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HEALTH WORKERS' BRAIN DRAIN AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

This study analyzed the short-run impact of health workers' brain drain on Nigeria's economic growth using 1995–2024 World Bank data and an ARDL model. Results indicate that net migration, as a proxy for brain drain, has no significant short-run effect on GDP, and most health indicators also show weak immediate influence. Youth unemployment affects GDP variably depending on lag periods. Overall, while brain drain impacts the health sector, its short-term effect on economic growth is limited. The study recommends better working conditions, improved remuneration, health sector reforms, and stronger institutions to curb health worker migration.

Keywords: health workers, brain drain, economic growth, Migration, ARDL
JEL Classification: F22, I15, J61, O15

Introduction

The migration of skilled health professionals from developing to developed countries is a major challenge for Nigeria, particularly in the health sector, which directly influences economic productivity, social stability, and population well-being. Health workers' brain drain involves the emigration of doctors, nurses, pharmacists, and laboratory scientists seeking better working conditions, higher salaries, and political stability abroad. Surveys prior to and during the COVID-19 pandemic indicate a sharp rise in this trend, with thousands of Nigerian health workers relocating to countries such as the UK, United States, Canada, and Australia.

This migration represents a loss of human capital investment, as the government and households bear the cost of education while other countries benefit from the professionals' expertise. Workforce shortages in Nigeria have resulted in overstretched hospitals, overworked staff, longer patient wait times, and declining quality of care. With only 24,000 licensed doctors for a population of 218 million in 2023, Nigeria faces a doctor-patient ratio far below the WHO standard, leading to increased disease burden, medical tourism, and reduced productivity.

A major driver of brain drain is the significant disparity in compensation and benefits. Early-career doctors in Nigeria earn between ₦150,000–₦300,000 monthly, whereas counterparts in developed countries earn substantially more with additional benefits such as health

insurance, malpractice coverage, and retirement plans. Efforts to retain health workers, including wage increases and incentives, have been limited by poor governance, inadequate infrastructure, insecurity, and weak professional development frameworks.

The economic implications are substantial: losses in public investment, reduced labor productivity, higher healthcare costs, and slower economic growth. To address this, legislative measures such as the "Medical and Dental Practitioner Act Amendment Bill" have been proposed to require post-graduation service in Nigeria before emigration.

Given the growing trend of health worker migration and its implications for the economy, this study aims to examine the impact of Nigeria's health workers' brain drain on economic growth.

Literature Review

Ayeni (2017) explored the role of leadership failures and poor institutional framework in the increasing trend of the issue of brain drain in Nigeria. The study focused on capital flight identifying key drivers such as corruption, poor investment in healthcare and education, lack of research funding and neglecting innovation. The study observed that these factors result in the emigration of skilled professionals, weakening national service delivery and reduced economic development. He argued that that the failure of the government to create a conducive environment for these skilled professionals to thrive leads to underdevelopment, dependency of foreign countries and a shrinking domestic knowledge economy. The study recommended policies aimed at strengthening governance and attracting Nigerian skilled professionals abroad to support capacity building.

Ezeokafor (2018) in his study examined the impact of skilled Labor migrations from Nigeria on the country's economic development. He used documentary data and a historical/analytical approach and found that the emigration of skilled professionals contributes to reduced domestic activity particularly through the loss of skilled labour, weak public services and increased inequality. The study made use of the Neo-Classical Migration theory to explain the push-pull factors and highlighted the fiscal and welfare consequences of brain drain.

Ossai et al. (2020) conducted a cross-sectional survey of 285 clinical medical students in Ebonyi State University and found that 74.4% planned to emigrate with key drivers being better equipment, better pay and skills in their prospective countries. The key predictors here included being single and already choosing a specialty (AORs = 4.0and 2.6 respectively). Only 17.2% intended to stay back and work in rural areas.

Adeniran (2021) also analysed the causes and the consequences of human capital flight in Nigeria and emphasized the developmental and economic toll of professional migration. The study showed that continuous migration of skilled professionals across different sectors including the health sector has reduced national productivity, increased dependence on foreign support and slowed economic development. By identifying poor professional incentives, weakened institutions and inadequate infrastructure as key drivers, the study provides a wide explanation for the brain drain issue. The study recommended improved

policy coordination and targeted institutional reforms as important tools for reversing the trend.

