FACTORS INFLUENCING THE RETENTION OF KEY HEALTH PROFESSIONALS IN RURAL GHANA

Esther Nartey
Ghana

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Health Education/
Free University of Amsterdam

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Master of Public Health

By

Esther Nartey
Ghana

Declaration:
Where other people's work has been used (either from a printed source, internet or any other source) this has been carefully acknowledged and referenced in accordance with departmental requirements.
The thesis (Factors Influencing The Retention of Key Health Professionals In Rural Ghana) is my own work.

Signature 

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DEDICATION

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To God be the utmost glory for the life, strength and grace to see the dawning of today.

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ABBREVIATIONS AND ACRONYMS

MMR - Maternal Mortality Ratio

NMR - Neonatal Mortality Rate

WHO - World Health Organisation

ABSTRACT

BACKGROUND: Just like other Sub-Saharan African countries, Ghana is faced with shortage and mal-distribution of health workers. Majority of the people who need most care, are situated in rural areas where only few health workers are found to deliver the needed services. Health workers play a key role in the attainment of Universal Health Coverage, Sustainable development goals and improving health outcomes of the rural population.

AIM: To explore the factors that influences the retention of key health professionals in rural SSA and to analyze evidence on interventions in order to make recommendations towards the retention of health workers in rural settings in Ghana.

METHODOLOGY: A literature review was conducted on the factors and health system interventions geared towards increasing health worker retention in rural areas in Ghana and other Sub-Saharan countries. The conceptual framework used was Lehmann, Dieleman, & Martineau, 2008.

FINDINGS: Sub-Saharan African countries including Ghana are faced with mal-distribution of health workers. The factors contributing to this mal-distribution originates from different environments that interrelate with each other. No single factor can be addressed to solve the problem. Interventions that were proven to have yielded some positive results combined strategies to address the different factors within the different environments.

CONCLUSION: Though, some efforts have been made by government, failure to adequately respond to these factors is what has led to the poor retention of health workers in rural areas.

RECOMMENDATION: Context specific rural retention policy and strategic plan

KEY WORDS: Health workers, retention, rural areas, Sub-Saharan Africa

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NAME: ESTHER NARTEY

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INTRODUCTION

One of the most important pillars of the healthcare system is the health workforce. The availability of health workers is very critical for the achievement of health goals of all countries. Despite the fact that there are acute shortages globally, Sub-Saharan African countries are worst hit with this plight. In addition to this, the distribution of health workers is significantly skewed towards urban areas making the already disadvantaged health situation in rural areas much worse.

The situation in Ghana is not different from other Sub-Saharan African countries. Most health workers are in urban areas depriving rural communities of access to quality basic healthcare. One major factor for the shortage of healthcare workers in rural countries is the inability to retain those healthcare workers who accept positions in these rural communities.

The thesis is of much interest to me because as a nurse manager in one of the faith-based health facilities in Ghana, I have heard and experienced some of the challenges health workers especially midwives, nurses and doctors go through in rural communities. This has motivated me to undertake this study.

Knowledge from the research will be helpful in improving the retention of healthcare workers in Ghana especially faith-based facilities which are mostly situated in rural communities in Ghana including my facility.

The thesis will be organized in five chapters. Chapter one will describe the background of Ghana, my country of study. The second chapter two will describe the problem statement and justification, the methodology used for the study as well as the conceptual framework. The chapter three describes the findings of my literature review and the fourth chapter analyses the findings during the review of literature. The fifth chapter will present the conclusions and the recommendations of the study.

CHAPTER ONE: BACKGROUND INFORMATION OF GHANA

1.1 DEMOGRAPHIC INFORMATION

Ghana is a lower middle income country located in Sub - Saharan Africa, north of the Gulf Of Guinea. It has a tropical climate with varying rainfall patterns. There are 10 administrative regions of which 8 are predominantly rural with 170 districts[1] [2]. Ghana's population was estimated as 28,308,301 in 2016. The population growth rate is 2.5% with females constituting 51% of the population. The proportion of people under 15years is 38.8% and population over 60years is 5.3%. This brings the dependent population to over 40% of the general population. The most populated regions in the country are Ashanti and Greater Accra regions whilst the least populated regions are Upper East and Upper West regions[2] [3](2,3).

As at 2014, the total fertility rate was 4.2 children per woman with rural women having 1.7 more children than urban women. An estimated 49.1% of Ghanaians live in rural areas. 57.2% of Ghanaian women from rural settings have their deliveries supervised by skilled personnel as against the national figure of 74%. Facility delivery among women of rural settings is 59% compared to 90% among women of urban settings[2] [1].

1.3 HEALTH CARE DELIVERY SYSTEM

The ministry of health governs and oversees health delivery in the country including policy formulations. In collaboration with relevant partners, it set priorities for the health sector including human resource needs[4]. It has about 18 agencies under it that implements policy areas. The Ghana Health service (GHS) is the agency responsible for health delivery within the public sector. The private sector and teaching hospitals also work under the ministry of health. Health delivery is organized into three functional and three administrative levels.

The primary, secondary and tertiary levels constitute the functional levels in the public, private not-for-profit and the private for profit sectors. The tertiary hospitals are mostly teaching hospitals and serve as the highest level of specialist referrals. Teaching hospitals mostly receive referrals from regional hospitals but can occasionally receive from district hospitals or other teaching hospitals. The secondary facilities are mostly the general regional hospitals and receive referrals from the various districts. The primary level is the first point of contact for patients assessing the formal sector and is made up of district hospitals (usually one), health centers and community-based health planning and services (CHPS) compounds.

The CHPS approach is a system adopted mainly by Ghana health service, where health service and planning is decentralized to the community. The CHPS compounds are usually manned by community health nurses (CHNs) who visit clients in their homes to deliver basic services to them including preventive and health promotion with the aid of guidelines and protocols. The health centers are manned by Physician assistants, nurses and midwives who provide initial in-patient care before referring those that will need advanced or further care to the hospital. The district hospital has a complete complement of basic health service providers including; midwives, nurses, physician assistants, pharmacy technicians,

laboratory technologist and a medical doctor. The administrative levels include the central or national headquarters, regional and district management levels[5] **.**

1.2 HEALTH SITUATION

Ghana has not been left out in the recent epidemiological transition occurring in many developing countries. The country is faced with high levels of communicable diseases and an increasing level of non- communicable diseases. While a World Health Organisation (WHO) report indicates that 39% of **all deaths in Ghana in 2010** were as a result of Non-Communicable Diseases (NCDs), communicable diseases accounted for about 53% of the general disease burden in 2013 [4] [6]. The topmost cause of OPD attendance and in-patient admissions over the years has been malaria. Upper respiratory tract infections, diarrhea, diabetes and hypertension were also reported to be high in the country contributing to the top ten causes of out-patient department attendance in the country[6].

