

Demand and Production of Health Workforce in Ghana: Perspectives of Health Workforce Policy Actors



Hamza Ismaila^{1,2} , Juliet Nabyonga-Orem^{1,3} , Yolande Heymans¹  and Christmal Dela Christmals^{1,*} 

¹Centre for Health Professions Education, North-West University, Potchefstroom, South Africa

²Ghana Health Service, Office of the Director-General, Accra, Ghana

³World Health Organization Namibia Country Office, Windhoek, Namibia

Abstract:

Introduction: Ghana has embarked on several health workforce policy initiatives and health workforce governance structural changes, with critical shifts in the production and demand of health workers over the last two decades. Many more policy proposals are being made regarding the production and recruitment of health workers due to current challenges, such as skills mismatch, underproduction of some essential cadres, a huge surplus of some cadres, and fiscal space challenges leading to 40% unemployment rate in the health sector. It is imperative to generate evidence, from the perspective of practicing health workforce policy actors, on what influences the production of and demand for the health workforce to inform future health workforce policy.

Materials and Methods: We adopted an exploratory, descriptive qualitative design guided by the Standards for Reporting Qualitative Research (SRQR), enabling us to capture nuanced perspectives of health workforce policy actors on production and demand dynamics. Participants were purposively sampled from health workforce policy actors within Ghana's public health sector, prioritising those actively involved in health workforce policy formulation or implementation at national or organisational levels while excluding those outside the health sector. The sampled participants represented the sector ministry, three service delivery agencies (collectively accounting for about 70% of the public health workforce), and a professional labour group (representing 60% of the total health workforce), engendering broad institutional representation. Semi-structured interviews were conducted, audio-recorded with consent and transcribed verbatim, and thematically analysed following Braun and Clarke's six-step framework, supported by MaxQDA software.

Results: Our findings reveal a complex interplay between structural limitations, fiscal constraints, and political interference in shaping Ghana's health workforce landscape. Limited production capacity for upper-level cadres (doctors, pharmacists) intersects with political patronage, which influences the proliferation and citing of training institutions. These dynamics exacerbate skill-mix imbalances and inequitable distribution, where, due to fiscal space constraints, the government is unable to absorb surplus cadres, reflecting a structural disconnect between production planning and demand absorption.

Discussion: Repurposing nursing and midwifery training schools to award degrees instead of certificates is essential in increasing the quality of the health workforce and the services provided. Moreover, politicians should use their influence to support health workforce planning and ensure the implementation of plans. A managed migration of surplus health workers with the signing of recruitment agreements with countries in need of health workforce, particularly enrolled nurses who were overproduced and remained unemployed, is an inevitable policy reform consideration for Ghana.

Conclusion: These findings underscore the need for integrated governance frameworks that link production decisions to labour market analytics and fiscal realities.

Keywords: Health workforce, Health policy, Health professions education, Health workforce planning, Migration, Budget space, Ghana.

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*Address correspondence to this author at the Centre for Health Professions Education, North-West University, Potchefstroom, South Africa; E-mail: christmal.christmals@nwu.ac.za

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1. INTRODUCTION

Over the past decades, the centrality of the health workforce as a sine qua non for improving health outcomes has been prominently featured in global health dialogues [1]. Besides the health workforce's crucial role in developing healthier communities [2], they help bridge gaps in access to healthcare and improve the economic growth and development of nations [3].

Global estimates suggest that a quarter of the economic growth recorded in low- and middle-income countries in the early 2000s was driven by improvements in health [4]. In contrast, the health workforce's role in averting premature deaths from health-related illnesses and lost productivity due to illness boosted the global gross domestic product (GDP) by some 15% [5].

In Ghana, studies into the relationship between health, the health workforce, and economic growth established that a year's increase in life expectancy boosted workers' productivity and increased economic growth by 3.66% [6], as well as occasioning a 1.62-unit increase in foreign direct investment inflows. Similar studies into the relationship between health-seeking behaviours and the availability of the health workforce revealed that as many as 9 in 10 mothers received antenatal care, given increasing health workforce per capita density [7].

