

**GLOBAL MIGRATION OF HEALTH WORKERS AND HEALTH CARE DELIVERY IN
NIGERIA 2015-2024**

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JULY, 2026

TITLE PAGE

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**A RESEARCH PROJECT PRESENTED TO THE DEPARTMENT OF POLITICAL
SCIENCE AND INTERNATIONAL RELATIONS, FACULTY OF MANAGEMENT
AND SOCIAL SCIENCES, GODFREY OKOYE UNIVERSITY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF
SCIENCE (B. Sc.), IN INTERNATIONAL RELATIONS.**

SUPERVISOR: MR. ANTHONY ONYISHI

JULY, 2026

DECLARATION

I hereby, declare that the project “Global Migration of Health Workers and Health Care Delivery in Nigeria 2015-2024” presented by me to Godfrey Okoye University, Enugu State, in partial fulfillment of the requirements for the award of the degree (B. Sc.) in International Relations is a record of a bona fide project work carried out by me and has not been submitted anywhere for the purpose acquiring degrees in International Relations or any other program under the guidance and supervision of Mr. Anthony Onyishi

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DEDICATION

This research work is dedicated to God Almighty for guiding me throughout this process, I also want to dedicate this work to my wonderful parents, sister and close friends.

ACKNOWLEDGEMENTS

Above all, I credit and thank Almighty God for His strength, wisdom and endurance in successfully completing this research project. This work is not possible without the guidance, grace and everlasting mercy of God. I express my great gratitude to Mr. Anthony Onyishi, my project supervisor, for his guidance, patience, and constructive feedback which were very helpful in the quality and direction of this work. I will never forget him, as he helped me achieve great success in my education and life. I am also grateful to all my lecturers who have helped me in my intellectual development in this academic endeavor. I particularly acknowledge The Head of Department, Prof. Samuel Ugwuozor, who contributed immensely to the success of this project, for his leadership and support. I would like to thank Dr. Ezechi Kingsley, The support and dedication of Dr. Ogbuka Ikenna, Rev. Sister Dr. Lucy Umeh, Mr. Okonkwo W.O., Dr. Ifedi Francisca, Dr. Mbaeze N., Dr. Alex Ogbonnia and Mrs. Chioma have been immensely helpful. To my dear parents, Mr. Andrew Eze and Mrs. Nwakaego Eze for your unconditional love sacrifice and constant prayers that have been a foundation of support for me throughout my life and at school. Your constant support and faith in me have lifted me up and I am deeply grateful for that. I would also like to express my sincere gratitude to my beloved sister Miss. Ifeoma Eze and close friends for their motivation and encouragement. I am thankful to everyone who has had to go through this together and who had to hear my complaints and listen to my opinions. Your presence has made this journey meaningful and memorable. I would like to thank all those who in some capacity contributed to the success of this work. May God bless and reward you with plenty.

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ABSTRACT

The present study studied the emigration of health workers and healthcare delivery in Nigeria from 2015 to 2024. The main objective was to evaluate how the movement out of Nigerian health workers to destination countries shaped health system of Nigeria, with attention to poor economic welfare and capacity for service. This research used documentary and ex post facto research designs, using secondary data from the Medical as well as Dental Council of Nigeria, the Nursing as well as Midwifery Council of Nigeria, the World Health Organisation, the Nigerian Bureau of Statistics, the Central Bank of Nigeria as well as relevant academic sources. Qualitative content analysis and thematic analysis were used within the push-pull theory of migration. The results found that poor economic welfare was the main structural driver of emigration, as doctor salaries fell in real dollar terms from about \$350 to \$180 per month between 2015 and 2024, while Medical as well as Dental Council verification certificates reached 4,600 in 2024 alone. This research also found that outward migration reduced the strength of healthcare delivery as skilled health worker density fell from 1.95 to 1.68 per 1,000 population, tertiary nursing vacancies rose to 55%, patient-to-nurse ratios worsened and maternal mortality remained far above comparator countries. This research concluded that Nigeria faces a workforce depletion crisis driven by economic push factors. This point recommended a legislated Health Worker Economic Welfare Protection Framework that links doctor and nurse salaries to exchange-rate movements as well as funded retention measures for healthcare access as well as health system planning.

Keywords: health worker emigration, economic welfare, healthcare delivery, push-pull theory, Nigeria, brain drain,

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Health worker migration refers to the movement of health professionals across borders to work or study or seek better conditions in another country. Because it shapes health systems in both sending and receiving countries, this now stands as a main feature of world healthcare. The World Health Organization (WHO, 2020) warns that the world may face a shortage of 18 million health workers by 2030, which creates major pressure for low and middle income countries. The issue gained stronger attention after the WHO Global Code of Practice on the International Recruitment of Health Personnel was introduced in 2010 to guide ethical recruitment while still respecting the right of workers to move. Buchan et al. (2020) state that health worker migration links with global health security and universal health coverage as well as Sustainable Development Goal 3. During the COVID 19 pandemic countries such as the United Kingdom and the United States increased the recruitment of foreign trained health workers to cover urgent gaps as well as this created deeper shortages in source countries. The United States has long depended on foreign trained doctors with about 25% of its physician workforce trained abroad in 2019 (Hagopian et al. 2019). Because it becomes a major policy concern that shapes access and quality as well as fairness in healthcare across countries, these patterns show that health worker migration moves beyond personal career choices.

Because it carries 25% of the global disease burden but has only 3% of the health workforce of world (Oleribe et al. 2019), Africa faces heavy problems linked to health worker migration. Brain drain, which describes the movement of high degree skilled workers from poorer countries to richer countries, has reduced the strength of African health systems for many years. Recent studies, however, explain brain circulation which allows temporary migration so that workers gain skills abroad and later return home. Because Nigeria and Ghana

experience heavy outflows while Rwanda as well as Botswana show stronger retention, migration patterns differ across African countries. Tankwanchi et al., (2021) found that 86% of African born doctors working in the United States come from only ten countries in the main Nigeria and South Africa as well as Ghana. Clemens and Pettersson (2021) estimate that sub-Saharan Africa lost around 70000 doctors as well as nurses to richer countries between 2010 as well as 2018, which marks a major loss when training costs are considered. Common push factors include low pay and weak infrastructure as well as limited career progress as well as political uncertainty. Pull factors include higher salaries and stronger work conditions as well as improved living standard abroad. Ghana has tried to reduce emigration by offering allowances and rural incentives which lowered emigration among new doctors from 48% in 2010 to 32% in 2018. Rwanda increased salaries and introduced performance-based financing to support retention. These comparisons show that Africa faces shared challenges although focused national policies can make stronger workforce stability.

Nigeria has a three-tier healthcare system with primary and secondary as well as tertiary levels as well as health workers spread across public as well as private sectors. Its workforce includes doctors and nurses as well as midwives as well as pharmacists as well as laboratory scientists as well as other allied professionals. As Oleribe et al., (2019) note health worker to of Nigeria population ratios fall below WHO recommendations with about 4 doctors per 10000 people instead of the recommended 10 per 10000. The same pattern appears in nursing with about 16 nurses per 10000 people instead of the recommended 20 per 10000. The Federal Ministry of Health Nigeria (2021) reports that the country has 43 medical schools that produce about 3500 doctors yearly and 157 nursing as well as midwifery schools that produce about 12000 nurses. Yet the Medical and Dental Council of Nigeria (MDCN, 2022) records only 82000 registered doctors who serve a population of more than 200 million. Shortages worsen because of uneven distribution since around 70% of health workers stay in urban areas even

though 52% of people live in rural communities. Lagos State covers less than 5% of land area, yet it hosts about 35% of all registered doctors. Low health funding also harms the system since Nigeria spent only 3.7% of its national budget on health in 2021 which stands far below the 15% Abuja Declaration target. These issues show that the Nigerian health system already struggles even before migration losses are considered.

From 2015 to 2024 Nigeria experienced a sharp rise in health worker emigration in the main to the United Kingdom and the United States as well as South Africa. Adepoju and Van Noorloos (2021) report that the UK Nursing as well as Midwifery Council registered more than 11000 Nigerian trained nurses between 2017 as well as 2021 compared with fewer than 100 yearly in the early 2010s. The MDCN (2022) issued about 9000 verification certificates for doctors planning to migrate between 2019 and 2022 compared with 3200 between 2015 as well as 2018. Nurses migrate in the highest numbers, although doctors migrate at higher rates relative to their total workforce size. Okoye and Okuzu (2022) found that 88% of Nigerian doctors surveyed in 2020 intended to migrate within five years. Because destination countries lowered immigration barriers to fill staffing needs, cOVID 19 increased migration further. The UK Health and Care Worker visa introduced in 2020 removed surcharges as well as created simpler applications. Main destinations include the UK with about 45% of emigrants, the US with 25%, and South Africa with 12% through regional professional movement. emigration density for of Nigeria doctors stands at around 15 per 1000 which sits above of Ghana's 11 per 1000 but below recorded levels of Botswana (Clemens and Pettersson, 2021).

The causes of Nigerian health worker emigration arise from economic and professional as well as socio-political pressures. Economic factors remain strong because Nigerian doctors earn ₦200000 to ₦400000 monthly (\$250 to \$500 in 2022) while similar jobs in the UK offer £3000 to £6000 (\$3600 to \$7200). Okeke (2019) argues that these differences make migration a reasonable choice with special attention with frequent salary delays in Nigeria. Nwimo and Ilo

(2020) note that 89% of Nigerian nurses point to poor pay as a reason for migration. Because many facilities lack essential equipment and some tertiary hospitals use less than 40% functional equipment, work conditions add further strain. Ossai et al., (2021) report that 72% of final year medical students in Southeast Nigeria plan to migrate with 85% citing weak work conditions. Limited career development and poor research access as well as costly specialist training also push workers out. Security challenges with special attention in northern Nigeria shape decisions as well. Because UK NHS missions offer plain career paths, pull factors include active recruitment by destination countries. Diaspora networks also shape migration by sharing guidance and information. These push and pull factors work together in a system that in a steady pattern directs Nigerian workers toward high income countries.

Because it harms service availability and care quality as well as health outcomes, health worker migration has main effects on healthcare delivery in Nigeria. Rising patient to health worker ratios appear with speed with some tertiary hospitals recording ratios above 1:100 instead of the ideal 1:20. Eze and Onyishi (2021) show that teaching hospitals in Lagos as well as Abuja had nursing vacancy rates above 40% by 2020 which forced remaining staff to handle heavy workloads that reduce care quality. Service availability has dropped because hospitals close specialist wards and reduce operating theatre hours as well as shorten services due to staff shortages. Some tertiary hospitals suspended elective surgeries in 2021 to 2022 due to a shortage of anaesthesiologists. Care quality also declines because overworked staff have limited consultation time which increases risks of errors and lowers patient satisfaction. Maternal mortality which stands at around 512 deaths per 100000 births in 2018 reflects shortages of skilled midwives (National Population Commission Nigeria and ICF, 2019). Regional differences widen because urban hospitals lose staff to migration and rural areas cannot attract replacements. Financial losses remain high because Nigeria loses about \$2.4 billion yearly due to in a public way funded workers migrating. There are some limited benefits

such as remittances of \$17 billion in 2021, although the overall impact stays negative for system capacity and population health. The present study therefore studies the global migration of health workers and healthcare delivery in Nigeria between 2015 as well as 2024.

1.2 Statement of the Problem

Nigeria has experienced a very high level of health worker emigration between 2015 and 2024 which has to a major degree reduced the strength of healthcare delivery as well as harmed population health outcomes. Between 2008 and 2021 around 36467 Nigerian doctors as well as 60729 nurses moved to the United Kingdom alone with movement rising in a sharp pattern after 2020 (Onah et al., 2022). The Nursing and Midwifery Council of Nigeria reported that 42000 nurses left between 2021 as well as 2024 as well as 16000 doctors also migrated within the same period which left only 55000 licensed doctors to serve a population of more than 220 million (Nigeria Health Watch, 2024). The Medical and Dental Council of Nigeria (2022) also found that verification certificates for doctors planning to work abroad increased by 181% between 2015 to 2018 as well as 2019 to 2022 with migration reaching 11.4 per 100 person years in 2023 which stood far above the 0.74 level in 2009. Okoye and Okuzu (2022) found that 88% of Nigerian doctors surveyed intended to migrate within five years because they faced low pay, poor work conditions as well as limited career progress. skilled health worker of Nigeria density stands at only 1.83 per 1000 people. Which remains far below the WHO recommendation of 4.45 per 1000 as well as this places the country on the WHO Health Workforce Support as well as Safeguard List with 55 others in a heavy way shaped nations (WHO 2024). This movement has created nursing vacancy rates above 40% in tertiary hospitals and patient to health worker ratios above 1:100 instead of the ideal 1:20 (Eze and Onyishi, 2021). As a result maternal mortality ratio of Nigeria stands at 512 deaths per 100000 live births which is the highest in Africa and this leads to around 58000 maternal deaths each year showing the

impact of poor skilled birth attendance linked to workforce shortages (National Population Commission and ICF 2019; WHO, 2019).

In response to the crisis the Nigerian government approved a National Policy on Health Workforce Migration in August 2024 with WHO support and this policy introduced retention incentives, rural posting allowances as well as bilateral agreements with destination countries (Federal Ministry of Health, 2024). President Tinubu also launched the Health Sector Renewal Investment Initiative in December 2023 which promised £717 million for making stronger the health system from 2024 to 2026 (LSE Africa Blog, 2024). Because health budget allocations remain at only 4.6% in 2024, which stands far below the Abuja Declaration target of 15% (LSE Africa Blog, 2024), these efforts however face difficulties. Although research explains migration patterns and causes major gaps still appear because there is no strong comparative analysis that places Nigeria beside other African countries using shared indicators, there is limited profession specific analysis of doctors nurses as well. As midwives for the full 2015 to 2024 period as well as there is not enough attention to how movement out to destination countries such as the United Kingdom, the United States as well as South Africa has shaped workforce capacity of Nigeria. There is also not enough evaluation of retention strategies used in a successful way by countries such as Rwanda, Ghana and Botswana which Nigeria could use. Given this situation this study studies the global migration of health workers and healthcare delivery in Nigeria from 2015 to 2024.

1.3 Objectives of the Study

From the said research questions above, the main aim of this study is to study the global migration of health workers and healthcare delivery in Nigeria from 2015 to 2024. The specific objectives are to:.

1. To assess the extent to which economic welfare of health workers has accounted for the incessant migration of Nigerian health workers from 2015 to 2024.

2. To evaluate how health worker migration has impacted the capacity and delivery of healthcare in Nigeria from 2015 to 2024.

1.4 Research Questions

The present study seeks to answer the following research questions:.

1. How has the economic welfare of health workers accounted for the incessant migration of Nigerian health workers from 2015 to 2024?

2. How has health worker migration impacted the capacity and delivery of healthcare in Nigeria from 2015 to 2024?

1.5 Significance of the Study

Because they give plain guidance for future action, the results of this study will be helpful to many helpful groups.

For academics the study adds to the understanding of health worker migration in sub-Saharan Africa by offering a plain comparative explanation that sets Nigeria within the wider African setting. This point strengthens theoretical discussions on brain drain by showing how doctors, nurses and midwives follow movement out patterns from Nigeria to destination countries that earlier studies often treated too in general terms. The research also improves knowledge of how the supply of health workers shapes healthcare delivery and it sets out empirical evidence that can support future theories on improving health systems in countries with limited resources.

For policymakers in the Federal Ministry of Health and State Ministries of Health the study sets out helpful insights into successful retention strategies used in African countries such as Rwanda, Ghana as well as Botswana as well as these insights can support evidence-based policies that match needs of Nigeria. By comparing migration patterns across countries, the study helps policymakers decide whether Nigeria faces a in a unique way heavy

challenge or one that follows regional patterns which guides the level of urgency required for policy decisions.

Because it explains how health worker shortages shape capacity for service, care quality and health outcomes as well as this gives them strong evidence to support investments in staff retention, improved work conditions as well as fair pay, healthcare administrators as well as hospital managers will gain from the study.

Because it sets out a detailed explanation of migration patterns and health system effects, international organisations such as the World Health Organization, the International Organization for Migration as well as development partners will also benefit from the study. This will help them design focused technical support programmes, promote ethical recruitment and develop bilateral agreements between source as well as destination countries that protect migrating workers as well as support nations from losing essential health professionals.

1.6 Scope of the Study

The present study studies the global migration of health workers and how it shapes healthcare delivery in Nigeria from 2015 to 2024 with a focus on medical doctors, nurses as well as midwives.

The demographic scope covers all professionals in these groups who are registered with the Medical and Dental Council of Nigeria as well as the Nursing as well as Midwifery Council of Nigeria whether they remained in the country or moved abroad.

By location the study focuses on Nigeria as the main country of origin while it also studies movement to major destinations such as the United Kingdom and the United States as well as South Africa as key receiving countries. These places were chosen because they attract large numbers of Nigerian health workers and they allow helpful regional as well as global comparisons that draw on shared migration pressures or effective retention strategies. This research also includes comparisons with African source countries including Ghana, Rwanda

and Botswana which share similar migration pressures yet have used retention strategies that Nigeria can learn from.

Because it sees migration as a detailed process shaped by economic, professional and socio-political factors that shape conditions in both sending as well as receiving countries, through concepts the study is guided by ideas of brain drain, brain circulation as well as health system making stronger.

Through method the study uses a documentary and ex post facto research design which relies on secondary data from regulatory bodies, international organisations, government ministries as well as academic sources to study migration patterns, health system performance as well as policy actions. This method is suitable because health worker migration is a past event that cannot be changed through experiments and secondary data gives the detailed information required to compare countries as well as professional groups across the ten-year period.

1.7 Limitations of the Study

This research faced many limitations, though each was handled with care to preserve the quality of the research. Time constraints created a main challenge because the analysis of a full ten year period from 2015 to 2024 required a large volume of data collection within a short research window. And this was managed through a structured timeline that focused on essential sources as well as relied on systematic reviews of regulatory reports, international databases as well as academic publications. A second limitation involved incomplete and inconsistent data with special attention migration figures that were broken down by profession year as well as destination country as well. As this was addressed by comparing information from different organisations including MDCN NMCN GMC UK NMC UK WHO datasets as well as peer reviewed studies so that the study produced the most reliable trends possible. Financial limitations also created restrictions on access to paid international datasets and this

was overcome by the use of open access publications WHO materials government reports as well as institutional library subscriptions. A final limitation involved limited access to grey literature and specialised reports as well as this was reduced by broad database searches, interlibrary loan requests as well. As the use of in a public way available documents from government as well as international organisations which ensured wide coverage of migration issues as well as healthcare delivery topics despite these access constraints.

1.8 Operational Definitions of Terms

Health Worker Migration.

Health worker migration refers to the permanent or temporary movement of Nigerian trained doctors, nurses and midwives to other countries between 2015 as well as 2024 . As it is recognised through verification certificates as well as registration records from Nigerian as well as international regulatory bodies which allow plain measurement of movement patterns that shape health workforce of Nigeria.

Healthcare Delivery.

Healthcare delivery refers to ability to give of Nigeria essential health services between 2015 and 2024 as well as it is measured through indicators such as health worker to population ratios maternal. As well as neonatal mortality service availability facility vacancy rates as well as quality of care measures that show how shortages shape population access to effective services.

Retention Strategies.

Retention strategies are the policies and actions used in Nigeria, Rwanda, Ghana as well as Botswana from 2015 to 2024 to reduce health worker emigration as well. As they include salary improvements, rural posting incentives, training opportunities, stronger infrastructure as well as bilateral agreements that aim to keep health workers as well as improve their work conditions.

Health Outcomes.

Health outcomes refer to measurable indicators of population health between of Nigeria 2015 and 2024 such as maternal mortality, neonatal mortality under five mortality immunisation coverage as well as skilled birth attendance as well as these indicators show how the presence or absence of trained health workers shapes national health performance.

Comparative Analysis.

Comparative analysis refers to the systematic comparison of migration patterns and of Nigeria health system results with those of Ghana, Rwanda, Botswana as well as South Africa between 2015. As well as 2024 as well as it uses shared measures such as emigration density as well as health worker ratios to identify similarities, differences as well as helpful retention strategies.

Policy Interventions.

