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Retention of medical doctors in post-conflict Sierra Leone: Factors influencing medical doctors' retention within Sierra Leone's public health sector.

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Retention of medical doctors in post-conflict Sierra Leone:
Factors influencing medical doctors' retention within Sierra Leone's public health sector.

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A thesis submitted in partial fulfillment of the requirements for the degree of
Master of Science in Public Health

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The thesis (Retention of medical doctors in post-conflict Sierra Leone: Factors influencing medical doctors' retention within Sierra Leone's public health sector) is my own work.

Signature:

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DEDICATION

Ms. Fatmata Bah (Deceased)

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In Sierra Leone, I am beholden to my amazing colleagues working tremendously day and night to deliver quality health care services to our countrymen under challenging circumstances. You are the true heroes.

Last and most importantly, to my mother in heaven, I only wish you were here to celebrate the fruits of your sacrifices. To my second mother who saw me in the streets of war-torn Sierra Leone and educated me, you are the best thing that happened to me, and I am forever indebted to you. And to my wife, thank you for the daily courage and support you continue to provide throughout this program.

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II. List of Abbreviations

BPEHS	Basic Package of Essential Health Services
CMO	Chief Medical Officer
ENT	Ear, Nose and Throat
EVD	Ebola Virus Disease
FBO	Faith Base Organization
FHCI	Free HealthCare Initiative
GDP	Gross Domestic Product
GMC	General Medical Council
HDI	Human Development Index
HIC	High-Income Country
HIV	Human Immunodeficiency Virus
HR	Human Resource
HRH	Human Resources for Health
LMIC	Low-Middle-Income Country
MeSH	Medical Subject Headings
MoHS	Ministry of Health and Sanitation
NAPHS	National Action Plan for Health Security
NCDs	Non-Communicable Diseases
NGO	Non-Governmental Organization
NHSSP	National health Sector Strategic Plan
PS	Permanent Secretary
SDGs	Sustainable Development Goals
SLeSHI	Sierra Leone Social Health Insurance Scheme
UHC	Universal Health Coverage

UK United Kingdom

UN United Nations

UNDP United Nations Development Programme

WHO World Health Organization

III. Glossary

1. Health workforce Optimization Project: is a model employed by various countries to assess the total number and cadres of expertise of the health workforce needed to provide health services at the facility level. This is determined through the utilization rates of health services for each facility (1,2).

2. Retention: According to Employee Retention Workgroup, 2002, Employee retention is "a systemic effort to create and foster an environment that encourages employees to remain employed by having policies and practices in place that address their diverse needs". Human resource for health (HRH) retention is generally considered as the attraction and recruitment of new graduates, the unemployed, those working in other sectors, or the retired. The aim is to recruit and ensure retention plans are in place to keep health workers in their posts. Although there is no defined period to be considered as successful retention, generally a period of five years or more is considered acceptable (3).

3. Supra-personal factors: According to Moos, H., and Schaefer, supra-personal factors are considered as the aggregate demographic and personal characteristics of individuals in a setting. The aggregate attributes of a larger group in a particular setting attract members to a subgroup of similar ideals and cultural values which in itself define their morals and cultural behaviors (4).

4. Post-conflict period: According to Brown et al., this period is characterized as a transition continuum where specific milestone achievements are reflective of progress towards national cohesion, trust in governance and sustained peace. The separation between conflict and peace is a gradual process distinct to every state or country's reality (7).

IV. Abstract

Background

Long-term retention of doctors to serve in the public sector remains a problem in various low-and-middle-income countries. Strong attraction factors force doctors to either take up dual practices both public and private sector or migrate to high-income countries, and thus, affects the quality of healthcare services delivered. **Objective:** This study explores factors influencing long term retention and described the coping strategies of doctors in the public sector in post-conflict Sierra Leone.

Methodology

This literature review explored factors that influenced long-term retention and described coping strategies of doctors in the public sector in Sierra Leone. The conceptual framework used to structure the result section is the health worker retention framework used to analyze drivers of long-term retention in Eastern Uganda and adapted from Schaefer J. and Moos R. model, 1991.

Results

This study explored factors influencing long term retention and the coping mechanisms of doctors in the public sector in Sierra Leone.The result showed that personal factors such as ties with family and community, and specialization interests influenced long-term retention. Promotion and leadership roles when accompanied with financial rewards motivated long-term retention while clear, unambiguous, and decentralized policy plan improves job satisfaction. Taking up multiple jobs and, family and community help provided additional support to meet the living costs, while job security and a decent pension plan influenced long-term retention.

Conclusion

This study successfully showed existing interlinkages between retention factors and coping strategies of docctors and implications for leaving the public sector. A strong political commitment is required to address fundamental organizational factors. As opposed to addressing the general health workforce as a singular entity, this approach focused on addressing barriers to doctor's retention and provided recommendations that could improve retention, job satisfaction, and motivation.

Key Words: Medical doctors, retention, human resource management, implementation Science, Sierra Leone.

Thesis word count: 12514

V. Introduction

In 2016, few months prior to my graduated from medical school, I received a call that my mother had suffered a stroke. In 2010, I had won a scholarship to pursue a career in medicine in Venezuela and had not returned for holidays throughout this six-year period. Although my mother was admitted to one of the adult referral hospitals in the capital city, Freetown, there was no CT scan available at the admission facility to accurately diagnosed the type of stroke and to get a management plan. She had to be transferred to multiple facilities three days later to get the scan done. At the time of the diagnosis, she had extensive internal brain bleeding and there was not a single neurosurgeon in the entire country. We could not afford to fly her out for surgery to neighboring countries like The Gambia where there was a Sierra Leonean Neurosurgeon who had left Sierra Leone due to poor working conditions and inadequate work environment. She died a week later.

Fast forward to 2017, I returned to Sierra Leone after completion of medical school with the courage to make a change in the health sector. Few months after my arrival, I realized many Sierra Leoneans suffer the same fate as my mother due to an inefficient health sector. This motivated me to engage in advocacy after realizing my individual limitations as a doctor. Through the Junior Doctors Association of Sierra Leone (JUDASIL), representing the interests of more than 70% of doctors locally, we were able to holistically analyze the current healthcare system, we identified major barriers to quality health service delivery, and developed strong policy recommendations. The recommendations were later presented to the newly appointed minister of health and chief medical officer, who had showed little or no interest.

From experiences shared and continuous interactions with colleagues working in ill-equipped facilities, it was clear that healthcare workers especially doctors were considering job options with international non-governmental organizations or to migrate with their families to other countries. This motivated me to pursue a career path in public health. I chose this thesis research topic to explore these challenges from different perspectives and make recommendations to improve long-term retention of a very limited doctor population. This work provided me the opportunity to fully explored this area of research and also to add my voice to doctors in Sierra Leone to contribute to strengthening the health system

The thesis is literature review structured and presented in five main sections. The first section provides background information of Sierra Leone such as country setting, political landscape, economic status, health system formation, health service delivery and the health situation. The second section describes the problem statement and justification of this study. In addition, a descriptive study design inclusive of methods and analytical framework used to structure the findings of the study. The third and fourth sections, provides detail results in a well-structured format followed by a discussion section to analyze the findings of the study. The Final section concludes on the main findings matching the objectives of this study and a recommendation to address retention barriers for doctors in Sierra Leone.

I. Background.

This section elaborates on the geographic and demographic description of Sierra Leone, political overview, economic status, health system, and health service delivery, and the health situation of Sierra Leone.

1.1 Country Setting

Sierra Leone is a small West African nation with a population of almost 8 million and a population growth rate of 2.1% yearly. The country is divided into four regions (Western, Eastern, Southern, and northern), 16 districts and 190 chiefdoms (see figure I). The capital city, Freetown, which is the largest city, economic hub, and houses the central government is located in the western region with a population of about 1 million inhabitants. There are approximately 15 to 20 ethnic groups with most Sierra Leoneans speaking the common language, Krio. However, English is the official language (5,6).

Figure I: Map of Sierra Leone, districts and chiefdoms (12).

Sierra Leone is known for its historic role played in the transatlantic slave trade and Freetown, named as the home for repatriated free slaves in West Africa. However, the discovery of diamonds and other precious minerals in the early nineties significantly influenced Sierra Leone's trading patterns as well as a major factor that influenced the 10-year civil war and current economic policies (7,8).

1.2 Political and Economic Status.

In 1961, Sierra Leone gained independence from Great Britain. This was followed by 28 Years of a one-party state rule that ended in a bloody civil conflict from 1991 to 2002 resulting in the loss of tens of thousands of lives, migration, infrastructural damages, and economic collapse (7). In 2002, Sierra Leone's 10-year civil conflict ended, and the immediate **post-conflict period** saw the restarting process to regain its social structures and economic stability. Though the war ended about 20 years ago, the crumble effect is significantly manifested through provoked social conflicts and mistrust in government. Consequences of the war are still evident is post-conflict Sierra Leone, a period characterized with several weaknesses and challenges that had also paved the way for a delayed response to the in the 2014 -2015 Ebola outbreak in in West Africa. The immediate post-conflict period, series of systemic policies to revitalize economic growth were developed, however, the implementation progress was hugely affected by the Ebola outbreak, collapsing the health sector and other vital structures (9).

Before the 2014 Ebola outbreak in West Africa, Sierra Leone's economic status showed a positive trajectory from a Low-Income Country to a Middle-Income Country status by 2035. However, the Ebola outbreak and medium to long term effects of the war including governance challenges and distrust, corruption, and low opportunities for youths seriously hindered economic progress. Though series of reforms and policies have been implemented recently, existing economic and infrastructural challenges account for the wide disparity in middle class, of which doctors are part as well as urban and rural impoverishment (10).

According to the United Nations Development Programme (UNDP), 70% of Sierra Leone's youth were either underemployed or unemployed, and the adult literacy rate is approximately 40%. Sierra Leone was ranked 181 of 189 countries on the Human Development Index (HDI) in 2019 with a life expectancy of 54.7 years. Over 50% of the population live under the poverty line of $1.90 per day through the annual inflation rate dropped to single digits in 2021 with a GDP growth rate of 2.4% (5,9,11).

1.3 Health System and Service Delivery

The Ministry of Health and Sanitation (MoHS) is an entity operating through a hierarchical structure. The legislative framework of the MoHS describes the structural formation and functions and these include a coordinating body (set common visions with partners), normative body (make policies), regulatory body (enforcing standard), and a service provider entity (5). The MoHS is led by the Minister and two Deputy Ministers at national level. There are two pillars of operation within the ministry: an administrative division headed by the Permanent Secretary (PS) with four directorates and a professional division led by the Chief Medical Officer (CMO) with nine directorates. The HRH directorate is part of the administrative division which is guided by the national civil service code and scheme of service (9).

Sierra Leone has a pluralistic health delivery system comprising of the public sector, private sector, Non-Government Organizations (NGO), and Faith Based Organizations (FBO). The

health service provision is divided into a public sector service delivery, private non-profit, private for-profit (13). The public health system is categorized into five facility levels of care arranged in two major subdivisions: Hospitals (12 District referral hospitals and 8 National & Regional Hospitals) and Peripheral Health Units (623 Maternal-Child Health posts, 236 Community Health Posts, and 195 Community Health Centers) (6,9).