To deepen this symbiotic relationship, address systemic challenges, and attain set health outcomes, such as the erstwhile Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs), Ghana embarked on health sector reforms. These reforms primarily sought to link the National Health Policies and the health sector's Medium Term Development Plans (HSMTDP) to the national development framework for attaining Ghana's Vision 2020. The reforms also introduced structural changes in the management of the sector – decoupling the regulatory, policy-making, service delivery, and financing functions.

The functions of health care delivery became entrusted to the Ghana Health Service and the Teaching Hospitals following the enactment of the Ghana Health Service and Teaching Hospitals Act, Act 525 of 1996 [8] health financing (national health insurance scheme) to the National Health Insurance Authority [9] and professional regulation to bodies such as the Nursing and Midwifery Council, Medical and Dental Council, and Pharmacy Council. Policy formulation, however, remained with the Ministry of Health.

With a mandate to formulate policy, the Ministry of Health (MOH) has since developed numerous national health and health workforce policies to enhance health status and contribute to the attainment of universal health coverage in Ghana. The flagship national health policies (2007 and 2020) and resultant national human resource policy and strategies brought in their wake health workforce reforms, such as increasing the health workforce production capacity through liberalising the training of health professionals to include the private sector [6] increasing the uptake of the throughputs from the liberalised health training institutions [10], and strategically repositioning health workforce issues as part of economic discussions.

What, however, determines the production of and demand for health workforce in Ghana and other low-middle income countries, as “there is many a slip between cup and lip” in the wake of the too-many-produced yet too-few-employed paradox, given an average nursing/midwifery unemployment rate of 39.48% [11] and amidst global evidence of limited fiscal space as the leading cause. This paper, thus, explores health workforce policy actors' perspectives on the factors that influence the production of and demand for health workforce in Ghana, discusses these factors vis-à-vis existing evidence, and concludes with a call for reforms.

2. MATERIALS AND METHODS

2.1. Design

We used an exploratory, descriptive qualitative approach and the Standards for Reporting Qualitative Research (SRQR) guidelines [12]. The exploratory, descriptive qualitative approach allowed for the collection of views and perspectives from policy actors on the subject matter and complemented earlier research on the topic, which appeared lacking or limited, to deepen understanding and familiarity with the area.

2.2. Study Setting

The study was conducted amongst health workforce policy formulators and implementers of the public health sector within the Ghana Ministry of Health (MOH), its service delivery agencies, and a health professions labour group. The MOH works collaboratively with its service delivery agencies to develop and implement proactive health policies to improve health and vitality, as well as to provide and manage comprehensive, accessible primary

healthcare and tertiary-level care services. The health professions labour group, meanwhile, is a professional association for the largest category of health professionals within the public health sector.

2.3. Population and Sampling

Participants were purposively sampled from a population of health workforce policy actors, meeting the inclusion criterion of actors involved in the formulation or implementation (or both) of health workforce policies within the public health and finance sectors, and the exclusion criterion of policy actors geographically outside those sectors.

These criteria resulted in the sampling of health workforce policy actors with vast experience, institutional knowledge, and expertise in health workforce policy formulation and implementation within the public health sector of Ghana. They pruned down the sample size to five, comprising health workforce policy actors from the sector ministry of health, three of its serving delivery agencies, and one from the professional labour group, based on their share distribution of the total public sector health workforce population.

Together, the three sampled service delivery agencies accounted for about 70% of the total public health sector workforce. The professional labour group accounted for about 60% of the total health workforce (public and private) in the country, thereby making the sampling criterion representative.

The gender distribution of the sampled participants was 100% male, as there were no females involved in the formulation or implementation (or both) of health workforce policies within the public health (whose health workforce gender distribution was predominantly feminine) at the national or organisational level(s). All five participants were serving health workforce policy actors with over ten years of public health sector experience, with the mandate of ensuring the “availability of a competent and motivated health workforce, with the right numbers, skills mix, and placement to deliver quality healthcare services” within the sector.

100% response rate was meanwhile recorded, as all five participants availed themselves for the study.

2.4. Ethics, Recruitment, and Informed Consent

The study, part of a doctoral study, was granted full ethics approval by the Ghana Health Service Ethics Review Committee (No. GHS-ERC:018/08/22) and the North-West University's Health Research Ethics Committee (No. NWU-00122-22-A1).