Ezeike and Ebong (2023) used a cross-sectional survey and collected data with a structural questionnaire of house officers at National Hospital Abuja and found that 78.1% intended to migrate mainly to the United Kingdom with better working conditions as the key drivers. Despite strong career aspirations, migration was still very high.

Obasi (2021) examined the broader implications of migration and brain drain on Nigeria's national development. The Study identified several economic and institutional challenges such as unemployment, political instability and poor professional welfare as key drivers of migration of these skilled professionals. Although the study is not specific to the health sector yet it emphasized the damaging effects of human capital loss on economic growth, institutional performance and even service delivery especially in the health and education sectors. The study concluded that for brain drain to be reversed, it requires policy reforms that improve domestic working conditions, strengthen governance and improve opportunities for professional growth within Nigeria. Abimbola et al. (2021) adopted a qualitative approach and data were collected using semi-structured in-depth interviews and focus-group discussions. The study found that decentralization influences the retention of rural health workers in Nigeria. It showed that irregularities in salaries due to delays in transfer of funds from the national to sub-national governments and because one tier of government can blame failure on another tier of government. The study recommends governance reforms to strengthen funding.

Umeh (2022) examined the impact of skilled workers' migration on Nigeria's economic development particularly migration from the health sector and educational sector. He used the Human capital theory and found that such migration results in the loss of national investment and weakens economic growth. The study highlighted severe effects on the health sector such as reduced service delivery and increased public spending, the study concluded that without better working conditions and policy incentives, brain drain will persist.

A study by the BMC international Health Human Rights (2022) examined the migration intention of about 913 Nigerian Physicians. The findings revealed that nearly 60% of respondents planned to migrate within five years highlighting economic hardship, poor salaries, insecurity and weak institutional support as key drivers. Using regression analysis, the study demonstrated a significant relationship between dissatisfaction with economic conditions and migration intentions. The authors argued that brain drain is a threat to the Nigeria's health system and weakens the broader economy by reducing the availability of important healthcare labour, therefore increasing mortality and public health burdens and low productivity. The study came to a conclusion with a call for urgent policy intervention in health financing, workforce management and national economic reforms to reduce migration of health care professionals.

A comprehensive study by Human Resources for Health (2022) investigated the preferences of Nigerian health workers using a Discrete Choice Experiment (DCE) involving over 1000 respondents. The study found that decisions made by these health workers to remain in Nigeria's health system were mostly influenced not just by salary but also by non-monetary

factors such as housing, working conditions, access to training, and institutional management quality. The study concluded that effective health worker's retention requires an approach that combines financial incentives with improvements in the work environment and career development.

Serhienrhien and Osagie (2022) examined the nexus between Nigeria's socioeconomic development and brain drain, the study used secondary data and conceptual frameworks and found that the persistent migration of skilled labour especially from the health system and educational system slows national productivity, drains public investment in training and weakens the county innovation potential. The study linked brain drain to failure in governance and recommends the implementation of diaspora engagement strategies, improved public sector funding, and the promotion of merit based professional systems to reduce the effect of brain drain.

Nwaneri and Emecheta (2022) examined the socioeconomic effects of brain drain in Nigeria, the study identified poor remuneration, weak institutions, and political instability as major drivers of brain drain. Although the study is not limited to the health sector yet it found that brain drain leads to diminished productivity, weakened public services and long term. Onah et al. (2022) also conducted a cross - sectional survey of 913 physicians across 36 states in Nigeria. They found that 43.9% intended to migrate with key drivers being poor pay (91.3%), insecurity (79.8%), and inadequate facilities (61.8%). physicians who were satisfied with their jobs were 4.7 times more likely to stay while older doctors were more willing to stay in Nigeria. Akinwale and George (2022) conducted a survey of 450 public health care workers in four government hospitals in Nigeria using structural equation modelling (SEM) and artificial neutral networks (ANN). they found that job dissatisfaction, poor working conditions and low remuneration significantly contributed to health workers' migration and decline in health care delivery.