The 2016 geo-mapping done by the MoHS indicated the distribution of the government health workforce across 1,324 facilities including public health units, clinics, hospitals, and administrative offices. The current health workforce in Sierra Leone is estimated at around 24,365 including administrative and support staff. Around 19,030 are clinical staffs which included doctors, nurses, midwives, community health officers, and other healthcare workers with an estimated 9000 unsalaried staffs (9).

Service provision at government-run health facilities is done by the public sector health workforce, however, a small percentage of public sector health workers are posted to work in private facilities (1.4%), and about 2% posted to work at public-private (non-profit) facility (Emergency Hospital)(9). Highly skilled clinical staff such as medical officers and medical specialists generally serve at hospital levels and in 2015 approximately over 450 doctors including medical specialists were required to deliver the Basic Package for Essential Health Services (BPEHS) for primary and secondary care, not including tertiary hospital facilities (5,9,14).

The Basic Package for Essential Health Services (BPEHS) framework first developed in 2010, serves as a guide for quality health service delivery in Sierra Leone. The goal is to provide evidence-based, cost-effective, and quality health services through equitable access to nationally and vulnerable groups. Specific focus will be given to addressing maternal and child health issues. The expecting long term impact includes improved health outcomes for all vulnerable groups through easy access to basic essential services. Additionally, a prioritized framework for health problems and provide effective service delivery (13).

In 2017, only 2% of the Gross Domestic Product (GDP) accounted for domestic health expenditure and, in 2017 and 2019, the national budget allocated to the health sector as a drive to meet the minimum target of the Abuja Declaration was 8% and 10% respectively (15). The public health system is mainly supported by the government and donor partners. However, the total health expenditure to seek healthcare services is approximately $95 per capita of which over 75% is contributed through out-of-pocket expenditure by users. A national service delivery perception survey was done in 2008, showed factors influencing access to health facilities (see figure II) due to high user fees for health services (16).

The donor-funded **Free Health Care Initiative (FHCI)** was launched in 2010 through which children under 5, pregnant women and lactating mothers receive free health care services. This Universal Health Coverage (UHC) initiative to eliminate user fee for service yield some early

positive outcomes including an increased number of consultations, and decreased in morbidity and mortality rates among this population group (15). Although the full impact of the FHCI have not yet been extensively studied, an independent review of the FHCI done in 2016 (17) and findings from an independent evaluation team by Oxford Policy Management (18), noted that the complex nature of the FHCI and its dynamic implementation facilitated changes to strengthen both the demand side and the heath system pillars. The FHCI significantly contributed to equitable access and improve for essential health services to women and children (17). Additionally, those not included in the FHCI had to pay higher user fee for service through out-of-pocket payment and eventually result in low turnout of patients not covered by the FHCI due to economic hardship (15,19).

In addition to the FHCI, the development of the **Sierra Leone Health Insurance Scheme (SLeSHi)**, which was later approved by parliament in 2018 to facilitate easy access to health services for formal sector workers and prevent catastrophic health expenditure. This scheme was also to be extended to informal sector workers through this model of a UHC insurance scheme providing a primary health care package comprising of all essential basic health needs for Sierra Leoneans (20,21). Though these schemes are intended to address the demand side to access health care services, the supply component of adequate health workforce especially for highly skill clinicians continue to be a challenge.

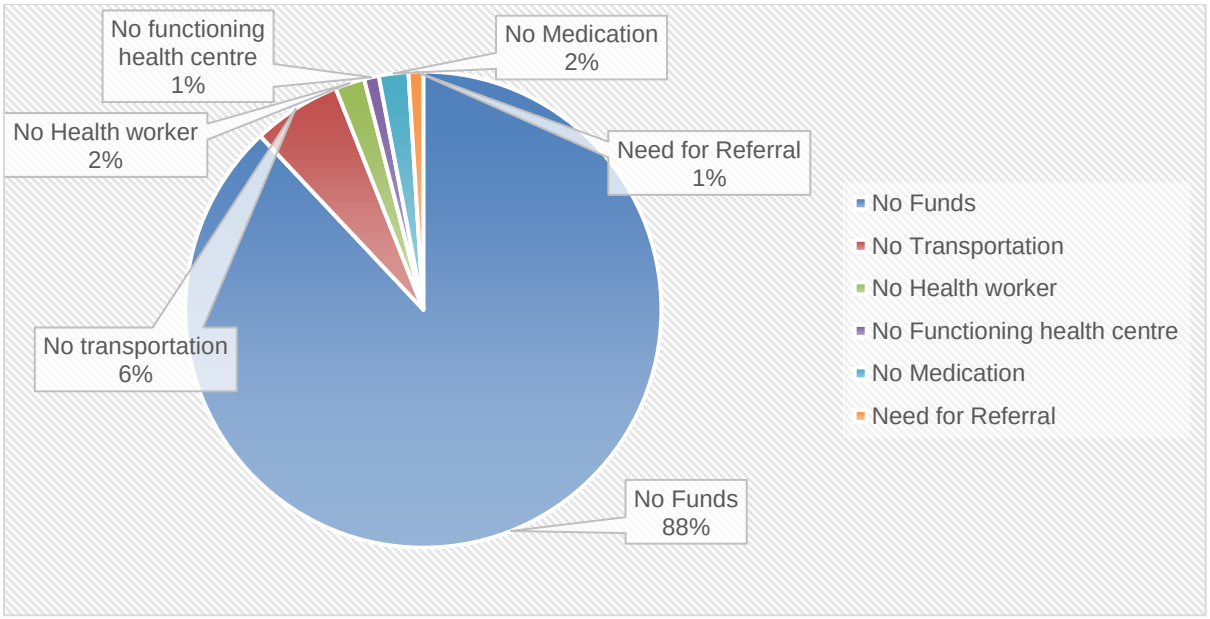


Figure II: Factors affecting access to health facility (15)**.**

(Source: National Service Delivery Perception Survey.)

1.4 Health Situation

Non-communicable diseases (NCDs) account for a huge burden to a challenging health sector in Sierra Leone. The prevalence of NCDs including diabetes mellitus, hypertension and other cardiovascular condition is unknown due to lack of accurate data. However, an estimate 18% of deaths is accounted for by NCDs (5,22). Although, there are about four main hospitals providing ophthalmic services in Sierra Leone, there is severe shortage of ophthalmic and, ear, nose, and throat (ENT) specialists in both the public and private health sectors (23). Cancer control and prevention is another huge challenge with significant manpower deficiencies. In 2016, the WHO and MoHS is collaboration with the International Agency for Research on Cancer provided training for six medical personnel on cervical cancer screening, and prevention and control. Additionally, substance abuse is noted widely and approximately 90% of psychiatric admissions nationally is related to alcohol and drug related illnesses. There are only three rehabilitation centres in Sierra Leone and two of those are in the capital city (22).

'The Lunatic Act' written in 1902 is Sierra Leone's legislative document for mental health. There is only one psychiatric hospital and the only to provide mental health services in Sierra Leone. This facility is managed by three medical personnel; one psychiatrist who double down as the medical superintendent and national mental health coordinator. The chronic shortage of mental health professionals nationally is a major challenge to deliver mental health services to every district (22,23).

Communicable diseases account for most deaths and the highest disease burden in Sierra Leone. Malaria-related death is the third highest in the world and accounts for over 40% of total admissions nationwide. In 2017, incidence rate for tuberculosis was estimated at 301 per 100000 population and tuberculosis related mortality of 3000, making Sierra Leone one of the 30 countries accounting for more than 80% of all newly diagnosed tuberculosis cases (24-26). The prevalence of HIV ranges from 1.5% to 1.7% since 2005. There is also a noted disparity between urban and rural community access to treatment and mortality risk is high (23,27,28).

Sierra Leone has the highest maternal mortality ratio in the world (1360 per 100000 live births), one of the highest under-five mortality rates (113.5 per 1000 live births), neonatal mortality (33.2 per 1000 live births), and more than 30% of under-five children suffer from stunting in 2017 (23,29).

The first cases of the **Ebola Virus Disease (EVD)** were reported in May 2014 along in the eastern region of Sierra Leone along the Guinea and Liberia border (30). The epidemic outbreak rapidly spread to all regions and districts. In a year, Sierra Leone became worst hit country in the region with an estimated 8500 cases and over 3,600 deaths reported nationally. The lack of adequate Infection and Prevention Control (IPC) measures and late recognition of the disease increase infection among health workers. Approximately 300 health workers were infected, and more than 220 deaths (12 doctors) reported nationally. The resulting loss in confidence by communities to visit health facility, seriously affected essential service delivery to the population especially for pregnant mothers and children (5,13).

In the current global pandemic of **COVID-19**, the MoHS reported the first COVID-19 case in Sierra Leone on March 31, 2020. An inbound passenger from France was confirmed after he developed signs of the disease (31). To date, Sierra Leone have recorded more than 6300 cases, 120 deaths nationally and a case fatality rate of 1.9% with approximately 160,000 (2%) COVID-19 vaccines administered nationwide. However, more than 260 COVID-19 cases (4.2%) were reported among health care workers and claiming multiple deaths (32). These had resulted in series of reported interruptions of health service delivery in various facilities due to isolation protocols and quarantine for close contact health workers.

These data could be associated to the lack of a well-trained and highly skilled clinical professionals need to make a correct and timely diagnosis and provide adequately required management care. This also has an indirect effect in the health seeking behavior of service users.

2. Study Overview

2.1 Problem Statement and Justification

There is an increasingly concerted effort to address inequalities and improve global health outcomes including mortality and morbidity rates, quality and timeliness of care, and the full implementation of health policies and plans through evidence-based research (33). However, in almost every country worldwide there is evidence of retention challenges and maldistribution of the health workforce. Health worker density is lower in rural than urban areas in many low-and-middle-income-countries (LMIC) where the health needs could be perceived to be higher. Highly skilled professional such as doctors easily migrate due to stronger push and pull factors. The results have been chronic health inequalities in these countries where it is estimated that more than half of the world's population live in remote and underprivileged communities while only 24% of the total doctor's population serve these settings (34,35).

The global strategic approach on Human Resource for Health (HRH): Workforce 2030, by the World Health Organization (WHO) set a vision to "accelerate progress towards UHC and the United Nations (UN) Sustainable Development Goals (SDGs) by ensuring equitable access to health workers within a strengthened health system" (36). To serve as a blueprint for building a resilient health system, the current discourse focus on availability, accessibility, acceptability, and quality of the health workforce to achieve satisfactory health outcomes (29). Moreover, six recommendations were put forward by a WHO high-level commission on health employment and social growth set up to address the health workforce shortage, to meet the SDG targets and to serve as a model for countries to adopt. These recommendations were categorized into addressing job creations; gender and women's right; education, training, and skills; health service delivery and organization; technology; and crises and humanitarian settings (37).