Ghana in the past decade has made considerable progress in improving the health status of its people. The country however could not meet some major health related targets in the millennium development goals as shown in the table below.

Key Indicators	**MDG target**	**As at 2015**
MMR	190/100,000 live births	319/100,000 live births
<5 MR	43/1000 live births	61.6/1000 live births

Table 1.1 Health Indicators in Ghana. Source: NDPC, UN-GHANA 2015[7], WHO-2016[8]

1.4 HEALTH FINANCING

Health care in Ghana is financed by the government through a national health insurance scheme (NHIS) and payment of taxes. The goal of the NHIS is to improve financial access for the poorest and most vulnerable populations. The NHIS is currently faced with the challenge of late reimbursement of providers sometimes affecting service provision. The formal sector subscribed to the scheme was 3.6%. Ghana has a large proportion of the population are in the informal employment sector making tax revenue collection to be low and less efficient[9]. Other means of health financing in Ghana include out of pocket payment for services and private health insurance schemes.

1.5 HUMAN RESOURCES FOR HEALTH

Health workers form a major part of the labor workforce in Ghana. According to WHO, they are defined as "all people primarily engaged in actions with the primary intent of enhancing health"[10]**.** This research focuses on doctors, nurses and midwives as key players when it comes to improving the health situation in rural areas, contributing towards Universal Health Coverage (UHC) and fostering efforts towards the attainment of the Sustainable Development Goals (SDGs).

The major challenges in the human resources for health in Ghana, has been that of shortage in numbers, mal distribution, poor motivation and retention especially of those who work in rural areas[5] [4]**.** The mal-distribution of doctors, nurses and midwives, though is seen basically across all the regions in Ghana, is more pronounce in rural areas and retention of these key health professionals in rural settings is a major issue for the ministry of health.

CHAPTER TWO: PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVES AND METHODOLOGY

2.1 PROBLEM STATEMENT AND JUSTIFICATION

An important pillar of any healthcare system is the health workforce. The availability of health workers is very critical for the achievement of health goals of all countries[11] [12]. For a health system to execute its mandate of providing quality healthcare to all its citizens in the face of current challenges, the World Health Organization (WHO) recommends that, it should pay attention to the availability of appropriately skilled health workers especially in places where they are most needed and create the needed enabling environment that will motivate and engage them[10].

According to WHO estimates, 4.3 million health workers are needed to fill the human resource gap in 57 countries with critical shortages[13]. Whilst half of the world's population lives in rural areas, the health workforce is skewed towards urban areas in many countries. In addition, only 38% and 25% of the total nursing and physician workforce are respectively found in these rural areas[11].

Low and middle income countries are faced with high shortage of health workers especially in rural areas which is associated with relatively low access to health services in such areas [10] [13] [14] [15]. Out of the 59.2 million estimated global health workforce, only 3% are found in Africa delivering services to cope with 25% of the worldwide disease burden[16] . Africa has the lowest mass of health workforce of 1.33 per 1,000 which falls short of the WHO recommendation of 4.1 per 1000 health workers[14] [17]. Coupled with the above, there are imbalances in the geographic allocation of these health professionals within their respective countries with rural areas been worse affected[18] [19].

Despite its relatively better position compared to other African countries, Ghana is still faced with shortage of key health workers. This is especially so in the rural areas as identified by the ministry of health[20] [21]. A study in Ghana showed that while urban Accra had 1.43 public sector doctors, nurses and midwives per 1000 population, rural northern region had only 0.67 per 1000 population[22].

Studies in other Sub-Saharan African (SSA) countries show similar findings. In Zambia for example, clinical health workers in private and public facilities in two districts was 1.43 per 1000 population whereas the more marginalized and deprived district of Chilubi had only 0.13 clinical health workers per 1000 population[23]. **The 30 percent urban dwellers in Sudan attracted 70% of their health personnel leaving only 30% to serve the majority 70% population that are located in Rural Sudan**.

There has been a number of interventions in SSA especially Ghana to increase the number of health workers available and working in the rural areas. In Ghana for example, the government established a special rural allowance for doctors who accept posting to rural areas. A policy to give priority to health workers in rural areas in career progression through study leave with pay and provision of accommodation to such health workers were also tried[18].

Despite the above interventions, inequitable distribution and poor retention of health workers in rural areas is still a challenge[24]. There is a knowledge gap as if certain interventions implemented in Ghana address the factors that make health workers to stay or leave rural areas. This study is a literature review of factors that influence retention of key health professionals in rural settings and an analysis of interventions that have been implemented to address these factors.

This research seeks to answer the questions:

- ✓ What factors influence the availability and distribution of health workers in rural areas in Ghana and other Sub – Saharan countries?
- ✓ What are the current interventions in Ghana geared at retaining key health professionals in rural settings?
- ✓ What are the current interventions in other Sub – Saharan countries geared at retaining key health professionals in rural settings?
- ✓ What interventions can be implemented to improve the availability of key health professionals in rural settings of Ghana?

The discussion will look at gender because women form a majority of especially nurses and midwives to see if this has an influence on retention in rural areas.

2.2 OBJECTIVES OF THE STUDY

The main objective of this study is to explore the factors that influence the retention of key health professionals in rural SSA in order to make recommendations to the Regional and District Health Managers and the Human Resources Division of the MOH/GHS regarding the retention of health workers in rural settings in Ghana.

The specific objectives will be to

- ✓ To describe the factors influencing the availability and distribution of health workers in rural areas in Ghana and other Sub-Saharan African countries
- ✓ To analyze health system interventions that are geared towards increasing health worker retention in rural settings in Ghana
- ✓ To analyze health system interventions that are geared towards increasing health worker retention in rural settings in other Sub – Saharan African countries
- ✓ To provide recommendations to policy makers regarding evidence based approaches to improve the retention of key health professionals in Ghana

2.3 METHODOLOGY

The method used for this study is a literature review.

2.3.1 SEARCH STRATEGY

Google scholar, Vrije University (VU) Library and Pub Med were the search engines used in this study. The search was initiated with the search term "Retention of Health Workers in rural areas". Other search terms derived from the key search term and used in combinations to facilitate the search were availability, accessibility, attraction; doctors, nurses, midwives; remote, poor settings, poor communities and MESH terms.

The search was narrowed down by year of publication to include articles from 2007 to 2017, published in English with the search terms (retention, health workers, nurses, doctors). Screening of titles for their relevance to the study as well as a thorough examination of the abstracts to ensure that the study was about retention of health workers in rural areas and also to ensure that the study was done within SSA was done. After taking out duplications from the various search engines, it resulted in a final selection of 62 articles for the study.

Information and grey literature was also searched from organizational and departmental websites such as Ministries of Health website in Ghana and other SSA countries as well as from the World Health Organization (WHO) and International Labor Organization (ILO) websites to further enrich the data.

