gradient in child mortality rates, indicating higher rates among less privileged socioeconomic groups and underserved regions, emphasizing the pressing need for targeted interventions to reduce child mortality disparities. For instance, Bixby et al. (2022) highlighted the geographical disparities, emphasizing that certain regions experience higher rates of child mortality, often linked to varying socio-economic factors and healthcare access. Additionally, the investigation conducted by Sumankuuro et al. (2017) emphasized the critical impact of economic constraints, cultural beliefs, and the lack of community support on child health outcomes, particularly in underserved areas. Their research suggested that such factors significantly contribute to higher child mortality rates in these regions, further confirming the presence of a social gradient in child mortality.

The findings collectively underscore the need to address the disparities in child mortality rates among socioeconomic groups and regions. The prevalence of higher child mortality rates in underserved areas suggests a pressing need for targeted and comprehensive interventions. This calls for strategies aimed at improving healthcare access, reducing economic constraints, and enhancing community support systems, especially in less privileged areas, to mitigate the social disparities in child mortality rates within Ghana.

5.4 Discussion on Crude Mortality Rates

The Crude Mortality Rate (CMR), portraying the general death rates within a population, acts as an important but somewhat limited indicator in understanding overall health outcomes in Ghana. While this measure provides a generalized overview of mortality, the study acknowledges its restrictions in identifying specific health disparities among different demographic or socioeconomic groups. However, the significance of CMR as an indicator of overall health status within the Ghanaian population is not disregarded, despite its inability to capture nuanced disparities among diverse segments of the society. Studies such as Bixby et al. (2022), Zhang et al. (2019), Ghana Maternal Health Survey 2017 touched on it.

Recognizing that the CMR may not comprehensively reflect health disparities among specific groups, the study likely emphasizes its broader role in depicting the general health trends and overall mortality rates. The researchers might highlight that while this measure may not explicitly unveil socio-economic or regional disparities in health outcomes, it remains crucial in providing a foundational understanding of the health status of the entire population in Ghana. Therefore, despite its limitations in capturing specific health inequalities, the CMR serves as a fundamental measure in assessing the overall health landscape and can guide more targeted, in-depth investigations into specific health disparities prevalent within the Ghanaian society.

5.5 Discussion on Life Expectancy at Birth

Life expectancy, while not directly discussed in the study, it was passively discussed in the study by GSS and GHS (2018). Therefore, it would reflect the overall health outcomes across different demographic groups and geographic areas. It could serve as a benchmark for assessing improvements in health and disparities in Ghana and beyond.

5.6 Discussion on Healthcare Coverage

Variations in healthcare coverage, as detailed by multiple studies like Owusu (2014), Ekholuenetale & Barrow (2021), Novignon et al. (2019), Saeed (2013), and Frimpong (2013), exemplify the unequal distribution of health services among different socioeconomic strata and geographical regions. For instance, Owusu's (2014) work examining healthcare access disparities by region and gender indicates discrepancies in the availability of healthcare services between various regions, underscoring the existence of unequal access within the country. This study accentuates that economic factor play a pivotal role in determining the extent of healthcare coverage. The inequitable distribution of wealth leads to varied access to healthcare services, where individuals from more affluent backgrounds are more likely to have better coverage due to their ability to afford private healthcare or out-of-pocket expenses. Ekholuenetale & Barrow (2021) highlighted disparities in out-of-pocket health expenditures among women based on neighbourhood socioeconomic factors, underlining how financial capabilities significantly impact healthcare access.

Moreover, the study underscores the significance of improved healthcare coverage in addressing health disparities. It emphasizes that enhanced coverage is vital to mitigating these disparities and fostering more equitable access to services. Access to comprehensive healthcare services is crucial for reducing the gaps between different socio-economic groups and regions. Novignon et al. (2019), in their analysis of wealth-related disparities in maternal healthcare service utilization, and Saeed (2013), examining factors influencing healthcare utilization, indicate how broader healthcare coverage can significantly affect health outcomes and diminish disparities among different demographics and regions in Ghana. Therefore, improving the extent of healthcare coverage remains imperative in the pursuit of reducing health inequities and enhancing health outcomes across the Ghanaian population.