The imbalances of global health workforce have serious consequences on the health system of LMICs which could be associated to one or multiple factors such as insufficient production and supply of doctors, switch to non-clinical practices and or migrate to high-income-countries (HICs) associated to various retention challenges in the public health sector. The doctor-to-population imbalance between LMICs and HICs is a complex influence by series of factors. More than 10 countries in Sub-Saharan Africa having no medical school and 24 countries have only one medical school each, which cannot produce and supply enough doctors to serve a subcontinental population of more than 660 million people (38). The impact and availability of doctors to serve in the public health sector varies from one country to another, for example, in 2005, the doctor-to-population ratio in Ghana was 9 for every 100 000 patients, while in Mozambique the ratio was 2.78 per 100 000 population. In Zambia, over 500 doctors reported to have been trained locally since independence (1964), and only 60 of those doctors were still working in the country by 2005 (39). Over time, an estimated total of more than 5000 doctors trained in medical schools in 22 Sub-Sahara African countries had migrated and were working in the United States of America in 2002 (38).

Recommendations put forward by the WHO in 2010 to address health workforce imbalance and retention focused on categories influencing push-pull-stick-stay factors in public sector settings. These include training and professional development opportunities, enhance scope of service and compulsory services, improved financial incentives and, providing better working and living conditions, career development and recognition (35).

The post-conflict data analysis for Sierra Leone between 2005 and 2011 showed a low doctor-to-population ratio. The effect of the war and poor working conditions resulted in the migration of many health workers. Sierra Leone has have one undergraduate medical school for over 30 years with most of the country's current medical population having graduated from this institution (40). Prior to the establishment of the only medical school in 1988, medical training had to be pursued in other countries such as Cuba, former Soviet Union, China, Germany, United Kingdom (UK), and other parts of Africa, and only few doctors return back to Sierra Leone after completion of training.

Sierra Leone had 203 medical officers in 1993, reduced to only 67 in 2005 and of the 623 state registered nurses, only 152 remained after the war (15). This significantly contribution to the maldistribution and increased percentage of unfilled posts especially for specialist and consultants. Senior specialists had between 60% and 22% unfilled posts in 2005 and 2011 respectively; while consultants had about 70% and 85% unfilled positions in 2005 and 2011respectively (41). The doctor-to-population ratio in Sierra Leone was 0.021 per 1000 population in 2010 and 0.074 per 1000 population in 2018, a cumulative total of 500 medical officers and 66 specialist in in 2018 (9,14,42)

Multiple factors noted in various studies (9,40,43,44) including the 10 years civil conflict cemented the current crisis of health workers shortage in Sierra Leone. The chronic shortage of health workers especially for doctors with a slower projection rate compared to nurses (see figure III and IV) prior to the Ebola surge was already a major concern to meet BPEHS. However, the Ebola outbreak created more burden and eventually caused the health systems of the most affected countries, Sierra Leone, Guinea, and Liberia to collapse. Unfortunately, more than a dozen doctors and hundreds of other health workers in Sierra Leone succumbed to the Ebola virus causing more blows to an already devastated health sector and exacerbated the healthcare worker shortage (40,43).

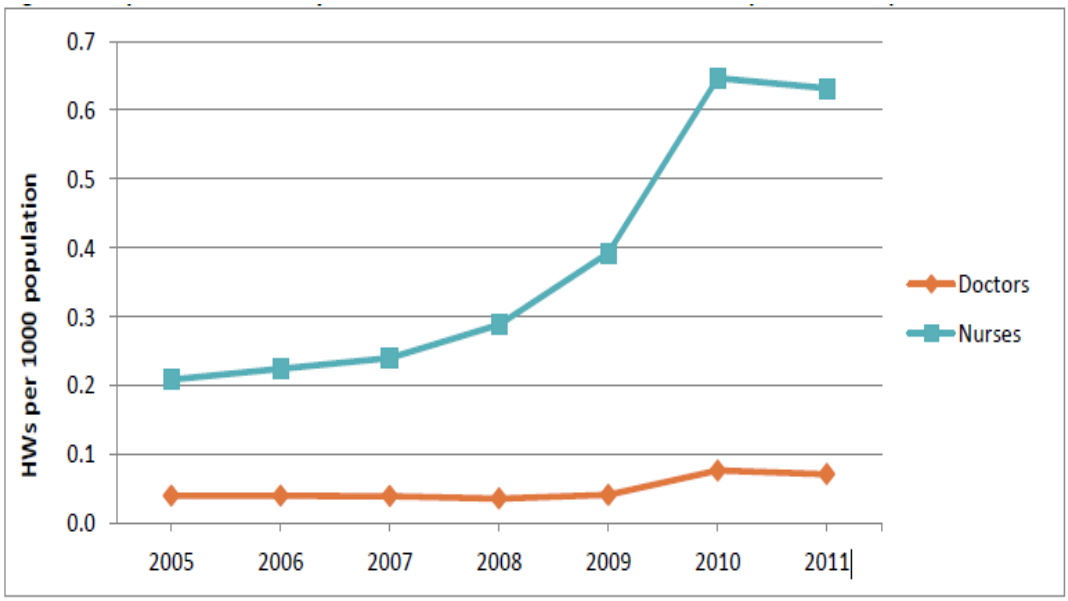


Figure III: Population data analysis of doctors and nurses in Sierra Leone (2005 – 2011) (9)

Critical shortage of doctors in clinical practice has been associated with a growing percentage of medical officers (26%) and medical specialists (37%) in Sierra Leone taking up administrative roles or taking postgraduate study leave (8). In 2010, personal correspondence data from the General Medical Council (GMC) in the United Kingdom (UK) noted that, despite the low number of 136 doctors in the public health sector in Sierra Leone, 27 doctors in the UK at the time had migrated from Sierra Leone after completion of their training (15).

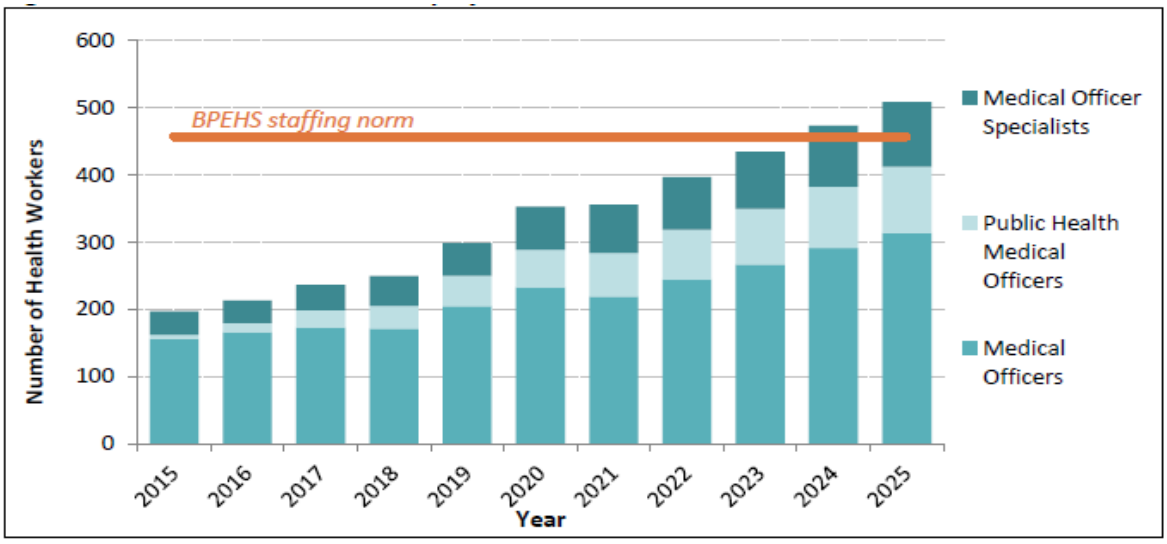


Figure IV: Medical Officer Workforce projection (9)

The lack of well trained and motivated clinicians in the public sector makes it very challenging to meet the health needs of the population, especially in rural communities. These challenges

caused by inadequate health workforce have been more evident with a growing population and the implementation of the FHCI and SLeSHi resulting in high patient workload nationally. Understanding and addressing the factors influencing retention of doctors in the public sector is very key to addressing the health work force imbalance in Sierra Leone. Although Sierra Leone launched the human resource policy document in 2006 as a recommendation deduced from the 2004 HRH development plan, this document focuses mainly on framework of events. The 2009 draft of the national health sector strategic plan (NHSSP) 2010 – 2015 documented additionally factors of HRH gaps, set the platform for more program implementation, and envisaged the subsequent HRH policy and NHSSP 2012 – 2016 and 2017 – 2021 (5,45,46).

Previous studies (1)(47) had identified series of factors influencing production, supply and long-term retention of the general health workforce dynamics in Sierra Leone, and with specific focus on rural retention and distribution of nurses, community health officers and other allied health workers. These factors include inadequate financing to the health sector, centralized HRH department, unclear and ambiguous civil service code, low remuneration package and challenging work environment (1,48,49). Though these factors may not necessarily be different for doctors, the strong market value attracting doctors indicate a knowledge gap on the factors and barriers specifically influencing long-term retention of doctors, highly skilled professional group that have been in chronic shortage to serve in Sierra Leone's public health sector. This study aimed to gain insight into the factors influencing the retention, and the coping mechanism of doctors in the public sector in the post-conflict era in Sierra Leone.

2.2 Objectives and Research Question

2.2.1 General Objective

The overall objective of this study is to explore factors influencing long term retention and describe the coping strategies employed by doctors in the public sector in a post-conflict period in Sierra Leone in order to make recommendations that will support the government, the MoHS and the HRH directorate to strengthen the health system capacity in delivering quality services to the general population.

2.2.2 Research Question

What are the factors influencing the retention of doctors within the public sector in post-conflict Sierra Leone?

2.2.3 Specific Objectives

1. Identify determinants influencing long term retention of doctors in the public health sector in Sierra Leone.

2. Describe the coping strategies for doctors in the public health sector in Sierra Leone.

3. Use the results to provide recommendations to overcome barriers of long-term retention to authorities and policy makers.

2.3 Methods

This study is based on a descriptive literature review.

The methodology of this study followed the six stages of standard review framework by Arksey and O'Malley for the selection of studies as shown below (figure V) (50).