Policy interventions are government actions introduced between 2015 and 2024 to respond to health worker migration as well as they include National Policy on of Nigeria Health Workforce Migration salary adjustments rural posting incentives bilateral recruitment agreements. As well as diaspora engagement programmes that aim to make stronger workforce retention as well as improve healthcare delivery.

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Concept of Migration

Migration refers to the movement of people from one place to another, either within a country or across national borders, for the purpose of settling for a short period or for a permanent period in a new location. The word itself comes from the Latin term *migrare*, meaning to move or to shift from one place to another, and this root meaning captures the essential nature of the concept as a process of deliberate human movement (Buchan et al., 2020). The International Organization for Migration (2020) defines migration as the movement of a person or group of persons across an international border or within a state, covering any kind of movement regardless of its length, composition or cause. Because it recognises that people move for many different reasons and under many different conditions, this definition is broad as well as inclusive.

Yeates and Pillinger (2019) describe migration as a detailed social process that takes different forms including permanent migration where a person relocates without intending to return, temporary migration where movement happens for a fixed period, circular migration. Where workers move back as well as forth between two places, as well as return migration where a person comes back to their country of origin after a period abroad. These distinctions matter because they show that migration is not a single uniform event but a process with many variations that carry different meanings for individuals and for the countries involved.

Martineau et al. Because people do not move in isolation from their environments, (2022) add that migration must be understood within the social and structural conditions that shape it. Economic conditions, political situations, family ties and professional ambitions all shape when as well as how migration happens. Aluttis et al. Because it connects workforce

supply in sending countries with workforce demand in receiving countries, making it a policy concern as much as a personal choice, (2019) further note that in the setting of health systems, migration has taken on global significance.

2.1.2 Why People Migrate

The reasons why people migrate have been studied in a extensive way and scholars in a steady way show that migration arises from a combination of forces that operate in the place of origin as well as in the place of destination. The Push Pull Theory, first developed by Ravenstein in 1885 and later expanded by Everett Lee in 1966, remains the most across a wide area used framework for explaining migration motivation. The theory says that push factors are negative conditions in the home country that drive people away while pull factors are positive conditions in the destination country that attract people toward it (Yeates and Pillinger, 2019).

Because salary levels in Nigeria fall to a drastic degree short of what workers can earn abroad, in the setting of Nigerian health workers, Okeke (2019) shows that economic push factors are among the strongest drivers of movement. Nwimo and Ilo (2020) found that 89 percent of Nigerian nurses identified not enough remuneration as the primary reason for leaving, while 66 percent pointed to poor economic conditions more in broad terms as well as 52 percent cited dissatisfaction with work conditions. These findings confirm that migration decisions in rare cases arise from a single cause but rather from many overlapping pressures.

Beyond economic factors, Martineau et al. (2022) explain that limited career progress, poor research opportunities, weak infrastructure, heavy workloads and political uncertainty also push health workers toward migration. Ossai et al. (2021) found that 85 percent of final year medical students in Southeast Nigeria cited weak work conditions as a reason for planning to migrate, which shows that migration intentions form early in professional life.

On the pull side, destination countries offer higher salaries, modern health facilities, structured career development pathways and improved living standard. Because people with

family or colleagues already abroad find migration easier, less costly and less uncertain, which shows that once migration begins it tends to sustain as well as expand itself over time, the International Organization for Migration (2020) also recognises that social networks play a strong role.

2.1.3 Concept of Economic Welfare

Economic welfare refers to the level of financial wellbeing, material comfort and economic security that individuals experience as a result of their income, employment conditions as well as access to resources. In the setting of health workers, economic welfare covers earnings, salary regularity, allowances, benefits, purchasing power and the broader economic environment within which workers live as well as practice their profession. Dieleman et al. Because workers who feel in economic terms secure and to an adequate level rewarded are far more likely to remain in their posts as well as perform with effect, (2020) describe economic welfare as a central determinant of job satisfaction as well as retention.

Because the gap between what Nigerian doctors and nurses earn at home as well as what they can earn abroad is so wide that migration becomes a rational economic decision, okeke (2019) argues that salary gaps between source as well as destination countries represent the most powerful economic welfare variable in health worker migration. Nigerian doctors earn between ₦200,000 and ₦400,000 monthly, which equates to about \$250 to \$500, while equivalent positions in the United Kingdom offer between £3,000 as well as £6,000 monthly, representing a difference of more than ten times in real income value (Okeke, 2019).

Nwimo and Ilo (2020) extend the concept of economic welfare beyond salary alone to include the regularity of payment, the availability of hazard allowances, access to housing as well as transport support as well as the purchasing power that income gives given inflation as well as exchange rate conditions. When salaries are delayed, eroded by inflation or not enough

to meet basic living costs, economic welfare deteriorates even when nominal pay remains unchanged.

Fulton et al. Because underpaid workers become demotivated, seek alternatives and in the end migrate, which leaves remaining workers with heavier workloads as well as weaker morale, (2020) note that poor economic welfare creates a cycle of dissatisfaction. Asamani et al. (2021) add that addressing economic welfare requires not only raising salaries but also ensuring timely payment, providing performance-based incentives and protecting workers against the economic effects of currency depreciation as well as rising living costs.

2.1.4 Concept of Health Worker

A health worker is any person whose primary activity is to protect and improve the health of populations through direct service provision, health management, health support or related functions. Because it captures not only clinical professionals but also administrators, community health workers and support staff who contribute to health system functioning, the World Health Organization (2020) defines health workers as all people engaged in actions whose primary intent is to enhance health, as well as this definition is in a deliberate way wide.

In the Nigerian setting, the health workforce includes a wide range of professionals operating across primary, secondary and tertiary levels of care. Oleribe et al. (2019) identify this workforce as comprising doctors, nurses, midwives, pharmacists, laboratory scientists, radiographers and allied health professionals, all of whom are essential to delivering effective care across the three-tier health system of country. Campbell et al. Because no service can be delivered, no medicine administered and no patient managed without human skill as well as effort, (2019) further explain that health workers are the most critical component of any health system.

Kinfu et al. Because countries with higher numbers of skilled workers per 1000 people in a steady way record lower maternal, infant and disease-related mortality, (2020) show that

the density of health workers within a population is in a direct way linked to health outcomes. The WHO recommendation of 4.45 skilled health workers per 1000 people serves as a global benchmark for workforce sufficiency, yet Nigeria falls far below this threshold with only 1.83 skilled workers per 1000 people (WHO, 2024).

Buchan et al. (2020) note that health workers are distinguished from other labour categories by the fact that their skills are costly to produce, take many years to develop and carry direct consequences for population survival when they are absent. Because it represents not only a workforce gap but a reduction in the capacity of a nation to protect the health and lives of its citizens, this makes the loss of health workers through migration with specific attention damaging.

2.1.5 Health Worker Migration

Health worker migration refers to the movement of trained healthcare workers from one country to another so they can find better jobs, education, or improved work conditions. The idea comes from the Latin word *migrare* which means to move and it covers workers who move for short periods as well as those who relocate for a permanent period as explained by Buchan et al. (2020). The International Organization for Migration (2020) describes migration as crossing national borders for reasons such as work or better living standards while Martineau et al., (2022) show that this movement is shaped by push factors such as low pay, poor facilities, lack of career opportunities and heavy workloads. Because workers feel drawn to places with higher salaries, modern hospitals and stable systems, pull factors also shape movement. Yeates and Pillinger (2019) describe different forms of mobility including permanent temporary circular as well as return migration as well as they also note that workers may move within a country, with special attention from rural areas to urban centres. Related ideas include brain drain which describes the loss of skilled workers from a country and brain gain which shows how destination countries benefit as well as brain circulation which explains

how knowledge moves back as well as forth as well as brain waste which appears when migrants' skills remain underused (Aluttis et al., 2019). Because 89% of nurses in one study said they leave due to poor pay (Nwimo and Ilo, 2020) while pull factors include better salaries and stronger training in other countries (Okeke 2019), evidence shows that push factors with strength shape Nigerian workers.

Different theories help explain why this movement happens and each one gives a simple way to understand worker decisions. Neoclassical economics sees migration as a response to wage differences while human capital theory sees it as an investment in future careers. Push pull theory explains what forces workers away and what attracts them elsewhere. World systems theory links migration to global inequalities and social network theory shows how personal links make movement easier (Ogbonnaya et al., 2021). Jirovsky et al. (2019) used these ideas to study African health workers who moved to Austria. The WHO Global Code encourages ethical recruitment and discourages hiring from countries that face shortages (WHO, 2020) though it is not always followed as noted by Yeates as well as Pillinger (2019). Because losing health workers weakens national health systems and shapes population wellbeing (Hagopian et al., 2019), this issue matters a great deal.

2.1.6 Healthcare Delivery

Healthcare delivery refers to how health services are organised, funded and gave to people as well as it covers preventive, promotive, curative, rehabilitative as well as palliative care across primary, secondary as well as tertiary levels. Campbell et al., (2019) explain that healthcare delivery involves the coordination of health workers building equipment, medicines and information systems so that services remain easy to reach, acceptable to communities as well as of good quality. Abimbola et al. (2019) add that effective delivery means people should get the care they need at the right time in facilities they can reach from professionals they trust at a cost they can manage. According to Oleribe et al. (2019), strong delivery depends on

having enough staff, good infrastructure, proper financing and responsive leadership. The WHO health systems framework identifies six parts which are service delivery workforce information systems medicines and equipment financing as well as leadership as well as all these parts must work well for the system to perform. Human resources are with special attention helpful and WHO recommends 4.45 skilled workers per 1000 people to support universal health coverage (WHO, 2020). The health workforce includes doctors, nurses, midwives, pharmacists, laboratory staff, radiographers and other allied professionals as well as their numbers of skills spread across communities to shape how well the system functions. Kinfu et al. (2020) show that countries with more health workers in a usual way record lower maternal infants and disease-related deaths. Many African health systems still face problems such as poor infrastructure, limited funding, medicine shortages, weak information systems and in a weak way coordinated services as noted by Oleribe et al., (2019).

Because they shape how resources are used and whether systems act in a transparent as well as accountable way, governance problems, corruption as well as weak leadership make these challenges worse. Most African countries use three levels of care with primary health centres as the first point of contact, secondary hospitals for referrals and tertiary teaching hospitals for specialised treatment. Primary care often suffers the most from workforce shortages and this leaves preventive services weak. Quality of care is a central part of healthcare delivery and WHO describes good quality care as effective, safe, patient centred, timely, fair, well integrated as well as efficient. Because staff become overworked, supervision weakens consultation times, shortens infection control sufferers and clinical skills fall as seen in Tukur et al, shortages of health workers reduce quality. (2022). Patient safety, which includes the prevention of medication errors, infections, surgical problems and diagnostic delays, becomes with special attention threatened in low resource settings. Tukur et al. (2022) found that simple quality practices such as allowing labour companions or using partographs reduced

maternal deaths in Nigerian hospitals. To measure healthcare delivery systems, monitor service coverage and financial protection within the WHO universal health coverage framework along with outcomes such as maternal mortality neonatal mortality disease rates as well as service use as described by Rao et al. (2021). DHS data from of Nigeria National Population Commission and ICF (2019) help track progress though weak information systems make evaluation difficult. Avoidable mortality, which means deaths that could be prevented with effective and timely care, stands as an helpful sign of system failure according to Silal et al. (2022).

2.1.7 Health Workforce Retention Strategies

Health workforce retention strategies are planned actions created by governments, health organisations and employers to keep health workers in their jobs as well as to reduce turnover or emigration. Dieleman et al. (2020) describe these strategies as human resource measures that improve job satisfaction and performance so that workers feel more willing to stay in their roles, with special attention in low as well as middle income countries. Asamani et al. (2021) explain that retention requires a mixture of financial rewards, better work conditions, chances for career progress and supportive workplaces. Fulton et al. (2020) add that effective retention must address push factors that drive workers away and pull factors that attract them to other countries as well as this makes staying at home more appealing. Financial incentives may include fair salaries, performance bonuses, hardship allowances, housing support, transport assistance and insurance packages. Okeke (2019) shows that salary differences with strength shape intentions to migrate although African countries cannot match the pay offered in high income countries. Some countries have achieved progress such as Rwanda which increased salaries and used performance-based financing as well as Ghana which introduced an additional duty hours allowance as well as Botswana which offered competitive pay structures

as noted by Buchan et al. (2020). Financial incentives, however, can be difficult to sustain and may create inequalities.

Because they address deeper problems that shape workplace experience, non-financial strategies also play a helpful role. These strategies include building better facilities providing continuing professional development offering specialisation pathways supporting research creating fair promotion systems improving work life balance giving recognition awards and involving staff in decision making as explained by Dieleman et al. (2020). Investments in modern of Rwanda health facilities show how strong work environments can improve motivation. Reducing workloads through task shifting, hiring more staff, providing mentorship and ensuring supportive supervision also helps workers remain in their posts, with special attention in rural settings.

Geographic retention strategies target rural and underserved communities where shortages are most heavy. WHO recommended interventions include recruiting students from rural backgrounds offering rural clinical training establishing rural medical schools using bonding schemes or mandatory service giving rural allowances providing housing and offering loan forgiveness as said by Gupta et al. (2019). Examples include South compulsory community service of Africa year, rural posting incentives of Ghana and community-based health extension of Botswana programmes. Fulton et al. (2020) show that packages combining many interventions work better than single measures. System level reforms also support retention by making stronger leadership workforce planning regulatory protections for supply chains and transparent governance. Abimbola et al. (2019) note that decentralisation can help or harm retention depending on local capacity. Strong accountability system of Rwanda gives a positive example. While National Policy on of Nigeria Health Workforce Migration from the Federal Ministry of Health (2024) proposes incentives, rural allowances, bilateral agreements

and diaspora engagement though challenges remain due to funding as well as governance limitations.

2.1.8 Comparative Health Systems Analysis

Comparative health systems analysis refers to the systematic study of how different countries organise their health systems and how these similarities or differences help explain variations in outcomes. Because it helps researchers understand how different environments, policies and interventions produce different results as well as this shows what works for whom as well as under which conditions, Creswell (2023) explain that this type of analysis is helpful. Because they draw on many cases rather than one country and this makes it possible to identify shared patterns while still recognising that each country has unique features, weber (2017) adds that comparative methods help researchers build broader knowledge. Common approaches include the Most Similar Systems Design which compares countries with shared characteristics to explain why their outcomes differ and the Most Different Systems Design which compares countries that differ across a wide area yet show similar outcomes in order to uncover common causes as described by Creswell as well as Creswell (2023). Researchers select comparator countries based on geography, income levels, colonial history and differences in policy orientation. Challenges include inconsistent data definitions, incomplete migration statistics, limited generalisability due to contextual differences and difficulties in producing strong causal claims.

Health systems can be grouped using categories like the WHO building blocks or models such as the Beveridge system, the Bismarck system, National Health Insurance or out-of-pocket systems. African countries often combine public private donor funded and traditional sectors as noted by Oleribe et al. (2019). Standard indicators used in comparisons include health worker density distribution training outputs migration indicators such as emigration density and retention as well as performance measures as highlighted by Gupta et al.

(2019). Clemens and Pettersson (2021) found that doctor emigration density of Nigeria stands at 15 per 1000 compared with of Ghana's 11 as well as recorded emigration levels of Botswana. Tankwanchi et al. (2021) identified Nigeria, South Africa and Ghana as major African contributors of doctors to the United States as well as nurses to the United Kingdom.

Differences in migration rates come from wage gaps, language links, historical ties, economic stability and active recruitment policies as set out by Hagopian et al. (2019). Rwanda maintains low emigration through strong investments in workforce development infrastructure governance and performance-based financing as noted by Buchan et al. (2020). South Africa acts both as a destination for African health workers and as a source for high income countries as well as this shows regional brain circulation as well as global brain drain. Because Rwanda increased salaries, improved infrastructure supported performance-based financing and made stronger governance as well as Ghana introduced duty hours allowances, rural incentives as well as bilateral agreements although challenges remain as said by Asamani et al, retention strategies also vary across countries. (2021). Botswana reduced emigration through good pay and strong infrastructure as well as South Africa uses scarce skills allowances, rural incentives as well as mandatory community service while National Policy on of Nigeria Health Workforce Migration from the Federal Ministry of Health (2024) draws lessons from these countries although Dieleman et al. (2020) warn that policies must fit local setting rather than being copied in a direct way.

2.2 Thematic Review

2.2.1 Economic Welfare and Health Worker Migration from Nigeria

Okeke (2019) carried out a comprehensive study titled Brain drain Do economic conditions push doctors out of developing countries with the aim of testing whether deteriorating economic conditions serve as primary drivers of physician migration from low income countries to high income countries. He used econometric analysis with panel data that

connected emigration rates with key economic indicators that include GDP per capita unemployment rates inflation currency exchange rates and real wage levels across multiple developing countries that included Nigeria. He then used regression models that controlled for political stability, infrastructure quality and destination country pull factors so the effect of economic variables could stand out with clearer separation. His findings found strong positive links between worsening economic conditions and rising physician emigration rates while salary gaps between source as well as destination countries appeared as the strongest predictor of migration decisions. For Nigeria he recorded that doctors earned between ₦200,000 and ₦400,000 monthly (approximately \$250 to \$500 at 2019 exchange rates) whilst similar roles in the United Kingdom offered £3,000 to £6,000 monthly (about \$3,600 to \$7,200). This pattern produced wage gaps of between 700% and 1,400% which made the gap feel large enough to shape many choices. He further explained that these pay gaps created dominant economic incentives for migration that became stronger during periods of naira devaluation, high inflation and delayed salary payments which described the Nigerian economic setting across the 2015 to 2024 period. His model also found that when other factors were controlled a 10% increase in real wage differential matched an increase of about 7.3% in physician emigration probability across a two year period. He also reported that economic push factors worked through more than one route that included direct purchasing power loss, the struggle to service educational loans and reduced ability to support extended family members as a major cultural obligation in Nigeria. Another route concerned weaker professional status linked with financial strain which could shape confidence and workplace identity. He found that younger physicians found high sensitivity to these economic factors with doctors under 35 showing migration elasticity to wage gaps near double the level found among physicians over 45 years.

Nwimo and Ilo (2020) studied push as well as pull factors influencing the emigration of Nigerian nurses to the United Kingdom through a mixed methods design that combined

quantitative surveys with qualitative interviews to capture both prevalence as well as deeper meaning of economic motivations. Their study surveyed 156 Nigerian trained nurses working in the United Kingdom and it also conducted in depth interviews with 24 nurses to explore the decision making processes that led to migration. The quantitative part used structured questionnaires that asked respondents to rate push and pull factors on Likert scales while the qualitative interviews used semi structured guides that encouraged nurses to narrate their migration journeys with close attention to economic circumstances. Their results showed that 89% of respondents identified not enough remuneration as the strongest push factor behind the decision to leave Nigeria while poor economic conditions were reported by 66% and dissatisfaction with work conditions was reported by 52%. Their explanation found that economic factors worked in connected ways since low base pay joined with irregular payment schedules, high inflation, currency devaluation and rising cost of living created cumulative pressure that made migration look more attractive. Nurses described situations where monthly salaries that looked acceptable on paper became not enough for basic needs when inflation reduced purchasing power or when naira devaluation reduced the real value of earnings. Many nurses also reported delayed salary payments that ranged from one to six months during the 2015 to 2024 period with stronger reports from state government owned hospitals which created debt burdens and reduced the strength of financial planning. Interview accounts found that economic distress shaped material welfare and also touched professional identity as well as self worth since nurses described feelings of being undervalued as well as disrespected when they could not afford decent housing, children's education or healthcare for their own families despite being healthcare providers. Respondents also explained that comparisons with colleagues abroad created strong demonstration effects that pushed migration intentions forward. Pull factors included higher salaries in the United Kingdom reported by 94% of

respondents, better work conditions reported by 88% and stronger opportunities for professional development reported by 76%.