5.7 Discussion on Disparities in Healthcare Access by Region and Gender

The study corroborates the significant disparities in healthcare access among distinct regions and gender groups within Ghana. This alignment is evident in various research endeavours highlighted within the study, including the works of Owusu (2014), Ekholuenetale & Barrow (2021), Bixby et al. (2022), Novignon et al. (2019), and others. These studies collectively underscore the pronounced regional and gender-based differences in accessing healthcare services, emphasizing social inequalities and the pressing need for targeted interventions to address these disparities.

Owusu's (2014) investigation into healthcare access disparities by region and gender accentuates the differences in healthcare availability and utilization, emphasizing the unequal distribution across various regions within the country. The study effectively illustrates that certain regions possess more extensive healthcare access compared to others, exposing disparities in the country's healthcare provision.

Additionally, research by Ekholuenetale & Barrow (2021) and Bixby et al. (2022) further supports these findings by identifying the uneven access to healthcare facilities and disparities in child mortality rates within specific regions like the Greater Accra Metropolitan Area. This geographic variation highlights the unequal distribution of healthcare resources, contributing to varying health outcomes across different regions.

Furthermore, studies such as Novignon et al. (2019) delve into gender-related disparities in accessing maternal healthcare services, revealing that women from different socio-economic backgrounds have differing access to essential maternal health services. These studies collectively emphasize how regional disparities and gender-based differences significantly contribute to social inequalities in healthcare access within Ghana. Therefore, targeted

interventions addressing these disparities are essential to promote equitable access to healthcare services, thereby improving health outcomes for all regions and gender groups across Ghana.

5.8 Discussion on Out-of-Pocket Health Expenditures

The study aligns closely with the significance of economic factors, particularly highlighting the impact of out-of-pocket health expenditures on healthcare access and its consequent effects on overall health outcomes. Various research works included in the study provide a nuanced understanding of this aspect, reflecting the influence of financial factors on healthcare access disparities. For instance, the investigations by Ekholuenetale & Barrow (2021) and Novignon et al. (2019) emphasize the impact of financial constraints and socio-economic status on healthcare utilization. These studies shed light on how out-of-pocket health expenditures create disparities, preventing individuals from accessing necessary healthcare services due to financial limitations.

Ekholuenetale & Barrow (2021) use the 2014 Ghana Demographic and Health Survey (GDHS) data, analyzing disparities in out-of-pocket health expenditures among women based on neighbourhood socioeconomic factors. This research underlines the financial burdens experienced by women in disadvantaged areas, contributing to inequalities in healthcare access.

Moreover, Novignon et al. (2019) explore wealth-related disparities in maternal healthcare service utilization, particularly focusing on antenatal care visits and skilled delivery attendance. Their findings emphasize how financial constraints significantly affect the ability of women from different socio-economic backgrounds to access and use crucial maternal healthcare services.

These studies collectively highlight the link between financial factors, particularly out-of-pocket health expenditures, and the disparities in healthcare utilization, emphasizing the crucial role of economic considerations in shaping healthcare access and health outcomes within Ghana. Addressing these financial barriers is vital to reduce healthcare disparities and improve equitable access to essential healthcare services.

5.9 Discussion on Utilization of Maternal Healthcare Services

The research closely aligns with the emphasis on disparities in maternal healthcare utilization, especially highlighting wealth-related inequalities in accessing maternal healthcare services. Various studies encompassed within the research provide insights into these disparities, underscoring the significant role of economic factors in determining access to essential maternal health services. Novignon et al. (2019) conduct a study exploring wealth-related disparities in maternal healthcare service utilization, focusing particularly on antenatal care (ANC) visits and skilled delivery attendance.

This study showcases how financial constraints greatly impact women's access to crucial maternal healthcare services, creating disparities based on socio-economic backgrounds. The investigation underscores that women from wealthier backgrounds tend to have better access to these essential services compared to those from less privileged socio-economic backgrounds. The utilization of maternal healthcare services is hindered by financial constraints, thereby perpetuating inequalities in accessing important care during pregnancy and childbirth.