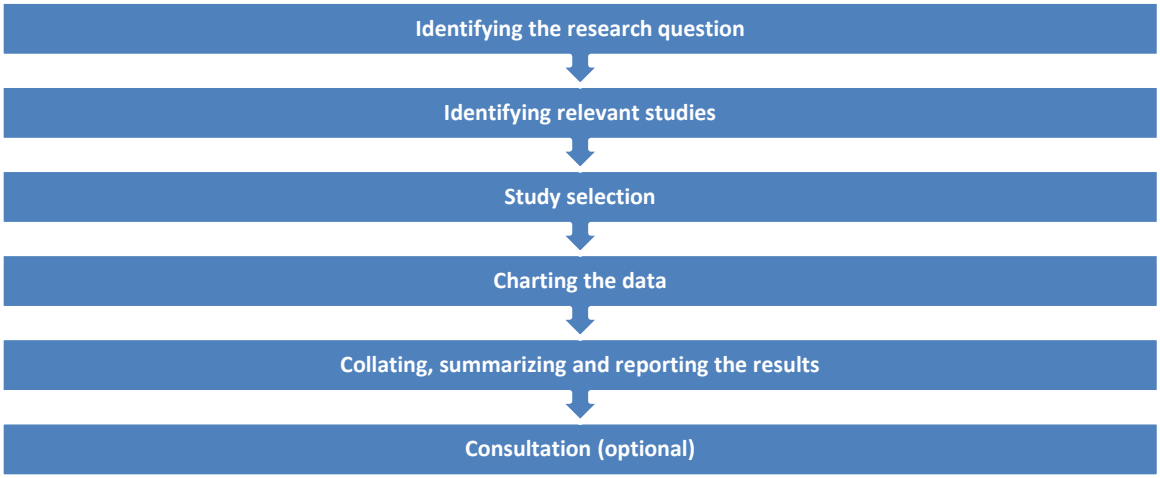


Figure V: Six stages of review (50)

2.3.1 Identifying the research question

Literature review study questions are developed through definitions of the population, concept and context framework (51). For this study, the 'population' was defined as medical doctors, physicians, medical officers, clinicians, health workers and health professionals while the 'concept' was factors influencing doctor's retention in the public health sector. Long term retention in the context of this study to be considered 5 years or more of continuous service (voluntary and non-voluntary) excluding study leave periods.

The health worker retention framework used to analyze the drivers of long-term retention of health workers in Eastern Uganda adapted from Schaefer and Moss model framework was selected as the conceptual model for this study to explore the determinants of retention of doctors in Sierra Leone. The context is linked to the World Health Organization health system building blocks towards Universal Health Coverage on the health workforce, retention and service delivery in Sub-Saharan Africa (52).

Conceptual Framework: Health worker retention framework adapted from Schaefer and Moss model used to analyze the drivers of long-term retention of health workers in Eastern Uganda, is considered an appropriate model for this study. Uganda is another Sub-Saharan African country of similar quality of life, economy and cost of living to Sierra Leone. This conceptual model has been used to explore the determinants of retention for doctors in the public health sector domain in Sierra Leone (figure VI) using series of factors arranged into organizational and personal

system factors. Both systems' factors will eventually affect workers environment and their coping mechanisms.

This conceptual framework serves as a guide to structure the result section of this study into headings and sub-headings in the following chapters.

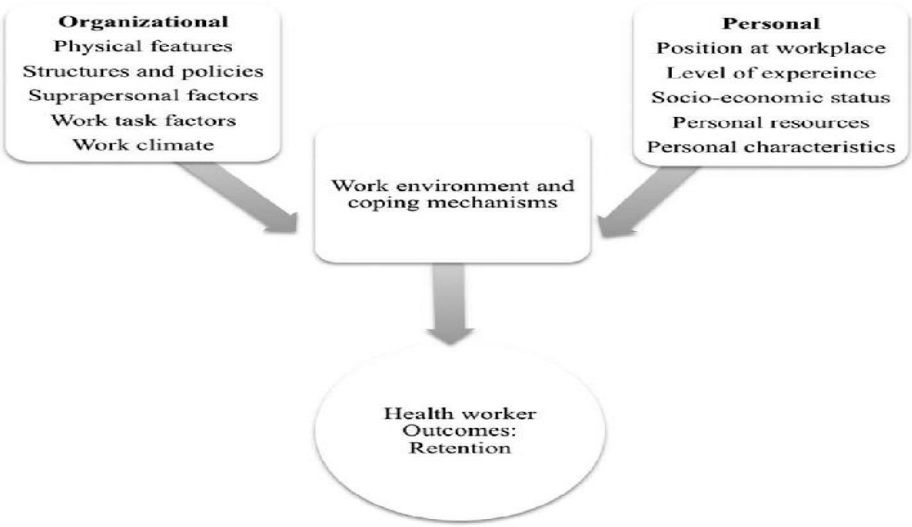


Figure VI: Conceptual framework: Health worker retention framework (49)

2.3.2 Identifying relevant studies and design

An extensive search strategy was used including scientific peer-reviewed studies, journals, and gray literature from WHO International/Sierra Leone (Global Health Observatory Data Repository), MoHS Sierra Leone. Papers in English spanning the last 20 years, indicating the start of the transition and post-conflict period in Sierra Leone were included in this study.

Search tools used to access documents and other materials included libraries (VU library Amsterdam), search engines (Google scholar and Microsoft academic), databases (ResearchGate, ProQuest, JSTOR, PMC, NIH, PubMed, BMJ, BMC, NCBI, and Science Direct) and websites for MoHS, World Health Organization (WHO) and the World Bank. Additionally, gray literatures such as HR policies and strategic plans were reviewed. Snowballing through reference lists of selected articles and documents was used to access additional publications

Key search words included doctors, physicians, healthcare workers, health workforce, Sierra Leone, low-middle income countries, sub-Saharan Africa, public health sector, internal migration, and retention, human resource for health, distribution, and Medical subject Headings (MeSH).

Eligibility Criteria

Table I: Eligibility criteria

Inclusion Criteria	Exclusion Criteria
• Published on/after 2001 • Describes doctor's population and retention in relation to the health workforce before, during and after the war. • Targets specifically doctors and health professionals as participants • Specific to Sierra Leone and similar country setting to Sierra Leone. • Published peer-reviewed journal, thesis or reports. • Written in English.	• Published before 2001 • Does not include a health workforce retention. • Does not specifically target doctors or the health workforce • Does not include Sierra Leone or similar country settings. • Only abstract without full text access. • Not written in English.

- **Search combination:**

(LMIC* OR Sierra Leone* OR Sub-Sahara Africa* OR West Africa) AND (medic*OR hospital* OR 'medical officer' OR doctor* OR physician* OR health workforce OR medical specialist* OR surgeon*) AND (retention* OR public health sector* OR distribution*).

2.3.3 Study selection

A summary of eligibility criteria for this study is in Table I.

183 papers were originally found through search engines and 12 extra through citation search. 64 studies were removed due to duplication and a total of 131 papers assessed for eligibility criteria. Review and eligibility assessment of articles resulted in further elimination of a total 48 more articles. A total of 83 articles were included in this study (see figure VII).

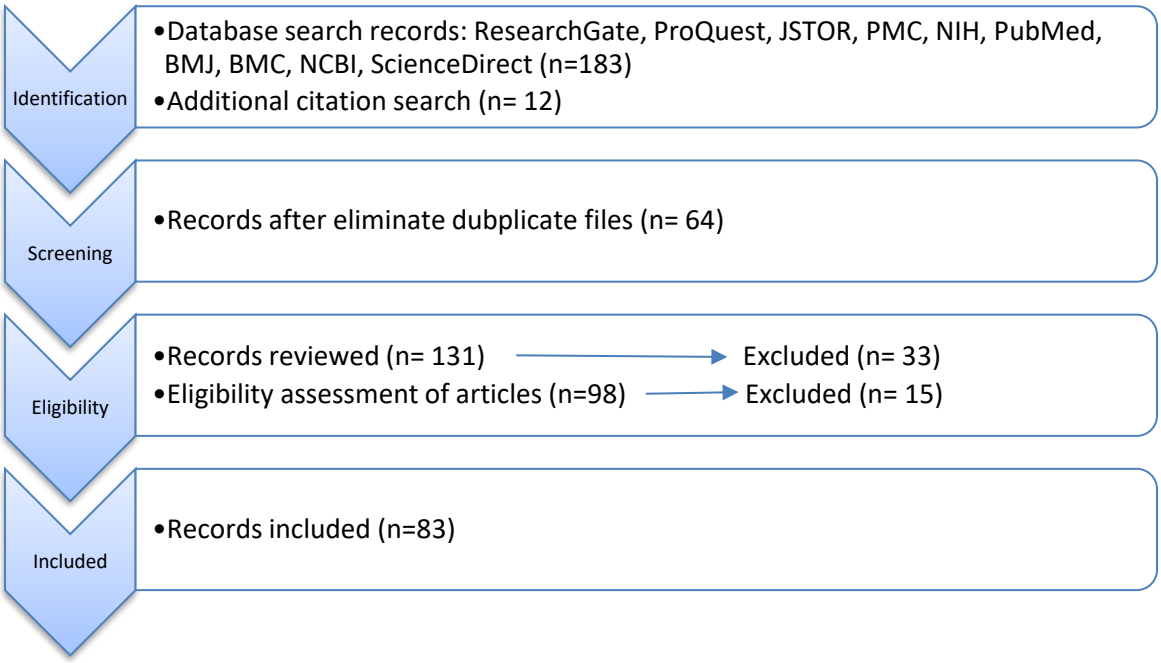


Figure VII: Research flow chat of included studies

- **Charting the data**

Microsoft Excel spreadsheet was used to log, cataloging and synthesize data. Fields includes dates, authors, titles, summary note, key words, conceptual approach, and key findings.

- **Collate, summarize, and report the results**

The findings were categorized into mains sections and summarized in tabular form as content, methods, and result. Analysis of overall and specific objectives was done through the findings.

2.3.4 Study Limitations

The review included only literatures done in English, and databases for humanities and social sciences were excluded from the search. Different methodologies and study design present issues with consistency in the general reports and details. Additionally, countries and regions have different context and varying issues which may influence the results, e.g., countries with current political instabilities and economic challenges affect doctors' retention differently compared other counties.

3. Results

This chapter will provide a thematic description of the factors influencing long term retention of doctors in the public health sector using the health worker retention framework adapted from Schaefer and Moos model (see figure VI). The findings of this study will then be discussed in the context of policy and practical recommendations.

3.1 Organizational System Factors

The organizational system factors comprised of physical features, the structures and policies in place to address health workforce retention challenges, supra-personal factors associated to management formation, and the work environment and existing work climate to perform optimally.

3.1.1 Physical Features

Improved facilities and other public sector infrastructures such as good roads, electricity, and water supply are considered part of general economic growth. Health workers retention and motivation among the public sector workers can be improved with adequate investment in public infrastructures (35).

Adequate health facility infrastructure, and the availability of resources and equipment to manage patients are considered important motivators among doctors. A qualitative extract from a study (53) in South Africa indicated the lack of suitably equipped facilities as reason for several doctors to abandon hospital jobs. The Medical team as well as patients do not feel completely confident when being managed in a poor infrastructural and under-resourced settings.

"…the cleanliness of the hospital… the tidiness of the place. Yes, I know because I follow people [new doctors] around and some people [new doctors] get tired of it and many leave" (53).

A principal intrinsic motivational factor for retention and building confidence of the health worker and their patients can be achieved through the provision of improved facility infrastructure and the availability of equipment required to perform best clinical practice. Additionally, managers at facility levels should provide motivation for staffs, however, this is not the case in institutions that are poorly resourced. This resulted in highly skilled staffs such as doctors leaving facilities to seek better opportunities (53,54).

In a recent study (55) in Freetown, a team of surgical staff including doctors indicated that a main reason for low morale is strongly attributed to chronic shortages of medications, materials, and specialized equipment. This expressed sentiment by surgical staffs was linked to poor job satisfaction and disempowerment. In some instances, frequent power outages during surgical procedure, doctors having to buy medications for patients and equipment to perform routine interventions create a perception of low value placed on surgical teams by the hospital management and MoHS.