Badru et al. (2023) conducted a cross - sectional survey of 513 health care workers in Nigeria. They found that 80.15 intended to migrate with top destination being the UK, Canada and USA. The key significant predictors of migration were burnout and years of practice and nurses showed higher migration intent than doctors. The study recommends urgent policy reforms to retain these health professionals. Yakubu et al. (2023) conducted an analysis on 22 skilled health workers in Nigeria using ego-network analysis and thematic interviews to explore how social networks influence migration intentions. They found that skilled health workers intending to migrate relied on networks for migration opportunities, behavioural modelling and decision support while those intending to stay back relied more on locally engaged networks. Ojo et al. (2023) also conducted a cross- sectional survey of 402 final year health related students of Obafemi Awolowo University and found that 81.1 % intended to migrate with UK, Canada and the United States being their top destinations. The study recommends improving local training and incentives to help reduce migration. Toyin-Thomas et al. Conducted a systematic review of 107 studies on health workers' migration in low income and middle-income countries (1970-2022). The study found that low pay (83.2%), insecurity (58.9%), career prospects (81.3%) and poor working conditions (63.6%) were the key drivers of migration. Nwachukwu et al. (2023) used a qualitative research design involving interview with 41 primary healthcare workers across Cross River State and Bauchi States. They found that the working conditions, living environments and human resources

for health (HRH) and management practices influenced the choice of work location among health workers. The study recommends that addressing these issues will help the retention of health workers.

Data and Methodology

This study is based on human capital theory expanded by Gary Becker in 1964 which recognizes human being as the major form of capital whose education, skills, health and training contributes to economic productivity and national development. In line with this theory, the model is econometrically specified using Auto-Regressive Distributed lag model (ARDL thus:

$GDPG_t = \alpha_0 + \beta_1 UNEMP_t + \beta_2 DOCPOP_t + \beta_3 AMR_t + \beta_4 HE_t + \beta_5 NETM_t + \beta_6 LITR_t + \varepsilon_t$ _____ (1)

Where:

GDPG= Gross Domestic Product Growth

UNEMP = Unemployment Rate

DOCPOP = Doctor Per Population

AMR= Adult Mortality Rate

HE = Health Expenditure (% of GDP)

NETM = Net Migration

LITR = Literacy Rate

$\alpha 0$ = Intercept term or constant parameter

β_1- β_6 = Coefficients of explanatory variables

ε_t = stochastic term

t = The time series property of the respective variables

Empirical Results

Table 1: OLS long-run and Error Correction Model (ECM) results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDP2(-1)	0.263535	0.245183	1.074850	0.2984
NETM	-2.76E-07	1.18E-05	-0.023310	0.9817
DOCTPO	-17.16714	30.77393	-0.557847	0.5847
AMR	0.298478	0.339191	0.879970	0.3919
AMR(-1)	-0.949261	0.441664	-2.149281	0.0473
AMR(-2)	0.472475	0.264756	1.784570	0.0933
HE	-0.059232	0.067669	-0.875314	0.3944
LITR	-0.488850	1.359304	-0.359632	0.7238
YUNEMP	-9.288981	3.315760	-2.801464	0.0128
YUNEMP(-1)	14.86135	4.757545	3.123744	0.0065
YUNEMP(-2)	-9.686919	2.944556	-3.289772	0.0046
C	141.3350	193.2782	0.731251	0.4752

R-squared	0.704546	Mean dependent var	4.669369
Adjusted R-squared	0.501421	S.D. dependent var	3.507634
S.E. of regression	2.476744	Akaike info criterion	4.949294
Sum squared resid	98.14821	Schwarz criterion	5.520239
Log likelihood	-57.29012	Hannan-Quinn criter.	5.123838
F-statistic	3.468539	Durbin-Watson stat	2.422210
Prob(F-statistic)	0.012104		

Economic and Statistical criteria

NETM is -2.76E and statistically insignificant (-0,9817) suggesting that changes in migration do not produce any measurable short run effects on economic growth in Nigeria. This conformity to theoretical expectations is validated by Ezeokafor (2018) and Adeniran (2021) who found that skilled labour migration reduces domestic productivity capacity and weakens economic performance. Umeh (2022) affirms the above in his finding that migration of skilled health workers lowers Nigerian economic growth due to loss of human capital.

DOCTPO is (-17.1671) and statistically insignificant implying that short-run changes in the availability of medical personnel do not influence economic growth in Nigeria. This non-conformity to theory is expected in Nigeria given the high doctor-patient ratio. This aligns with the findings of Obasi (2021) and Akinwale and George (2022), who explained that shortages of doctors weaken service delivery and productivity.

AMR is 0.29885 and insignificant meaning that changes in mortality rate do not have a meaningful short run impact on Nigeria's economic growth.