Following ethics approval, the research team invited prospective participants via their last-known official or personal email addresses to take part in the study. Detailed participant information sheets (**Supplementary Material 1**), letters of approval, and permission were shared with prospective participants to help them make an informed decision and to signpost them to an independent research administrator if they were interested in the study

and/or needed any clarifications. The independent research administrator played the gatekeeper role, organising separate one-on-one physical or virtual meetings with the participants to explain the purpose of the study using a PowerPoint presentation (**Supplementary Material 2**) and the consenting process using the informed consent forms (**Supplementary Material 3**).

All transcripts and audio files were anonymised by assigning pseudonyms to remove any personal information traceable to the participants, thereby protecting their identities.

2.5. Data Collection

Based on the empirical literature, we developed a semi-structured interview guide for data collection (**Supplementary Material 4**) [8]. The tool, reviewed by an expert in the subject area, consisted of five sections: 1) demography of the participant, 2) basic understanding of public sector health workforce issues, 3) factors influencing the production of health workforce, 4) factors influencing the demand for health workforce, and 5) general comments. It was pre-tested with three health workforce practitioners in the public health sector to determine applicability and context specificity, and the pre-test comments were used to refine the tool before the actual interviews.

The interviews were conducted at convenient venues or modes selected by the participants, and participants were reminded during this time of the provisions of the consent process and their consent to the audio recording of the interviews.

The interviews were held between 15th February 2023 and 10th May 2023, lasting an average of 40 minutes per session, and were conducted in English. Data collection was terminated at the fifth interview when data saturation was confirmed through iterative coding and peer debriefing [13]. Only two in-person interviews were held, with the remaining three held virtually.

2.6. Data Management, Analysis, and Storage

Data from the interviews were managed, analysed, and stored in line with Ghana's relevant data protection laws, *i.e.*, the Data Protection Act of 2012 (Act 841), and other data protection laws of the North-West University, such as the Protection of Personal Information Act (POPI Act 2021). Hard data were secured in sealed envelopes under lock and key in HI's office and subsequently transferred to the Centre for Health Professions Education (CHPE) of the North-West University for secure storage, where access was restricted to the research team. Electronic data, in the form of audio recordings, was transferred to HI's computer from the recording device directly after each session, after which it was deleted from the recording device and emptied from the recycle bin of the password-protected personal computer.

Data from the interviews were transcribed verbatim by the first author (HI) with the supervision of the other authors (CDC, YH, and YNO) and were analysed

thematically. All authors read the transcripts thoroughly to familiarise themselves with their contents and subsequently uploaded them into MaxQDA qualitative data analysis software. HI and a co-coder (Dr Alhassan Sibdow Abukari) independently coded three transcripts and held a meeting with CDC to compare their codes. A consensus was reached on a coding system, which HI used to code all the transcripts. Similar codes were grouped into sub-themes, and related sub-themes were grouped into major themes, which were then described.

2.7. Rigour and Trustworthiness

We ensured rigour and quality by ensuring the study's findings accurately reflected participants' perspectives and were credible, transferable, dependable, and confirmable [14]. To ensure the credibility of the study findings, HI familiarised himself with the sampled health workforce policy actors to gain contextual knowledge and used probes to get more information during the interviews. Post-semi-structured interviewee checking was also done to confirm the accuracy of the transcribed data and emergent themes [15].

HI reported the procedure for participant selection and used "thick description" of the research setting and processes to enhance the transferability of the interview findings. To ensure dependability, the data collection, analysis, and interpretation methods were documented in the study report and validated during meetings with subject-matter experts for peer review. We, however, mitigated our positionality and reflexivity, given HI's experience as a health workforce policy implementer and our collective roles as academics in health systems, by composing an audit trail of field notes, audio recordings, analysis notes, and coding details, allowing other researchers to review the same to arrive at similar conclusions [16]. These dependability mechanisms helped subdue and account for our personal biases and experiences, contextual intersecting relationships, and self-knowledge, thus curtailing their impact on the study findings.

3. RESULTS

3.1. Background Characteristics of Participants

All five participants were male health workforce policy-makers involved in policy formulation and/or implementation for the past 1.5 decades. While a participant had over two decades of experience in mainly health workforce policy formulation at the sectoral level, three other participants were health workforce policy implementers at the health service delivery levels, and the last participant was an executive of the professional labour group involved in the training of health professionals.

3.2. Main Findings

Overall, three main themes and fourteen subthemes were generated from the data through exploratory thematic content analysis.