In an extract from a qualitative study on exploring providers experiences on patient management in Sierra Leone, a medical officer from Bo City indicated *"Sometimes we have to ask patients to go get materials from outside including antibiotics… the patient would lose trust in our system… seeking alternative care from traditional healers which may end up killing them"* (56).

Though general schemes to address poor retention are most times planned in larger intervention approaches, assessing the effect of infrastructural issues on the individuals' decision to stay or leave their job is paramount.

3.1.2 Structures and Policies

There is an annual human resource (HR) planning process through which the HR directorate review staffing needs at the ministry for the coming year. This planning process include information such as: health workers eligible for retirement (60 years old and above); strength of current staff (percentage occupancy) and vacancies; proposed promotions and new positions (additions) for the coming year. However, the manpower for this planning process has been hindered historically due to lack of accurate data on health workers (9).

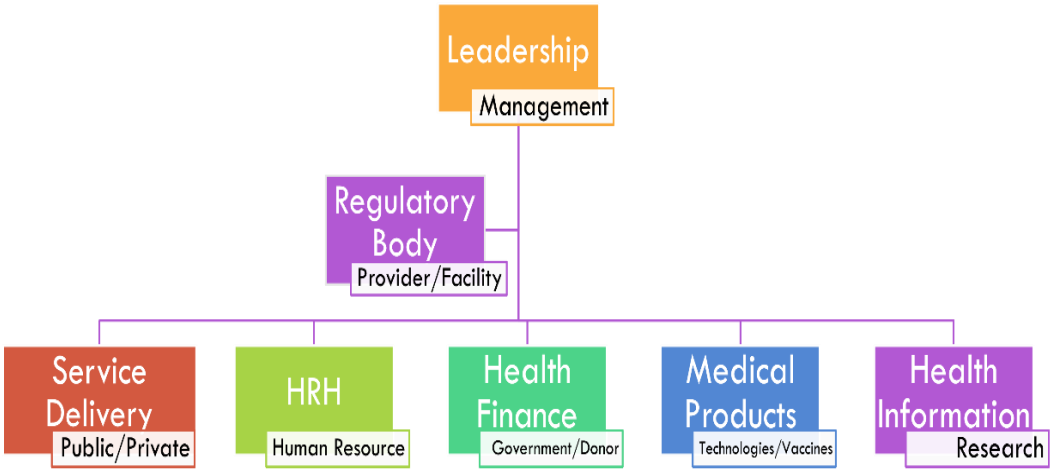


Figure VIII: Structural health model, Sierra Leone (Review position) (5)

The lack of an organized management system results in an inadequate communication channel between the central ministry, district and the healthcare workers. Currently, there are no mechanisms to track information and or receive feedback from health workers eventually creating more confusion and dissatisfaction for health workers (1).

There is a decentralized management team at district and facility levels, however, important components of the human resource team including HR officers are absent. Therefore, health workers must travel to the centralized HRH Directorate in Freetown to apply for annual vacation leave, study leave, salary upgrade and promotions. This creates series of challenges including the need to travel multiple times, long waiting periods because of excessive work pressure on the small HRH Directorate and other constraints especially for those having to travel longer

distances (9)(1). Absenteeism or late arrival because of HR processes by the medical work force especially doctors who are already in very small numbers, detrimentally affect health service deliver at facility level. Sometimes, doctors do postpone their trip multiple times because they have no substitute. This have affected promotion processes and influenced long term retention (1). As indicated in the National Action Plan for Health Security (NAPHS) (16), the need for a decentralized human resource management team at district and facility levels is importance for the retention of health worker particularly doctors in a resource poor setting and especially in the face of a disease outbreak in recent years.

The NHSSP 2017-2021 highlighted series of challenges face by the MoHS that requires urgent attention to facilitate better organizational and technical performance. An outdated organizational chart, unmatched relationships with other ministries and semi-autonomous agencies have hindered operational and management processes to meet its functions. Additional gaps noted include the insufficient MoHS staffing need and lack of administrative/management capacity training especially at mid-career and directorate levels to meet ministry's tasks (5,57).

- **Policy Context**

In 2004, the HRH Development plan 2004-2008 was produced and revised two years later. This served as a pioneering step to the first post-conflict HRH Policy for Sierra Leone in 2006. The scheme of service that dictates job requirement and description for the health workforce was revised in 2006, 2007 and in 2010, making some amends to improve condition of service and career progression. Additionally, a Performance Based Financing Scheme to provide incentives based on health workers performance was introduced in 2011 after launching of the FHCI in 2010. These documents served as a guide for the HRH strategic plans 2012-2016 and 2017-2021 (see figure IX) (9,57).

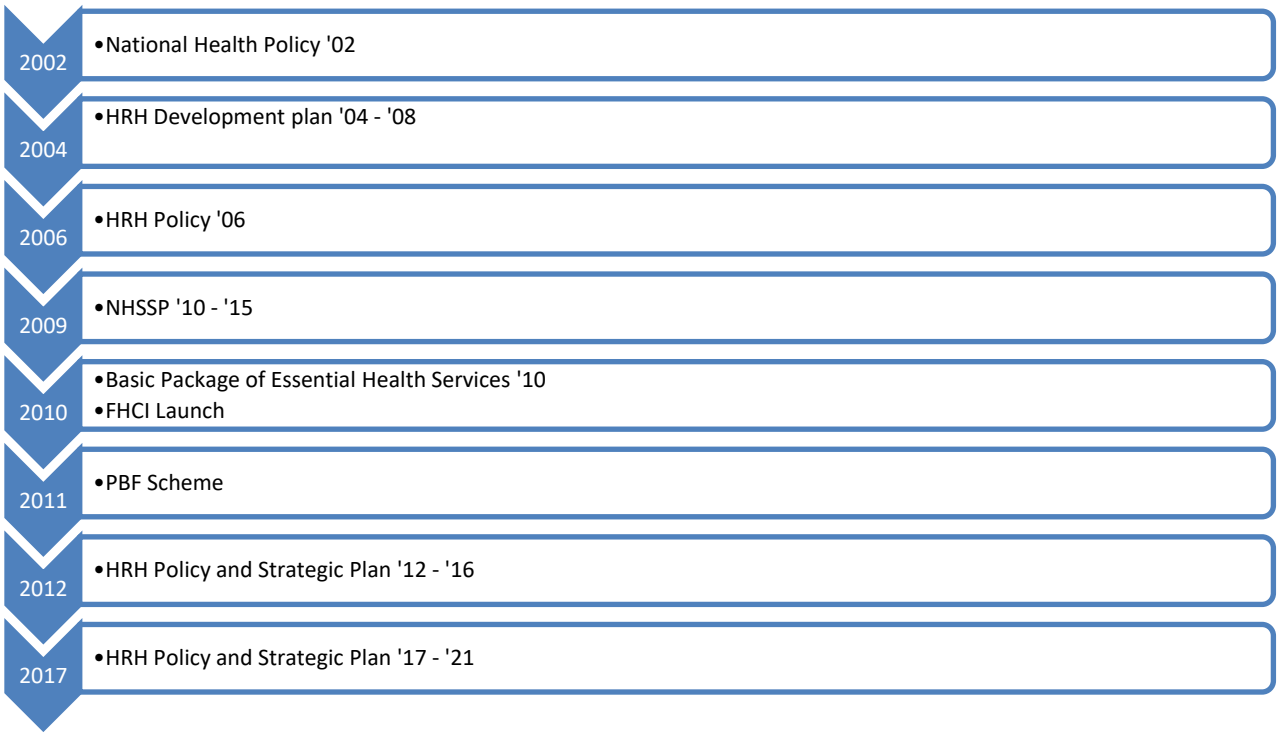


Figure IX: HRH policy timelines 2002-2017 (9)

Adapted from Bertone, Samai, Edem-Hotah, & Witter (2013).

In the immediate post-conflict phase, these documents were designed in a normative vague skeleton rather than operational frameworks for implementation. Polices were not implemented due to lack of technical and implementation expertise within the Ministry. Additionally, the specific focus of external agencies to meet mandates on policy production affected implementation plans (37,44,45).

Due to series of urgent national reforms needed in the immediate and later post-conflict periods, recruitment exercises were done in a one-off fashion including facility recruitment, overlooking training prior to employment with postponement of certain allowances which could have strongly influenced retention (44). Additionally, disenchantment due to absent or inadequate information about entitlements and benefits (including medical and annual leaves, career opportunities) was linked to ambiguous HR policies relating to doctors rights and opportunities (58).

In 2009 and 2017, the NHSSP 2010-2014 and 2017-2021 were released respectively by the MOHS. The design aimed to provide a strategic structure and policy guide for HRH management and development; importance of training for HRH; strengthen management, planning, and policy for HRH capacity improvement at institutional level; improve capacity and quality of training for HRH; research development and advancement for HRH; and improve health worker's capability

and performance. Though both plans highlighted series of expected outcomes, no implementation goals were set to achieve these action plans (5,45).

Non-specific and unclear provisions within the general civil service code affect medical workforce HR processes and generally results in more uncertainty as to timing and specificity of entitlements. Provisions such as "civil servants shall receive a medical care allowance to be determined from time to time" (58) illustrates that the medical workforce attached to the MoHS do not have descriptive specifications or a policy document directing how provisions within the civil service code apply to their frame of work within the ministry. This lack of harmonization continues to leave a significant information and knowledge gap among health workers.

Although the MoHS has put forward strategies and policies including the NHSSP and HRH policy towards achieving a reformed regulated health system, the lack of strong implementation plans, and decisions being largely driven by external donors strongly influence other organization factors and create barriers to doctors' retention and increase in the workforce population (37,45).

3.1.3 Supra-Personal Factors

A peculiar mix of individual attributes is formed when people get together in a setting to perform a particular task. The personal norms, values and abilities of individuals selectively and in a non-random model produce a subgroup of distinct mix of characteristics that enable they to perform their task in certain style and behavior (4).

Personal attitudes, professional values and level of education are aggregate attributes that are likely to influence the tasks and general work group climate. Although few studies (49,59) have indicated that doctors engaged in managing emergency and complicated medical conditions develop autonomy in decision making and undertake more challenging tasks, there is need for more research to fully understand the effects subgroups behavior and morale on the general work climate in a health care facility.

Consultants and specialists tend to collaborate and maintain good relationship with junior doctors who perform their functions at intermediate and high levels of professionalism. This could be in a form of mentorship and or supervision especially during surgical procedures. However, in circumstances where there are already challenges in work environment that affect performance, doctors have to show resilience in building and maintaining workable climate relationships (59,60).

A cohesive and better absorbing social environment within a facility, department or unit significantly improves job performance, reduce work-related stress and a better supervision support.

3.1.4 Work Task factors

Work task factors, considered in terms of the general work performance of clinicians to meet their responsibilities and includes leadership, training and professional development, and postings.

3.1.4.1 Leadership

A recent 2021 qualitative study (60) on leadership by doctors in Sierra Leone, described how doctors viewed and defined leadership. Most doctors considered leadership to be centered on the management of people while pushing for sector change, achieve vision and create influence. However, among junior and senior colleagues, current leadership by doctors is below standard of good leadership and the need for leadership training is required.