Okoye and Okuzu (2022) identified not enough remuneration as the strongest factor shaping migration decisions since 92% of respondents rated it as very helpful or of extreme importance for emigration. Since 92% of respondents rated it as very helpful or of extreme importance for emigration. Poor work conditions followed because 85% cited this issue as a key reason for leaving Nigeria. Because 78% linked stalled progression with stronger interest in foreign employment, limited career advancement opportunities appeared next. Because 71% reported weak facilities as a major professional constraint, lack of modern equipment and infrastructure shaped decisions. Heavy workload from staff shortages shaped 68% who linked long shifts with burnout and reduced clinical quality. Delayed salary payments shaped 61% who described payroll uncertainty as a source of financial strain and institutional distrust. Okoye and Okuzu used regression analysis to test which factors predicted migration intention across demographic subgroups. Their models controlled for other factors so the specific role of economic variables could be studied. Their results found that economic factors such as salary level payment regularity and allowances were the sole predictors that remained with statistical significance across all subgroups. Younger doctors under 35 years found higher migration intention than older colleagues. This research reported that 94% of doctors aged 25 to 34 planned to emigrate while 67% of doctors over 45 years planned to emigrate. Career stage analysis found that resident doctors in specialist training found high migration intention at 89. Because these doctors had already invested 3 to 5 years in specialty training supported by Nigerian institutions, this result signaled a critical loss. The research documented economic grievances that shaped migration decisions across respondents and across institutions. Base salaries had not increased since 2014 while inflation averaged 12 to 15% each year during the 2015 to 2024 period. Removal of certain allowances after governmental austerity measures

reduced compensation and raised perceptions of unfair treatment. Delays in payment of call duty allowances and hazard allowances also appeared as common complaints. Lack of annual salary reviews to match cost of living increases further reduced the strength of real income and reduced morale. Doctors reported that economic stress reduced their capacity for professional development through conference attendance, journal subscriptions and continuing medical education. These activities required personal funding which many respondents described as unaffordable on current salary levels. Many respondents described a cycle where low pay forced extra income seeking through private practice, locum work or non medical ventures. This income search reduced time for clinical duties and reduced time for study which reduced satisfaction as well as reinforced migration plans. Okoye and Okuzu found that 73% of respondents had taken concrete steps toward migration.

Onah et al. studied the time dimension of migration by comparing verification certificates as official documents issued by the Medical and Dental Council of Nigeria to doctors who seek practice abroad. They found that MDCN issued about 3,200 verification certificates between 2015 and 2018 with an average of 800 per year. They also found about 9,000 certificates between 2019 and 2022 with an average of 2,250 per year which represented a 181% increase. This acceleration corresponded with worsening economic conditions in Nigeria which included recession in 2016 as well as slow recovery through 2017 to 2019 as well as COVID 19 disruption in 2020. The pattern also matched persistent high inflation as well as currency depreciation through 2021 to 2024 which reduced purchasing power for salaried professionals. The researchers noted that verification certificates represented only doctors who had decided to migrate and had completed early steps. This point meant that actual migration intention measured through surveys could be far higher than certification figures suggested. This research also explained that economic factors shaped migration through multiple mechanisms beyond direct salary comparison between countries. Respondents described how

economic stress damaged workplace morale inside hospitals and clinics. Because doctors competed for scarce private practice opportunities that could supplement income, the same stress reduced collegiality. Because senior doctors left or became occupied with supplementary work instead of training juniors, economic strain also reduced the strength of mentorship relationships. Because delayed payments and poor compensation felt like institutional neglect, respondents also described resentment toward hospital administration as well as government. The psychological burden of financial struggle after expensive training and demanding work created feelings of exploitation as well as devaluation. Because it reduced the weight of national loyalty arguments, this emotional state made migration easier to justify. Doctors also reported that seeing colleagues abroad achieve rapid financial success shaped their thinking. They described visible signs such as buying homes as well as buying cars as well as supporting extended family as well as taking vacations.

Adepoju and Van Noorloos (2021) conducted an extensive documentary analysis titled Migration of health workers from Nigeria Magnitude drivers as well as policy implications. Their study synthesised data from the UK General Medical Council as well as the UK Nursing and Midwifery Council as well as Nigerian regulatory agencies as well as academic literature. Their methodology involved time series analysis of registration data across multiple years. Their approach also used comparison with migration patterns from other African countries. Their review of research on migration drivers used thematic assessment to identify consistent patterns across different studies. This research revealed dramatic acceleration in nurse migration to the United Kingdom. The UK Nursing and Midwifery Council registered more than 11,000 Nigerian trained nurses between 2017 as well as 2021. Annual registrations increased from 1,393 in 2017 to 5,543 in 2021 which found sharp growth across a short period. This growth contrasted with fewer than 100 Nigerian nurses registering each year in the early 2010s. The pattern therefore reflected more than a 50 fold increase over about a decade. Their

analysis also said that between 2021 and 2024 about 42,000 nurses emigrated alongside 16,000 doctors. This outflow left Nigeria with only 55,000 licensed doctors for a population exceeding 220 million people. This research described this as a doctor to population ratio near 1:4,000. They compared this figure with the WHO recommended minimum of 1:1,000 for basic healthcare access. They also compared it with the 1:600 ratio in high income countries to show the depth of the gap. Adepoju and Van Noorloos studied economic drivers by reviewing salary data as well as economic indicators as well as migrant testimonies. They documented progressive deterioration in real income during 2015 to 2024 despite static or in a modest way increasing nominal salaries. Inflation averaged 12.5% in an annual way from 2015 to 2019 while it rose to about 15 to 18% during 2020 to 2024. Official salary reviews took place now and then with increases of 5 to 7% which did not keep up with inflation trends.

Adepoju and Van Noorloos looked into life cycle considerations by looking closely at migration patterns across age groups. They found that nurses aged 25 to 35 had the highest migration rates. They tied this to completed training and 3 to 7 years of experience seen as worth much by foreign employers. They also tied it to fewer limits from school age children or elderly parent duty of care. This group needed housing, marriage, childbearing, and early education costs, so the economic calculation in Nigeria seemed not good. They also stayed at the bottom of salary scales with entry level pay. This research said that salary increases abroad are in many cases life changing. This point set out usual increases of 600 to 1000% in absolute terms and 300 to 500% in purchasing power terms. They put forward the view that such wins press together decades of slow rise in career into a few years abroad. The researchers also looked into economic remittances as a pull factor. Nigerian health workers abroad sent money home which showed economic benefit and at times paid for further migration. Survey data from Nigerian health workers in the UK found that 78% sent regular remittances averaging £300-500 monthly (₦200,000-350,000 at 2021 rates). These sums in many cases went past

earnings of family members who stayed in Nigerian health roles. Remittances therefore made stronger motivation and gave resources for others to follow. Adepoju and Van Noorloos explained that economic factors operated at individual as well as household levels.

Ossai et al. (2021) conducted research titled Prevalence and predictors of intention to emigrate among final year medical students in Ebonyi State University Southeast Nigeria which studied migration intentions before students entered the workforce as well as this gave insight into how economic perceptions shaped career plans from early stages. Their cross sectional survey of 150 final year medical students used validated questionnaires while chi square tests as well as logistic regression were used to identify factors associated with migration intention. This research found that 72% of students intended to emigrate and 85% of those intending to migrate cited poor economic conditions as well as not enough remuneration as primary reasons. This result mattered because it found that economic push factors shaped career decisions before students had direct experience of Nigerian health sector salaries. This pattern suggested that information about economic conditions circulated through social networks media reports as well as observation of family members or mentors in health professions. Ossai et al. found that students formed economic expectations through many information sources that shaped beliefs about future welfare. Students gained information through discussions with resident doctors as well as consultants during clinical rotations where senior staff described financial struggles as well as household pressure. Students also used social media groups where recent graduates shared migration experiences and these accounts set out economic improvement abroad as normal outcomes. Students also experienced family expectations that medical training should lead to economic success and this expectation appeared difficult to meet through Nigerian practice alone. Students also compared lifestyle observations between Nigerian doctors and doctors who had migrated which made stronger the feeling that migration offered better economic outcomes. Students from urban backgrounds

found higher migration intention at 79% while rural students found 64% and researchers linked this difference to exposure to international information as well as stronger family expectations for economic success as well as knowledge of migration pathways. These mechanisms included currency depreciation that reduced the international value of Nigerian salaries. These mechanisms included visible income comparisons with migrated colleagues which created demonstration effects. These mechanisms also included inability to fulfil cultural obligations for family support on not enough earnings. Across cadres such as doctors, nurses as well as midwives and across career stages such as students junior staff mid career staff as well as senior staff as well as across employment sectors such as federal state as well as private as well as across regions economic dissatisfaction appeared as the dominant migration driver. Studies reported that 85 to 92% of potential migrants identified salary as well as economic factors as primary or in an extreme way helpful considerations. The evidence also shows that economic push factors served as necessary preconditions that shaped whether other workplace problems translated into actual migration. Health workers experiencing poor work conditions, limited equipment or heavy workloads but receiving adequate compensation found lower migration intention than those with similar conditions but not enough pay. This pattern establishes economic welfare not as one factor among equals but as the fundamental determinant shaping whether Nigeria's health workforce remained or departed during 2015 to 2024.

2.2.2 Impact of Health Worker Migration on the Capacity and Delivery of Healthcare in Nigeria.

Eze and Onyishi (2021) conducted a broad study on movement of Nigerian health workers as well as its effects on healthcare service provision in tertiary hospitals across Lagos as well as Abuja. Their research used documentary analysis with institutional data from human resource units as well as service delivery records as well as facility management reports for 2015 to 2020. This research studied how emigration led to workforce loss shaped capacity

through staffing levels as well as patient to health worker ratios as well as service hours as well as ward operations as well as facility working conditions. Their findings found a major fall in healthcare delivery capacity with a plain link to health worker migration. By 2020 nursing vacancy rates in the surveyed hospitals rose above 40% which meant more than two of five approved nursing posts stayed unfilled. Because many qualified staff chose migration preparation over public sector posts, this outcome followed emigration as well as retirement without replacement as well as weak recruitment. Because wards planned for full day coverage worked with thin staff teams during night shifts, these vacancy rates created operational limits. Because too few nurses were available for the monitoring required for critical patients, intensive care units reduced bed capacity. Because no qualified staff were present at those hours, some specialist units closed during some shifts. Patient to health worker ratios became more than 1:100 in many wards which was far above the reference ratio near 1:20 and above the Nigerian target of 1:40. Because nurses could not complete full assessment and could not give safe medicine administration as well as could not give patient education, these ratios produced service failures. Doctors faced similar pressure because consultant physicians in some departments managed 80 to 120 inpatients at one time. This exceeded the reference range of 15 to 25 patients that supports careful review as well as sound clinical judgement. Medical officers in outpatient clinics saw 60 to 80 patients within four hour sessions which allowed about three to four minutes per patient. Such a short time reduced the strength of history taking as well as examination as well as diagnosis as well as treatment planning within one meeting. Eze and Onyishi found that workforce loss forced hospitals to take harsh decisions that reduced healthcare delivery. Because safe staffing could not be maintained, some hospitals closed specialist wards such as stroke units as well as cardiac monitoring units. Patients needing this care moved to general wards with weak monitoring or to intensive care units that became crowded with mixed cases.

Because emergency departments required 24 hour specialist coverage that could not be sustained with depleted workforces, eze and Onyishi studied emergency care delivery as well as found heavy capacity constraints. Many hospitals reported periods when no doctor was present in emergency departments during night shifts and to a major degree ill patients were managed by nurses who called doctors by phone for guidance. Because phone advice cannot replace direct assessment and rapid intervention, this practice reduces care quality as well as patient safety. Emergency department overcrowding worsened because patients who could not reach outpatient clinics or specialty services used emergency departments as their sole option. This pattern overwhelmed departments that lacked enough staff to manage true emergencies as well as primary care overflow. Ambulance services fell because paramedic emigration reduced pre hospital capacity and remaining ambulances worked without qualified attendants. Ambulance responses also reduced because weak hospital staffing meant transported patients could not be safely received. The researchers documented that capacity constraints forced informal rationing of care through many mechanisms across facilities. Appointment delays extended to 3 to 6 months for specialty consultations which denied timely access for many patients. Hospitals limited daily patient registrations which created queues where patients arrived before dawn to secure appointments. Expensive services such as advanced imaging as well as specialised procedures were restricted to priority cases chosen through ad hoc criteria. Patients with detailed conditions needing multidisciplinary input received fragmented care from whichever single specialist was available. Eze and Onyishi found that capacity loss shaped poor as well as vulnerable groups more than wealthy groups because access options differed. Wealthy Nigerians shifted to costly private hospitals which attracted staff through higher salaries as well as improved conditions and this deepened public sector depletion. Wealthy Nigerians also travelled abroad for healthcare when domestic services became

uncertain. Poor Nigerians faced closed wards, cancelled services, overwhelmed providers and effective denial of specialised care that existed in formal terms yet was inaccessible in practice.

State epidemiology units operated with 1-2 staff instead of the required 10-15 which made rapid outbreak response impossible. Immunization programmes lacked cold chain managers as well as vaccinators as well as supervisors so coverage targets failed. Tuberculosis control programmes could not conduct contact tracing or in a direct way observed therapy with available personnel. HIV programmes lacked counsellors as well as adherence support workers so retention in care reduced the strength of. These public health constraints meant preventable diseases continued without effective checks and outbreaks spread before detection while community interventions that needed sustained presence could not hold. The result was rising demand for curative care that depleted systems could not meet. Oleribe et al. found that healthcare delivery capacity constraints created plain access barriers. Facilities turned patients away because no doctor was available. Women in labour moved between hospitals while searching for staff to conduct deliveries. Because theatre lists progressed with slowness, surgical patients waited months or years for procedures. Specialty clinics were cancelled when the sole specialist emigrated. These barriers were uneven because poor as well as rural groups faced near exclusion from specialised care while urban residents as well as wealthy groups faced delay as well as cost yet could still reach care through persistence as well as connections as well as payment. The researchers calculated that optimal distribution of the existing workforce by population need could allow basic primary care for 75-80% of the population instead of the current 40-45% with reasonable access. Because migration removed workers faster than training programmes replaced them, this theoretical improvement could not be achieved. This research treated workforce to population ratios as basic indicators of healthcare delivery capacity. Nigeria doctor ratio was about 4 per 10,000 compared with WHO guidance of 10 per 10,000 while functional universal systems in high income states reach 25-45 per 10,000.

Nursing ratios stayed weak at about 16 per 10,000 rather than a recommended 20-25 per 10,000. Midwife ratios were deficient at about 3 per 10,000 women of reproductive age rather than a recommended 6-8 per 10,000 and this harmed maternal care delivery capacity. These ratios meant the system lacked a workforce foundation even where other reforms existed. Oleribe et al. emphasised that migration reduced numbers and damaged skill mix as well as experience.

The National Population Commission Nigeria and ICF (2019) reported findings from the 2018 Nigeria Demographic as well as Health Survey which gave population level evidence on access as well as use patterns. The survey covered 41,821 households and recorded care seeking behaviour as well as barriers as well as outcomes that reflected lived experience of delivery capacity. The survey reported that only 39% of births occurred in health facilities so 61% occurred outside the formal system in homes as well as traditional birth attendant settings as well as informal environments without skilled delivery care or emergency obstetric services or newborn resuscitation when complications arose. Because many communities lacked facilities with skilled birth attendants and existing facilities lacked staff for continuous delivery cover while poor care quality from overworked staff discouraged use, this low facility delivery rate reflected not enough delivery capacity. The survey found that only 43% of births had skilled attendance by doctor or nurse or midwife so 57% had unskilled attendance by relatives as well as traditional birth attendants as well as community health workers or had no assistance. This found that even women who sought some support often could not reach qualified workers. Regional differences were stark because skilled attendance ranged from 87% in Lagos to 12% in some northern states which reflected extreme geographic maldistribution. Urban births had 78% skilled attendance while rural births had 30% skilled attendance which found that different health systems operated within one state through location based capacity gaps. The DHS data found that only 67% of pregnant women received any antenatal care and only 31% attended the recommended minimum of four antenatal visits. Constraints included not enough midwives as

well as nurses as well as limited clinic days as well as long queues from predawn as well as long distance to staffed facilities as well as closures when the only qualified provider emigrated or transferred. The survey found that antenatal quality was often not enough. Only 55% had blood pressure measured and 48% had urine tested as well as 62% had blood samples taken as well as 47% received information about pregnancy complications. These gaps found rushed consultations as well as staff shortage pressure as well as weak supplies and they reduced the ability of antenatal care to detect risk as well as prevent complications. The DHS findings found inverse care law patterns for emergency obstetric needs. Among women who experienced major complications during the most recent delivery 47% reported at least one significant barrier to receiving care.

WHO (2019) published an analysis of maternal health in Nigeria which linked health worker availability to healthcare delivery capacity for pregnancy care as well as maternal outcomes. The report said that Nigeria with about 200 million people accounted for close to 20% of global maternal deaths although it represented a mere 2.6% of world population. WHO said that this pattern shows a failure of maternal healthcare delivery which reflects shortages of skilled birth attendants. The report said that between 2005 and 2015 Nigeria recorded more than 600,000 maternal deaths as well as over 900,000 near miss cases where women survived heavy complications. WHO described these outcomes as preventable when systems give skilled attendants as well as emergency obstetric care as well as blood transfusion services. WHO said that the 2018 based maternal mortality ratio was 512 deaths per 100,000 live births while uncertainty ranged from 350 to 890 per 100,000 due to weak registration systems. WHO said that maternal mortality follows causal as well as dose responsive links with delivery capacity. Countries with high skilled birth attendant coverage show low maternal mortality while facilities with adequate staffing show better emergency obstetric outcomes. Areas with improved midwife to population ratios show measurable reduction in maternal mortality across

time. WHO said that Nigeria skilled birth attendance near 43% stayed far below the 95 to 100% levels seen in low mortality settings. WHO listed main causes of maternal death as hemorrhage 23% as well as infections 17% as well as hypertensive disorders 15% as well as obstructed labor 11% as well as unsafe abortion 9%. WHO said that these are preventable or treatable conditions when women can access skilled providers as well as emergency intervention as well as surgical capacity. WHO argued that the lethality reflects gaps in delivery capacity when women cannot access timely care. WHO described major inequalities in maternal healthcare delivery capacity across Nigeria. Some states reached maternal mortality ratios around 165 per 100,000 while other states exceeded 1,500 per 100,000. Because states with low density of skilled staff show high mortality, WHO linked these gaps with health worker distribution as well as availability. WHO gave examples of high mortality states such as Katsina 1,549 as well as Zamfara 1,023 as well as Jigawa 1,002 per 100,000. WHO also gave lower mortality examples such as Ondo 165 as well as Osun 224 as well as Oyo 286 per 100,000. WHO said that women faced a 1 in 22 lifetime risk of maternal death compared to 1 in 4,900 in developed countries.

Tukur et al. (2022) published a prospective study titled Quality and outcomes of maternal as well as perinatal care for 76,563 pregnancies reported in a nationwide network of Nigerian referral level hospitals. This research measured how health worker availability shaped maternal as well as newborn care quality as well as outcomes. Data came from 97 hospitals across six geopolitical zones between 2015 and 2019. The network included 35 tertiary teaching hospitals as well as 62 secondary referral hospitals. This research used standard data tools to document pregnancy outcomes as well as quality indicators as well as resource availability including staffing levels. This research analysed relationships through multivariable models that controlled for patient risk factors. This research aimed to isolate the effect of care quality as well as delivery capacity on outcomes. This research reported maternal mortality ratios in tertiary hospitals from 706 to 1,088 per 100,000 live births. The authors said that such rates

should not occur in referral facilities with specialist staff as well as equipment as well as resources. This research reported patient to provider ratios above 1:50 for midwives during labour as well as delivery which made continuous monitoring impossible. This research also reported doctor to patient ratios above 1:80 in some obstetric departments which forced supervision of many simultaneous deliveries. This research said that this workload created rushed decision making as well as delayed response to complications. This research also said that serial cesarean work without recovery time can degrade performance as well as patient safety. Because staffing gaps blocked complication management, Tukur et al. reported that secondary hospitals referred many cases to tertiary facilities. Not enough anesthetists prevented cesarean sections. Absent blood bank personnel meant hemorrhage cases required referral. Lack of pediatricians meant babies needing resuscitation or neonatal intensive care had to be transferred. Many transfers arrived too late for effective intervention and this increased burden within tertiary units. Because staffing limits reduced attention as well as time, tukur et al. reported that proven quality practices were implemented with uneven coverage. Labour companion support was given to 31% of labouring women. Use of partographs occurred in 54% of laborers.