Inclusion and exclusion criteria:

The search results included literature published in English within 2007 to 2017. This was due to the fact that the WHO's major report on Human Resources for Health (HRH) occurred in 2006 and this led to increased attention for HRH. However, in cases where there was no current publication concerning an area of interest, older publications before this time frame was used. Titles & abstracts were scanned to ensure that they are in line with the search terms and answer each objective before they were included. Articles were examined to ensure that studies were done in Ghana and other SSA countries. Articles that did not meet the above criteria were excluded.

Details of search strategy is in table 2.1 in annex 1

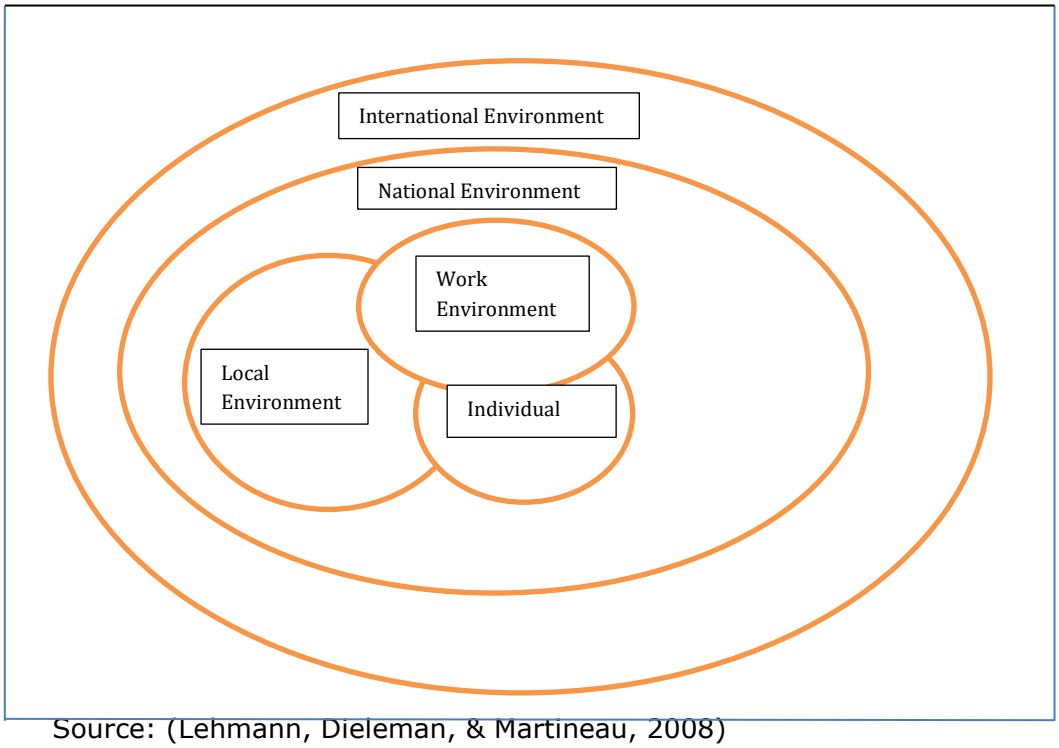
2.3.2 CONCEPTUAL FRAMEWORK

The concept of retention of health workers in remote and rural areas has been studied in different ways and with diverse conceptual frameworks, theories and models. Frameworks such as the one proposed by Henderson & Tulloch, 2008 focuses on the influence of financial incentives on retention of health workers in rural areas. Others have aimed at evaluating the strategies put in place to address these factors[40]. **Willis – Shattuck et al**., 2008, studied the concept through the lens of how motivation in general imparts on retention of health workers in rural areas.

This study seeks to draw from the evidence from the analysis of factors influencing retention in rural areas in SSA, examine interventions that have successfully been rolled out in other SSA countries to improve this situation and recommend strategies to improve health workforce retention in rural areas in Ghana. Thus, the availability of health workers in rural areas is linked to the factors that influence their retention in these areas and the responsiveness of health system interventions to these factors. As categorized by WHO, interventions will be analyzed in the broad areas such as education, regulatory, financial incentives and professionals and personal support.

The framework that will be used to analyze the factors that influence the retention of key health professionals in rural areas in this study will be Lehmann, Dieleman, & Martineau, 2008 conceptual framework as shown in figure 1 below. This framework (figure 1) was chosen for this study because it helps to examine the various factors and how they inter-relate from different environments to influence retention. It allows for a wider view of the topic, thus allowing for an in depth analysis of the concept under study.

Figure 2 Conceptual Framework on different environments impacting attraction and retention



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

A description of the various environments imparting on attraction and retention proposed by Lehmann, Dieleman, & Martineau, 2008 framework and the components to be described under each environment is as follows**;**

Individual factors
Factors to be discussed under this environment consist of age, sex, marital status, origin of the health worker.

Local environment
Local environment is described under the framework as the living conditions such as staff accommodation, schools and qualified teachers, good drinking water, electricity, roads and transport.

Work environment
Factors within this environment are pay and conditions of service, organizational arrangements, management support, high-risk work environments and availability of equipment and infrastructure.

National environment

The political situation of the country such as social unrest such as war or conflict, the national policies that govern the general labor relations and career opportunities within a nation are described as factors influencing retention under this heading.

International environment
This environment consists of higher rates of remuneration, more satisfying working conditions, a safer working environment and better educational and career development opportunities.

2.3.3 LIMITATION OF THE STUDY

Since this is not a systematic review, the quality of the studies used could not be fully assessed; hence the findings cannot be generalized. The exclusion of publications done in other languages other than English as well as the primary use of an online literature search could create an information bias. It is possible that some unpublished studies could not be assessed, which would have enriched the study. Employing the use of a variety of search engines and thoroughly examining the methodologies of the literature found was a way to minimize the limitations of this study. In addition, there were not enough studies found in Ghana to be used for this review to better evaluate the interventions put in place for health workers retention in rural areas. Due to the limitation of word count, some information had to be left.

CHAPTER THREE: STUDY RESULTS AND FINDINGS

3.1 FACTORS INFLUENCING THE RETENTION OF KEY HEALTH PROFESSIONALS IN GHANA AND OTHER SSA COUNTRIES

Different environments impact on the attraction and retention of health workers in rural areas. As proposed by Lehmann, Dieleman, & Martineau, 2008 framework, these environments can be classified into individual factors, work environment, local environment, national environment and international environment. The environments do not act independently but inter-relate with each other to influence retention. This chapter examines literature found expanding on these factors.

3.1.1 INDIVIDUAL FACTORS

Individual factors refer to characteristics of a person such as age, sex, marital status, origin or background and educational level.