The findings from this research and similar studies highlight how economic factors significantly influence the access and utilization of maternal healthcare services, forming a social gradient in accessing these essential health provisions. The study underscores the

necessity to address these wealth-related barriers to ensure equitable access to maternal healthcare services for all women in Ghana.

5.10 Discussion on Impact of Environmental Conditions on Child Mortality across Neighbourhoods

The impact of environmental conditions on child mortality across different neighbourhoods is a pivotal aspect underscored in the study. Various research works within this study provide evidence of the influence of environmental factors on child mortality rates. This implies that the environmental conditions within specific regions or neighbourhoods can significantly impact child mortality rates. Sumankuuro et al.'s (2017) study, for instance, delves into the intricate link between environmental conditions and the health outcomes of children, highlighting that adverse environmental factors contribute to increased child mortality in various neighbourhoods.

The research emphasizes that a complex interplay exists between environmental conditions and child mortality rates, indicating that certain regions or neighborhoods might present more challenging conditions for child health. The findings call for a concerted effort to address these environmental impacts to enhance overall population health and reduce disparities, especially in areas where children are more vulnerable to adverse environmental conditions.

It suggests that improving environmental conditions, particularly in the neighbourhoods where children face increased risks, could potentially contribute to reducing child mortality rates. Addressing these environmental factors becomes a crucial step in mitigating child health disparities and improving overall population health, thereby fostering a more equitable health landscape.

5.11 Discussion on Potential Negative Health Externalities in Urban Areas

Some of the studies reviewed such as Bixby et al. (2022), Sumankuuro et al. (2017), GHS & GSS (201) highlighted the potential negative health effects within urban areas, despite better socioeconomic conditions. This emphasizes the need to address social, economic, and environmental factors for improved health outcomes.

5.12 Discussion on Regional Disparities in Health Service Access

The study demonstrates a perceptive acknowledgment of the evident regional discrepancies in healthcare access across various parts of Ghana, attributing these insights to a comprehensive array of research efforts. Among these, the study might have drawn upon works such as Bixby et al.'s 2022 study particularly focusing on the differences in healthcare access within the Greater Accra Metropolitan Area of Ghana. This research work shed light on the nuanced disparities prevalent among various neighbourhoods within the region. Additionally, Owusu's 2014 study also emphasized the disparate levels of healthcare access across different regions, emphasizing the existing discrepancies within the country's healthcare provision.

The core emphasis of the study remains directed toward highlighting the notable disparities in healthcare service access across different regions in Ghana. It delves into how regions like Greater Accra and Ashanti portray more robust and accessible healthcare services compared to disadvantaged regions like Volta and Northern Ghana. This distinction is crucial as it not only identifies the present healthcare service inequalities but also underscores the importance of implementing region-specific interventions. Recognizing such differences could potentially prompt the development of targeted healthcare policies aimed at bridging

the existing gaps in healthcare access between regions and fostering more equitable healthcare provision throughout Ghana.

5.13 Discussion on Environmental Conditions Affecting Maternal and Neonatal Health

The study underscores the substantial influence of environmental factors on maternal and neonatal health, likely drawing insights from a range of research investigations found in the collected body of work. For instance, Sumankuuro et al.'s 2017 study might have contributed to highlighting the extensive impact of environmental conditions on maternal health. This research provided deeper insights into how environmental elements, such as the lack of support, cultural beliefs, and challenging economic circumstances, negatively affect the health outcomes of expectant mothers. Additionally, the work of Ghana Statistical Service and Ghana Health Service in 2018 likely shed light on environmental conditions that significantly impact maternal and neonatal health in specific neighbourhoods, unveiling the necessity of improving these conditions to enhance health outcomes for mothers and new-borns.

The study essentially focuses on the profound ramifications of environmental factors on maternal and neonatal health, indicating the need for comprehensive interventions aimed at improving environmental conditions. It highlights that these interventions could potentially mitigate the adverse health outcomes experienced by mothers and new-borns. Recognizing the intricate interplay between environmental factors and health outcomes, especially concerning maternal and neonatal health, is fundamental for designing and implementing targeted strategies and policies aimed at improving environmental conditions. Addressing these environmental challenges could significantly contribute to enhancing overall maternal and neonatal health, leading to better health outcomes for mothers and new-borns in Ghana.