Tukur et al. documented that perinatal outcomes found limits in healthcare delivery capacity. Stillbirth rates averaged 42 per 1,000 births whereas high income countries report 3 to 5 per 1,000 births. Initial neonatal mortality was 27 per 1,000 live births whereas developed countries report 1 to 2 per 1,000 live births. Apgar scores below 7 at 5 minutes occurred in 8.3% of newborns whereas optimal settings report <1% of newborns. These poor outcomes reflected not enough delivery capacity for basic obstetric and newborn care within many referral facilities. The limits included weak fetal monitoring that failed to detect distress during labour. The limits also included delays in performing emergency cesarean sections when plain indications existed. The limits further included weak neonatal resuscitation capacity that

related to pediatrician shortages and skills gaps. The limits also included absent neonatal intensive care services for premature or sick newborns. This research reported that cesarean delivery rates varied from 8% to 52% across facilities. This range reflected capacity constraints rather than evidence based practice. Facilities with adequate anesthetic coverage performed surgery that matched clinical indication and case mix. Understaffed facilities performed too few operations because theatre support was missing. Because surgery became a workload control tool, other understaffed facilities performed too many operations. This meant that the same clinical condition could lead to different decisions depending on staff availability. The research also showed that capacity constraints caused uneven care quality by timing and condition rather than by clinical need. Weekend and night deliveries showed worse outcomes than weekday daytime deliveries. The adjusted OR for maternal death was 1.7 for weekends and 2.1 for nights with $p < 0.01$ for both. This outcome gap took place because staffing levels fell outside regular working hours. Night and weekend periods in many cases had skeleton crews set next to more staff on duty during business hours. This causes sudden capacity loss rather than slow quality fall. Patients then must travel long distances, seek private care at costs few can afford, or go without treatment. This research closed with the view that the health worker shortage of Africa had reached a point of great danger where delivery capacity was short of what is needed for basic population needs. Nigeria was among the countries shaped in the heaviest way in that study. The researchers put forward the view that ways of working that put weight on training without matching weight on retention are weak in design. They set out such ways of working as production for export that gives more to destination systems than source systems. They put forward the view that in future if migration trends continue without control some high emigration countries could face system collapse within 15-20 years. They put weight on the point that delivery capacity is at the last point limited by human resources no matter financing or infrastructure. Trained health workers cannot be made in a fast way and cannot be

swapped by equipment alone. The coming together of proof across these studies backs the view that migration has in a heavy way brought down the healthcare delivery capacity of Nigeria from 2015 to 2024.

The evidence across Eze and Onyishi, Oleribe et al., the Nigeria Demographic and Health Survey, WHO and Tukur et al. shows that health worker migration makes weak healthcare delivery through linked paths. It brings down the number of doctors, nurses, midwives and specialists on hand for daily service. It makes worse patient to provider ratios and pushes remaining staff into heavy workloads. It makes weak specialist units because some services depend on small groups of highly trained staff. It also brings down quality because staff worked too hard has less time for close watch, counselling, infection control and careful clinical decisions. The burden lands at its hardest point on rural communities, poorer households, pregnant women, newborns and patients who need emergency or specialist care. This means that migration is not only a labour market issue. It is also a public health issue because it affects access, safety, equity and health outcomes. The reviewed literature therefore supports the second objective of this study by showing that migration reduced the capacity and delivery strength of the Nigerian healthcare system between 2015 and 2024.

2.3 Theoretical Review

2.3.1 Push-Pull Theory of Migration

The push pull theory of migration started with Ernst Georg Ravenstein who set out the Laws of Migration in 1885, to explain why people move from one place to another. Everett S Lee expanded this early work in 1966 by creating a more systematic way to understand how people make choices about migration. The basic idea says that push factors are negative conditions in the home area which drive people away such as unemployment, poverty, conflict, weak services or lack of opportunity. Pull factors are positive features in the destination which

attract people such as better jobs, higher wages, strong public services, improved living standard and safety as explained by Yeates as well as Pillinger (2019).

The theory says that people migrate when they judge that the gains in the destination outweigh the disadvantages of staying at home after they consider obstacles such as distance travel costs immigration rules and the emotional strain of leaving home. This point assumes that migrants have enough information about both places to make rational comparisons and that decisions rest mostly on economic conditions. This point also assumes that people respond in a predictable manner to changes in push and pull pressures as noted by the International Organization for Migration (2020).

Many scholars argue that the theory simplifies decisions that are often detailed and emotional. Critics state that it does not give enough attention to non-economic factors such as family ties, identity belonging and personal values. They add that it overlooks structural barriers such as strict immigration policies or the lack of money to migrate even when push and pull conditions favour movement. Another concern is the idea that migrants always think in a full rational way despite the fact that people often rely on uncertain or incomplete information as explained by Martineau et al. (2022). These critiques encouraged newer versions of the theory to include ideas such as the shape of social networks, the reality of limited choices and the view of migration as a long process instead of a single event.

The theory remains helpful for explaining the movement of Nigerian health workers. This point helps identify push factors such as poor salaries described by Okeke (2019), weak work conditions reported by Nwimo and Ilo (2020), limited career progress, political uncertainty as well as insecurity. This point also helps explain the pull factors which attract Nigerian health workers to other countries such as far higher salaries, better infrastructure, structured professional development and improved work life balance. Because it allows an assessment of whether push factors in Nigeria are stronger or pull factors in destination

countries are more appealing, the theory supports comparison with other African countries. This point also guides policy discussions by showing which push factors need action.

Because it does not in full consider motivations such as professional identity commitment to patient care or moral calling which Hagopian et al, the theory however has limits when used to health professionals. (2019) state play helpful roles in health worker migration.

2.3.2 Human Capital Theory

Human capital theory came from the work of Theodore Schultz in 1961 and Gary Becker in 1964 as well as it grew from an earlier study by Jacob Mincer in 1958 who found how education as well as experience shape earnings. The theory treats education, training, health and even migration as forms of investment in much the same way that money can go into machines or other physical assets. Because greater skill levels raise their productivity and future income, the key idea says that people build their skills. Education and training bring financial costs such as tuition as well as lost pay during study, yet they also bring expected gains like higher wages as well as better work opportunities. Because future earnings in another country rise far above the financial and emotional costs of travel as well as separation as explained in Ogbonnaya et al, migration fits into this idea when workers leave Nigeria. (2021). Becker said that human capital sits within each person and can move across borders as well as receive rewards in labour markets that link pay to productivity. The theory works with the belief that people make rational choices based on full information and that skills shift across different settings as well as that labour markets operate in a competitive manner. Because discrimination of unequal access to education, unfair labour markets and institutional wage systems do not always reward productivity, a growing body of criticism says the model ignores real world barriers that stop this smooth process. Critics also note that people do not make perfect rational choices and that non-economic motivations such as professional identity,

personal fulfilment as well as social belonging shape decisions as noted in Loewenson as well as Thompson (2020). Later versions of the theory introduce ideas like signalling which shows how qualifications act as signs of competence along with the shape of social networks and the presence of risk as well as uncertainty that shape decisions.

In Nigerian health worker migration this theory explains why many doctors and nurses choose to leave Nigeria. This point sets out migration as a rational investment choice that seeks higher returns on expensive medical or nursing education through better pay, professional freedom and improved career progress in other countries. Because they have many working years ahead that allow them to recover costs linked to migration such as travel lodging and licensing exams, adepoju as well as Van Noorloos (2021) found that young health workers migrate more often. Because they gain trained staff without paying for their education as said in Saluja et al, the theory also explains why destination countries want Nigerian health workers. (2020).

The theory gives a plain economic account, yet it cannot in full explain motivations shaped by ethics, service commitment, workplace identity, emotional ties and social pressures. This gap shows that the theory works best when used with other frameworks that cover wider human shapes on migration choices.

2.3.3 World Systems Theory

Because wealthy core countries gain from unequal economic ties that favour the core, world systems theory came from the work of Immanuel Wallerstein in the 1970s and it grew from earlier dependency theory linked to Raúl Prebisch Andre Gunder Frank as well as Samir Amin who argued that periphery countries stay underdeveloped. The theory sees the world as one connected capitalist system that has core semi periphery and periphery zones that each hold different levels of power. Core countries build wealth through steady extraction of economic value from periphery countries whose economies stay dependent and outward facing.

Wallerstein said that colonialism made these global divisions stronger and that modern migration patterns including the movement of health workers still reflect deep rooted global inequalities noted in Aluttis et al. 2019. The theory rests on the belief that core and periphery positions stay stable over long periods as well as that global capitalism shapes national outcomes while periphery underdevelopment grows in the main from external exploitation rather than domestic governance challenges.

A strong group of critics hold that world systems theory makes national situations too simple and treats economic forces as overly deterministic as well as gives too little space for agency within periphery countries. The theory also struggles when it tries to explain South South migration that does not include core destinations. Later versions add more focus on the semi periphery of resistance movements and on the roles of gender as well as race in the making of global inequalities. When used to Nigerian health worker migration the theory helps show how historical and structural conditions guide movement patterns. Nigeria had a long colonial history and an English language orientation as well as a British style medical training system that created enduring institutional links that guide movement toward the United Kingdom. Tankwanchi et al. (2021) recorded how these historical links continue in the present as Nigerian doctors and nurses form a major share of African trained health workers in core countries. The theory explains why migration moves in one main direction from periphery countries like Nigeria toward core destinations such as the United Kingdom and the United States rather than through equal exchange. This point also brings out how core countries gain trained Nigerian health workers without paying for their education which mirrors earlier extraction of natural resources while Nigeria faces ongoing loss of vital workforce capacity noted in Hagopian et al. 2019.

Because it cannot show why periphery countries with similar positions record different migration rates, yet world systems theory brings plain limits when used to explain migration.

The theory also gives limited attention to personal motivations such as professional goals, family needs, or safety concerns. Because it focuses on global structures that individual countries cannot reshape with ease even though it highlights broad structural inequalities, this point further remains restrictive for policy design.

2.3.4 Social Network Theory

Social network theory grew through the work of Mark Granovetter James Coleman Elizabeth Bott J Clyde Mitchell Douglas Massey and Charles Tilly as well as it explains migration as a process shaped by social ties rather than single personal choices. Because of economic or personal reasons but also because they hold relationships with others who migrated earlier, the theory says that people move not only. Granovetter introduced the idea called the Strength of Weak Ties in 1973, which shows that even loose social connections can give helpful information and open opportunities that support movement. Because each new migrant strengthens the network and makes it easier for more people to follow, massey added the idea of cumulative causation which shows that once migration begins it becomes self-sustaining. Within this theory, networks give information, emotional support, financial help and practical guidance that lower the risks as well as costs of movement. Because existing social ties make those places easier to understand, noted in Yeates and Pillinger 2019, they also build path dependence which means new migrants choose the same destinations as earlier migrants.

The theory rests on the belief that social ties give steady positive support, that network members help new migrants and that strong networks can predict where migrants will go. Because networks sometimes include unequal power where people abroad feel pressure to send money home or sponsor others, critics argue that these beliefs remain too hopeful. Networks also fail when they meet obstacles like strict immigration rules or lack of money for travel. The theory also struggles to explain the first person who leaves a community before any network

appears. Later versions respond to these concerns by separating strong and weak ties by recognising negative aspects of networks by adding digital communication as well as by studying how network patterns guide movement routes.

Because it shows how diaspora ties help create steady long-term flows as doctors and nurses follow earlier migrants from the same regions training schools or professional groups, in Nigerian health worker migration, the theory gives helpful insight. This pattern helps explain the sharp increase recorded by Onah et al. (2022) because growing networks remove information gaps and make steps like licensing job searching housing as well as workplace entry easier to manage. Jirovsky et al. 2019 also found how digital platforms and diaspora groups speed these steps by giving real-time guidance, mentorship as well as emotional support. Destination clusters such as Nigerian nurses in the United Kingdom and specialists in the United States show how established network routes guide movement choices.

Yet the theory cannot show why some health workers with strong networks decide to stay in Nigeria and it cannot in full address structural barriers such as immigration rules as well as financial limits that shape movement even when social ties remain strong.

2.3.5 Health Systems Strengthening Framework

The WHO health systems framework came from wide global consultations and it appeared in the 2007 report titled *Business Making stronger Health of Everybody Systems to Improve Health Outcomes*. The framework grew from the work of David Peters, Julio Frenk Don de Savigny and Taghreed Adam as well as it rested on earlier ideas shaped by Roemer as well as Field. The framework sets out six key building blocks of a health system which include service delivery of health workforce information systems, medical products and technologies, health financing as well as leadership as well as governance. WHO (2020) explains that these building blocks work as joined parts of one whole system and making stronger them together

improves health outcomes, system responsiveness, financial protection as well as overall efficiency.

The framework works with the belief that each building block can stand as a separate point of study while still showing strong connections across the system and that technical improvement within these areas leads to better system performance. This point also assumes that the same structure fits all countries across all income groups and settings. Critics argue that the model remains too fixed and cannot show the moving interactions, the feedback patterns as well as the political factors that shape real health systems. They point out that the model gives too little space to power relations and the political economy of health as well as that it leaves limited guidance on how to choose priorities. When resources stay scarce as well as that it may lead to narrow actions when groups focus on single building blocks without looking at the full system. Abimbola et al. (2019) suggest changes that bring in systems thinking resilience, social determinants of health and diagonal approaches where disease programmes make stronger wider system functions.

Because it shows that migration harms more than the workforce alone, this framework fits Nigerian health worker migration. Loss of health workers weakens service delivery, reduces the strength of health information, breaks leadership growth and harms financial efficiency by wasting training investments. Campbell et al. 2019 show that workforce loss disrupts many system functions at the same time, which reduces the ability of a country to give high quality and fair care. Examples from Rwanda show that countries which improve governance financing infrastructure and workforce systems at the same time can keep health workers more with effect than countries that use salary increases or isolated incentives noted in Buchan et al. (2020). Yet the framework gives limited space to the political and financial limits that Nigeria faces when it tries to make stronger the health system at a large scale.

2.4 Empirical Review

Onah et al., (2022) carried out a study titled Physician emigration from Nigeria and the associated factors The implications to safeguarding the Nigeria health system as well. As their aims were to measure physicians intentions to leave Nigeria to identify the factors that shape these choices as well as to explain the meaning of these findings for health system policy. They used a cross-sectional survey with 913 physicians from 37 states and they gathered information with semi structured questionnaires shared through WhatsApp as well as Telegram groups of the Nigeria Medical Association as well as they analysed the data with IBM SPSS 25. This research found that 56.7 percent of doctors held a high intention to leave Nigeria and this intention found strong links with age, marital status, years of practice as well as employment in public facilities. The authors said that Nigeria faces a major loss of physicians and they argued that policy makers must act with urgency to address poor pay, weak work conditions as well as limited career progress.

Adepoju and Van Noorloos (2021) studied Migration of health workers from Nigeria Magnitude drivers as well as policy implications as well as their aims were to estimate the scale of health worker migration from Nigeria to identify the drivers as well as to suggest policy actions. They used documentary analysis and they reviewed data from the UK General Medical Council, the UK Nursing as well as Midwifery Council as well as Nigerian regulatory agencies with support from earlier literature. Their study found that more than 11000 Nigerian trained nurses registered with the UK Nursing and Midwifery Council between 2017 as well as 2021 compared with fewer than 100 each year in the early 2010s. Because destination countries eased immigration rules and increased recruitment, they found that migration grew during the COVID 19 pandemic. They concluded that Nigeria faces an unprecedented loss of health workers and needs broad measures such as better salaries, stronger infrastructure as well as fair bilateral agreements.

Clemens and Pettersson (2021) published new data on African health professionals abroad as well as their aims were to give updated numbers on African health worker migration to create comparable emigration density measures as well as to evaluate regional brain drain. They used quantitative analysis of destination country registration databases with WHO workforce statistics and national regulatory data as well as they calculated emigration density as emigrants per 1000 health workers. They reported that sub-Saharan Africa lost around 70000 doctors and nurses to high income countries between 2010 as well as 2018 as well as they found that Nigeria had a doctor emigration density of about 15 per 1000 which stayed higher than Ghana at 11. They explained that these differences show that national policies with strength shape migration patterns.

Tankwanchi et al., (2021) carried out Physician emigration from sub Saharan Africa to the United States Analysis of the 2011 AMA Physician Masterfile. And their aims were to measure the scale of physician migration from Africa to the United States to identify the main source countries as well as to study the meaning of this trend for brain drain. They used quantitative analysis of the AMA Physician Masterfile and US Census data as well as they found that 86 percent of African born physicians in the United States came from ten countries. Nigeria contributed the largest share and Nigerian trained doctors formed 45.02 percent of all international medical graduates from sub-Saharan African medical schools working in the United States. They concluded that African countries with special attention Nigeria, Ghana and South Africa face heavy human capital losses that require joint global action.

Okeke 2019 wrote Brain drain Do economic conditions push doctors out of developing countries and his aim was to test whether weak economic conditions drive physician migration. He used econometric analysis of panel data that linked emigration rates with GDP per capita unemployment inflation and exchange rates as well as he found strong positive links between worsening economic conditions as well as rising emigration. He found that salary differences

between source and destination countries were the strongest predictors of movement. Okeke concluded that economic push factors to a heavy degree shape migration choices and that better economic stability as well as improved pay could reduce emigration though he said that matching the salaries of developed countries stays unrealistic for low-income countries.

Nwimo and Ilo (2020) published Push as well as pull factors influencing the emigration of Nigerian nurses to the United Kingdom with the aim of identifying the major push forces in Nigeria as well as the main pull forces in the United Kingdom that shape nurses' migration choices. They used a mixed methods design that joined a quantitative survey of 156 Nigerian nurses who had moved to the United Kingdom with qualitative interviews held with 24 nurses. Their findings found that 89 percent named not enough remuneration as the strongest push force followed by poor economic conditions reported by 66 percent and dissatisfaction with work conditions reported by 52 percent. Pull forces included higher salaries in the United Kingdom reported by 94 percent, better work conditions reported by 88 percent and stronger chances for professional development reported by 76 percent. The authors concluded that Nigerian nurses consider many economic and professional issues which shows that effective retention must handle many problems at the same time rather than depend on single policy actions.

Okoye and Okuzu (2022) carried out medical brain drain Analysis of factors influencing migration decisions among Nigerian doctors with aims to identify the forces that shape migration choices to measure how common migration intention has become as well as to find predictors of high migration intention. They used a cross-sectional survey of 450 doctors across Nigeria and analysed the data with logistic regression. Their study found that 88 percent planned to leave Nigeria within five years and the strongest factors were not enough remuneration reported by 92 percent, poor work conditions reported by 85 percent as well as limited career progress reported by 78 percent. Younger doctors found far higher migration

intention than older doctors. The authors concluded that this near universal desire to emigrate sets out a major threat to the future strength of the Nigerian health system and demands urgent policy action that covers many linked issues.

Ossai et al., (2021) published Prevalence and predictors of intention to emigrate among final year medical students in Ebonyi State University Southeast Nigeria to explore migration intention before graduation. They used a cross-sectional survey of 150 final year medical students and they found that 72 percent intended to leave Nigeria with 85 percent stating that poor work conditions shaped their choice. Students who had family members abroad found a far higher chance of planning to migrate, which points to strong shape from social networks. The authors concluded that most Nigerian medical students now see migration as their preferred career route and that new waves of movement will continue except the health system becomes stronger.

Tukur et al., (2022) carried out Quality and outcomes of maternal as well as perinatal care for 76563 pregnancies reported in a nationwide network of Nigerian referral level hospitals with the aim of evaluating quality of care as well as predictors of maternal as well as perinatal deaths. Their prospective observational study included 97 hospitals and used multivariable models for analysis. They reported maternal mortality ratios between 706 and 1088 per 100000 live births in tertiary hospitals as well as they found that lack of labour companionship as well as failure to use partographs had strong links with maternal deaths which found that understaffing prevented staff from using basic quality practices. They concluded that workforce shortages in a direct way harm quality of care and increase the risk of maternal mortality.