The work atmosphere and efficiency can be improved at facility level when strong leadership is demonstrated, and employees are involved in decision-making. Doctors leadership attributes was pictured in a hierarchical model from the top, while junior colleagues tend to copy the working attributes of top management and clinical colleagues (58,60). However, the lack of full authority at facility level to make leadership decisions such as reprimanding, and the accompanied bureaucratic system for certain intended actions make it challenging for decisions to be taken at departmental and/or facility levels (60).

Unsatisfactory leadership decisions to withhold fuel allowances as dictated by the civil service code and not providing food for doctors on night duties frequently create high tensions between doctors and management teams in various tertiary hospitals. On the other hand, junior doctors described instances of intimidation coming from the MoHS and/or senior colleagues when they demonstrate leadership behaviors not in line with the system. Sometimes pressure comes from politicians or supervisors of certain junior doctors who speak up to be posted to hard-to-reach areas and/or areas with accommodation challenges (14,60,61).

Challenges faced by doctors from central leadership and/or supervisor is considered in ways that one must navigate skillfully, maintaining adequate balance between tolerance and resistance. In situations when the pressure was considered appalling, doctors were noted to have ‘walked away’ from their role or left the country. Though, doctors in Sierra Leone see leadership as an individual concept associated to authority, most consider the current leadership to be weak at central and facility levels, which significantly influencing long term retention (14,58,60,62).

3.1.4.2 Training and professional development

Important motivational factors include training and career development as they serve to improve doctors’ personal goals and value within the health system. There are several related objectives for training as human resource management tool. The effect of training empowers doctors to better manage job responsibilities, perform demanding roles and attain professional goals (54).

Though training may serve a motivational role and for promotion for highly skilled professionals like doctors, the availability of equipment and structures to practice newly acquired skills have

also influence the need to undergo these trainings. A studies done in East Africa (48,49) on local retention of health workers indicated that because of lack of equipment, participating in trainings does not translate into a motivating factor for clinicians in Kenya due to preconceived notions that they will not be able to practice the skills or gain promotion after the training sessions.

Though there is lack of comprehensive data on the production of house officers and specialists in Sierra Leone, the annual growth rate of doctors is currently at 0.1% (required net growth rate of 16.1%) (45). Training institutions lack the capacity to provide continuous in-service and pre-service training because of low staff numbers and under-resourcing. The University teaching hospital complex had received partial accreditations for various post-graduate specialist training, but the unavailability of equipment to practice new skills, low salary and bureaucratic processes involved in promotion have served as retention barriers for doctors (45). A 2018 qualitative study (40) on specialist training aspirations of junior doctors in Sierra Leone, indicated the willingness of junior doctors to receive additional postgraduate training within the sub-region in various clinical specialties. However, though some were willing to pay for their post-graduate training outside Sierra Leone, they were not financially strong enough to do so. There were limited training opportunities or government scholarships and those who may be considered for those opportunities had stronger political links and were connected to supervisors or directors at central level (60). Medical officers expressed positive participation in short courses to improve clinical skills, however, due to challenging undergraduate experiences in medical school, most lack faith in a local postgraduate training and would prefer the option to study in another country (59).

Generally, to pursue short professional courses and specialist training for doctors have required travelling outside Sierra Leone because of the lack of locally accredited training for multiple specialty areas. Doctors who decide to pursue specialist training outside Sierra Leone hardly return after completion of their trainings and those that eventually return, have indicated dissatisfaction because of the ambiguity in the scheme of service and challenges in career promotion within the public sector (58,62).

In 2010, the MoHS allocated only about 2% of the total HRH budget for training. Although an increase of approximately 40% in total health expenditure is expected in a five-year period, allocations for training is expected to remain the same or with slight increment. There is limited investment from government towards training of practicing health workers. Most training for in-service staffs and clinicians are coordinated and delivered by partner organizations with little support from the MoHS (45).

As noted by the Minister of Health during the recent annual medical conference (6) the absence of a clear career progression for all specialist cadres has created a system of promotion based on performance report rather than a cumulative assessment of qualification, skills and experience, competency, and performance records. The current scheme of service provides a limited career path for clinicians (House Officer, medical Officer, Senior Medical Officer, Specialist, Senior

Specialist, Consultant, Deputy Chief Medical Officer and Chief Medical Officer) while non-medical public health professionals have no defined career path (6,9).

3.1.4.3 Postings

Sierra Leone faced series of human resource challenges in the post-conflict period, especially with shortage and absenteeism of highly skilled professionals caused by migration, which have cushioned to some extent by the increase in faith-based and NGO services. The design and production of series of HR policy documents and strategic plans in the last 15 years to 20 years help to contextualize these challenges, however, lack of funding has been another challenge for the implementation of these plans.

Unfilled posts for doctors (junior and medical specialists) are significantly higher while the poor remuneration package and working conditions are retention barriers for those already in the system (41). There is no systemic approach to assessing facility-based needs for health workers by cadres creating a fixed ratio of posting not based on needs or workload, resulting in most facility staffs experiencing 'too little or too much' workload. Though mal-distribution of health workers varied from facility to facility, the unbalanced work load and staffing need will result in poor allocation of limited resources (1).

The national health service commission enacted by parliament in 2011 is an independent entity responsible for health workforce recruitment and promotion by conducting interviews, assist the ministry in the provision of quality health services nationally (9). The MoHS controlled and coordinated medical postings at a centralized level and, doctors and medical associations have little or no inputs in the entire process. The approach to work wherever one is posted irrespective of personal circumstances could however be influenced by political interference. In most cases, work ethic and patriotism are the reasons for doctors to accept postings. In some instances, doctors are posted to take up leadership and management positions that they have limited experiences on in facilities that need serious improvement (1,60.62).

The absence of a bonding scheme and a defined period of posting and the option to be transferred, promotion and career development opportunities, make it difficult for doctors to accept or stay long in unplanned and remote postings (1).

3.1.5 Work Climate

These are factors which are generally considered to have minimal influence on long term retention, however, they contribute to achieving assigned roles and responsibilities influencing overall job satisfaction and work-related stress. They workload, altruism, Knowledge, and skills acquisition.

3.1.5.1 Workload

In 2010, the Free Health Care initiative was enacted as a step towards addressing some of the challenges caused by out-of-pocket expenditure to seek health care services for children under five years, pregnant and lactating mothers (15). The significant increase in patients' healthcare

seeking behavior simultaneously increased workload and pressure on the limited staffing population especially for highly skilled professionals (63).

Sierra Leone's gatekeeping system to access health service is almost non-functional, therefore, patients can easily access tertiary facilities for complaints which could have been managed at primary and/or secondary level facility. The effect is a huge workload pressure for limited clinicians (see table II) in these facilities, long patient waiting time and frequent stock outs (15,63).

Because of the low number of doctors and senior doctors having to take up both clinical and administrative responsibilities. This limits the time dedicated to attending to their patients and also affecting administrative productivity. Also, even though some doctors work with the private sector, they claim it does not affect their normal working hours in the public sector (1).

The Government and donor partners have recognized this challenge faced on the side of supply and retention of clinicians for the FHCI and general service provision nationally. This resulted in the implementation of various incentive schemes, location, and performance allowances to strengthen the supply side, however, timely disbursement of these allowances became an issue (63).

Table II: Medical officer distribution in Sierra Leone 2011 (6)

Region	District	Pop (%), 2011	Medical officers	Medical officers (%)	Medical Officer/Pop (%)
Eastern	Kailahun	5.32	2	3.7	0.70
Eastern	Kenema	7.81	3	5.6	0.71
Eastern	Kono	4.34	2	3.7	0.85
Northern	Bombali	8.77	3	5.6	0.63
Northern	Kambia	7.33	2	3.7	0.51
Northern	Koinadugu	10.36	3	5.6	0.54
Northern	Port Loko	6.84	2	3.7	0.54
Northern	Tonkilili	5.28	2	3.7	0.70
Southern	Bo	5.08	3	5.6	1.09
Southern	Bonthe	2.65	3	5.6	2.10
Southern	Moyamba	5.38	2	3.7	0.69
Southern	Pujehun	10.30	3	5.6	0.54
Western	Western	20.63	24	44.4	2.15

A general high workload pressure (over utilization) has always been a dilemma for doctors, instances of having to work a 72-hour weekend duty and longer periods on weekdays outside the civil service code is reported by junior doctors especially in the capital city, affecting quality of

care and productivity. The use of an outdated posting ratios will continue to create unbalanced workload especially for doctors with a critically low population ratio (62,64).

3.1.5.2 Altruism, Knowledge, and skills acquisition.

Newly graduated doctors get assimilated into the civil service and assigned to rotate in multiple public sector facilities for internship training under supervision during the first two years of their professional path. Additionally, most doctors had previously rotated in regional hospitals during medical school postings and therefore had developed some connections and witnessed the challenges in some of these facilities and regions.

A study done in Ghana (65), indicated that the awareness of low doctor-patient ratio and high workload pressure instilled a sense of altruism among doctors to remain in the public sector, stayed in facilities where their final rotation was done or accept rural postings as a way of giving back to communities and facilities where they once received trainings.

Additionally, another qualitative study in South Africa (53) indicated that doctors considered that regular visits and supervision by specialists and consultants will improve work quality and satisfaction through teaching and assisting complicated cases. The possibility to practice more, improve skills and demonstrate courage in challenging work environment while regularly being monitored generate a sense of approval of what is been done.

Although the chronic shortage of doctors especially specialists create the space for junior doctors to acquire more clinical practices and experiences in the public sector, it also serves as a strong reason for some to accept job postings and long-term stay. This promotes the ability to gain more confidence and become professionally independent when exposed to series of cases in tertiary and district facilities (64).

3.2 Personal System Factors

Important personal factors noted to mainly influence retention in the public health sector are socioeconomic status and the opportunities to acquire more assets, maintain community and family ties, and the position or level of experience.

3.2.1 Position and Level of Experience

On the completion of training or returning from study leave, doctors get posted by the MoHS for an undefined period ranging from two to ten years in Sierra Leone. Generally, postings could be based on doctors' interest and specialty as considered by MoHS, however, in some cases, senior doctors with years of experience in the health sector may be posted based on recommendation to take up administrative and leadership roles in deteriorating facilities and to improve quality of service delivery (62).

However, an extract from a qualitative in-depth interview report of health workers in Sierra Leone (62) showed that in some situations in which doctors fail to accept or challenge their

postings, they face the option of redundancy. Additionally, some postings had been changed because of political interferences.

"I came back they couldn't sponsor me to go back instead they started threatening me to resume work or I'll be sacked, yes, so I dared them to sack me so I walked away for a while in '91 ...[…] initially I was posted as the Medical Superintendent but politics you know politics, the posting was changed even without informing me".

Although health workers generally welcomed the presence of higher-level cadres to occupy administrative positions and help to foster professional development, clinical staffs mainly performing administrative function also indicate the lack of well-trained administrative personnel with the required experience to take up these roles (62).