3.2.1. Health Workforce Challenges in Ghana

Under this central theme, the participants enumerated the inadequate production capacity for the training of upper-level health professionals (such as doctors, pharmacists, and biomedical scientists), political interference, inadequate funding for recruitment, inequitable distribution, improper citing and proliferation of health training institutions, and the brain drain of skilled professionals as the primary health workforce challenges in Ghana.

The participants maintained that the limited installed capacity, *i.e.*, the number of universities, for the training of doctors, pharmacists, (degree) nurses, (degree) midwives, and laboratory (biomedical) scientists led to a shortage of these health professionals. As stated by the participant:

"Doctors and pharmacists are produced through the tertiary institutions or universities. For now, the universities producing this cadre of staff are very limited, which is leading to their shortfalls. Laboratory scientists are also produced through the universities, but when it comes to the lower levels" (R1).

Besides inadequate production capacity, participants also underscored political interference as another factor that hindered the proper siting of health training institutions for the production of health professionals, the equitable distribution of the health workforce, and the production of the appropriate skill mix of health professionals. The participants bemoaned the many requests and pressure from political officials to post their relatives, friends, or political party members to well-endowed cities and towns, creating shortages in deprived areas. A participant stated that *"... [...]...the staff themselves....[were]...not willing to go to deprived areas... they all want to be in either Accra or Kumasi.[....]" (R2).*

"So, generally, the biggest challenge with health workforce planning has been political interference. That is what I can say for now, that is the biggest challenge with health workforce planning. Because the expertise is just within the health sector, proper health workforce planning cannot be done. But going beyond the planning stage, you would need to implement your plans. Authorities mandated to implement more or less are deprived of the mandates to do so because of political interference" (R3)

Again, political actors were touted to have overly *"politicised the training of nurses and midwives"* and influenced the proliferation/citing of nursing and midwifery training schools to conterminously exist with electoral constituencies, leading to misalignments between production capacity, production mix, and demand for the produced health professionals. The participants averred that:

"About fifteen to twenty years ago, we had only fifteen nursing and midwifery training colleges in Ghana. Currently, we have over 90 of them, and some of these schools are situated in places that are resource-constrained. So it makes it very difficult for the students to

acquire the requisite competencies and skills that the job market requires" (R5).

On the issue of the brain drain of skilled professionals, the study found the causal factors differed according to the type of profession and the time horizon, which differences subsequently informed the type of strategies implemented to curb the brain drain. The participants stated that:

".... And interestingly, depending on the professional background of the individual, the reason for leaving Ghana to [sic] the destination country differs. With the medical officers [doctors], their reason for leaving was basically to upgrade their skills, [and] improve their career pathway, especially with their e-training in terms of specialisation. For the nurses, it had to do with a financial breakthrough. (R1)

Unlike in the case of doctors, where the "establishment of a postgraduate health college i.e., the Ghana College of Physicians and Surgeons" curbed the surge in their outmigration, "the enhancement of the compensation package with the introduction of the Ghana Universal Salary Structure (and later the Health Sector Salary Structure and the Single Spine Pay Policy)" did the trick for the nurses in the short term (R1).

In the medium to long term (from the late 1990s to the mid-2000s), however, the mitigating strategy tilted towards increasing the production of the needed health professionals. Starting with a medium-term strategy of mass producing a lower-level cadre of auxiliary nurses, termed "Kuffour nurses" and mid-level prescribers – medical assistants- who task-shared some traditional roles of professional nurses and doctors, respectively, the strategy, in the long term, changed to encapsulate onboarding the private sector in the production of specialised health professionals whose duration of training spanned a minimum of two years.

The policy thrust during this phase, clearly, was to just produce, without taking into consideration the ability to recruit (demand) what was produced. According to one of the participants:

"We have to strategically look at long-term policies, what our supply will look like, and whether or not we can even absorb them. It was not the matter [20 years ago], we need availability, it should be available, we should have a stock of them" (R1)

3.2.2. Determinants of Health Workforce Production and Demand in the Ghanaian Health Labour Market

The participants espoused "meeting or satisfying the healthcare needs of the population" as the major factor that determined the need for the production of and demand for the health workforce. They intimated that as the population became more conscientious and warier of their health conditions, the Ministry of Health (with oversight responsibility over the health training institutions), developed the "medium-term human resource policy and strategies" to inform the production of some categories of the health workforce needed, however

in tandem with the universities, to meet the health needs of the population. The participants stated that:

"The main driver of the need has to do with meeting or satisfying the healthcare needs of the population today because, today, most people have been conscientized and are aware of their health conditions and, for that reason, seek orthodox healthcare in the country" (Director TTH).