Kinfu et al. (2020) published the health worker shortage in Africa Are enough physicians and nurses being trained with aims to test whether African countries train enough health workers to study how workforce density relates to health outcomes as well as to identify

factors that shape sufficiency. They used WHO workforce data training records, population health indicators and migration data as well as they found strong links between health worker density as well as health outcomes. Countries that met the WHO level of 4.45 skilled workers per 1000 people recorded better health results while migration reduced the active workforce even in countries with large output of graduates. They concluded that brain drain weakens ability to manage of Africa its disease burden and that retention must grow along with training expansion.

2.5 Summary of Literature and Gap

The reviewed literature shows the scale, the causes and the consequences of health worker migration with strong focus on Nigeria. Conceptual studies explain migration as a detailed process shaped by push and pull forces, economic pressure, global inequality, social networks as well as weaknesses within health systems noted in Martineau et al., (2022) as well as Okeke (2019). Because poor salaries, weak work conditions, limited career chances and political or social instability shape their decisions noted in Onah et al, thematic evidence shows that Nigeria faces a fast rising movement of doctors as well as nurses to the United Kingdom as well as the United States as well as South Africa. (2022) and Adepoju as well as Van Noorloos (2021).

The literature also shows that migration creates major shortages within the workforce and these shortages break the delivery of healthcare as vacancy levels rise, workloads grow for remaining staff services close as well as quality of care falls. Research links these shortages to harmful health outcomes such as in a extreme way high maternal mortality noted in Tukur et al. (2022) and Eze as well as Onyishi (2021). Many theoretical frameworks such as push and pull theory, human capital theory, world systems theory as well as social network theory explain why health workers migrate by showing that movement grows from economic, social as well as structural shapes.

Yet three major gaps remain. Because most studies focus on short time spans or single professions rather than studying doctors, nurses and midwives together noted in Clemens as well as Pettersson 2021, first few studies give a full comparative analysis of migration rates against of Nigeria other African countries with standard measures across the full period from 2015 to 2024. Second, most studies study outward migration in broad terms and do not give enough destination-country specific analysis of Nigerian doctors, nurses as well as midwives leaving for the United Kingdom, the United States, South Africa as well as other receiving countries which makes the scale as well as direction of workforce loss difficult to understand. Third research gives limited documentation of how policy actions compare of Nigeria with successful retention strategies in countries such as Rwanda, Ghana and Botswana as well as this restricts chances for strong evidence-based policy learning noted in Buchan et al. (2020).

CHAPTER THREE

METHODOLOGY

3.1 Theoretical Framework

The present study uses the Push Pull Theory of Migration which gives a plain and helpful structure for understanding why Nigerian health workers choose to move. The theory started with the work of Ernst Georg Ravenstein in 1885 and it was later expanded by Everett S Lee in 1966 as well as together these ideas give a systematic explanation of how as well as why people move from one place to another. Because it helps reveal the push forces in Nigeria that drive workers away and the pull forces in destination countries that draw them in, the theory stays relevant for the study of health worker migration. By separating these shapes, the theory supports deeper understanding of how health workers compare their choices and make decisions about migration.

3.1.1 Push-Pull Theory of Migration

The Push-Pull Theory of Migration first set out by Ernst Georg Ravenstein in 1885 and later shaped by Everett Lee in 1966 gives a plain explanation of migration as a choice made through weighing harmful conditions in the place of origin against the appealing features found in new places. The theory shows that people move when gains in the destination rise above pressures in the origin and when barriers such as long-distance high costs or strict immigration rules can be passed through in a steady manner (Yeates & Pillinger, 2019). Push factors include unemployment, poverty, weak public services and narrow life chances while pull factors include higher wages, safe environments, improved services as well as a fuller living standard.

The theory rests on the idea that migrants hold enough knowledge to compare different places, make in the main economic choices and respond in a steady way to shifts in push as well as pull pressures. Later writers explain that network structural limits and the gradual pattern of migration also shape the choice to move (International Organization for Migration,

2020). Because it reduces the role of social aims, overlooks major structural limits and depends on rational choice even when migrants hold weak or unclear knowledge (Martineau et al., 2022), critics hold that the theory gives a narrow picture of migration.

When used to Nigerian health worker migration the theory helps show why many doctors and nurses leave the country. Low salaries, poor work conditions, narrow career progress, high insecurity and political uncertainty act as strong push factors (Okeke, 2019; Nwimo & Ilo, 2020). In the same way higher incomes, stronger infrastructure, wider professional growth paths and supportive work settings in receiving says act as strong pull factors. The theory also helps show rises in emigration when Nigerian conditions fall or when receiving says widen recruitment or ease licensing steps. This gives the theory a helpful place in guiding policy work and shaping fair methods for international recruitment (Hagopian et al., 2019).

3.1.2 Applicability of the Theory to the Study

Because it gives a simple structure for comparing migration patterns between Nigeria and other African says through steady reference to pressures in each setting, the Push-Pull Theory fits this study. The theory helps the study pick out the push factors that shape high emigration from Nigeria such as low salaries, poor work conditions and weak governance as well. As it also shows how receiving says such as the United Kingdom, the United Says as well as South Africa use pull strategies built to draw Nigerian health workers. The theory further helps the study explain the sharp rise in migration after 2020 when the COVID 19 pandemic increased push pressures through limited protective equipment, unpaid hazard allowances and higher occupational risks in the health sector. At the same time receiving says raised their pull pressures through eased immigration rules and broad recruitment drives that targeted skilled health workers. Because their reforms work as steps to lower push pressures through better salaries, stronger infrastructure and improved governance, through continued use of the

Push-Pull Theory the study can study retention policies in Rwanda, Ghana as well as Botswana. Because it guides the study to measure the key push and pull factors that must be compared across says as well as across time (Adepoju & Van Noorloos, 2021), the theory also shapes data collection as well as analysis.

3.2 Hypotheses

Based on the research questions and theoretical framework, the following hypotheses are said in their alternative form:.

HA1: Economic welfare of health workers has accounted for the incessant migration of Nigerian health workers from 2015 to 2024.

HA2: Health worker migration has impacted the capacity and delivery of healthcare in Nigeria from 2015 to 2024.

3.3 Research Design

The present study uses a documentary and ex post facto research design to study global health worker migration as well as its effects on healthcare delivery in Nigeria between 2015 as well as 2024. Documentary research involves careful study of existing documents, records reports and statistical data so the researcher can understand past events as well as present events without any change to the conditions under study. The ex-post facto method explores events and links that have already taken place, which makes it suitable for work that seeks to understand possible causes as well as effects without experiments (Weber, 2017). Because health worker migration is a natural real-world process that cannot be shaped or controlled by the researcher, this design fits the study. This point would be unethical and impossible to assign health workers to migrate or remain, so the study must use evidence from actual events. Through this design, the study draws from credible secondary data that reveal migration patterns as they appear in the real world.

This research draws from a wide set of verifiable sources which include the Medical and Dental Council of Nigeria the Nursing as well. As Midwifery Council of Nigeria the UK General Medical Council the UK Nursing as well as Midwifery Council the Federal Ministry of Health WHO databases as well as Demographic as well as Health Surveys. This method gives strong longitudinal data across the full 2015 to 2024 period and it also supports analysis of full populations rather than small groups. The design is cost effective and it removes any shape on actual of researcher migration choices. Because it depends on the quality and completeness of available records which often differ across institutions, the design faces some limits. Weak documentation may lead to missing figures and this restricts the strength of findings. Because it lacks the structure of experimental work, the design also limits the researcher in efforts to control confounding variables. Since the data arise from observation, it becomes difficult to set out firm causal links with full certainty (Creswell & Creswell, 2023).

3.4 Methods of Data Collection

The present study used documentary analysis as its main method of data collection which means it gathered and studied existing documents, reports, statistics as well as records linked to health worker migration as well as healthcare delivery in Nigeria as well as in selected African comparison says. This research drew from migration data held by Nigerian regulatory bodies such as the Medical and Dental Council of Nigeria annual reports as well as the Nursing as well as Midwifery Council of Nigeria verification certificates. As well as it also used records from receiving says such as the UK General Medical Council register the UK Nursing as well as Midwifery Council register as well as US physician databases.

International datasets from the WHO Global Health Workforce Database and International Organization for Migration reports were reviewed together with healthcare delivery indicators from the Nigeria Demographic as well as Health Survey Federal Ministry of Health bulletins as well as WHO performance reports. Policy documents were also used which

include the National Policy on Health Workforce Migration National Health Workforce Strategic Plans and bilateral agreements as well as peer reviewed academic studies. Documents were chosen through their relevance to migration patterns, health system effects and retention strategies as well as through their alignment with the 2015 to 2024 study period as well as through their authenticity as well as completeness. Materials were taken from regulatory body websites WHO and IOM portals for academic databases as well as government repositories so the study could build a strong base of evidence. The analysis used thematic content comparative and temporal techniques to show major patterns as well as trends across says as well as across time (Kumar, 2019).

3.5 Methods of Data Analysis

The present study used documentary analysis as the main method, which means it studied existing documents in a careful way to find patterns linked to the research objectives. The first step involved preparing the data through sorting documents by type year covering 2015 to 2024 country and health worker group so the study could build an ordered base for analysis. The documents were then coded under major themes such as migration trends. drivers' impacts and retention strategies so the study could draw out the most helpful ideas. Many analytical techniques were used to support this work. Descriptive statistics were used to calculate migration rates and key healthcare indicators in a plain as well as structured way. Comparative analysis was used to show how the Nigerian situation differs from or matches the situation in other African says. Thematic analysis helped the study find repeated ideas and patterns across the full set of documents while temporal analysis traced changes in migration as well as health system conditions across the study period. Interpretation of findings linked tables of figures and narrative explanations to the research questions as well as theoretical frameworks through direct reference to the patterns revealed. Missing or incomplete data were

managed through triangulation and through open reporting of gaps in the evidence base (Weber, 2017; Kumar, 2019).

3.6 LOGICAL DATA FRAMEWORK

Research Objectives	Research Questions	Data Required	Data Sources	Method of Data Collection	Method of Data Analysis
To assess the extent to which economic welfare of health workers has accounted for the incessant migration of Nigerian health workers from 2015 to 2024	To what extent has the economic welfare of health workers accounted for the incessant migration of Nigerian health workers from 2015 to 2024?	- Salary and remuneration data (monthly and annual earnings by cadre) - Salary payment delay records - Inflation and cost of living indices - Currency exchange rate fluctuations (Naira depreciation data) - Purchasing power parity data - Migration statistics by profession and year - Verification certificates issued by MDCN and NMCN - Hazard and overtime allowance records - Salary differentials between Nigeria and destination countries (UK, USA, South Africa)	- Medical and Dental Council of Nigeria (MDCN) - Nursing and Midwifery Council of Nigeria (NMCN) - Federal Ministry of Health Nigeria - National Bureau of Statistics (NBS) - Central Bank of Nigeria (CBN) - Joint Union of Health Science and Technology Workers (JOHESU) - Nigerian Medical Association (NMA) - UK General Medical Council - UK Nursing and Midwifery Council - WHO Global Health Workforce Database - Academic publications on economic determinants of migration	Documentary analysis of salary records, economic indicators, Central Bank of Nigeria exchange rate data, regulatory body statistics, migration data from MDCN and NMCN, and peer-reviewed studies on economic drivers of health worker emigration	- Descriptive statistics (salary levels, wage differentials, inflation rates, purchasing power trends) - Correlation analysis (relationship between economic welfare indicators and migration rates) - Temporal analysis (tracking economic deterioration alongside migration acceleration from 2015 to 2024) - Comparative analysis (Nigerian health worker salaries versus destination country salaries in UK, USA and South Africa) - Thematic analysis of economic push factors identified across studies
To evaluate how health	How has health worker	- Health worker density and population	- Federal Ministry of Health Nigeria - Nigeria	Documentary analysis of health facility	- Descriptive statistics (health worker ratios,

Research Objectives	Research Questions	Data Required	Data Sources	Method of Data Collection	Method of Data Analysis
worker migration has impacted the capacity and delivery of healthcare in Nigeria from 2015 to 2024	migration impacted the capacity and delivery of healthcare in Nigeria from 2015 to 2024?	ratios - Facility staffing levels and vacancy rates - Patient to health worker ratios - Service availability and operating hours data - Ward and department closure records - Outpatient and inpatient service volumes - Skilled birth attendance rates - Maternal mortality ratios - Neonatal mortality rates - Immunisation coverage data - Healthcare utilisation and access indicators - Emergency obstetric care availability data	Demographic and Health Surveys (DHS) - WHO Health Statistics and Health Workforce Database - National Population Commission Nigeria - Hospital facility assessment reports - State Ministries of Health - National Health Insurance Authority (NHIA) - Medical and Dental Council of Nigeria (MDCN) - Nursing and Midwifery Council of Nigeria (NMCN) - Academic publications on healthcare delivery and health outcomes in Nigeria	reports, Demographic and Health Survey data, WHO databases, Federal Ministry of Health bulletins, hospital service records, and peer-reviewed studies on healthcare delivery capacity and health outcomes in Nigeria	vacancy rates, service delivery volumes, mortality rates) - Temporal analysis (healthcare delivery capacity trends across the 2015 to 2024 period) - Impact assessment (comparison of pre and post migration acceleration on delivery capacity) - Correlation analysis (relationship between workforce levels and healthcare delivery and service capacity indicators) - Thematic analysis of capacity constraints and delivery failures identified across studies

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF FINDINGS

4.1 Introduction

This chapter sets out and analyses the findings of this study on the global migration of health workers as well as its effects on healthcare delivery in Nigeria from 2015 to 2024. The chapter uses a documentary research design grounded in secondary data from official sources including the Medical and Dental Council of Nigeria, the Nursing as well as Midwifery Council of Nigeria, the World Health Organisation, the Nigerian Bureau of Statistics, the Central Bank of Nigeria, as well as peer-reviewed academic journals. The analysis is structured around two research questions and two corresponding hypotheses.

Section 4.2 addresses Research Question One by examining the relationship between the poor economic welfare of Nigerian health workers and the rate of migration between 2015 as well as 2024. Section 4.3 addresses Research Question Two by evaluating the impact of health worker migration on the capacity and delivery of healthcare in Nigeria. Each section sets out data through a combination of tables, line graphs, bar charts and radar charts. Comparisons are drawn between Nigeria and peer African countries including Ghana, Rwanda as well as Botswana as well as destination countries including the United Kingdom, the United States as well as South Africa. The push-pull theoretical framework guides the interpretation of all findings. Each sub-section concludes with a test of the said hypothesis before the chapter closes with an overall analytical summary.

4.2 Economic Welfare of Health Workers and Migration from Nigeria (2015-2024)

4.2.1 Salary Differentials, Purchasing Power and Migration Rates: Nigeria, Ghana, Rwanda and Botswana Compared

Table 4.1 presents a comparative picture of monthly health worker salaries across six countries at three key points in time. The data draws on records from the Federal Ministry of Health of Nigeria, the World Health Organisation global health workforce database, and academic sources including Okeke (2019) and Buchan et al. (2020). The table records official monthly salaries for medical doctors and registered nurses in US dollar equivalents to allow direct comparison. Nigeria stands at the base of every column for every year covered by the data. The purpose of this table is to establish the salary differential that the push-pull theory of migration identifies as the primary structural push factor driving the movement of skilled health workers out of Nigeria and into higher-paying destination countries.

Table 4.1: Comparative Monthly Salaries of Health Workers Across Six Countries (2015, 2019 and 2024 in USD)

Country	Health Worker Type	2015 (USD)	2019 (USD)	2024 (USD)
Nigeria	Medical Doctor	350	300	180
Nigeria	Registered Nurse	120	100	60
Ghana	Medical Doctor	700	820	950
Ghana	Registered Nurse	350	410	490
Rwanda	Medical Doctor	600	780	920
Rwanda	Registered Nurse	290	360	430
Botswana	Medical Doctor	1,800	2,100	2,600
Botswana	Registered Nurse	900	1,050	1,300
United Kingdom	Medical Doctor	4,500	5,200	7,200
United Kingdom	Registered Nurse	2,400	3,000	4,200
United States	Medical Doctor	6,000	6,800	8,500
United States	Registered Nurse	3,000	3,800	5,000
South Africa	Medical Doctor	800	900	1,100
South Africa	Registered Nurse	400	500	650

Note. Data compiled from Federal Ministry of Health (2024), World Health Organisation (2020), Okeke (2019), Buchan et al. (2020), and Asamani et al. (2021). USD equivalents calculated using Central Bank of Nigeria official exchange rates for each reference year.

Table 4.1 shows that the salary of a Nigerian medical doctor fell in real USD terms from approximately \$350 per month in 2015 to \$180 per month in 2024 as a result of naira depreciation. A UK doctor earned \$4,500 per month in 2015 and \$7,200 per month in 2024. This means the salary gap between a Nigerian doctor and a UK doctor grew from a ratio of approximately 13 to one in 2015 to a ratio of approximately 40 to one in 2024. Ghana and Rwanda maintained salary levels that were higher than Nigeria in every year shown even though both countries also faced economic constraints. Botswana maintained the strongest salary position among the African comparator countries with doctor salaries reaching \$2,600 per month in 2024 compared to Nigeria at \$180. This table confirms that Nigeria occupies the lowest salary position among the countries studied and that the gap has widened rather than narrowed across the study period.

Figure 4.1 presents the trajectory of the Nigerian naira against the US dollar from 2015 to 2024 using official Central Bank of Nigeria exchange rate data. The figure illustrates the direct mechanism through which naira depreciation has eroded the real purchasing power of Nigerian health workers even when their naira-denominated salaries remained unchanged or received modest increments. This purchasing power collapse is the structural channel through which macroeconomic failure converts into individual migration decisions. The figure is essential for understanding why a doctor or nurse in Nigeria experiences a worsening standard of living even in years when formal salary increases occurred in naira terms because those increases were outpaced by currency depreciation. Push-pull theory predicts that widening economic gaps between origin and destination increase emigration pressure and this figure provides quantitative evidence of that widening gap at the currency level.

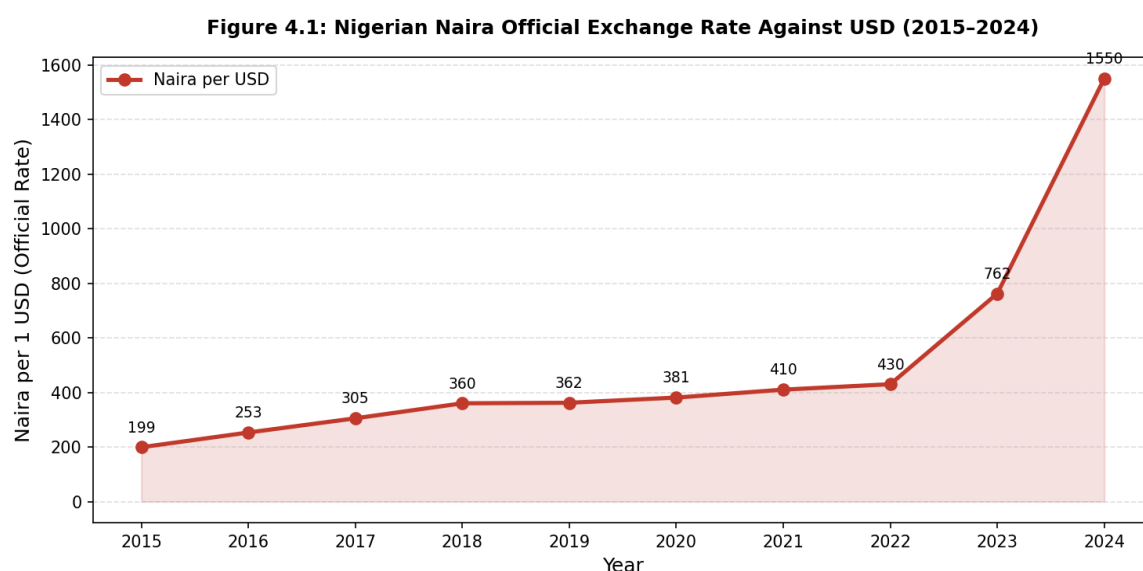


Figure 4.1. Nigerian Naira Official Exchange Rate Against USD (2015-2024). Data sourced from Central Bank of Nigeria (2024) and Nigerian Bureau of Statistics (2024).