AGE

The relation between age and retention in rural areas is not clearly stated in the literature reviewed, but age seems to be linked to willingness to move to another area and older health workers seem to be less willing to move than younger ones:

In Sub – Saharan Africa, younger health workers are more willing to accept postings to stay in rural areas than older ones. This inverse correlation between age and retention in rural areas for doctors was cited as been due to the lack of willingness of older doctors to forfeit the years of building their credibility in practice in urban areas and the opportunities to earn extra income through other private practices that come with it. Moving to rural areas was seen as an opportunity cost to doctors thus their unwillingness to do so[14]. A study in four rural Tanzanian districts showed that health workers of 30years and above were less likely to leave their jobs and were retained in their positions longer than younger ones. This was due to the guarantee of job security they had in their current post, which came with pension benefits and opportunities for training. Origin and family reasons were other reasons cited to positively influence the retention of older health workers[25]. In South Africa, a study found that the value for stability on the jobs for older health workers influenced their decision to stay in their current position[26].

The Ghana human resources for health country profile 2011, showed that seventy four percent (74%) of doctors and sixty eight percent (68%) of nurses were within the age range 18 to 36years. This age group was found to travel more to developed countries for the reason of higher earnings[5].

GENDER

In Sub-Saharan African countries, female are seen to be less willing to accept rural postings than men due to concerns for safety, the lack of family support in the places where they were posted to, as well as the social and economic conditions in rural areas[14]. In Zambia, a study showed that although women formed the majority of the health workforce especially within the nursing and midwifery professions (85.2% of the nurses and midwives were women), they were found to be in fewer numbers in rural areas[23]. In Kenya a study found that female health workers in the rural area of Turkana constituted only 30% of the workforce. This was because the environmental conditions which were described as extremely dry with insufficient availability of water within the region was seen as unfavorable to women[27]. A study in Ghana found that medical doctors serving in rural areas in the Upper West were predominantly male.

Similar to findings in other Sub-Saharan African countries, in Ghana, studies show that females are uneager to work in rural areas. Male medical doctors were more willing to accept posting to work in rural areas than females. Some reasons cited include the absence of good jobs for their spouses, good schools for their children[28] [29].

MARITAL STATUS

In Sub-Saharan African countries, marriage was found to influence the retention of health workers in rural areas. A study found that in the Republic of Congo, health workers were less retained in rural areas because they moved to join their spouses in the urban areas when they got married[14]. In South Africa, a study showed that rural health workers, mostly nurses, reported more as living apart from their spouses and children than urban health workers. This influenced their desire to leave their current post[30]. In Burkina Faso., a report showed a high turnover among single workers than married ones. Married women who lived with their spouses in rural areas were more likely to be retained in the rural areas than men because of their families[31]. This is consistent with findings in other countries[32].

In Ghana, a study showed that due to cultural reasons, it is more common to see married women relocating to find jobs within the locations where they reside with their husbands rather than the opposite[33] [29].

ORIGIN/BACKGROUND

In Sub- Saharan African countries, having a rural background was shown to influence the decision to practice in rural areas. A study in Ethiopia showed that health workers from a rural background were more retained in rural areas[34]. In Botswana, a study showed that having a rural background influenced the decision of medical doctors to practice in rural areas because the desire to be close to families was key to them[35]. In Uganda, health workers from rural backgrounds stayed longer in rural areas because they could attend to their family issues as well as receive the necessary support from them[36].

In Ghana, a study found that medical doctors working in rural Northern Ghana were natives of these areas whereas doctors in Greater Accra region mostly did not have any rural background[28].

EDUCATIONAL BACKGROUND

In Sub- Saharan Africa, a study found that health workers with higher educational background were less retained in the rural areas. This is shown in the high shortage of doctors and specialists in rural settings compared to urban settings. This disparity was found to be attributable to the better opportunities for their practice and avenues to make extra income which were more available in urban areas compared to rural areas[14].
In Tanzania, a study found that health workers with lower levels of education were more likely to be retained longer in rural settings compared to those with higher levels of education[25]. A study showed that in Nigeria, nurses and midwives who were at the primary care level had to take up the delivery of certain services that were above their role because there were no medical doctors present[37]. In Zambia, a study found that the low availability of medical doctors and other specialized cadres in the rural settings was because they

perceived the financial and non-financial factors in rural settings as disadvantageous to them. Also, highly educated staff did not desire to stay due to fear of social isolation[23].

In Ghana, health workers with lower levels of educational qualifications are more retained in rural areas than those with higher levels of educational qualifications. A study showed that whereas the majority (72%) of the health workers in three rural districts in Eastern region had a certificate, only a few (10%) had earned their bachelors, masters or phd. Among these health workers, nurses and midwives were 83% as against 4.3% of medical doctors[33].

3.1.2 LOCAL ENVIRONMENT

Local environment is described as the living conditions that pertains to the location of work and that may influence the willingness to remain in rural areas. It includes staff accommodation, availability of quality schools for children, general infrastructure like roads, electricity, good drinking water and community support.

STAFF ACCOMMODATION

Several studies within Sub-Saharan countries have pointed to the fact that access to good accommodation is one of the factors that influence the decision of health workers to stay in rural areas. Studies in Kenya found that, unavailability of good accommodation made residing in rural areas non-conducive for medical doctors and nurses. This affected their decision to stay in the rural districts[27 38]. In Burkina Faso, a study showed that good housing was viewed by nurses and midwives as an incentive to stay in rural areas[31]. A study in Sierra Leone found that the lack of housing was a driver of their poor retention of primary health care workers in rural areas[39]. In Ghana, a study showed that medical doctors' decision to accept postings and stay in rural areas is influenced by the provision of good accommodation[28].

SCHOOLS AND QUALIFIED TEACHERS

In Sub- Saharan African countries, ***s***chools in remote areas are perceived by health workers as been of lower quality[40]. A study in Kenya showed that the poor quality of schools hindered the willingness of nurses and doctors to accept and to stay in rural areas38. In South Africa, a study found that the lack of good schools had contributed to few health workers being stationed in remote communities30. A study in Ghana found that the presence of good schools for their children was an important consideration that informed the decision of medical doctors to stay for longer period in rural areas[28].

ROADS AND TRANSPORT

In Kenya, a study found that inadequate and inefficient access to transportation to work was a limiting factor for nurses and doctors within the Turkana district which made them unhappy with their stay[27]. Studies showed that in Kenya and South Africa, the difficulty in commuting to and fro and the high transportation cost the health workers incurred as a result negatively influenced their retention in rural areas[38 41]. In Ghana, a study found that health workers were demotivated by the poor road networks and inefficient transport systems in remote areas. However, vehicular traffic and travel time to work was better compared to rural areas[18].