The Ministry of Health developed a medium-term human resource policy and strategies, which informed these cadres that we have ... (A chunk of doctors, in fact, all doctors ...biomedical scientists and pharmacists... are produced from the universities, which universities the Ministry of Health has no control over." (R1).

R1, however, admitted that although the need for the production of and demand for the requisite health workforce hinged on *meeting or satisfying the healthcare needs of the population*, some labour market rigidities created instances of underproduction/overproduction and unemployment. For example, R1 illustrated that whereas a policy decision to recruit more of the requisite health workforce could take immediate effect, that of "getting [producing] doctors within 2 months or nurses within 1 month or 1 year" was not possible, given the duration of training.

On what informed the numbers, categories, and skill mix of health professionals (to be) trained, the participants stated these were mainly guided by human resource forecasting based on a skills gap analysis, which was routinely done at the sectoral and agency levels. The skills gap analysis, according to R1, helped in identifying the calibre of the health professionals in need and their existing numbers vis-à-vis the establishment levels to inform the numbers to be produced where there were shortages. The participants stated that:

"We are to look at the various skills that we need when it comes to healthcare in Ghana, like I said, four levels. And then find out whether those that have those skills, they are adequate. If they are not adequate, we should come up with a plan that will focus on...by the year 2030, we want to have maybe critical care nurses, about 1000 of them, then that informs intake".

Meanwhile, regarding the informed demand for health workforce, the participants' views varied according to their operational levels. Whereas R1 opined that "the budget from the ministry of finance informs [sic] our demands", participants at the service delivery and professional labour group level maintained demand for requisite health workforce was determined by identified health workforce gaps informed by the existing staffing norms –

"Fortunately, the... [...] is blessed with a policy called the staffing norms which was developed by the Ministry of Health and Ghana Health Service jointly. So, this is the policy that we use in terms of recruitment of [....] (R2-R5)".

This group of service delivery and professional labour association participants lamented that albeit health

workforce gaps informed their demand for the needed health workforce, there were instances when “the agencies receive [sic] postings from the ministry as and when it is [sic] time for recruitment”, which did not reflect their needs. One of the participants stated that:

“So, the needs of the health sector would have formed the basics of recruitment into the various training schools so that the schools would be seen to be producing professionals to meet the needs of the various health facilities. But that is not what we have in Ghana. There appears to be a lack of communication between the agencies that use the various professionals and the ministry that supervises the training school and the production of the health professionals. So, the results have been in the last decade over production of certain cadres of health professionals that are not actually needed”.

3.2.3. Policy Recommendations for Addressing the Health Workforce Challenges and Streamlining Health Workforce Production and Demand

The participants proffered several recommendations on how the existing health workforce challenges could be addressed, and the current spate of health workforce production and demand could be streamlined. To improve the production of fit-for-purpose categories of health workforce, the participants recommended improved consultations between the Ministry of Health, the service delivery agencies, training institutions, and the health professionals’ regulatory bodies. According to the participant:

“Some level of consultation [between the Ministry of Health, the Agencies, and the Ministry of Education/Universities] in determining the cadres or the various professional groups that would be required.....so, the needs of the health sector would have formed the basics of recruitment into the various training schools”.

R5 additionally recommended repurposing the proliferated nursing and midwifery training schools for the training of degree nurses. A participant stated that:

The Association has a definite position when it comes to training. As far as we are concerned, we think that we need to stop the training of the certificate nurses in this country and turn all the diploma training institutions into degree-awarding ones (R5)

Meanwhile, the participants of the service delivery agencies (R2-R4) averred that although most health workforce policy actors had the requisite skills and competencies, they required little push from the political actors to implement to the letter otherwise robust and fit-for-purpose health workforce plans and strategies. They therefore implored the political actors to use this otherwise “unhealthy” interference to support the already existing expertise in the health sector to improve health workforce planning. A participant stated that:

“But going beyond the planning stage, you would need to implement your plans. Authorities mandated to do implementation more or less are deprived of the mandates to do so because of political interference. So, in terms of

workforce planning, the concept exists, and the expertise to do the workforce planning is there. Unfortunately, when the plans are done, they need some special push to make sure that the plans come to fruition”. (R4)

Finally, to turn the tide against the exodus of health professionals from Ghana to the Global North, the participants recommended the managed migration of the seeming surplus of the health workforce, especially enrolled nurses (“as we speak, enrolled nurses, I can confidently say that we have overproduced them – R1”), who were yet to be employed. R1 emphasised that as at the second quarter of the current year, i.e., 2023, about 68,000 nurses comprising 2020 – 2022 batches remained employed in the public health sector, mainly because of the inability of the “Government’s purse” to employ them.

This situation, R1 posited, called for going into the global labour market where the three market principles of supply, demand and need worked better (and often resulted in “people with the muscles...[...].coming to the market ...to...[buy] your [the] skills...[they needed]”); thereby creating a win-win situation, as stated by R1: “as we train our people, and we give them to you [those destination countries], at least we can get remittances and they will also provide service.”

Ghana, as a result, had engaged a number of countries in the global south for bilateral agreements for the managed migration of its ‘surplus’ health workforce, R1 concluded.

4. DISCUSSION

This study explored health workforce policy actors’ perspectives on health workforce challenges and the factors that influence the production and demand for health workforce in Ghana. Three main themes, health workforce challenges, determinants of health workforce production and demand in the health labour, and policy recommendations for addressing the health workforce challenges and streamlining health workforce production and demand, were generated from the data through exploratory thematic content analysis.

Participants identified several health workforce challenges in Ghana, which included inadequate production capacity for training upper-level health professionals (doctors, pharmacists, and biomedical scientists), political interference, inadequate funding for recruitment, inequitable distribution, improper citing and proliferation of health training institutions, and brain drain of skilled professionals.

They emphasised that the limited number of universities producing doctors, pharmacists, nurses, midwives, and laboratory scientists led to a shortage of these professionals. This finding aligned with revelations from the sector’s 2024 labour market analysis where it was found that Ghana’s total installed health workforce education capacity could only employ 11% and 22% of applicants into medical/dental and pharmacy programmes respectively, resulting in need-based shortages of some 9,854 doctors in 2022 [11] and the enlisting of Ghana on the World Health Organization’s list of countries with the

most pressing health workforce which needed to be safeguarded and protected [17].

The participants also opined that the training of nurses and midwives had been politicised, leading to the proliferation of training schools in resource-constrained areas, thereby affecting the quality of education. The brain drain of skilled professionals, mostly to the global South, was found to have different causes depending on the profession and time horizon. Doctors, it was found, often left to upgrade their skills and improve their career pathways, while the deciding factor for the brain drain of nurses was to seek financial breakthroughs. Different strategies were implemented to address the brain drain, such as establishing postgraduate health colleges for doctors and enhancing compensation packages and other hygiene factors for nurses.

These findings are idyllic of the global health workforce landscape, where health workforce challenges inhibit the optimum performance of health systems [18], the pattern of migration of skilled health professionals reflects movements in search of greener pastures [19], and the planning horizon for health workforce issues is changing from the short term to medium- to long-term horizons [20].

In the 2024 labour market analysis, it was found that as high as 63% of the 2,720 surveyed Ghanaian health professionals harboured the intention to migrate, with about 38% having started work on their migration plan. This compared unfavourably with the situation in Kenya, where 42% of its health workforce intended to migrate in search of greener pastures in the future [21], albeit favourably with Nigeria, which had an estimated 11,055 Nigerian-trained doctors working in the United Kingdom [22].

On the impact of government's fiscal space on recruitment, Ismaila et al found the country's current health workforce production regime to be unsustainable, given its wage bill-health budget ratio of almost 90% [23, 24], leading to a 40% unemployment rate within the health sector [11].

Similarly, the finding of political interference in health workforce issues, especially in the citing and proliferation of nursing training institutions, resonates with similar findings where the shortened distance between politics (politicians) and health service managers led to unprecedented levels of political interference in the daily management of health services in Australia [25, 26], the continued operations of Ghana's National Health Insurance Scheme (NHIS) was threatened financially and operationally by possible political interference [9] and reported cases of fraud and corruption in service delivery within municipalities in South Africa point towards inappropriate interferences by political office-bearers [27].