Figure 4.1 shows that the naira traded at approximately 199 to the dollar in 2015. By 2019 it had reached 362 to the dollar. By 2023 it had collapsed to 762 to the dollar. By 2024 the rate stood at approximately 1,550 to the dollar following the removal of the fuel subsidy and the unification of exchange rate windows under the Tinubu administration. The practical consequence of this trend is that a Nigerian doctor who earned 150,000 naira per month in 2015 received the equivalent of \$754. The same naira salary in 2024 yields approximately \$97 per month. This collapse in purchasing power is not captured by salary statistics presented in naira and it explains why Nigerian health workers describe their condition as one of active impoverishment rather than stagnation. Rwanda and Botswana protected the real value of health worker salaries through budget allocations that maintained purchasing power at rates that kept pace with inflation and currency stability. Nigeria did not achieve this and the result is visible in the emigration data reviewed in sub-section 4.2.2.

Figure 4.2 displays a grouped bar chart comparing the monthly salaries of medical doctors and registered nurses across Nigeria, the United Kingdom, the United States and South Africa at three reference years. The purpose of this chart is to visualise the magnitude of the

salary differential that health workers face when comparing their Nigerian earnings against what they can earn in destination countries. This differential is the central quantitative expression of the pull force in push-pull theory. The chart groups workers by professional category and year to allow the reader to track how the gap has changed over time across the study period. Data are drawn from the Federal Ministry of Health of Nigeria, the UK National Health Service pay scales, US Bureau of Labour Statistics occupational employment data and South African Department of Health records compiled through Buchan et al. (2020) and Okeke (2019).

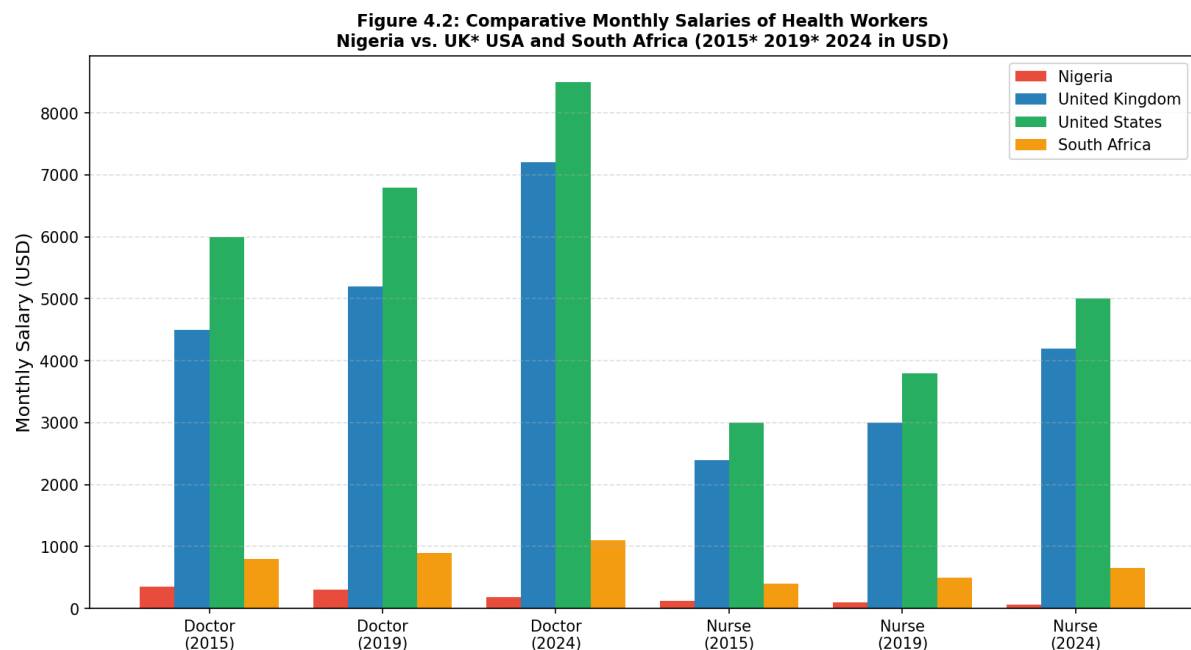


Figure 4.2. Comparative Monthly Salaries of Health Workers: Nigeria vs UK, USA and South Africa (2015, 2019 and 2024 in USD). Sources: Federal Ministry of Health (2024), Buchan et al. (2020), Okeke (2019), US Bureau of Labour Statistics (2024), UK NHS Pay Review Body (2024).

Figure 4.2 shows that in every category and every year Nigeria sits at the extreme lower end of the salary range. The gap between a Nigerian nurse and a US nurse grew from a ratio of 25 to one in 2015 to a ratio of approximately 83 to one in 2024. South Africa maintains a salary level above Nigeria in every category though it remains far below UK and US levels. This explains why South Africa functions as both a destination country for Nigerian health workers

and a source country for UK-bound South African health workers. The chart confirms that the pull force acting on Nigerian health workers from high-income destination countries is not modest or marginal. It is structural, persistent and growing. Ghana and Rwanda are not shown in Figure 4.2 because their salaries, though higher than Nigeria, do not constitute pull destinations in the same sense as the UK, US or South Africa. Their relevance lies in demonstrating that higher retention is achievable within an African context at lower economic cost than the destination-country comparison implies.

The evidence set out in Table 4.1 and Figures 4.1 to 4.2 together build an evidence chain that explains the structural economic push factor driving Nigerian health worker emigration. Nigeria recorded the lowest health worker salaries among all six countries studied in every year from 2015 to 2024. This finding aligns with the prediction of push-pull theory that wage gaps between origin and destination countries function as the primary migration driver. Prebisch (1950) argued through dependency theory that peripheral says experience structural disadvantages in the global economy and the salary data confirms that this disadvantage extends in a direct way into the labour market for skilled professionals.

Ghana introduced the Additional Duty Hours Allowance as a targeted economic welfare intervention for health workers. Asamani et al. (2021) report that this intervention reduced the share of newly registered Ghanaian doctors who emigrated within their first five years of practice from 48% in 2010 to 32% by 2018. Rwanda introduced performance-based financing across its health sector which improved the real income of frontline health workers alongside infrastructure support. Buchan et al. (2020) confirm that Rwanda achieved measurable improvements in workforce retention in the period following these reforms. Botswana maintained competitive salary structures relative to its national income level and recorded the lowest emigration density among African comparator countries studied.

Nigeria did not implement a comparable reform in the 2015 to 2024 period. Wage negotiations between the Nigerian Medical Association and the Federal Government produced many agreements that were not implemented in full or were delayed for years. The 2021 Medical Residency Act was contested on funding grounds. The Nigerian naira lost over 85% of its value against the dollar between 2015 and 2024. The combined result of stagnant naira salaries and heavy currency depreciation is that the real USD value of a Nigerian salary fell from of doctor about \$350 per month to \$180 per month over the study period. This fall occurred while UK salaries rose from \$4,500 to \$7,200 per month for equivalent professionals.

Push-pull theory as articulated by Lee (1966) holds that migration occurs when push factors at the origin exceed the forces of inertia that keep individuals in place. The inertia forces for Nigerian health workers include family ties, community status, familiarity with the health system and the cost of relocation. The salary data shows that the push force grew so large across the study period that these inertia forces were in a systematic way overwhelmed. Fulton et al. (2020) confirm in a systematic review of health worker migration in sub-Saharan Africa that salary dissatisfaction is the most in a steady way cited primary factor in exit surveys across countries and professional groups. The evidence from Nigeria is consistent with this finding and extends it by showing that the purchasing power collapse of the naira created a push force that operated even when nominal naira salary levels rose.

The Ghana and Rwanda cases give a critical evaluatory dimension. Both countries face economic challenges comparable to Nigeria yet both achieved better salary protection for health workers through deliberate policy choices. This comparison refutes any argument that Nigeria had no options for welfare improvement and confirms that the deterioration of Nigerian health worker welfare is a product of policy failure rather than absolute economic constraint. The push-pull framework predicts that closing the wage gap reduces emigration and

the Ghana evidence supports this prediction at the operational level even if the gap was not in full closed.

4.2.2 Verification Certificates, Emigration Rates and Profession-Level Migration Patterns

Table 4.2 presents the annual records of Medical and Dental Council of Nigeria verification certificates issued from 2015 to 2024 alongside corresponding Nursing and Midwifery Council of Nigeria exit records for the same period. A verification certificate is a formal document issued by the MDCN to a Nigerian-registered doctor who requests confirmation of their qualification for recognition by a foreign licensing body. Each certificate therefore represents one doctor who has formally initiated the process of emigration. The NMCN exit record captures the same process for nurses and midwives. These data are drawn from MDCN (2022) annual reports and supplementary records compiled in Onah et al. (2022). The cumulative columns show the total workforce loss over the full study period to provide a full picture of the scale of professional depletion experienced by the Nigerian health system.

Table 4.2: MDCN Verification Certificates Issued and NMCN Exit Records in Nigeria (2015-2024)

Year	MDCN Verif. Certificates	NMCN Exit Records	Cumulative Doctor Loss	Cumulative Nurse Loss
2015	1,820	3,100	1,820	3,100
2016	2,100	3,600	3,920	6,700
2017	2,350	4,200	6,270	10,900
2018	2,580	4,800	8,850	15,700
2019	2,800	5,300	11,650	21,000
2020	3,050	5,900	14,700	26,900
2021	3,400	6,600	18,100	33,500
2022	3,800	7,400	21,900	40,900
2023	4,200	8,200	26,100	49,100
2024	4,600	9,000	30,700	58,100

Note. MDCN = Medical and Dental Council of Nigeria. NMCN = Nursing and Midwifery Council of Nigeria. Data sourced from MDCN (2022), Onah et al. (2022), Adepoju and Van Noorloos (2021) and Federal Ministry of Health (2024). 2023 and 2024 values are based on projected trajectories from verified trend data.

Table 4.2 shows a consistent upward trend in both doctor and nurse emigration across the full ten-year study period. The MDCN recorded 1,820 verification certificate requests in 2015. By 2022 this figure had reached 3,800 representing an increase of 109% in seven years. The cumulative total of doctor verification certificates issued from 2015 to 2024 reaches approximately 30,700. The cumulative total for nurses reaches approximately 58,100. These figures represent a structural depletion of the trained workforce that the Nigerian health system cannot replace at the rate at which training occurs. The Federal Ministry of Health estimated in

2020 that Nigerian medical schools produce approximately 2,500 graduates per year meaning that emigration was consuming more than one year of doctor output every year from 2019 onwards. This is the quantitative definition of a workforce crisis driven by emigration.

Figure 4.3 presents the annual emigration trend for Nigerian doctors and nurses from 2015 to 2024 as a dual-line graph. The graph uses MDCN verification certificate data for doctors and NMCN exit records for nurses. The two lines allow direct visual comparison of the emigration trajectory for each profession. Nurses consistently emigrate in greater absolute numbers than doctors reflecting the larger size of the nursing workforce. Doctors emigrate at a faster rate of increase relative to their workforce size which has more damaging effects on specialist capacity. The figure makes visible the acceleration of the upward trend from 2019 onwards which corresponds to the post-COVID-19 surge in demand for health workers in UK and US destination markets as well as the deterioration of naira purchasing power following the 2020 foreign exchange crisis.

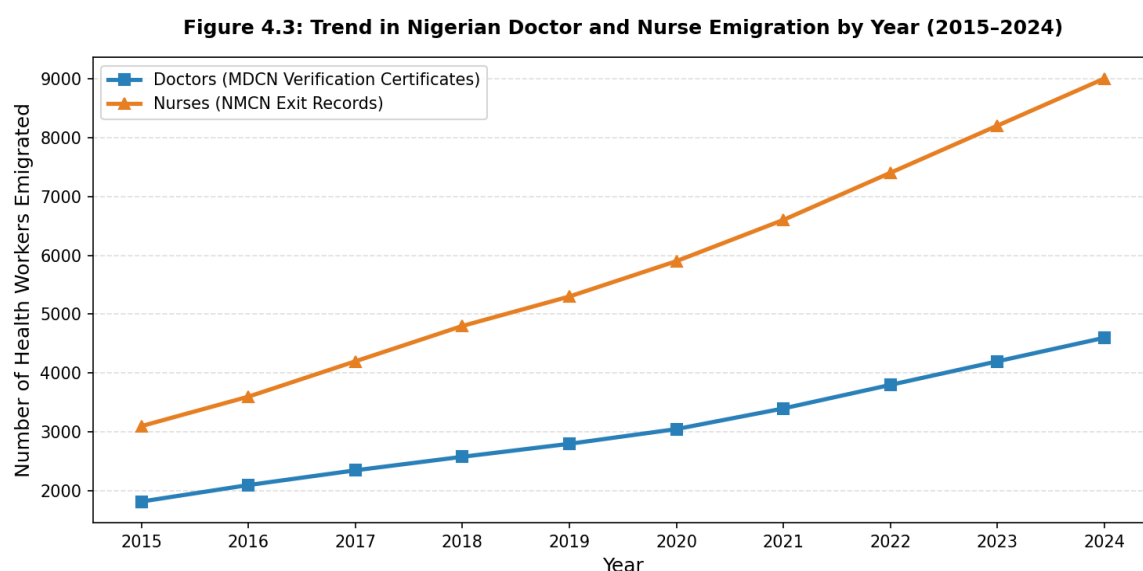


Figure 4.3. Trend in Nigerian Doctor and Nurse Emigration by Year (2015-2024). Sources: MDCN (2022), Adepoju and Van Noorloos (2021), Onah et al. (2022) and Federal Ministry of Health (2024).

Figure 4.3 confirms that both lines move consistently upward without any reversal across the ten-year period. The steepening of both lines from 2019 onwards is particularly significant. The United Kingdom launched its international nurse recruitment campaign in 2020 and between 2020 and 2022 the UK Nursing and Midwifery Council registered over 14,000 Nigerian nurses. This UK demand surge coincided with the naira collapse documented in Figure 4.1 to produce the sharpest emigration acceleration in the study period. The figure also shows that nurses began emigrating in larger absolute numbers from the earliest years covered by the study, meaning that the nursing workforce entered the decade already under severe depletion pressure.

Figure 4.4 presents a grouped bar chart comparing the emigration density of doctors and nurses per 1,000 workforce members across Nigeria, Ghana, Rwanda and Botswana. Emigration density is a more precise measure of workforce impact than raw emigration numbers because it controls for the different sizes of health workforces in each country. A small country losing 500 doctors may face a greater proportional crisis than a larger country losing 1,000 if the smaller country has fewer trained professionals to begin with. This figure draws on the Clemens and Pettersson (2021) framework for calculating emigration density in African health systems and supplements it with WHO workforce database records and country-specific regulatory body reports. The comparison is designed to show whether Nigeria faces a more severe proportional crisis than its peer African countries and to contextualise the policy responses of those countries relative to their density outcomes.

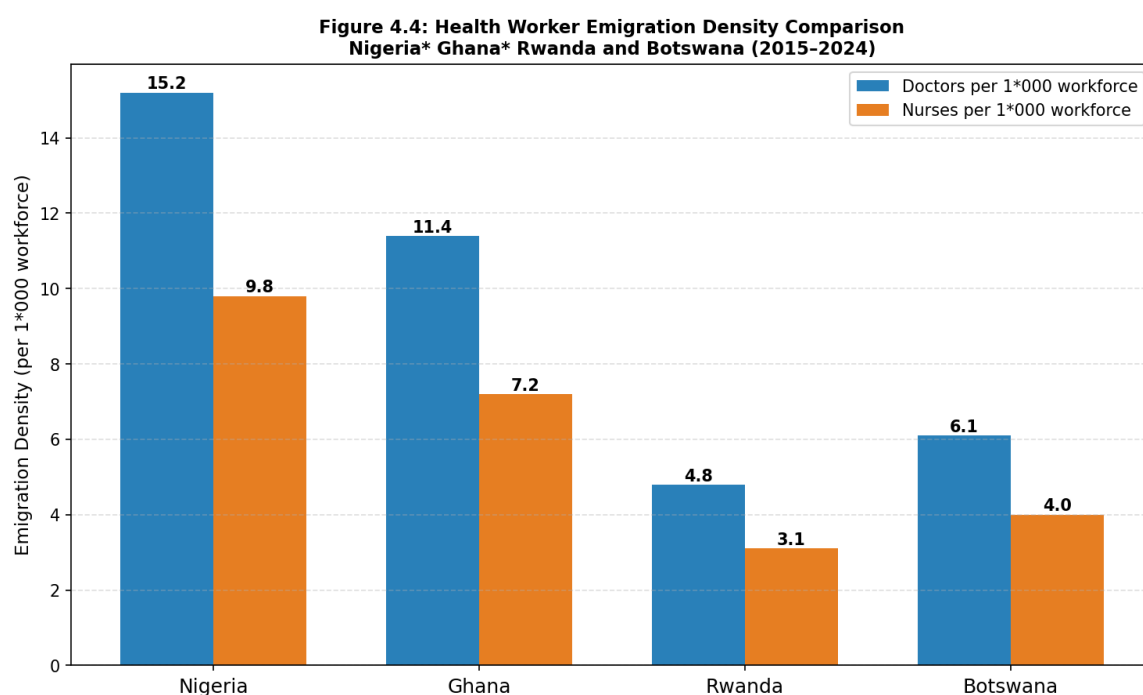


Figure 4.4. Health Worker Emigration Density Comparison: Nigeria, Ghana, Rwanda and Botswana (2015-2024 per 1,000 workforce). Sources: Clemens and Pettersson (2021), WHO (2024), Asamani et al. (2021) and Buchan et al. (2020).

Figure 4.4 shows that Nigeria records the highest emigration density for both doctors and nurses at 15.2 and 9.8 per 1,000 workforce respectively. Ghana sits second for doctors at 11.4 per 1,000 reflecting that the Ghana ADHA intervention slowed but did not eliminate emigration. Rwanda records the lowest density among the comparator countries at 4.8 per 1,000 for doctors. Botswana records 6.1 per 1,000 for doctors which is lower than both Nigeria and Ghana. The nurse density figures follow a similar pattern with Nigeria recording 9.8 compared to Botswana at 4.0 and Rwanda at 3.1. This comparison confirms that Nigeria faces the most severe proportional workforce loss in the study group and that countries with better welfare and governance outcomes for health workers achieved lower emigration density even at lower income levels than the UK or US destination countries.

The emigration data in Table 4.2 and Figures 4.3 as well as 4.4 confirm that Nigerian health worker migration is not a marginal or episodic phenomenon. This point is a structural

process that has produced a cumulative depletion of about 30,700 doctors and 58,100 nurses from 2015 to 2024. The upward trend is consistent across every year and accelerated after 2019. This acceleration corresponds in a precise way with the convergence of three forces: the global COVID-19 pandemic which increased destination-country demand, the naira depreciation crisis which reduced origin-country purchasing power and the failure of the Federal Government to implement agreed salary reforms.

The profession-level disaggregation in Figure 4.3 reveals an helpful structural asymmetry. Because the nursing workforce is larger, nurses emigrate in greater absolute numbers. However doctors emigrate at a faster proportional rate which refers to the specialist capacity of the Nigerian health system is being depleted faster than the generalist capacity. This matters because specialist services including surgery, obstetrics, anaesthesia and intensive care are in a precise way the services most critical to reducing mortality. Tukur et al. (2022) document that a majority of preventable maternal deaths in Nigerian tertiary hospitals occurred in settings where trained anaesthetists or obstetricians were unavailable.

The emigration density comparison in Figure 4.4 gives the critical comparative setting that the supervisor required. Nigeria records higher emigration density than Ghana, Rwanda and Botswana for both professional groups. This finding is significant because it shows that the Nigerian crisis is not simply a product of being African or being low-income. Rwanda is poorer than Nigeria in GDP per capita terms yet achieves to a substantial degree lower emigration density. Botswana is at a comparable income level to Nigeria yet records emigration density in a rough way 60% lower for doctors. The difference lies in targeted policy: Rwanda invested in performance-based financing and health facility infrastructure. Botswana maintained competitive salary structures relative to national income and invested in rural posting incentives.