ELECTRICITY AND GOOD DRINKING WATER/SOCIAL AMENITIES

In Zambia and in Malawi, some studies showed that inadequate supply of electricity and water were reasons why health workers did not desire to stay in rural jobs[23 42]. In Ghana, studies showed that showed that limited access to water and electricity in rural areas affected the willingness of health workers to be retained. Midwives were unwilling to accept posting into rural areas and to be retained there because of the lack of portable drinking water, and poor electricity which made living conditions unfavorable to them[43 44].

COMMUNITY SUPPORT

In Uganda, a study showed that the lack of appreciation and support of the work of these rural health workers by the community negatively influenced their retention[36]. A study showed that in Nigeria, high patronage of service activities and financial support by community helped to sustain the enthusiasm of rural health workers and in effect improved their retention[37].

3.1.3 WORKING ENVIRONMENT

This environment comprises all factors in the working place of the health worker that influence the decision to either leave or be retained on the job. It includes pay, payment systems, benefits and allowances; conditions of service such as training and professional development, criteria for promotion, bonding and mandatory service; working conditions such as management support, organizational arrangements, availability of equipment and infrastructure, electricity and good drinking water

PAY, PAYMENT SYSTEMS, BENEFITS AND ALLOWANCES

Several studies have shown that in Sub- Saharan African countries, pay, payment systems as well as benefits and allowances play an important role in the decision of health workers to stay in rural areas.

Several studies in Kenya show that low salary was a factor that drives the desire of rural health workers to seek for other sources of income generation and this becomes a setback to their retention in rural areas where opportunities for such ventures are minimal [27 38 45] (30,42,49). In South Africa, studies show that doctors and other health workers were unhappy to stay in rural areas based on few locum or extra income opportunities[30 41]. In Botswana, a study found that financial rewards were seen as a compensation for the opportunities lost and therefore a way to attract health workers to remote areas[35]. In Nigeria, a study showed that the differences in pay rate between various levels of care was a factor that contributed to the poor retention of health workers in rural areas[37]. In Tanzania, the delays in administering the required financial remuneration and extra benefits or allowances in rural areas is cited as a setback to retention[25]. In Nigeria, the irregularities in payment of salaries of rural health workers, which affected retention of the health workers was attributed to the bureaucracies associated with decentralization of the health service[37]. In Kenya , Malawi, and Sierra Leone, the unavailability, poor administration, unfair allocation and inadequacy of rural allowances were all cited as a disincentive to remain in rural areas [27 38 42 46]. In Ghana, studies showed that health workers in urban areas earn more from engaging in other part-time jobs than their counterparts in the rural areas. Medical officers are of the view that to attract medical doctors into remote areas, the opportunity cost of making extra income should be factored into their salaries[28 44].

CONDITIONS OF SERVICE:

Factors such as training and professional development, criteria for promotion, bonding and mandatory service are discussed below;

Training And Professional Development

Studies in South Africa and Sierra Leone cited the fact that doctors and nurses see rural areas to be places where they can have rare professional exposures in their field of practice[30 46]. Other studies in Malawi and Kenya cite poor, irregular access to training or too little opportunities available for professional development opportunities as a demotivating factor for retention in rural areas[42 45]. In a study done in South Africa, lower level nurses were especially unhappy about the duration it took them in rural areas to get the opportunity to professionally develop or improve upon their skill[41]. In Ghana, the career development is a key issue for health workers when it comes to the attraction and retention of health workers in rural areas. Majority of medical doctors perceive that unlike in urban regions, they will be eluded of the opportunity to be mentored by certain specialists if they accept posting to a rural station[28 44].

Criteria for Promotion

It South Africa, health workers preferred rural stations based on less competition and barriers encountered with regards to their promotions[30] . A study in rural Uganda showed that, having the opportunity to take up positions of responsibility that are higher for specified and agreed duration of time was seen as a motivation to be attracted and to stay in these rural areas[36]. *In Ghana, a study reported that the criteria for promotion of health workers in rural regions was viewed by medical doctors as unfair and slower compared to their counterparts in the bigger hospitals in the urban areas* [28].

Bonding and Mandatory Service

In Sierra Leone rules of staff engagement in rural areas were not been kept. Some staff complained of having been left at one post for years instead of been rotated every two years. This was seen as a demotivating factor[46].

WORKING CONDITIONS

Factors influencing retention described under this category include management support, organizational arrangements, equipment and infrastructure.

Management Support

Studies in Tanzania, Kenya, Uganda, Malawi show that supportive supervision from management of health facilities is as a factor that is considered by health workers in Their decision to stay at post. Supervisions that were not frequent, seen as unfriendly or not tailored to meet the needs of rural health staff were cited as influencing negatively their decision to stay[25 27 36 42 47]. Studies in Tanzania, Uganda and Sierra Leone showed that the lack of communication from management, unequal treatment of staff, failure to recognize achievements, exhibition of partiality among staff and impoliteness of management to health workers are some of the management issues mentioned in the literature as influencing staff willingness to stay[25 36 39]. Lack of management support for training and professional development opportunities was mentioned in a study in Ghana, as a major concern, thus an influencing factor for retention of physicians in rural districts[28].

Organizational Arrangements

Hindrances encountered by especially rural health workers when seeking administrative services stemming from bureaucratic organizational arrangements influence their decision to stay in these areas as shown by a study in Tanzania[25]. Poor information systems, centralization of the management of human resources and the failure to adhere with terms of engagement of health workers in remote areas are mentioned by certain authors as influencing the willingness to accept rural placements by health workers. Resistance to rural placement is also cited in a study in Sierra Leone and Malawi to be due to the uncertainty and perceived fear that once they are posted to these rural areas, they be rotated back to urban centers[39 42]. To add to the afore-mentioned factor, studies in Botswana, Sierra Leone and Kenya make mention of poorly organized health service delivery with the lack of electricity, clean water, essential medications, good referral system as negatively influencing the willingness of health workers to continue to stay in remote facilities [35 39 45](39,43,49). Staff shortages and work overloads are cited as linked to the poor retention of rural health workers Kenya[27 45]**.** In Ghana, a study showed that doctors, nurses and midwives in Ghana find the administrative procedures of obtaining a transfer from rural posts back to urban centers very cumbersome, thus they will want to avoid been stationed in rural areas[48].

Equipment and Infrastructure

A study in Uganda makes mention of the fact that the lack or poor availability of basic working equipment and infrastructure are factors that are considered by health workers and their decision to stay or leave rural health facilities are hinged on these factors[49]. In studies done in Tanzania, Kenya, South Africa, Botswana and Sierra Leone, the physical condition of the health infrastructure was mentioned as a critical factor that affected attraction and retention in rural areas[25 27 30 35 39]. In a study done in Northern Uganda, information technology infrastructural development was mentioned as a factor perceived by rural health workers as important and if invested in, would contribute to rural retention of health workers[50]. In Tanzania, Kenya and Sierra Leone, showed that the absence of electricity and water made the work environment in rural areas particularly difficult for health workers and decreased their motivation to continue to stay[25 27 39]**.**

However, studies in Ghana showed that aside the facilities in rural areas been physically poor, they also lack certain basic and essential equipment needed to deliver care to clients. In most instances, there were no ambulances to transfer clients who need further care. Lack of basic equipment and infrastructure to render services made the outcome of care very poor and influenced negatively the health workers willingness to stay in these rural health facilities[28 44 48 51].