5.14 Discussion on Regional Disparities in Maternal Mortality

The study has established regional disparities in maternal mortality rates, indicating potential disparities in the provision and outcomes of maternal health services. This information might be gleaned from multiple sources studied, with particular references to Novignon et al.'s 2019 study on wealth-related disparities in maternal healthcare service utilization. This research might have contributed insights into the variations in maternal health services among different socioeconomic strata across various regions. Additionally, the work by Ghana Statistical Service and Ghana Health Service in 2018 might have shed light on regional disparities in maternal mortality, indicating potential inequalities in maternal health outcomes among different regions.

The study underscores these regional disparities in maternal mortality rates as part of the broader spectrum of health disparities in Ghana. It likely emphasizes the implications of these regional variations in maternal health services and outcomes on the overall health equity within the country. By examining these variations, the study contributes to understanding the disparities in maternal health services and outcomes across different regions, emphasizing the urgency of targeted interventions to address and rectify these disparities. This recognition of regional disparities in maternal mortality highlights the critical need for strategies and policies that specifically target regional disparities to ensure improved maternal health outcomes across the diverse geographical areas in Ghana.

5.15 SDH Theory Versus the Study's Findings

The study extensively employed the SDH theory as a robust framework to comprehend and alleviate various health metrics and inequalities prevalent in Ghana. It underscored the intricate connections between social, economic, and environmental factors and their direct

influence on critical health indicators. For instance, factors like maternal well-being, healthcare accessibility, and environmental circumstances significantly impact health measures like the Infant Mortality Rate (IMR), Maternal Mortality Ratio, and Under-5 Mortality Rate. These issues are tightly interlinked within the SDH framework, emphasizing the need for comprehensive intervention, such as enhancing maternal healthcare services and addressing environmental impacts.

Health metrics, including Crude Mortality Rates and Life Expectancy at Birth, are profoundly shaped by a spectrum of social determinants encompassing healthcare accessibility, inclusivity, and environmental factors. Moreover, the disparities in healthcare access, highlighted by geographical and gender differences, underscore the role of societal and geographic elements in perpetuating health outcome inequalities. Economic influences, particularly represented by Out-of-Pocket Health Expenditures, significantly impact healthcare accessibility and subsequently affect overall health outcomes.

Notably, the study revealed the significance of environmental conditions in maternal and child health, as well as in child mortality rates across various neighborhoods. It challenges traditional perceptions by indicating potential negative health externalities in urban areas and emphasizes the need to address social, economic, and environmental factors to improve overall population health and reduce disparities. Strategies focusing on improving healthcare access, enhancing maternal and child healthcare services, and rectifying environmental and regional disparities stand as crucial steps toward advancing health equity in Ghana.

6. CONCLUSION

This study was set out to evaluate the social inequalities in Ghana's health sector on different health indicators across several social dimensions (urban/rural, high/low income and so on). Specifically, it sought to investigate and describe the variation in health across different social groups in Ghana, with a focus on understanding the social gradient in health indicators. Further, the research aimed to examine the methodologies employed by various authors to measure differences in health based on social factors in the Ghanaian context. Again, it aimed at analyzing the diverse approaches utilized by different authors to measure health problems in Ghana. Lastly, the study aimed to explore the reasons behind social differences in health and their temporal changes, with the overarching goal of comprehending the drivers and dynamics influencing the observed patterns over time.

6.1 Social Gradient in Ghana Regarding the Various Extracted Health Indicators

The objective one of this study demanded that the study establish Social Gradient in Ghana with regards to the various extracted health indicators. This section is dedicated to that.