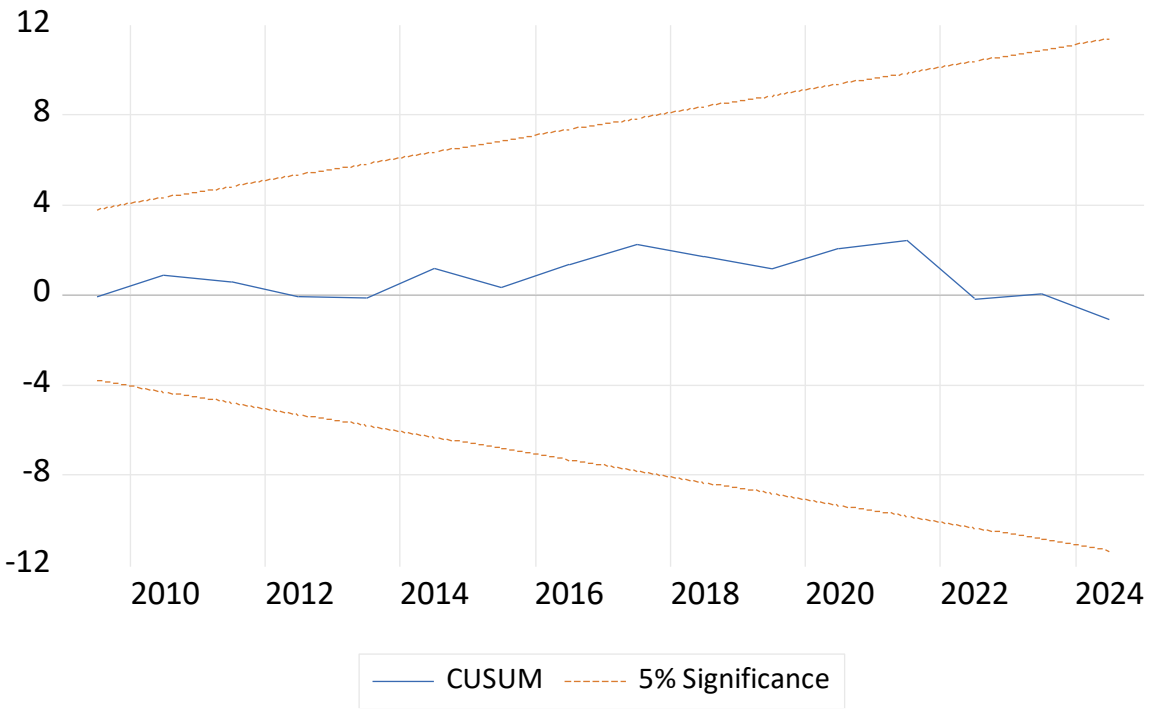
HE is 0.0592 and insignificant suggesting that the short run increases in government spending on health do not yield immediate improvements in GDP. The negative sign may reflect inefficiencies, misallocations or the fact that health investments typically have long-term rather than instantaneous economic payoffs. This aligns with the findings of Serhienrhien and Osagie (2022) who reported that institutional failure weakens the impact of health spending.
LITR is (-0.4889) indicating that short run changes in literacy levels do not produce any meaningful impact on economic growth. Literacy improvements take time to reflect in labour quality, innovation and productivity. The short run effect of literacy rate on economic growth is minimal and does not conform to the a priori expectation.

UNEMP: Youth Unemployment has both positive and negative lagged effects suggesting that past youth unemployment is associated with higher current GDP. This reflects situations where previously unemployed youths eventually engage in productive activities, creating delayed economic contributions while the lagged value of UNEMP with negative value of -9.6869 indicates that persistent youth unemployment ultimately harms economic growth. The longer the young people remain out of productive work, the more detrimental the impact becomes.