3.1.4 NATIONAL ENVIRONMENT

The factors identified within the national domain that impart on retention of health professionals are described in this session. They are the political situation (social unrest or conflict), social and economic factors, private sector, decentralization and funding sources, human resource policies in place.

The link between social unrest and conflict in a country such and the poor retention of the health workers is showed in the literature[52]. In post-conflict situations, the health system becomes weak. Ruined medical facilities make it difficult for health workers to provide services. This situation makes health workers to leave to other countries in search for job and better lives, making the shortfall in their numbers within these countries worse. The

insufficient number of health workers within these countries contributes to worsening the low availability and retention in rural areas. A study showed that in South Africa, conflict situation threatened the security of health workers and this lead to their poor retention in rural areas[26] . In Kenya, movement of the health workers from rural to urban locations was as of result socio-economic, professional factors and security reasons[45].

Studies show that as remuneration for health workers increase, it creates a greater pull into the health workforce[32 52].

The movement of HWs from rural areas to urban is facilitated by these differences but may also be determined by the higher salaries HWs earn in urban health facilities compared to rural health facilities

A study showed that in Kenya and South Africa, the introduction of a financial incentive of 30% of salary as rural allowance and the preferential selection of rural health workers for nursing specialist training as a policy improved the attraction and retention of nurses by 12.4 and 7.7 times respectively in these countries. Same study showed that in South Africa, a policy allowing rural nurses to specialize earlier was shown to improve the number of nurses taking up rural jobs by 6.7times[53].

In Uganda, a study showed that medical doctors were particularly attracted to rural areas by the well-defined terms of service that had been put in place[49]. Literature also supports the linkage between the level of remuneration and other financial incentives offered to health worker and its influence on attraction and retention in rural practice[35]. In Nigeria, a study showed that the decentralization of the health system improved retention of rural health workers by improving the regularity in their salary payments and by reducing their attraction to other sectors in urban areas[37].

Ghana has enjoyed some political stability over the years. Thus, the influence of social unrest, war and crime on retention of its health workers is not applicable in the Ghanaian context. However, a retention factor cited in the literature is the failure of the ministry of health to provide a strong incentive package to attract and retain rural health workers. The literature also mentions that the recruitment of health workers is over – centralized with current policies on terms of contract for rural practice unclear to health workers. This has been a major complaint restraining especially medical doctors from rural practice[28 5].

3.1.5 International Environment

This environment consists of higher rates of remuneration, more satisfying working conditions, a safer working environment and better educational and career development opportunities that influence or attract health workers to move to other countries.

Other authors showed that better remuneration, opportunities for further training, better working and living conditions in the reasons for exodus of health workers from Sub-Saharan countries to other developed countries thus contributing to poor health worker retention within the sub-region[15]. Unstable political environments creating lack of job security have been cited to also to contribute to health workers been attracted to international countries[54]. The shortage of human resources is influenced by the global economy, incentives for migration, and global negotiation on services. Such influences go beyond the health sector and can only be modified through political action at the national, regional and global level. Some efforts have been made globally to address the issue of rural – urban imbalances in health workers and this includes the investment in research and the release of the WHO evidence based interventions to help countries take strategic actions to solve the issue of poor retention of health workers[11]. Through continuous support for countries and funding of human resource initiatives of some SSA countries, the international environment has shown

to make efforts towards addressing this issue. In Ghana, the literature mentions that nurses and medical doctors emigrate due to higher salaries, better working conditions and better carrier prospect been offered by other high income countries[5].

The factors found within the international environment for Ghana and other Sub-Saharan African Countries. Therefore, the overall effect is that, they can influence the emigration of health workers from poor resourced countries to high income countries. This emigration can be from both rural and urban parts of these poor resource countries. Consequently, it negatively affects the retention of health workers in both urban and rural areas in resource poor settings such Ghana.

3.2 HEALTH SYSTEM INTERVENTIONS TO IMPROVE HEALTH WORKFORCE RETENTION IN RURAL AREAS

The WHO in their global policy recommendations for the retention of health workers to rural areas suggested evidence based intervention under the following thematic areas: Eductional interventions such admitting students from rural backgrounds into training institutions, Continuous Professional Development for rural health workers; Regulatory interventions such as compulsory service in rural areas by health workers; Financial incentive interventions and Professional and personal support interventions such as career development programmes [11] (details are found in table 3.1 in annex). Health system interventions are analysed based on their alignment with the WHO recommendations and the conceptual framework. Interventions found in the literature in Ghana and other Sub-Saharan African countries are described below. Some of the interventions found are not clearly explained in the literature and I could not find any documents that talked about the results of their implementation.

3.2.1 INTERVENTIONS TO IMPROVE HEALTH WORKFORCE RETENTION IN RURAL AREAS IN GHANA

The government of Ghana has made some efforts to address the issue of rural – urban disparity and poor retention in rural areas. In terms of policy, and through the agency of the Ministry of Health, some strategies have been put in place to improve staff retention in rural areas. They include incentive packages, allotting of fellowship programs in favor of rural health workers, one year reduction in the number of years for promotion, ensuring that newly deployed health workers don't not stay in rural areas for more than 3years, provision of support for one child per health worker through secondary education, benefit packages for health workers skewed in favor of rural health workers[55]. However, their description is very generic and not much information is found documented on these interventions, their implementation and evaluation of the results within the documents searched.

EDUCATIONAL INTERVENTIONS:

Schools Outside Major Cities

This is an intervention which involves the building of health training institutions in rural communities. It helps to attract and recruit health professionals from these rural communities and improves their retention within these communities. As part of strategies to improve the number of health worker who are retained in rural areas, the MOH initiated the

citing of health training institutions outside the main cities and ensuring that students with rural backgrounds are selected for training[6].

Continuing Professional Education

A study showed that to ensure that rural health workers are favored in the selection for post- graduate programs in Ghana, nominations were made from the heads of these institutions and fellowship awardees were bonded after their training to ensure their retention[55]. Another study cited the giving of opportunities to rural health workers for post – basic education courses as an intervention that had been implemented by the government as a strategy to improve retention of the heath staff[18].

Compulsory Rural Service

In this strategy, health workers are made to serve two years in rural areas after their graduation. A study found that the Ghana College of Physicians and Surgeons in 2009 enforced this as a pre-requisite for post – graduate trainings 6 55. Not much was found on evaluation of this intervention.