The various health indicators assessed in Ghana demonstrate a discernible social gradient, showcasing disparities across across several social dimensions: socioeconomic group, urban/rural region, men/women (and more. Studies such as Owusu (2014) and Ekholuenetale & Barrow (2021) indicated varying access to healthcare services based on regional disparities and socioeconomic backgrounds. The findings suggested that certain regions, like Greater Accra and Ashanti, exhibited more substantial healthcare access compared to disadvantaged areas like Volta and Northern Ghana, implying a distinct social gradient in healthcare availability across different regions within the country.

Moreover, disparities were apparent in maternal healthcare utilization, as highlighted in studies conducted by Novignon et al. (2019) and Ghana Statistical Service and Ghana Health Service (2018). Wealth-related inequalities were observed in access to antenatal care visits and skilled delivery attendance, suggesting a social gradient where women from wealthier backgrounds had better access to these crucial maternal health services compared to those from less privileged socioeconomic backgrounds.

Additionally, Sumankuuro et al.'s (2017) study provided insights into the social gradient in maternal health, revealing that the lack of support, cultural beliefs, and challenging economic conditions contributed to adverse health outcomes among expectant mothers. This social gradient in healthcare is particularly evident concerning cultural practices, economic constraints, and the level of community support, affecting healthcare decisions and outcomes, especially in maternal and child health. The cumulative evidence across these studies underscores the prevalence of a social gradient in various health indicators in Ghana, highlighting the impact of socioeconomic factors, regional disparities, and cultural influences on healthcare access and outcomes.

6.2 How the Different Authors Measured Health Problems in Ghana

The objective two of the study was to explore how various authors measured social differences in health inequalities in Ghana. This section is dedicated to that.

The measurement of health problems in Ghana was conducted through a diverse range of methodologies by various authors. Studies such as Owusu’s (2014) utilized Afrobarometer survey data spanning from 1999 to 2012 and statistical tests like the Mann-Whitney U Test to scrutinize healthcare access disparities by region and gender. Ekholuenetale & Barrow's (2021) study utilized the 2014 Ghana Demographic and Health Survey (GDHS) data along with

statistical tools like Lorenz curves to examine disparities in out-of-pocket health expenditures among women based on neighborhood socioeconomic factors. Bixby et al. (2022) employed census data and Bayesian spatial analysis to delve into child mortality disparities within the Greater Accra Metropolitan Area. Novignon et al. (2019) utilized quantitative analysis and decomposition methods to explore wealth-related disparities in maternal healthcare service utilization, focusing on ANC visits and skilled delivery attendance. Saeed's (2013) study employed a binary logistic regression model to analyze factors influencing healthcare utilization, while Frimpong's (2013) study used historical data and regression models to assess the impact of health reforms on various health outcomes.

The diverse methods encompassed quantitative analyses, Bayesian spatial analysis, decomposition methods, and regression models. These approaches enabled insights into factors influencing healthcare utilization, wealth-related disparities in maternal healthcare access, and disparities in out-of-pocket health expenditures among women. Additionally, the studies shed light on regional disparities in child mortality and maternal healthcare service utilization. From surveys to historical data, each study contributed nuanced perspectives on health problems in Ghana, emphasizing the complexity and multiplicity of factors impacting healthcare access, utilization, and disparities in the country.

The study found that earlier researchers who conducted such studies focused on four generic specific health indicators with each having sub-indicators amounting to 15 sub-indicators to assess and analyze social differences in health. These health indicators are as follows: Infant Mortality Rate (IMR), Maternal Mortality Ratio, Under-5 Mortality Rate, Crude Mortality Rates, Life Expectancy at Birth, Healthcare Coverage, Disparities in Healthcare Access by Region and Gender, Out-of-Pocket Health Expenditures, Utilization of Maternal Healthcare

Services, Impact of Environmental Conditions on Child Mortality across Neighborhoods, Potential Negative Health Externalities in Urban Areas, Regional Disparities in Health Service Access, Environmental Conditions Affecting Maternal and Neonatal Health, Regional Disparities in Maternal Mortality.

6.3 How the Various Authors Measured Social Differences on health in Ghana

The objective three sought to establish how the various authors measured social differences on health in Ghana. This section is dedicated to that.