This phenomenon has also led to the increased production and subsequent employment of the non-professional cadre of nurses, especially in the northern zone of the country, where the non-professional nurse-to-professional nurse ratio stands at around 65% [28],

thereby raising issues of quality of care, given the limited scope of practice of the non-professional nurses [29].

On what determines the production and demand for the health workforce, the study's findings, highlighting the meeting of healthcare needs of the population and the development of medium-term human resource policies and strategies as key determinants, align closely with extant evidence from previous studies. For example, while Leerapan *et al.* identified household income, the fiscal capacity of government to employ the health workforce, and the demographic/epidemiological conditions of the population as the key determinants of the demand for health workforce, several other studies have underscored the frequent mismatches between the production and demand for health workforce [30], often triggered by market rigidities and defective health workforce planning strategies [31].

These notwithstanding, the finding aligns with the methodological shift towards the needs-based framework to health workforce planning, where the health system's need for health workforce is largely determined by the population's health risks, demography, level of health service utilisation, and the productivity of the service providers [32].

Overall, these findings reveal the complex interplay between structural limitations, fiscal constraints, and political interference, underscoring the need for integrated governance frameworks to address health workforce challenges. To this end, we propose:

1. enhanced stakeholder coordination between the Ministry of Health, service delivery agencies, training institutions, and regulatory bodies to align production with actual service needs,
2. repurposing the proliferated non-professional nursing and midwifery schools into degree-awarding institutions to improve quality and skill mix,
3. formalizing bilateral agreements for the ethical migration of surplus cadres to countries with workforce shortages, ensuring mutual benefit through remittances and service provision, and
4. integrating workforce planning with medium-term expenditure frameworks to ensure recruitment feasibility.

5. LIMITATIONS

We relied mainly on qualitative data from five high-level policy actors, which may limit generalizability. We also surmise that while the stringent inclusion criteria employed might have ensured depth of expertise, broader perspectives, especially from female health workforce policy actors, could have yielded additional insights. Against this, we propose that future studies triangulate these findings with quantitative labour market data and policy document analysis to enhance validity and inform comprehensive workforce strategies.

CONCLUSION

Ghana's health workforce landscape appears to be facing some challenges, and its policy actors at the

national and sub-national levels seem to have a better understanding of these challenges. The policy actors have sought to address these health workforce challenges, mainly shortages in the production of essential cadres (like doctors, professional nurses, biomedical scientists, and pharmacists) and the overproduction of lower-level cadres (enrolled nurses), by using evidence-based health workforce planning strategies. There have, however, been implementation challenges occasioned by some forms of political interference and the lack of broader stakeholder consultation between the Ministry of Health, its implementing agencies, and the Ministries of Education and Finance in determining the health sector's composite health workforce needs to inform production and demand; thus, calling for reforms.

AUTHORS' CONTRIBUTIONS

The authors confirm contribution to the paper as follows: H.I.: Conceived and designed the study under the guidance of CDC, JN-O, and YH; H.I.: Collected and transcribed the data under the supervision of CDC, JN-O, and YH; H.I.: Coded and analysed the data and drafted the manuscript with inputs from CDC, JN-O, and YH. All authors read and approved the final manuscript.

LIST OF ABBREVIATIONS

GDP	= Gross Domestic Product
MDG	= Millennium Development Goals
HSMTDP	= Health Sector's Medium Term Development Plans
MOH	= Ministry of Health
SRQR	= Standards for Reporting Qualitative Research
CHPE	= Centre for Health Professions Education

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was granted concurrent ethical approval by North-West University's Health Research Ethics Committee, Ghana (No. NWU-00122-22-A1) and the Ghana Health Service Ethics Review Committee (with No: GHS-ERC: 018/08/22).

HUMAN AND ANIMAL RIGHTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from the participants.

STANDARDS OF REPORTING

COREQ guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The anonymised transcripts analysed in this study are available from the Centre for Health Professions

Education, Faculty of Health Sciences, and can be released on request.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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SUPPLEMENTARY MATERIAL

Supplementary material is available on the publisher's website along with the published article.

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