FINANCIAL INCENTIVE PACKAGE

This involves strategies that were rolled out by the MOH with the focus of motivating health workers to stay in rural areas and compensating for the opportunity cost to them for working in these deprived areas.

Deprived Area Incentives Allowance was cited by some studies as a financial incentive that was rolled out by the government of Ghana to motivate and retain rural health workers in 2004. This incentive scheme was financed by monies received by the government through the Highly Indebted Poor Country initiative. A total of 10.5 billion cedis was paid to health workers in 55 rural districts in 2004. The studies showed in the subsequent year (2005), as a result of lack of access this fund, and the inability for the government to sustain this expenditure, thus was abolished[6 55 56].

A study in Ghana showed that the government of Ghana implemented the Staff Vehicle Hire Purchase Scheme in 1997. Under this scheme, qualified health workers (doctors, nurses, midwives and other health workers) were given the opportunity to have access to cars to improve their mobility, whilst paying by monthly installments. Special preference was given to health workers working in the rural areas. According to this report, patronage of this scheme increased from 600 salon cars issued to health staff in 2009 to a total of 3494 salon cars as at 2011. Another study added that nurses were the highest to enrolled to this hire purchase scheme with a percentage of 34.7%, followed by doctors with a percentage of 24.9%[6 28 55]. However, not much is found on evaluation of this scheme and its impact on rural retention.

A study showed that, allowances and bonuses were especially associated with NGOs and faith based organizations such as the Christian Health Association of Ghana (CHAG). These were in various forms and varied according to the type of organization involved. However, the general goal was to encourage the health workers to stay in the rural areas. It included housing allowance, yearly bonus, car maintenance allowance, transportation and call allowance[48].

3.2.2 INTERVENTIONS TO IMPROVE RURAL HEALTH WORKFORCE RETENTION IN OTHER SUB-SAHARAN AFRICAN COUNTRIES

The presence of the right number of adequately skilled health workers in every country is very critical in the attainment of health goals. Almost all countries and especially Sub-Saharan African countries are faced with the challenge of mal-distribution of its health workers between rural –urban areas making the access to health care in rural areas poor [10] [40].Policy makers in Sub- Saharan African countries have made attempts to solve this problem by implementing certain interventions. Some of the interventions have been initiated in the various countries as described below;

EDUCATIONAL INTERVENTIONS

These include interventions such as selection of students with rural background into health raining institutions, citing of training institutions outside of major cities, rural rotation during training, educational curricula that reflects rural health issues and continuous professional training of health workers in rural areas[11].

There is evidence to show that having a rural background has a strong connection to rural retention[11]. In South Africa, a study showed that 38.4% of graduates with rural backgrounds were practicing in rural areas compared to 12.4% of graduates with urban origin. Another study showed that the effect on retention in choosing students with rural backgrounds was comparable to a 10% increase in salary [53] [57].

Dolea et al., in their study on evaluated strategies to increase attraction and retention of health workers in remote and rural areas mentioned that Continuous Professional development is an intervention that has been successful in improving the attraction and retention of rural health workers[40].

The studies show that interventions that take into consideration individual factors such as origin and education (continuous professional development) of the health worker improve retention in rural areas. Not much however, has been found on gender related interventions.

FINANCIAL INCENTIVES

Financial incentives refer to monetary and other benefits given to health workers as a way of motivating them to work in rural areas. It includes various forms of allowances and bonuses that help to compensate for the opportunity cost of having to work in very remote or resource poor settings[10].

In Zambia, health workers including doctors, nurses, midwives and other key health cadres are required to serve for three years in rural areas under the Zambia Health Worker Retention Scheme (ZHWRS). Rural health workers under this scheme were incentivized both financially and non-financially. The incentives included a monthly hardship allowance, an education allowance for their children between 5 to 12years, transportation allowance, accommodation allowance and assistance for post-graduate study. Rural health workers are given access to vehicle loans, housing allowances. Also, continuous capacity building is ensured through performance yearly assessment. Annual cost of implementation of this scheme was estimated at 35 billion Zambian Kwacha and this scheme was being funded by predominantly by donors (99%) and government (1%).A study showed that most

patronized strategy within this scheme were hardship allowance (80% of health workers) whilst the least patronized by the health workers was car loan and child support. The scheme made some impart in improving the retention of health workers in the rural areas[58] [59]

The Occupation Specific Dispensation Policy is a strategy that was implemented in 2007 in South Africa to improve the retention of rural health workers. Under this scheme, all Health workers were regarded and remunerated better on a new salary structure provided per occupation and this which took into consideration their grades, job profile, work experience and career progression opportunities. The package included a basic salary, retirement benefit, health care allowance, scarce skill allowance, extra duty allowance and hardship allowance. Nurses were the first cadres to benefit from this scheme and it was expanded to doctors and other health professionals in 2008. Remuneration of health workers increased according to this structure with increasing years of experience[26]

A study in Kenya shows that health professionals are given a hardship allowance which constitutes 30% of their basic salary as financial compensation for been posted to areas earmarked as hardship or remote areas and this intervention was effective in retention of health workers in rural areas[45]. In Senegal, a study showed that giving of hardship allowance to rural health workers was effective their retention[60].

REGULATORY INTERVENTIONS

Compulsory service program is a strategy where the health worker is mandated to serve in a remote area for a specified period of time. This is either a requirement to be fulfilled by the health worker before obtaining a license or as requirement for applying for specialization or other career development programs[62].

The introduction of compulsory community service is cited as been one of the effective retention strategies rolled out in South Africa. Under this strategy, health workers are required to do a compulsory community service for one year. The strategy was implemented in 1998 first for doctors and later expanded to cover other health care workers including nurses and midwives. The effect of this strategy is that it helped to retain a large number of health workers within the health system. A study showed that from 1998 to 2010, 13,155 doctors had been placed across all provinces and 4605 nurses from 2008 to 2010. Another study showed that for 2012 alone, the number of health workers were 7164.One disadvantage recorded with this strategy was that some health professionals due to dislike for this policy were forced to emigrate[61] [62].

PROFESSIONAL AND PERSONAL SUPPORT INTERVENTIONS

Rural areas are often viewed by health workers as places where they are cut off from professional networks and career development programs. The lack of a safe and supportive working environment, basic amenities and good schools and poor recognition of their efforts are usually seen as limiting stifle the willingness to be retained in rural areas. Studies have showed that supportive supervision have influence on health workers decision to stay in rural areas. Interventions that address these factors contribute to improving retention of health staff in rural areas[11] [19].