In the exploration of social differences within the Ghanaian healthcare landscape, a myriad of methodologies was employed by diverse researchers. Owusu (2014) and Ekholuenetale & Barrow (2021) utilized extensive survey data, incorporating statistical tests such as the Mann-Whitney U Test and Lorenz curves to dissect disparities in healthcare access. These approaches enabled a detailed analysis of gender-based and regional discrepancies, along with neighborhood socioeconomic factors affecting healthcare utilization. Additionally, Bixby et al. (2022) adopted a spatial analysis approach using census data, offering insights into disparities in child mortality across varied neighborhoods within the Greater Accra Metropolitan Area.

Furthermore, researchers such as Novignon et al. (2019) and Saeed (2013) engaged quantitative methods like decomposition analyses and binary logistic regression models to scrutinize wealth-related disparities in maternal healthcare service utilization and factors influencing healthcare access, respectively. Their studies shed light on the intricate relationship between socioeconomic factors and healthcare access, identifying critical determinants impacting maternal and child health. Alongside these, Frimpong (2013) delved into the impact of health care reforms by employing historical data and regression models,

providing valuable insights into the enduring social differences and disparities across different policy eras.

This diverse array of methodologies embraced quantitative analyses, regression models, spatial analysis, and qualitative approaches like focus group discussions and in-depth interviews. These approaches facilitated a comprehensive examination of the multifaceted social differences in healthcare access, maternal and child health, and disparities across different demographics and regions within Ghana. The findings from these studies collectively highlighted the complex interplay of socioeconomic factors, regional disparities, and policy influences, contributing significantly to the understanding of social differences in healthcare outcomes.

6.4 Reasons for the Social Gradient, And Its Change Across Time

The objective four sought to establish the reasons for the Social Gradient, And Its Change Across Time. This section is dedicated to that.

From the review, several factors account for the social gradient existing in Ghana's health sector. The social gradient in accessing health and medical care in Ghana can be attributed to various factors that influence disparities across different socioeconomic strata and regions. Economic disparities significantly contribute to the social gradient in healthcare access. Individuals from wealthier backgrounds often have better access to healthcare due to their ability to afford private healthcare services, transportation to health facilities, and out-of-pocket expenses that might be associated with seeking medical care. In contrast, those from lower socioeconomic strata may face financial constraints, limiting their ability to access and afford healthcare services.

Geographical and infrastructural factors also play a role in the social gradient. Disparities in the distribution of healthcare facilities, medical personnel, and resources across different regions create varying levels of accessibility. Regions with better infrastructure and more healthcare facilities tend to offer improved medical services compared to underserved or remote areas, perpetuating the social gradient.

Over time, changes in government policies, healthcare interventions, and economic development have the potential to impact the social gradient in healthcare access. For instance, the implementation of national health insurance schemes or government initiatives to improve healthcare infrastructure and services can contribute to reducing disparities. Efforts to expand healthcare facilities, increase health worker deployment to underserved areas, and provide financial support for healthcare access among disadvantaged populations may gradually mitigate the social gradient.

However, these changes might take time to manifest fully. Long-standing disparities in wealth distribution, infrastructure development, and access to education can persist, affecting healthcare access across different socio-economic groups and regions. Comprehensive and sustained efforts in healthcare policy, infrastructure development, and economic growth are necessary to alleviate the social gradient in healthcare access and improve health equity across Ghana over time.

6.5 Limitations of the Thesis

The thesis, while comprehensive, bears certain limitations that offer opportunities for future research. One notable constraint is the focus on specific health indicators from a limited pool. The study concentrated on a select number of health metrics, which might have excluded broader health indicators with potential social gradients and disparities. Consequently, there

exists an unexplored realm of health indicators that might play a crucial role in determining healthcare disparities within the Ghanaian context. Future studies should aim to delve into these overlooked health indicators to provide a more comprehensive understanding of health inequalities and social gradients in Ghana.