Model Stability Test

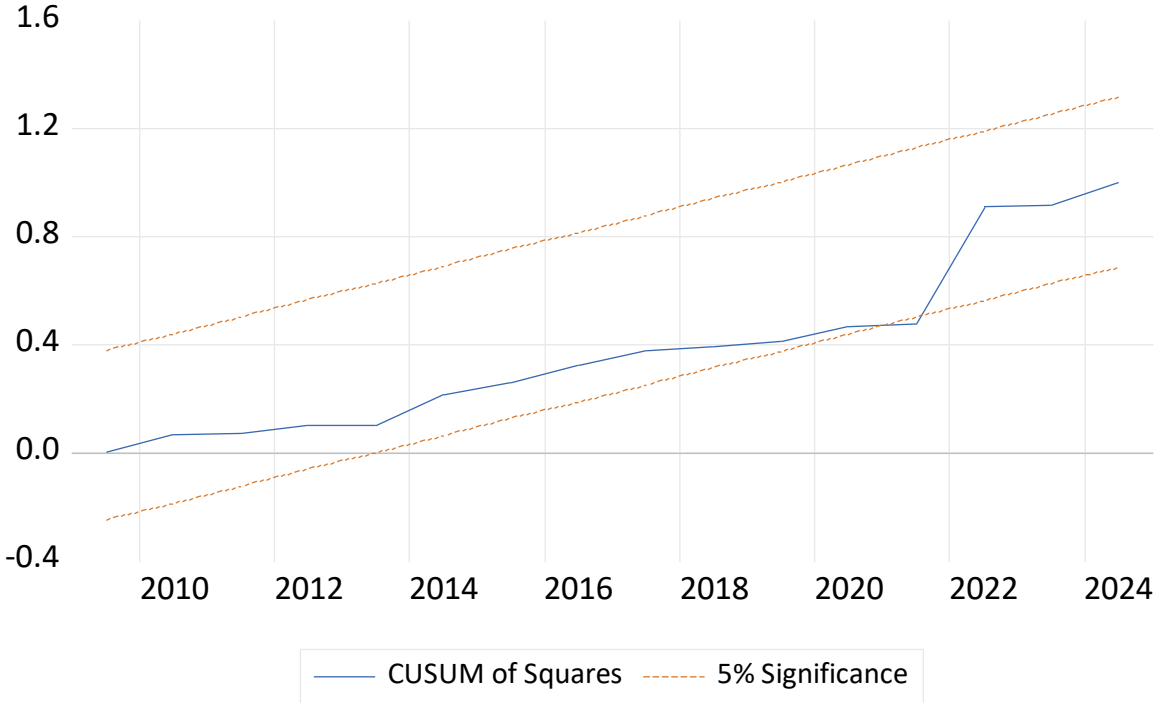
This test is done to check the stability of the coefficients over the sample period. The cumulative sum (CUSUM) and cumulative sum of squares (CUSUMQ) is plotted from a recursive estimation of the model and stability is indicated when the CUSUM and CUSUMQ statistics fall inside the critical bounds of the 5% confidence interval.

Fig1: CUSUM plot



The straight lines are critical bounds at 5% level of significance

Fig2:5B CUSUM of Squares Plot



From the CUSUM Plot, the blue CUSUM line remains within the 5% critical bounds throughout the sample period. This, indicates that the coefficients of the ARDL Model are stable over time. The CUSUMQ plot shows that the blue line remains inside the 5% significance boundaries for the entire sample period. This further confirms that the coefficients are stable in terms of variance. There is no structural break in the model.

Conclusion

Health workers brain drain has continued to shape discussions on Nigeria's economic performance in recent years. The empirical evidence from this study helps us understand how the migration of skilled medical professionals, measured by Net Migration interacts with other health-related and socio-economic variables to influence economic growth in Nigeria. Although the coefficient of Net Migration is negative indicating that brain drain reduces economic growth but the effect is not statistically significant, suggesting that within the period of study brain drain alone do not produce a strong enough influence to significantly alter the trend of Nigeria's economic performance.

Furthermore, other health related variables such as Health expenditure, doctor per population ratio and adult mortality rate were also found to be insignificant suggesting that weaknesses in institutional quality, inefficiency in public spending, and health sector challenges limit the contribution of health indicators to economic growth in the long run.

Youth unemployment however demonstrated a significance influence which shows that long term joblessness among the youth reduces economic performance. This highlights the urgent need for government intervention in creating employment and skills development.

Generally, the study establishes the fact that although health sector indicators show expected relationship with GDP, their short run impact is weak and Nigeria requires long term structural human capital development strategies to maximize the contributions of health workers to economic growth

Policy Implications and Recommendations

The findings of this study have important implications for the policy making in Nigeria health sector and broader economic planning. Although the study revealed that the study health workers brain drain which was proxied by Net Migration has a negative but statistically significant short run effect on economic growth, the direction of the coefficient indicates that continued loss of skilled workers poses a silent but serious long-term effect. This means that policy responses must go beyond just intervening temporary to address the deep structural problems that make emigration attractive. The insignificance of variables such as health expenditure, doctor per population ration and literacy rate implies that Nigerian health and educational systems are constrained by inefficiencies, weak governance, and poor implementation system and these prevents these indicators from translating into economic gains. Policy makers must recognize that strengthening institutions, improving transparency and ensuring efficient use of resources is very important for long term economic and health outcome.