CHAPTER FOUR: DISCUSSION

4.0 THE MATCH BETWEEN FACTORS INFLUENCING RETENTION IN RURAL AREAS AND INTERVENTIONS TO ADDRESS THESE

Several factors were identified within the studies reviewed to contribute to the problem of poor retention in rural areas. Also, some interventions were found in the literature in Sub-Saharan African countries and Ghana geared towards improving rural retention. This chapter examines how these factors have been addressed in the interventions.

INDIVIDUAL ENVIRONMENT

The main factors influencing rural retention of health workers within the individual environment in this study were age, educational background, origin, marital status and gender roles and responsibilities. All the factors were shown in studies in Ghana. Studies in Sub-Saharan countries that had similar situations like Ghana also showed same individual factors. The individual factors in SSA are thus applicable in the context of Ghana.

The location of schools closer to rural communities and the recruitment of students with rural background were two interventions that were found both in Ghana and also other SSA countries to be addressing the individual factor of origin and educational background. No interventions were identified that addressed age, marital status or gender.

Local environment

The major factors within the local environment that were found to influence rural retention of health workers were staff accommodation and availability of social amenities such as quality schools for children, electricity and good drinking water, transportation arrangements and community support.

Within the context of Ghana, staff accommodation, quality of schools, electricity and good drinking water, transportation were identified as important influencing factors of rural retention. A factor that was identified from SSA, that is applicable in Ghana in community support interventions. Some interventions addressed the issue of local environment through provision of clinical rotations during training. No intervention in Ghana or SSA was identified as addressing better living conditions, providing outreach support, professional network though these factors were seen to have a strong link with rural retention.

Work Environment

Health workers place a lot of value on the importance of the factors in the working environment in both Ghana and other SSA countries. The factors within the working environment identified in Ghana and SSA countries mainly are pay and payment systems, benefits and allowances. Other factors within the working environment that impart on rural retention and can apply to the context of Ghana are continuous professional development for rural health workers, criteria for promotion, management support, equipment and infrastructure. Most interventions in Ghana and other SSA were found to have addressed factors relating to pay, benefits and allowances. Issues with the appropriateness and sustenance of these schemes have been the problem especially within financial constraints faced by governments within SSA. A typical example is the financial constraints faced by Ghana that led to the abrupt cancellation of the Deprived Area Incentive Allowance. Other interventions that could be applied to the context of Ghana are the continuous development programs for rural health workers as health workers have been shown to value such interventions and are highly motivated by them. Other factors that could be considered within the context of Ghana are interventions that provide safe and supportive working environment

National Environment

Factors within the national environment that are were identified in the studies political situation (social unrest or conflict), social and economic factors, private sector, decentralization and funding sources, human resource policies in place. The factors that apply to the context of Ghana are human resource policies and over-centralization of the health delivery systems. Other factors that could impart on rural retention is also a competing and growing private health sector that offers better remuneration and attract rural health workers to urban cities. Other factors within the context of SSA like conflicts cannot be applied to the Ghanaian situation.

Interventions found in this study to address the national factors within Ghana is compulsory rural service as is found for SSA which addresses the issue of regulations within the human resource policies of the country. No intervention was found within this study that addressed socio-economic factors, private sector and decentralization. Other interventions that could be applicable within the context of Ghana as recommended by WHO are interventions that look at enhanced scope of practice, subsidized education for return of service.

International Environment

Factors influencing rural retention identified within this environment that were within the context of Ghana were higher rates of remuneration that is presented on the labor market for health workers. Other factors identified within other SSA countries that apply to Ghana were better living and working conditions in developed countries that attract health workers. The implementation of the evidence based intervention by WHO could possibly be the way forward for Ghana and other SSA countries.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSION

The mal-distribution and poor retention of health workers in rural areas is an issue of concern globally with Sub-Saharan countries been most affected. Studies have shown that there are different factors influencing retention of rural health workers. These factors are found at different levels and inter-relate with each other. Some interventions have been put in place by the government of Ghana to address some of the factors but not many have been evaluated. A comprehensive assessment of interventions to inform policy directions and multi-sectorial approach is required if current trends in human resource in rural areas are to be improved to achieve better health outcomes for the nation.

5.2 RECOMMENDATIONS

Based on the factors identified that play out within the context of Ghana to influence rural retention, drawing lessons from the interventions rolled out by other Sub-Saharan African Countries and using the evidence based interventions suggested by WHO as a guide, the following recommendations are suggested;

5.2.1 Recommendations for policy

- ✓ Ministry of health should collaborate with the various agencies to develop a retention policy targeting rural and underserved areas
- ✓ Ministry of Health should include gender related strategies as part of rural retention policies since gender greatly influences the retention at rural areas

5.2.2 Recommendations for Interventions

- ✓ The Training unit of GHS should collaborate with the various health training to schools to ensure that a quota of admissions into training schools are given to students from underserved areas. This recommendation is feasible because most health training institutions in the country are government owned and will therefore comply with government directives.

5.2.3 Recommendations for future research

It is recommended that the policy planning, monitoring and evaluation unit of Ghana Health Service should collaborate with the Human Resource Unit, the Research Unit, the Public Health Unit and other relevant stakeholders to evaluate the different retention strategies that have been implemented in the country over the years.

ANNEX 1.<u>TABLES</u>

Table 2.1 Search table showing key words and their synonyms

Key Words	Factors influencing "AND"	Availability and Distribution "AND"	Health workers "AND"	Rural "AND"	Sub-Saharan Africa "AND"	Retention "AND"	Interventions "AND"
Synonyms	Determinants "OR" Contributory factors "OR" Barriers "OR" Inhibitors "OR" Facilitators "OR"	Spread "OR" Accessibility "OR" Provision "OR" Deployment "OR"	Human resource for health "OR" Health workforce "OR" Health professionals "OR" Health personnel "OR" Doctors "OR" Nurses"OR" Midwives "OR"	Remote "OR" Poor settings "OR" Poor communities "OR" Countryside "OR" Villages "OR"	LMIC "OR" Developing countries "OR" Resource poor settings "OR"	Attraction "OR" Stay "OR" Maintain "OR"	Strategies "OR" Approaches "OR"

Table 3.1.Categories of interventions used to improve attraction, recruitment and retention of health workers in remote and rural areas.

Category of intervention	Examples
A. Education	A1 Students from rural backgrounds
	A2 Health professional schools outside of major cities
	A3 Clinical rotations in rural areas during studies
	A4 Curricula that reflect rural health issues
	A5 Continuous professional development for rural health workers
B. Regulatory	B1 Enhanced scope of practice
	B2 Different types of health workers
	B3 Compulsory service
	B4 Subsidized education for return of service
C. Financial incentives	C1 Appropriate financial incentives
D. Professional and personal support	D1 Better living conditions
	D2 Safe and supportive working environment
	D3 Outreach support
	D4 Career development programmes
	D5 Professional networks
	D6 Public recognition measures

Source: WHO,2010

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