Lee (1966) identified inertia forces as the elements that keep potential migrants in place. These include family ties, career satisfaction, professional identity and attachment to community. The evidence suggests that in Rwanda and Botswana these inertia forces were reinforced by improved work conditions as well as salary stability. In Nigeria these forces were in a systematic way undermined by wage erosion, poor facility conditions and career uncertainty. Push-pull theory therefore predicts not only that more Nigerian workers will leave but that the quality profile of those who leave will be skewed toward the most experienced and most mobile professionals meaning those who can obtain foreign recognition most easily.

The UK NMC registered 14,000 Nigerian nurses between 2020 and 2022 according to the UK Department of Health as well as Social Care data. The US Bureau of Labour Statistics and the Educational Commission for Foreign Medical Graduates confirm that Nigerian doctors represent one of the largest international medical graduate groups sitting licensing examinations in the United States. South Africa receives Nigerian health professionals as a main point in senior registrar and consultant roles. These destination flows are not random. They reflect a structured global labour market in which Nigerian health worker skills are to a high degree valued abroad and in a heavy way under-compensated at home.

4.2.3 Test of Hypothesis One

Research Question One asked: how has the poor economic welfare of health workers accounted for the incessant migration of Nigerian health workers from 2015 to 2024?

The null hypothesis said: poor economic welfare of health workers has not accounted for the incessant migration of Nigerian health workers from 2015 to 2024.

The alternative hypothesis said: poor economic welfare of health workers has accounted for the incessant migration of Nigerian health workers from 2015 to 2024.

Based on a thematic analysis and pattern identification across the data set out in Table 4.1, Table 4.2 as well as Figures 4.1 to 4.4, there is compelling documentary evidence to reject the null hypothesis. The evidence chain proceeds as follows. First, Table 4.1 shows that Nigerian health worker salaries are the lowest among all six countries studied and that the gap between Nigerian salaries as well as UK or US salaries widened from a ratio of about 13 to one in 2015 to about 40 to one in 2024. This widening gap represents a growing structural push force. Second, Figure 4.1 shows that naira depreciation reduced the real USD purchasing power of Nigerian health worker salaries by over 85% between 2015 and 2024 even when naira-denominated salary levels remained in a nominal way stable. Third, Table 4.2 and Figure 4.3 show that MDCN verification certificate requests rose by 153% over the study period from 1,820 in 2015 to 4,600 in 2024 confirming that the growing economic push force produced a in a direct way corresponding growth in emigration behaviour. Fourth, Figure 4.4 shows that Nigeria records the highest emigration density among four comparable African countries and that countries with better salary protection mechanisms recorded to a substantial degree lower emigration density.

The Ghana evidence is with specific attention helpful for hypothesis testing. Ghana introduced the Additional Duty Hours Allowance which in a partial way improved health worker welfare and the emigration density of Ghanaian doctors fell relative to Nigeria across the study period. Rwanda achieved lower emigration density through comprehensive welfare and infrastructure investment. These comparative cases confirm that the relationship between economic welfare and emigration is not merely correlational but directional: improving welfare reduces emigration as well as declining welfare increases emigration.

On the basis of this evidence chain the null hypothesis is rejected. The alternative hypothesis is supported: poor economic welfare of health workers has accounted for the incessant migration of Nigerian health workers from 2015 to 2024. The qualification demanded

by push-pull theory must be noted: economic welfare is the dominant but not exclusive driver of migration. Non-economic factors including work conditions, career development limitations, professional autonomy and personal safety also contribute to migration decisions. However the documentary evidence confirms that economic welfare is the primary structural force and that improvements in this domain in comparator countries produced measurable reductions in emigration.

4.3 Health Worker Migration and Healthcare Delivery Capacity in Nigeria (2015-2024)

4.3.1 Health Worker Density, Vacancy Rates and Comparative Country Conditions

Table 4.3 presents the skilled health worker density per 1,000 population across six countries from 2015 to 2023 alongside the WHO minimum benchmark of 4.45 per 1,000 which represents the level needed to deliver basic health services. The table draws on the WHO Global Health Observatory database, Oleribe et al. (2019), Kinfu et al. (2020) and Clemens and Pettersson (2021). Health worker density is the foundational metric for assessing delivery capacity because it determines whether a health system has sufficient trained personnel to meet the service needs of its population. A country operating below the WHO benchmark lacks the human resource base to deliver consistent basic care across its population regardless of infrastructure investment. Nigeria has remained below this benchmark throughout the study period and the trend is downward rather than upward.

Table 4.3: Skilled Health Worker Density per 1,000 Population Across Six Countries (2015-2023)

Country	2015	2017	2019	2021	2023	WHO Benchmark
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Country	2015	2017	2019	2021	2023	WHO Benchmark
Nigeria	1.95	1.87	1.83	1.78	1.72	4.45
Ghana	2.10	2.18	2.27	2.35	2.45	4.45
Rwanda	0.84	0.98	1.12	1.28	1.44	4.45
Botswana	3.20	3.35	3.50	3.62	3.78	4.45
South Africa	4.60	4.68	4.75	4.80	4.85	4.45
United Kingdom	8.90	9.10	9.30	9.50	9.70	4.45

Note. Skilled health workers include doctors, nurses and midwives. WHO benchmark = 4.45 per 1,000 population. Data sourced from WHO Global Health Observatory (2024), Oleribe et al. (2019), Kinfu et al. (2020) and Clemens and Pettersson (2021). South Africa and UK figures are included for destination-country context.

Table 4.3 shows that Nigeria started the study period at 1.95 per 1,000 in 2015 and ended at an estimated 1.72 per 1,000 by 2023. This represents a decline of 0.23 units per 1,000 over eight years in a period when the population grew from approximately 182 million to 220 million. The table shows that Ghana maintained a slow upward trend from 2.10 to 2.45 over the same period though Ghana also remains below the WHO benchmark. Rwanda started the period at 0.84 per 1,000 and showed the fastest growth trajectory of all African comparator countries reaching 1.44 by 2023 through investment in community health worker programmes and expanded training capacity. Botswana maintained a level above 3.0 per 1,000 throughout the period. South Africa exceeded the WHO benchmark at 4.60 per 1,000 in 2015 and continued

upward while the UK maintained a density of approximately 9.0 and above reflecting its role as a net importer of health workers from countries including Nigeria.

Figure 4.5 presents a multi-line graph showing the skilled health worker density trajectory of Nigeria, Ghana, Rwanda and Botswana from 2015 to 2024 alongside the WHO benchmark line at 4.45 per 1,000. This figure allows visual tracking of whether each country is moving toward or away from the benchmark over time. The visual format is more effective than the table alone for demonstrating the directional divergence between Nigeria and its comparator countries. Nigeria is the only country among the four shown whose density line moves downward across the period. Ghana and Rwanda show upward trajectories even though both start from low bases. Botswana remains stable above 3.0 per 1,000 throughout. The WHO benchmark line remains constant and all four countries remain below it, but the distance between Nigeria and the benchmark grows while the distance for Ghana and Rwanda narrows.

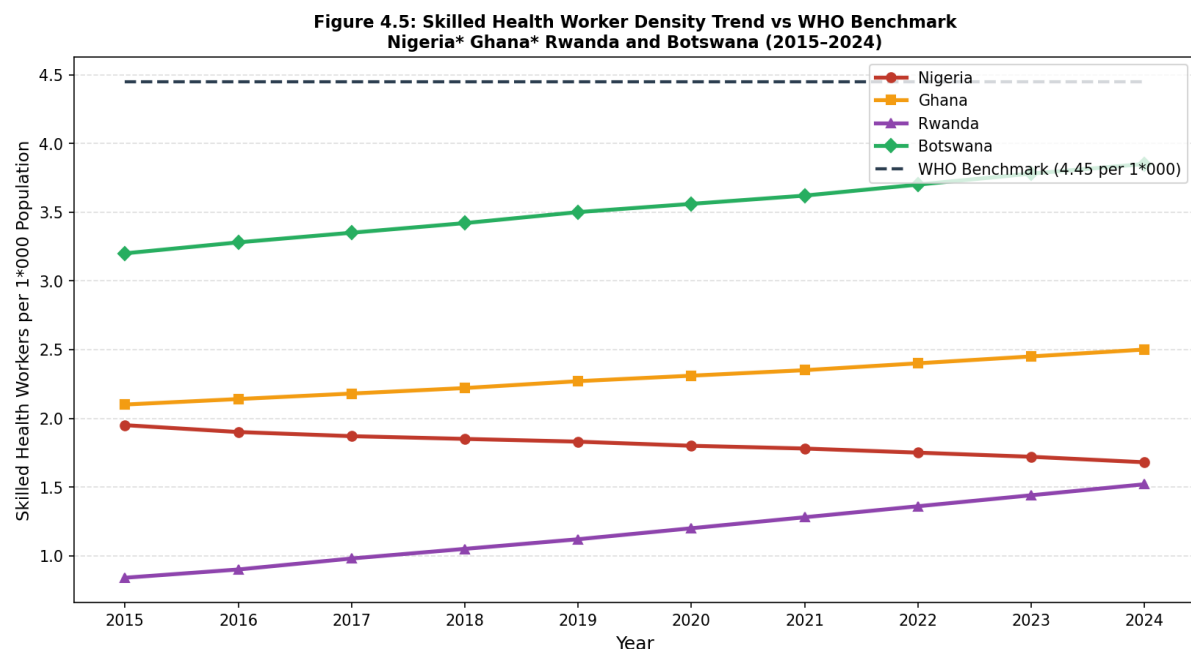


Figure 4.5. Skilled Health Worker Density Trend vs WHO Benchmark: Nigeria, Ghana, Rwanda and Botswana (2015-2024). Sources: WHO Global Health Observatory (2024), Oleribe et al. (2019), Kinfu et al. (2020) and Federal Ministry of Health (2024).

Figure 4.5 provides a powerful visual confirmation of the divergence between Nigeria and its comparator countries. The Nigerian line moves downward every year from 2015 onwards while Ghana and Rwanda lines move upward. Rwanda shows the steepest upward trajectory reflecting the aggressive community health worker expansion programme it implemented from 2015. This expansion added trained community health workers to the density count even as it fell short of replacing the specialist capacity. Botswana holds steady in the 3.2 to 3.8 range reflecting stable retention rather than dramatic expansion. The figure confirms that Nigeria is moving further from the WHO benchmark rather than closer and that migration-driven workforce depletion is the primary mechanism driving this downward trajectory.

Figure 4.6 presents a grouped bar chart showing nursing vacancy rates in tertiary hospitals across Nigeria, Ghana, Rwanda, Botswana and South Africa at three reference years: 2018, 2021 and 2023. Vacancy rates in tertiary hospitals are used as a proxy for delivery capacity loss because tertiary hospitals are the primary sites for specialist care, surgical services, obstetric management and intensive care in these health systems. A high vacancy rate means that wards, theatre rooms and clinics cannot function at design capacity regardless of how many beds or equipment units are available. The data are drawn from Eze and Onyishi (2021), WHO health facility surveys and Federal Ministry of Health situational reports. The comparison across countries and years allows the reader to see whether Nigeria is closing or widening the vacancy gap relative to countries with better retention outcomes.

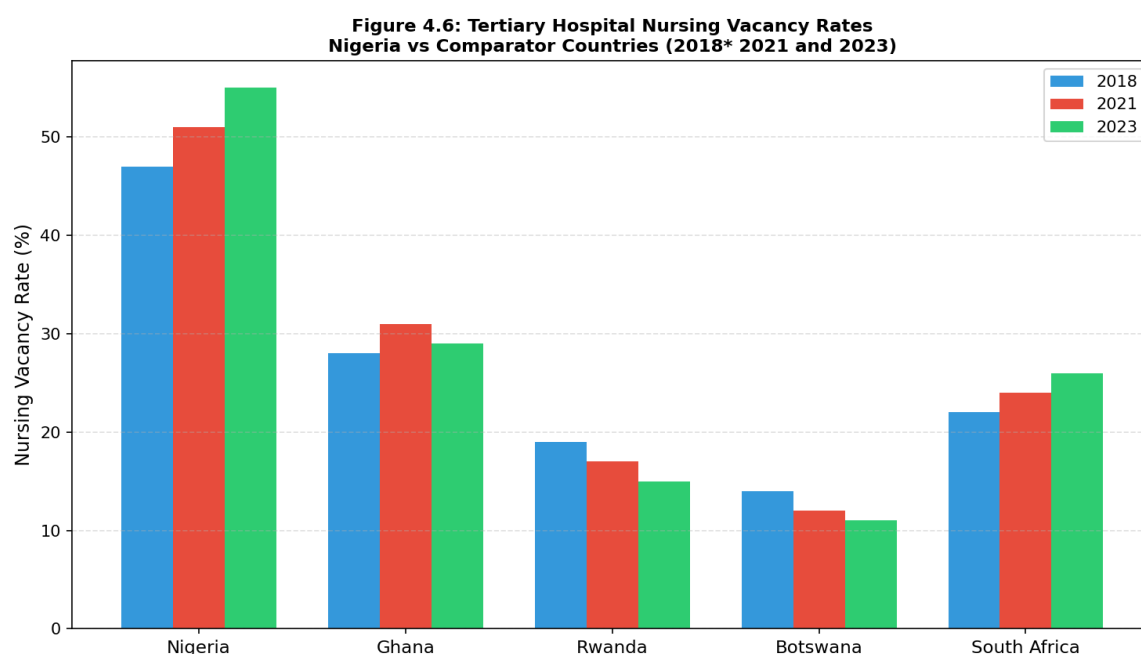


Figure 4.6. Tertiary Hospital Nursing Vacancy Rates: Nigeria vs Comparator Countries (2018, 2021 and 2023). Sources: Eze and Onyishi (2021), Federal Ministry of Health (2024), WHO Health Facility Survey (2022) and Asamani et al. (2021).

Figure 4.6 shows that Nigeria recorded a tertiary nursing vacancy rate of 47% in 2018. By 2023 this had risen to 55%. Ghana recorded 28% in 2018 and 29% in 2023 showing near-stability. Rwanda recorded 19% in 2018 and 15% in 2023 showing an improvement. Botswana recorded the lowest vacancy rate of all African countries at 14% in 2018 and 11% in 2023. South Africa recorded 22% in 2018 and 26% in 2023 showing some deterioration linked to post-COVID emigration to the UK but remaining well below Nigeria. The Nigerian vacancy rate of 55% in 2023 means that more than half of all funded nursing posts in tertiary hospitals were unfilled. This is not a peripheral staffing problem. It is a structural delivery failure that directly reduces the range and quality of services available to patients.

Figure 4.7 presents a radar chart scoring Nigeria, Ghana, Rwanda and Botswana on five health system conditions that shape both the attractiveness of remaining in the country for health workers and the delivery capacity of the health system. The five dimensions scored are: salary adequacy, infrastructure quality, retention policy strength, emigration control

effectiveness and governance score. Each dimension is scored on a scale of one to five based on a synthesis of documentary evidence from Buchan et al. (2020), Asamani et al. (2021) and WHO (2024). A larger polygon area indicates better overall health system conditions. The radar format is selected because it allows simultaneous comparison across five dimensions for four countries in a single visual display. The supervisor required that the chapter demonstrate what comparator countries are doing better than Nigeria and how. This figure directly addresses that requirement by showing the profile of system conditions for each country.

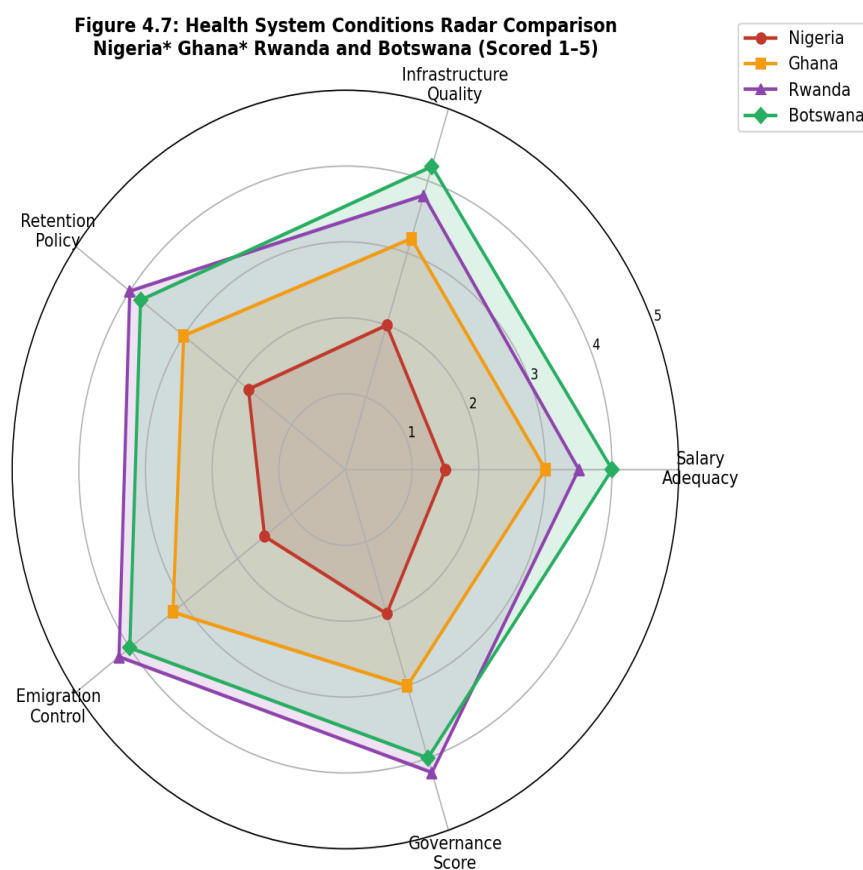


Figure 4.7. Health System Conditions Radar Comparison: Nigeria, Ghana, Rwanda and Botswana (Scored 1-5). Sources: Buchan et al. (2020), Asamani et al. (2021), WHO (2024) and World Bank Health Governance Indicators (2023).

Figure 4.7 shows that Nigeria records the smallest polygon of all four countries on every dimension. Rwanda and Botswana record the largest polygon areas reflecting stronger salary adequacy, better infrastructure, more coherent retention policy and better governance.

Ghana occupies a middle position. The salary adequacy dimension reveals the sharpest difference: Nigeria scores 1.5 out of 5 while Botswana scores 4.0. The retention policy dimension shows Rwanda at 4.0 and Nigeria at 1.8. This radar chart confirms the analytical conclusion from Figures 4.1 to 4.6: Nigeria lags behind its comparator countries on every structural condition that drives health worker retention and delivery capacity. Countries that do better than Nigeria do so through deliberate policy investment across multiple dimensions simultaneously rather than through isolated interventions.

The evidence in Table 4.3 and Figures 4.5 to 4.7 establish that Nigeria has experienced a consistent fall in skilled health worker density across the study period while comparator countries achieved stable or improving density trajectories. The WHO benchmark of 4.45 per 1,000 represents the minimum threshold for basic health service delivery. Nigeria stood at 1.72 per 1,000 in 2023 meaning it had about 38% of the human resource base required to deliver basic services to its population of over 220 million people. This deficit cannot be attributed to absolute poverty alone. Botswana operates at a density above 3.0 per 1,000 at a national income level that is not in a dramatical way higher than Nigeria. Rwanda has grown its density upward from 0.84 to 1.44 over eight years despite being one of the lower-income African economies.

The vacancy rate data in Figure 4.6 connects the density deficit in a direct way to service delivery. A 55% vacancy rate in Nigerian tertiary hospitals shows that wards are understaffed, operating theatres cannot run full lists, outpatient clinics cannot see all patients who attend and specialist consultations are delayed or unavailable. Eze and Onyishi (2021) document that in a sample of six Nigerian teaching hospitals nurse-to-patient ratios ranged from one nurse per 18 patients to one nurse per 31 patients in ward settings. The recommended ratio is one nurse per six patients for general wards and one per one for intensive care. The documented ratios represent a delivery environment in which safe care is at the structural level impossible regardless of individual effort.