Another major implication is the significance of youth employment in determining economic growth. From our results we see that prolonged unemployment has a significantly negative effect on GDP confirming that loss of productive labour even if its outside the health sector reduces economic growth. Therefore, policies aimed at retaining labour, skills development and even youth productivity will have direct economic benefits and reduce the pressure on young professionals to migrate in search of better opportunities.

From these implications, several recommendations emerge, first the government will prioritize improving the welfare of health workers by providing better remuneration, timely payment of salaries, functional medical equipment and better working conditions. This will help retain our health workers and reduce the incentive for migration. Also, reforms in the governance of the health sector is very important, increasing the budget is important but not enough, it has to be followed by transparency, effective monitoring and efficient use of funds. In addition, Nigeria must invest in expanding the training, career development and retention of health professionals. Scholarships, Continuous professional development programs and incentives for rural service should be implemented to encourage health workers to remain in the country.

Finally, Nigeria needs a comprehension nation human capital retention strategy. Such policy should address important push factors such as poor welfare, insecurity, limited career opportunities, and weak institutions so that the health professionals have reasons to stay. While legislative measures such as proposed five – year mandatory service bill may contribute to short term retention of health workers yet they should be complimented with strong incentives rather than relying on compulsion.

References

Abimbola, O., Adebayo, F., & Adeyemi, T. (2021). Decentralization and retention of rural health workers in Nigeria. *Journal of Health Policy and Management*, 10(2), 45 - 60

Adeniran, T. (2021). Causes and consequences of human capital flight in Nigeria: Implications for economic development. *Nigerian Journal of Economic Development Studies*, 12(2), 45-62.

Akinwale, A., & George, T. (2022). Health worker migration in Nigeria: Implications for public sector delivery. *African Journal of Public Health*, 14(1), 33-51.

Ayeni, O. (2017). Leadership failures, institutional weaknesses and the brain drain phenomenon in Nigeria. *Journal of Nigerian Social and Economic Policy*, 8(1), 23-39.

Badru, O., Musa, A., & Bello, I. (2023). Migration intentions of Nigerian health workers: Predictors and policy implications. *Nigerian Journal of Health Studies*, 18(1), 78-94.

Ezeike, H., & Ebong, I. (2023). Migration intentions among house officers at National Hospital Abuja. *Nigerian Medical Journal*, 24(2), 101-115.

Ezeokafor, P. (2018). Skilled labor migration and economic development in Nigeria: A historical and analytical approach. *African Journal of Migration Studies*, 5(1), 67-82.

Nwaneri, C., & Emecheta, B. (2022). Socioeconomic effects of brain drain in Nigeria. *Nigerian Journal of Economic and Social Studies*, 16(2), 44-59.

Obasi, A. (2021). Migration, brain drain and national development in Nigeria. *Journal of Nigerian Development Studies*, 9(2), 34-50.

Ojo, K., Adeyemi, L., & Balogun, T. (2023). Migration intentions of health-related students at Obafemi Awolowo University, Nigeria. *Nigerian Journal of Medical Education*, 19(1), 55-70.

Onah, C., Eze, J., & Nwankwo, P. (2022). Determinants of migration among Nigerian physicians: A national survey. *African Journal of Health Sciences*, 17(3), 78-95.

Ossai, I., Okonkwo, C., & Ude, A. (2020). Migration intentions of medical students in Ebonyi State University: A cross-sectional survey. *Nigerian Journal of Medical Education*, 15(3), 112-120.

Serhienrhien, E., & Osagie, P. (2022). Brain drain and Nigeria's socioeconomic development: Causes, consequences and policy responses. *African Journal of Development Studies, 14(2), 29-48.*

Toyin-Thomas, J., Adeyemi, T., & Musa, B. (2022). Health workers' migration in low- and middle-income countries: A systematic review (1970–2022). *Global Health Review*, 20(4), 201-225.

Umeh, C. (2022). Skilled workers' migration and economic development in Nigeria: Focus on health and education sectors. *Journal of Nigerian Economic Studies*, 15(2), 67-84.

Yakubu, S., Abdullahi, H., & Ibrahim, R. (2023). Social networks and migration intentions of Nigerian health workers: An ego-network analysis. *Journal of Health Workforce Studies*, 6(1), 15.