3.2.2 Socio-economic status and Personal Resources.

The socio-economic determinants including salary, non-financial incentives, social and community support, and family support influence motivation, job satisfaction and work-related stress among health workers.

3.2.2.1 Income (Salaries and incentives)

In health economics, remuneration plans for health workers work through a 'provider payment mechanism' for individual health workers to receive salary, performance based incentive, user-free payment, or capitation (66).

A study done in 2015 (67) to understand the role of remuneration in retention of public health sector workforce in Uganda concluded that health workers with adequate remuneration package maintain their job while those with low pay tend to always be in search of better job opportunities. A second study in Nigeria (68)indicated that difference in salary scale and income affect distribution as well as retention within countries, between public and private health sector workers, or between urban and rural areas.

Health workers in Sierra Leone receive a total composite salary paid into their bank accounts monthly. The breakdown of this composite salary can only be accessed through a bureaucratic process at the accountant general's department. Many health workers are not aware of the processes involved to access this statement and what amount is deducted for tax and insurance (58).

In 2010, the launch of the FHCI followed by the removal of user fee charges for essential services to pregnant women, lactating mothers and under five-year children at facility level through which doctors had once received a certain user fee percentage, a national strike action was championed by the Medical and Dental Association (63). The response of Government through donor partners (Department for International Development Sierra Leone and The Global Funds) provided financial support for salary increment for a period of five years. Though this increment resulted in almost 90% of the total income for doctors being from their salary and less

than 5% attributed to user fee charges or gifts (69), the following years saw rapid rise in the national inflation rate accompanied by series of austerity measures that consequently affected the stagnant salary rate of health workers. Though, an updated scheme of service was produced in 2015 describing the salary scale for health workers, there was no change made to the remuneration package (9).

In 2019, the Junior Doctors Association called for a national strike action due to inadequate remuneration package and poor working conditions. This resulted in the inclusion of some new allowances but maintaining the same basic salary, however, the lack of other non-financial incentives such as housing, transportation, communication, and others, continue to render the total income inadequate to meet monthly expenses for public sector health workers (14).

Currently many doctors take multiple jobs at various facilities (Public and Private) because of inadequate monthly salaries in the public sector. There is a significantly high disparities of about 10-fold difference in salaries for doctors in the public sector compared to what is earned when out of the civil service. Inadequate remuneration and the lack of a clear career progression serve as de-motivators and a low morale for doctors (63).

3.2.2.2 Social and Community Impact

Health workers feel motivated when there is a good sense of interaction and appreciation from the communities they serve. Doctors are seen to hold mentorship roles in communities and are held at high esteem. This serves as motivation for most health workers to continue providing long hours of service, work in difficult environment, improvise materials and make appreciable difference in the lives of families (54). Additionally, recognition from colleagues at the workplace and community members build a sense of feeling valued for their work done.

Although, most doctors had been gravitated to be in the public sector and serve in diverse communities for different reasons, the chronic existence of certain social barriers such as poor roads and transportation, poor accommodation, poor electricity supply and internet services cause increased dissatisfaction and are associated with reasons for shifting to a non-clinical public health practice or the private sector or, both public and private sectors (65).

3.2.2.3 Family related factors

The willingness of doctors to stay and or accept relocation within the public sector is strongly influenced by the quality of education available for their children as indicated in a study done in Kenya, and in South Africa, health worker acceptability to work in certain communities is influenced by the lack or presence of good schools and teachers (35). The quality of schools and teachers in Sub-Sahara Africa is perceived by the location, rural or urban, of the school.

Doctors seek to provide high quality education for their families to meet their socio-economic status. Though some doctors may look for schools and teachers in the communities they work, others are known to school their children outside Africa while they work locally in various

sectors to sponsor their families (70). This sometimes affects long term retention and they [doctors] eventually emigrate to meet their entire family due to a combination of other factors.

The possibility to raise enough funds to support quality education for their children and maintain good socio-economic level while working only in the public sector is almost impossible and therefore, push them (doctors) to engage in both public and private sector practices or shift completely to a well-paid private sector. Moreover, living with family provide the required social support needed to alleviate work stress (49).

3.2.3 Personal Characteristics

The decision to accept employment by health workers is hugely influenced by personal characteristics such as age, gender, origin, and personal values (49). According to Lehman et al., these factors have different ways of influencing the decision of the health worker depending on the age and level of experience of the individual. The lack of sufficient experience of junior doctors to attract private patients influence the decision to seek career development opportunities and mentoring within the public sector especially when young, unmarried with no child (71).

Female mobility is strongly influenced by family dynamics and deliberation while men mobility is mainly influenced by remunerative factors (34). According to Dussault et al., the place of employment of the husband is likely to be the place where female doctors will prefer to stay (71). A qualitative study (59) done to access training opportunities for medical officer in Sierra Leone showed that female medical officers felt that there is gender biasness or discrimination to access training and leadership opportunities in Sierra Leone. Emotional distress and family tension caused by financial loss or no promotion after long years of service are challenges noted by most female doctors. These challenges result in a change in career path or migration to other countries for better opportunities (59,60).

"It is definitely harder for women to be doctors at all let alone to become medical officers. I knew many girls who went to medical school to make themselves more eligible [for marriage] but never wanted to be doctors. I think in particular surgery, surgery no girls will train for because it is a long time, and we must have children in these ages. It would make for even longer still. People will say 'you do not take care of your children". (59)

A change in career path from a clinical oriented practice to public health focused and the preference to pursue local postgraduate training were strongly linked to having time for family and to stay with their children (40).

3.3 Work environment and coping mechanisms

One of the most important factors contributing to better job satisfaction is linked to improved work environment and work conditions according to doctors in a public sector qualitative study in South Africa (53). Doctors felt that poor working conditions and work environment contributed to work-related stress.

Health workers retention is considered as one of the main components influencing health worker shortage compared to recruitment of health workers. Although the recruitment of huge number of health workers could be noted in the initial post-training period, most stay for shorter periods especially if posted to a remote setting or posted in a department with no specialty interest thereby affecting the general availability to work resulting in high turnover rates (48). The expression “professional isolation” is used by doctors in Ghana to describe poor work environment and the lack of mentors and supervisors after being posted (34).

Though most health workers in Sierra Leone consider religion, patriotism, and the ability to improvise as coping strategies, the role of family, cooperative teamwork and service to community were considered important factors for work-related stress relief (62). In addition to the role and human support provided by donor partners, provision of periodic incentives and training build up better work performance(62). Instances of communities providing gifts such as food, secured accommodation for relocated health workers in appreciation of their services provided.

The possibility to have the professional life separate from the private life create more time for family and stability especially when the family live close to the place of work. Good team dynamics helped to cushion high work pressure and relieve work stress(49). According to a study in Uganda, communities in influence of health workers to stay long as well as the decision to leave (49). This is because some communities were more tolerant and appreciate the efforts of health workers in providing services amidst all the challenges, while other communities were considered less understanding.

4 Discussion

The critical shortage of highly skilled and well-trained medical professionals in Sierra Leone is a key challenge influencing accessibility to equitable healthcare services in Sierra Leone. Multiple factors existing in complex nature have been highlighted to influence long term retention and distribution of doctors. Although the post-conflict and post-Ebola periods saw series of policy development and strategic plans produced by the MoHS to address health workforce challenges and improve retention, there is still a notably high attrition rate, poor skills mix and multiple de-motivation factors that continue to plague the system. Many of the barriers explored in this study have been documented in various literatures, however, the lack of faith in local training programs for doctors due to ill-equipped facilities and challenging undergraduate experiences from the same medical institution present an additional complication to addressing the issues (59).

The factors of retention and its implication on the health workforce management is of complex nature and relevance, requiring continuous research to understand the balance that exists between the price for leaving and the decision to stay. This section will discuss the interrelationship between the organizational, personal, and work-related stress factors influencing the retention of doctors in the public sector in Sierra Leone and make recommendations for better retention plans.

4.1 Organizational factors.

Factors highlighted in the general organizational system are closely interlinked, they play variable roles to influence health workers' decisions to either stay and work for long term or move away. Multiple studies (72-74) have indicated that hospital infrastructure and work environment factors play significant roles to improve health workers retention. This is because most doctors find it displeasing to work in a poorly conducive environment with infrastructural challenges. However, doctors who decided to stay longer in their posts developed an attitude that appear to fail to notice poor hospital conditions and infrastructure and present a resignation demeanor. The eventual implication is low performance and productivity affecting the quality of service delivered to patients. Also, considering that most facilities experienced acute infrastructural challenges nationally, most doctors work to prove their tenacity in difficult work environment.

Defining the trajectory and shape of the health sector was critical in the initial stage of the post-conflict period. Decisions were based on contextual factors through which government legitimacy was extended to all regions. The post-conflict period used fire-fighting strategies and though infused with increased donor funding still failed to achieve tangible reforms and implementation remains fragmentary. This context is similar to other post-conflict nations. The need to prioritise funds to address demand side of the health care service other health undermine the importance of addressing supply side especially HRH challenges and barriers.

Doctors' retention is known to be positively influenced by the availability of housing facilities especially for rural and remote settings (64) and this supports the finding in this study. The lack of housing facilities for doctors in Sierra Leone is a major de-motivator factor especially after being posted to work in rural settings. This has also been highlighted in various studies (49,64). A key issue is that the lack of housing is a multi-sectoral problem which can likely not be solved by the health sector alone.

Conversely, amidst a challenging health system faced with high work pressure and low number of staffs, a study in India (75) indicated that some doctors preferred not to have staff accommodation as this contribute to work stress. Living close to the hospital facility required to be on-call duty always. Although this is a divergent finding which implies that health workers incentives which are favorable for retention should also be closely monitored to adequately mitigate unintended effects, it is important to note that the situation in India is different from Sierra Leone's context in terms of economic status and remuneration package for doctors. The lack of resources and equipment as indicated in this study are more fundamental and require to be addressed to ensure a reasonable quality of life for the doctors in Sierra Leone as they carry out their duties.

Poor management decisions highlighted in this study were of major concern especially in urban areas and tertiary facilities. Occurrences of not receiving fuel allowances as indicated in the civil service code created the opportunity for absenteeism and/or late arrivals. Also indicated was the lack of on-call food for doctors on night duties, the implication is that doctors may have to find places to eat at night which affect service delivery or received food from families which may incur additional cost. Tensions between doctors and management teams due to lack of timely responses to these challenges are strong de-motivators.

High workload and increased pressure from work were shown to ignite the search for better work conditions job among health workers. This is also supported by a study in Kenya (76) which showed that low staff number and heavy workloads increased the chance of resignation among health workers. It is of note that this issue creates a vicious cycle since more attrition of health workers only serves to perpetuate the high workload and increased pressure for those who stay. The question would be how this cycle can be broken.

Better performance factors such as good teamwork, quality supervision and adequate supplies highlighted in this study were supported by studies in Uganda (77,78) which emphasize the point that highly-skill professionals become more productive and motivated when provided with the required equipment and suitable work condition. This also implies senior doctors who lack the required tools to practice easily accept administrative roles which boosted their morale and provide added financial benefits.