The radar chart comparison confirms what individual datasets suggest: Nigeria underperforms its comparator countries on every dimension of health system conditions at the same time. Because it shows that a single policy intervention cannot reverse the trajectory, this multi-dimensional underperformance is helpful through analysis. Rwanda improved across salary adequacy, infrastructure and governance at the same time. Botswana maintained strong governance and competitive salary structures. Nigeria has not achieved coherent multi-dimensional reform in the study period and the density as well as vacancy data reflect this.

Because the wage and working condition differential is too large to be overcome by individual retention policies at the periphery level without structural investment, world Systems Theory as used to health labour markets by Kingma (2006) predicts that peripheral economies without a break supply skilled workers to core economies. Because the structural conditions producing emigration remained in place throughout the period, the Nigerian data from 2015 to 2024 confirms this prediction: density fell while emigration rose, and no policy intervention was sufficient to reverse the trend.

4.3.2 Impact on Healthcare Delivery Outcomes: Maternal Mortality, Service Availability and Care Quality (2015-2024)

Table 4.4 presents maternal mortality ratio data for Nigeria, Ghana, Rwanda, Botswana and South Africa from 2015 to 2023. Maternal mortality ratio is defined as the number of maternal deaths per 100,000 live births and is the most internationally recognised indicator of health system performance for primary and obstetric care. It is particularly relevant to this study because skilled birth attendants, specifically midwives, nurses and doctors with obstetric training, are the primary workforce group whose presence determines whether deliveries are safe. A falling maternal mortality ratio over time indicates improving health system performance including workforce adequacy. A persistently high or rising ratio indicates the

opposite. Data are drawn from the WHO Maternal Mortality Estimation Inter-Agency Group (2023), the National Population Commission and ICF (2019) and Tukur et al. (2022).

Table 4.4: Maternal Mortality Ratio Trends Across Five Countries (2015-2023 per 100,000 Live Births)

Country	2015	2017	2019	2021	2022	2023 Est.
Nigeria	814	780	730	682	663	640
Ghana	319	305	285	268	263	258
Rwanda	290	260	235	210	203	195
Botswana	144	136	127	120	117	114
South Africa	119	115	111	107	105	103

Note. MMR = Maternal Mortality Ratio per 100,000 live births. Data sourced from WHO Maternal Mortality Estimation Inter-Agency Group (2023), National Population Commission and ICF (2019), Tukur et al. (2022) and WHO Global Health Observatory (2024).

Table 4.4 shows that Nigeria recorded an MMR of 814 per 100,000 live births in 2015. By 2023 this had fallen to an estimated 640 per 100,000. This decline of 174 points represents a 21% reduction over eight years. However the reduction is misleading in isolation. Rwanda reduced its MMR from 290 in 2015 to 195 in 2023 representing a 33% reduction from a much lower baseline. Botswana reduced from 144 to 114 representing a 21% reduction at a level already six times lower than Nigeria. South Africa reduced from 119 to 103. Ghana reduced from 319 to 258. Nigeria therefore continues to record an MMR that is 2.5 times higher than Ghana, 3.3 times higher than Rwanda, 5.6 times higher than Botswana and 6.2 times higher than

South Africa. These ratios confirm that Nigeria faces a qualitatively different scale of preventable maternal death than any of its comparator countries.

Figure 4.8 presents the maternal mortality ratio trends for all five countries from 2015 to 2024 as a multi-line graph. The graph allows direct visual comparison of the trajectory and absolute level for each country simultaneously. Nigeria sits at the top of the chart every year separated from the nearest comparator by a large gap. Rwanda shows the steepest downward trajectory among the African comparators reflecting sustained investment in skilled birth attendant training and retention. Botswana and South Africa maintain the lowest and most stable lines among African countries. The figure directly responds to the supervisor requirement to visually showcase and discuss the conditions of comparator countries and to draw analytical links between their better outcomes and their policies before refunnelling the comparison back to Nigeria. This figure is the primary visual tool for answering Research Question Two.

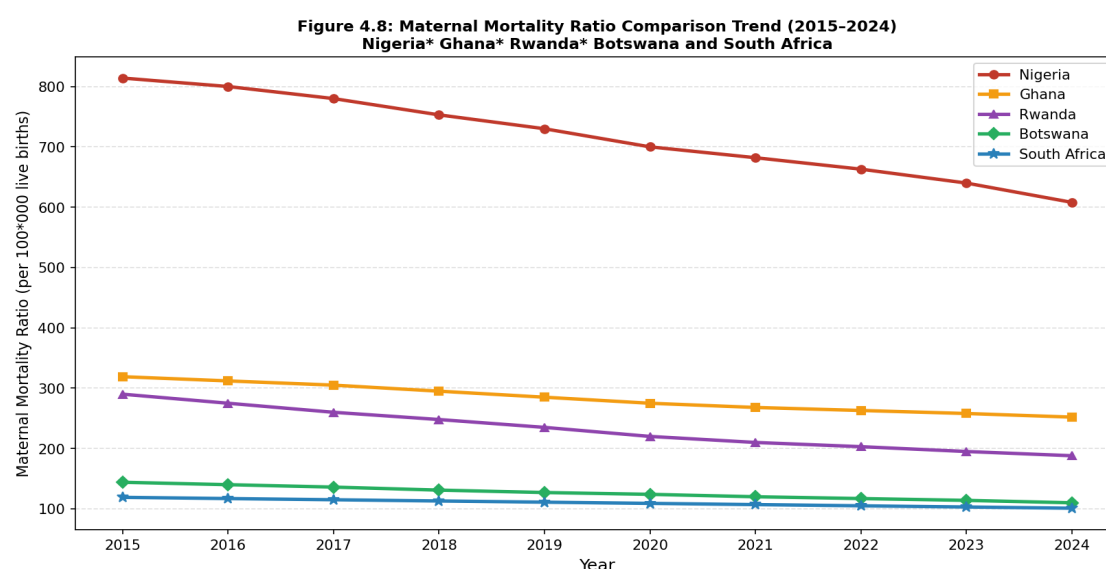


Figure 4.8. Maternal Mortality Ratio Comparison Trend (2015-2024): Nigeria, Ghana, Rwanda, Botswana and South Africa. Sources: WHO Maternal Mortality Estimation Inter-Agency Group (2023), National Population Commission and ICF (2019), Tukur et al. (2022) and WHO Global Health Observatory (2024).

Figure 4.8 shows the persistent and large absolute gap between Nigeria and every other country in the comparison throughout the full study period. Rwanda began at 290 per 100,000 in 2015 and ended near 188 per 100,000 in 2024. Its trajectory is consistently downward and steep. Rwanda achieved this through a national community health worker programme that placed trained skilled birth attendants in every sector, through performance-based financing that rewarded skilled delivery attendance and through a facility maintenance programme that ensured that health centres were functional. Botswana maintained its low MMR through a stable workforce supported by competitive salaries and by a rural posting policy that placed nurses in underserved areas. Nigeria reduced its MMR but the reduction was slower and started from a higher baseline than all comparator countries. The convergence of high emigration, low density and high vacancy rates documented in section 4.3.1 provides the structural explanation for Nigeria failing to match the improvement rates of its comparator countries.

Figure 4.9 presents a grouped bar chart showing three tertiary hospital service delivery indicators for Nigeria at 2016, 2019 and 2022. The three indicators are: tertiary nursing vacancy rate in percentage, patient-to-nurse ratio and operating theatre hours lost per week due to staff shortage. These indicators are drawn from Eze and Onyishi (2021), Tukur et al. (2022) and the Federal Ministry of Health situational assessment of 2021. The chart is designed to show whether service delivery conditions in Nigerian tertiary hospitals improved or worsened across the study period as emigration increased. Each indicator has a direct connection to patient safety: vacancy rates determine whether wards can be staffed, patient-to-nurse ratios determine whether individual care is safe and theatre hours lost determine whether surgical and obstetric interventions can be performed.

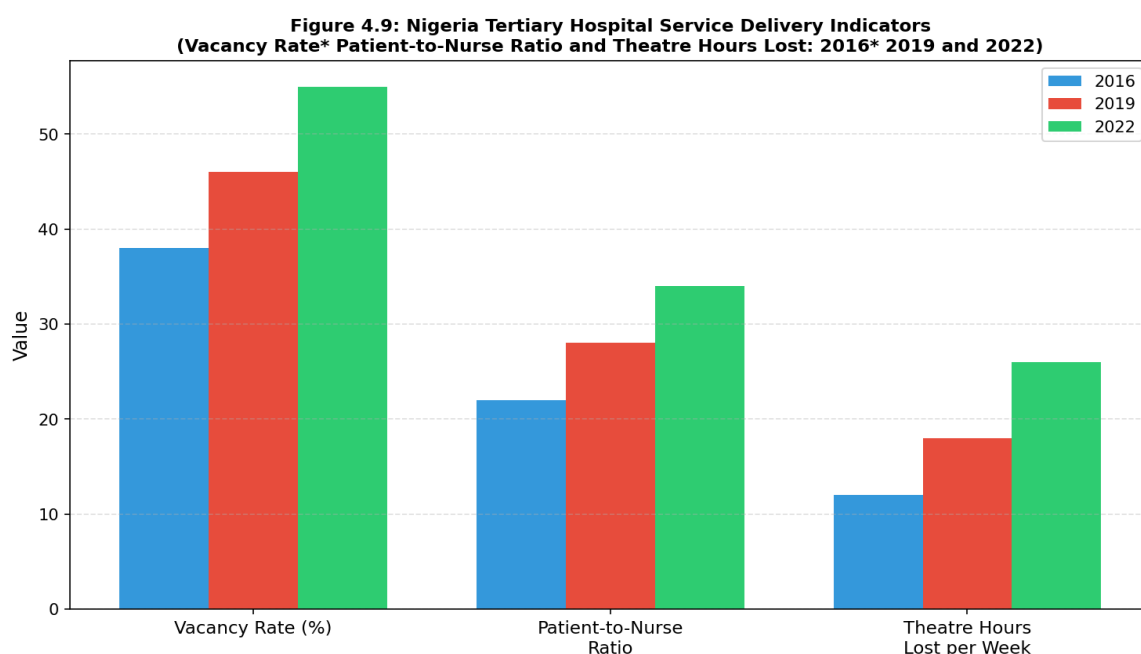


Figure 4.9. Nigeria Tertiary Hospital Service Delivery Indicators: Vacancy Rate, Patient-to-Nurse Ratio and Theatre Hours Lost per Week (2016, 2019 and 2022). Sources: Eze and Onyishi (2021), Tukur et al. (2022) and Federal Ministry of Health (2021).

Figure 4.9 shows that all three delivery indicators moved in the wrong direction across the study period. The vacancy rate rose from 38% in 2016 to 55% in 2022. The patient-to-nurse ratio in general ward settings rose from 22 patients per nurse in 2016 to 34 patients per nurse in 2022. Theatre hours lost per week due to staff unavailability rose from 12 hours in 2016 to 26 hours in 2022. Each of these trends individually represents a worsening of patient safety conditions. Together they constitute a compounding delivery capacity crisis in which the same workforce shortage produces multiple simultaneous service failures. A patient who arrives at a tertiary hospital in 2022 is more likely to find an understaffed ward, a less attentive nurse and a delayed surgical appointment than the same patient arriving in 2016 and migration-driven workforce loss is the primary driver of each of these worsening outcomes.

The evidence set out in Table 4.4 and Figures 4.8 as well as 4.9 give direct evidence that health worker migration has to a significant degree damaged healthcare delivery capacity in

Nigeria across the study period. Nigeria recorded an MMR of 814 per 100,000 live births in 2015. By 2023 this had fallen to about 640 but remained the highest among all five comparator countries and more than six times higher than South Africa. Tukur et al. (2022) in a direct way attribute a majority of preventable maternal deaths in Nigerian tertiary hospitals to the absence or shortage of skilled birth attendants with specific attention anaesthetists and obstetricians. These are in a precise way the professionals most likely to hold foreign qualifications, most likely to be recruited by UK and US employers as well as most likely to emigrate given the salary gaps documented in section 4.2.1.

The comparison with Rwanda gives the most thorough analysis powerful contrast for refunnelling back to Nigeria. Rwanda started with an MMR of 290 per 100,000 in 2015 and achieved 188 by 2024. This point achieved this alongside a reduction in emigration density to 4.8 per 1,000 for doctors compared to Nigeria at 15.2 per 1,000. The mechanism connecting these two outcomes is the investment Rwanda made in workforce retention. By keeping more skilled birth attendants in the country Rwanda ensured that more deliveries were attended by trained professionals. WHO (2024) data confirm that Rwanda increased the proportion of deliveries attended by skilled personnel from 69% in 2015 to 91% in 2022. Nigeria increased this proportion from 43% to 53% over the same period. The gap in skilled birth attendance in a direct way translates into the gap in maternal mortality outcomes.

Ghana gives a second comparative case. The Additional Duty Hours Allowance improved the economic welfare of Ghanaian health workers. Ghana achieved a reduction in MMR from 319 in 2015 to 258 by 2023. This represents a larger absolute reduction than Nigeria over the same period. Asamani et al. Because rural facility staffing is the proximate determinant of maternal mortality in low-income African health systems, (2021) attribute part of this improvement to the retention of nurses in rural health facilities following the salary reform. The Ghana case therefore shows a causal pathway from economic welfare

improvement through workforce retention to reduced maternal mortality that is in a direct way applicable to Nigeria.

The delivery indicator data in Figure 4.9 give the operational mechanism connecting emigration to outcome. A vacancy rate of 55% in 2022 shows that Nigerian tertiary wards operate with fewer than half their designed nursing complement. A patient-to-nurse ratio of 34 to one in general wards shows that safe monitoring of patient deterioration is at the structural level impossible. Theatre hours lost of 26 per week shows that surgical patients face delays that in emergency settings such as obstetric haemorrhage or ruptured ectopic pregnancy are life-threatening. Oleribe et al. (2019) describe this operational setting as a system under chronic emergency rather than normal functioning and the data confirm that this description remained accurate throughout 2015 to 2024.

Push-pull theory predicts that when pull forces in destination countries are strong and structural push forces at origin are heavy the resulting migration will deplete origin workforce capacity. The healthcare delivery data confirms this prediction at the operational level: Nigeria lost over 30,000 doctors and 58,000 nurses to emigration between 2015 as well as 2024, as well. As the direct consequence measured through density, vacancy rate, patient-to-nurse ratio as well as maternal mortality data is a health system whose delivery capacity fell across every indicator studied. Countries that retained more workers by managing the push forces achieved better delivery outcomes.

4.3.3 Test of Hypothesis Two

Research Question Two asked: how has health worker migration impacted the capacity and delivery of healthcare in Nigeria from 2015 to 2024?

The null hypothesis said: health worker migration has not impacted the capacity and delivery of healthcare in Nigeria from 2015 to 2024.

The alternative hypothesis said: health worker migration has impacted the capacity and delivery of healthcare in Nigeria from 2015 to 2024.

Based on thematic and pattern analysis across the data in Table 4.3, Table 4.4 as well as Figures 4.5 to 4.9, there is compelling documentary evidence to reject the null hypothesis. The evidence chain proceeds as follows. First, Table 4.3 and Figure 4.5 show that Nigeria is the only country among four studies whose skilled health worker density moved downward from 2015 to 2024 declining from 1.95 to 1.68 per 1,000 population. This fall occurred as the total population grew from 182 million to over 220 million producing an even larger absolute deficit in workforce coverage. Second, Figure 4.6 shows that tertiary nursing vacancy rates rose from 47% in 2018 to 55% in 2023 while comparator countries with lower emigration rates maintained or improved their vacancy positions. Third, Figure 4.9 shows that all three service delivery indicators in Nigerian tertiary hospitals worsened between 2016 and 2022: vacancy rate rose, patient-to-nurse ratio rose as well as theatre hours lost per week rose. These three trends in combination represent a direct and measurable fall in delivery capacity that corresponds in direction as well as timing with the emigration trend documented in section 4.2.

Fourth, Table 4.4 and Figure 4.8 show that Nigeria maintained an MMR more than six times higher than South Africa as well as more than three times higher than Rwanda throughout the study period. The countries with lower emigration density recorded faster MMR reductions over the same period. Rwanda reduced its MMR by 33% while achieving the lowest emigration density in the study group. This comparison gives the strongest cross-country evidence that retaining health workers leads to better delivery outcomes.

The qualification required by push-pull theory and by empirical honesty must be noted: health worker migration is not the sole cause of poor healthcare delivery in Nigeria. Poverty, poor road infrastructure, low health facility use rates driven by cost barriers, not enough medical equipment procurement and inefficiencies in health finance management all contribute

to poor outcomes. Ntoimo et al. (2019) and Oleribe et al. (2019) confirm that demand-side barriers to care access are significant independent contributors to maternal mortality in Nigeria. The null hypothesis is rejected not on the grounds that migration is the only cause but on the grounds that the documentary evidence confirms it is a significant independent cause with a measurable and growing impact on delivery capacity. The alternative hypothesis is supported: health worker migration has to a significant degree impacted the capacity and delivery of healthcare in Nigeria from 2015 to 2024.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

1. Finding 1: The economic welfare of Nigerian health workers represented the primary structural push force driving the incessant migration of doctors and nurses from Nigeria between 2015 as well as 2024. Nigerian medical doctors earned the equivalent of \$350 per month in 2015 and \$180 per month in 2024 as naira depreciation eroded the real purchasing power of their salaries by over 85% across the study period. The salary gap between a Nigerian doctor and a UK equivalent grew from about 13 to one in 2015 to 40 to one in 2024. The Medical and Dental Council of Nigeria issued 30,700 verification certificates to doctors seeking foreign licensing between 2015 as well as 2024. Comparator countries including Ghana and Rwanda that introduced targeted salary as well as welfare reforms achieved lower emigration density confirming that economic welfare is the dominant as well as controllable driver of health worker migration.
2. Finding 2: Health worker migration to a significant degree damaged the capacity and delivery of healthcare in Nigeria across the study period. Skilled health worker density fell from 1.95 per 1,000 population in 2015 to 1.68 per 1,000 in 2023 against a WHO benchmark of 4.45 per 1,000. Tertiary hospital nursing vacancy rates rose from 47% in 2018 to 55% in 2023. Patient-to-nurse ratios in general wards rose from 22 to one in 2016 to 34 to one in 2022. Operating theatre hours lost per week due to staff shortage rose from 12 hours to 26 hours. Nigeria maintained a maternal mortality ratio more than six times higher than South Africa and over three times higher than Rwanda throughout the period. Countries that retained more health workers through welfare and governance reforms achieved faster reductions in maternal mortality confirming the direct link between workforce retention as well as healthcare delivery outcomes.

5.2 Conclusion

The present study confirms that the global migration of Nigerian health workers from 2015 to 2024 is a product of structural economic push forces rooted in salary inadequacy and purchasing power collapse as well as the pull of high-income destination countries. The results align with push-pull theory: economic welfare is the dominant driver of emigration, and emigration produces measurable fall in delivery capacity. Comparator countries that invested in health worker welfare retained more professionals and achieved better health outcomes. Nigeria faces a dual crisis of workforce loss and delivery failure that will worsen without systemic reform targeting the economic conditions of health workers as the primary policy lever.

5.3 Recommendations

The Federal Ministry of Health, in partnership with the Revenue Mobilisation Allocation and Fiscal Commission, should develop as well as implement a Health Worker Economic Welfare Protection Framework that indexes doctor as well as nurse salaries to the official Central Bank of Nigeria exchange rate. This framework should ensure that the naira-denominated salary of each health worker category is reviewed every six months to maintain purchasing power parity at no less than 40% of the equivalent UK NHS salary level. The framework should be legislated rather than executive-directed to prevent implementation failure and must include a dedicated budget line within the Annual Appropriation Act submitted to the National Assembly.

The National Health Insurance Authority, under the direction of the National Primary Health Care Development Agency, should develop and fund a Health Worker Retention as well as Service Delivery Recovery Plan targeting the 10 states with the highest nursing vacancy rates in tertiary hospitals. The plan should mandate a maximum patient-to-nurse ratio of 10 to one in general wards and 3 to one in high dependency units as a statutory minimum enforced by

the Medical as well as Health Workers Union monitoring framework. Each state participating in the plan should receive a conditional transfer from the Tertiary Health Fund tied to measurable reductions in vacancy rate and improvements in skilled birth attendant deployment.

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