Geographical scope remains another limitation, as the thesis largely centered on Ghana. Expanding the research's reach beyond Ghana and incorporating studies from other third-world countries could contribute to a more global understanding of health disparities. This broader perspective would facilitate cross-country comparisons, allowing for a more holistic comprehension of healthcare inequalities and their determinants. Furthermore, employing standardized search terms and research methodologies could enhance systematic reviews, ensuring the inclusion of more diverse and relevant studies from various regions. Improved methodological strategies will bolster the generalizability and reliability of findings.

A critical consideration for future studies is the need for longitudinal research to discern trends and changes over time. Tracking shifts in health indicators and disparities would offer a dynamic view of how healthcare policies, economic development, and social reforms affect healthcare outcomes. Longitudinal studies would provide valuable insights into the evolving landscape of healthcare disparities and the efficacy of interventions. Additionally, future research could incorporate qualitative methodologies to explore the lived experiences of individuals affected by these health disparities. This qualitative dimension could provide a more nuanced understanding of the social, cultural, and economic factors influencing healthcare access and outcomes. Integrating diverse research methodologies and enhancing the scope and depth of study could significantly enrich the understanding of health disparities in Ghana and beyond.

6.6 Theoretical Implications of The Study

The study holds several theoretical implications. For instance, it significantly emphasizes the applicability of the Social Determinants of Health (SDH) framework in comprehending and mitigating health inequalities in Ghana. By establishing a strong connection between social, economic, and environmental factors and their direct influence on critical health indicators, the study reaffirms the relevance of the SDH theory. It highlights the intricate relationships between healthcare accessibility, environmental circumstances, and health metrics such as Infant Mortality Rate (IMR), Maternal Mortality Ratio, and Under-5 Mortality Rate. This emphasizes the need for comprehensive interventions addressing multiple social determinants to enhance health equity in the country.

Further, the findings of the study underscore the complex interplay of socioeconomic factors, regional disparities, and policy influences on health outcomes. This complexity is highlighted through disparities in maternal healthcare services and environmental impacts on child mortality rates across different regions. It suggests that health inequalities result from a myriad of social determinants and underscores the necessity of multifaceted interventions that address diverse factors to achieve better health outcomes.

The study's focus on the social determinants of health in Ghana reveals implications for policy formation and interventions. The findings suggest the importance of addressing disparities in healthcare access, particularly among different geographical regions and various demographic groups. It underscores the need for targeted policies and strategies to reduce health disparities, particularly through improving healthcare access, addressing environmental impacts, and reducing economic inequalities that influence health outcomes.

These implications resonate with the need for targeted policies that focus on social determinants to alleviate health inequalities and promote health equity.

6.7 Recommendations

The findings of this study bear significant implications for healthcare policy and interventions in Ghana. The observed substantial disparities in healthcare access among different regions and socio-economic groups point to the urgency of tailored, region-specific interventions. Addressing these disparities necessitates focused resource allocation, infrastructure development, and targeted healthcare services to bridge the pronounced gaps in healthcare access and health outcomes. Policy measures should prioritize regions that are currently underprivileged in terms of healthcare facilities and resources, aiming to reduce the existing discrepancies in health outcomes across various parts of the country.

Maternal and infant mortality rates stand out as critical areas requiring immediate attention. Policy initiatives must center on improving maternal healthcare services, ensuring the provision of comprehensive care throughout the maternity process. Key areas of focus should include antenatal, intrapartum, and postnatal care, with a focus on providing equitable access to quality healthcare services for women and infants across different socioeconomic strata. These interventions are paramount in working towards reducing the gaps in maternal and child health outcomes observed in the study, particularly in disadvantaged areas.

Economic barriers to healthcare access, especially the impact of out-of-pocket health expenditures, must be addressed. Policies should be geared towards overcoming financial constraints that impede healthcare access, particularly for disadvantaged groups. Tackling these economic barriers is crucial in enhancing healthcare coverage and narrowing the gaps in access, ultimately leading to improved health outcomes for the general population.

Moreover, interventions addressing environmental factors influencing child and maternal health outcomes are essential to mitigating child mortality rates and improving overall health outcomes for both mothers and newborns. Investing in research, evaluating existing policies, and developing community empowerment programs will be instrumental in effecting lasting improvements in healthcare access and outcomes across Ghana.

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