This study highlighted the need for a robust promotion mechanism that is essential to retaining health workers in the public sector and in rural settings, and management role by doctors positioned them to also network with political leaders accompanied with extra revenue and additional benefits. However, it is important to note that the mix of partly clinical practice and or

partly administrative functions have implications on the workload and work pressure for other staffs.

The model of this study is consistent with the results indicating that outcomes of patients can be improved through the formation of specific social environments influenced by physical features, policy, and supra-personal factors.

4.2 Personal Factors

Doctors' decisions and choices made as impact of personal factors depends on the person's age, position, and experience. Additionally, multiple studies (49,79) have indicated that strategies to improve retention should not be entirely based on personal factors because they can change with time even though, they have been shown to be reason for long term stay.

The ability to help others and community vocation have been cited as reasons for health workers to stay long in their jobs. Though social context may apply to clearly understand motivation and choices on gender, studies (80,81) have indicated that more males received promotion, leadership roles and opportunities for further training than their female counterparts. Also notably, impatience to secure funding within the system is more common with males and therefore they usually take up self-funded training. Additionally, due to gender responsibility with families, females are most times unable to take up these opportunities when available. Educational achievement is generally tied to promotion and leadership responsibilities; however, women constitute a lesser proportion of the entire doctor's population and thus are poorly represented in leadership roles. In Sierra Leone, promotion is influenced by possession of added professional certificate and training opportunities are not set to meet gender disparities

The opportunity to invest and gain wealth while living with family and good community ties are embedded working factors for optimal productivity as indicated in this study. Most doctors stay in the system because of job security and retirement pensions. Most doctors show preference to work in the public health sector or continue to be attached to the public system due to permanent job position. The absence of absolute long term job security and lack of retirement benefits deterred doctors from taking high paying jobs with the private sector, and those doctors who get completely tired of working in the public sector tend to migrate to other countries. Job security improves commitment to work and therefore should be part of recruitment policies for doctors.

4.3 Work-related stresses and coping strategies

A study in Uganda (49) highlight coping strategies for health workers in remote settings and even though the cause of work-related stress factors could be similar including poor working condition and environment, increase work pressure and poor remuneration, this study make the case that doctors in Sierra Leone tend to coping through the courage and tenacity to face issues and/or accept situations as they are. Additionally, family ties and community support play important roles on the eventual long-term decision to either endure available conditions or leave

Notable, an effective strategy to engage in dual medical practices (in public and private health facilities) to gain additional funds for family support and investment help to cushion the economic impact compared to when attached to only public health sector. Good team dynamic, availability of staff accommodation and having family close to place of work, together improve productivity, satisfaction, and result in long-term retention of doctors

4.4 Implications

The conceptual framework (figure VI) presented the factors highlighted in various studies to influence long-term retention and associated coping strategies. When compared with Lehmann, Dieleman, & Martineau, 2008 framework (see annex I) which examine how the connection between different environmental factors influence retention, both frameworks illustrated the complex nature of health workers retention which is based on both individual as well environmental (organizational) factors. My findings structured using this conceptual framework provided the required themes to differentiate these factors and facilitate good exploration and provide specific recommendations.

The framework categorized organizational system factors and personal system factors to have a twofold relationship influencing health workers' decisions. The organizational system factors included the general infrastructural design of the health system and the policies already in place in a post-conflict setting of Sierra Leone. Additionally, management structure and operations were explored to fully understand influence on the work environment and work climate towards health workforce decisions. Personal system factors were explored through influence of family (spouse and children), relationships with the community and available resources, consideration of gender was key personal characteristic.

The performance outcome of doctors in Sierra Leone was explored through work-related stressors which are strongly associated to both personal and organizational system factors. This study describes the existing inter-relationship between organizational and personal system factors, and how they influence coping strategies for long-term retention, employee morale and productivity among doctors.

Organizational and personal system factors were highlighted in this study as important elements to be considered for long-term retention plans for doctors in Sierra Leone. It is important to note that personal factors such as coping abilities in difficult work environment have the possibility of surpassing all other factors relating to long-term retention because organizational factors such as policies and promotion are uniformed applied in the public sector.

The conceptual framework provided a vital guide and reflection for areas of recommendation. Long-term retention of health workers in Sierra Leone is shown in the conceptual framework to be influenced by the entire health system. This study has shown that the issues are intertwined (non-linear) as in any complex adaptive system. More research may be required to understand the pattern and factors responsible for internal (public to private) and external migration.

Barriers of long-term retention for doctors are similar factors noted in various studies (1)(9)(34-39) done in other LMIC. These include a weak structural and operational management structure of the MoHS, unclear and unambiguous policies, overly centralized HRH department, inadequate working condition, and poor work environment, lack of sufficient post-graduate training opportunities and poor remuneration and incentive packages. Fortunately, the government and MoHS can improve on the quality-of-service delivery and long term-retention by addressing factors of job satisfaction and productivity.

5. Conclusion and Recommendations

5.1 Conclusion

On the 27th of August 2020, the president of the republic of Sierra Leone departed for Lebanon in the midst of the COVID-19 pandemic. According to a state house press release "Dr. Julius Maada Bio will depart Sierra Leone today, 27th August 2020, on a private visit to the Republic of Lebanon". It was further noted that the trip was for "strengthening ties between the two nations" (82). Following this statement, many Sierra Leoneans questioned the president's real motive for this travel based on the increasing COVID-19 cases globally. Amidst series of speculations, a statement was released a week later by a medical team through Sierra Leone's Consul in Lebanon indicating that the president's trip was not due to COVID-19 as was being rumored, however, he had successfully undergone a major and complicated surgery at the American University Hospital in Beirut and was out of intensive care. This clearly illustrated the level of confidence in the public health sector in Sierra Leone. Moving forward, building a more responsive health sector should be adhered to and set as priority by governments (83).

Regional and local studies (34-39)(41)(43,44) have considered multiple motivational factors including adequate remuneration packages, professional development opportunities, work effectiveness and improved working conditions to improve retention and job satisfaction among doctors. However, long term retention for doctors is strongly influenced by family, ties to communities and specialty interest. These should be taken into consideration during recruitment and postings. Additionally, non-financial incentives such as fuel, on-call food and investment opportunities should be guaranteed while periodically reviewing salary scale to meet appreciable levels. Job security and better pension package enhance attraction and recruit of doctors who had emigrated while management roles and promotion when it comes with financial benefits improves motivation.

Although doctor's retention challenges are complex depending on the context of the country, most LMICs are likely to experience the same structural gaps highlighted in this study. This indicates the need for further study in LMICs to get a broader understanding of these factors.

5.2 Recommendations

To improve doctor's retention based on the factors explored in the context of Sierra Leone, analysis of different strategies and interventions implemented in sub-Saharan Africa and the WHO framework to address health workforce issues, should be given strong consideration in addition to the following recommendations provided in this study.

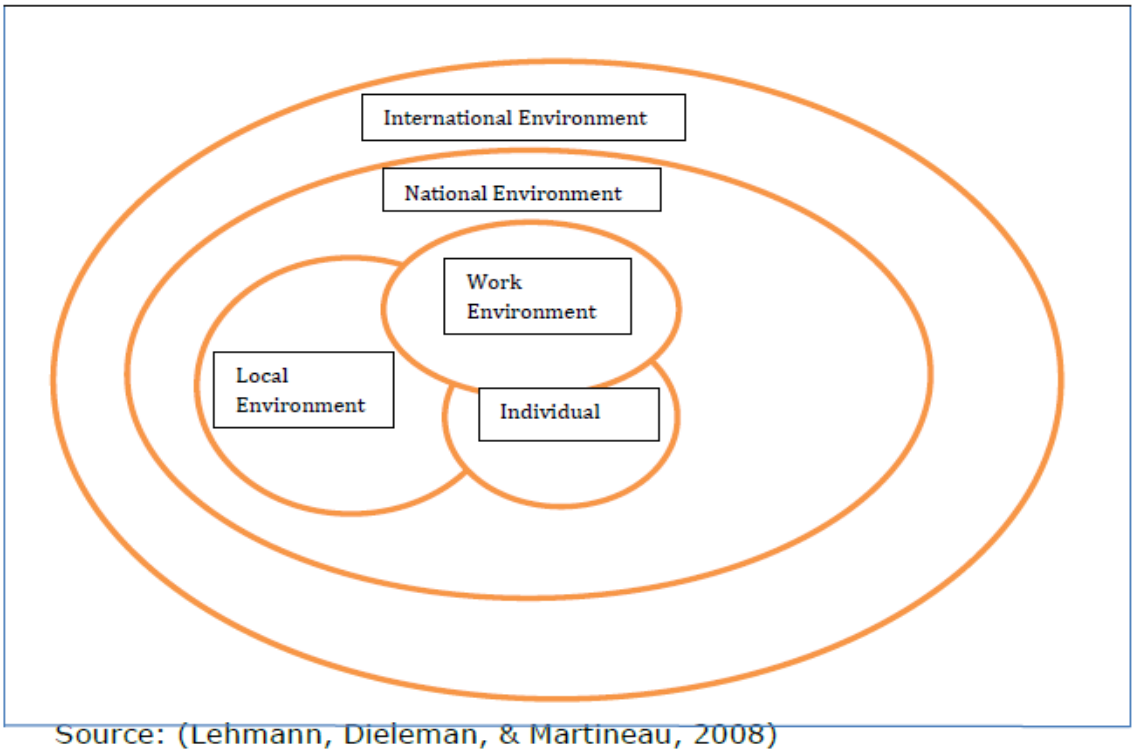
1. The MoHS should ensure the provision of conducive working condition in a safe working environment through regular facility needs assessment, adequate financing and stakeholder engagements. Additionally, medical associations with support of the MoHS should coordinate supportive mentorship programs and supervision for junior

doctors through flexible and attractive post-graduate recruitment training program that is gender sensitive.

2. The health workforce through the MoHS should be provided and maintain a two-way channel of communication for concerns, recommendations, and directives. The formulation of new human resource policies and strategic plans should be carried out in consensus with health workers and their medical associations to improve clarity and mitigate ambiguity. Documentations to accessing employment rights and required benefits should be made available at facility level through decentralized human resource department.
3. The MoHS officials responsible for postings should strongly consider doctors preferences, connection with communities and area of specialization interest to improve their retention. The posting committee must have members of the medical association representing doctor's interest. In addition, postings accompanied by family or close to family, working in known communities and in areas of professional interest while ensuring timely disbursement of incentives such as fuel and performance-based finance incentives with enhance motivation and improve performance among doctors.
4. Development of HRH policies, regulations, and procedures specific for the MoHS health workforce which in addition should accompany the civil service code. This could be achieved through "Health workforce Optimization Project" that will facilitate quarterly provision of HRH updates on new developments, a salary monthly pay slip inclusive of allowances and deductions and, easy promotion and recruitment process for locally eligible and those returning home from study leave through a decentralized human resource department at facility level.
5. The central governments through the MoHS should provide non-financial incentives including health insurance scheme for doctors especially during this period of COVID-19 by engaging private insurance companies, access to mental health services, and secured access to low interest transportation and housing loans through engagement with local banking partners.

Annex.

Panel I



Source: (Lehmann, Dieleman, & Martineau, 2008)

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