

Brain Drain in the Nigerian Health Sector: Workplace Factors and Implications for Healthcare Accessibility in Oyo State

Ayomide Oluwaseyi Aibinuomo^{1*}, Abiodun Paul Olaiya¹, Tolulope Deborah Akande²,
Faith Ehiage Ugba², Abayomi Olusegun Ayinde²

¹Texila America University, Guyana

²University of Ibadan, Nigeria

Abstract

Health worker migration poses a critical challenge to Nigeria's fragile health system, with severe implications for service delivery and access. This study examined how workplace satisfaction and career development influence migration intentions among healthcare professionals in Oyo State and assessed the consequences for healthcare accessibility. A mixed-methods design was employed, combining secondary data with a structured survey of 377 healthcare workers across primary, secondary, and tertiary facilities. Data were analyzed using descriptive and inferential statistics, including chi-square tests and logistic regression. Findings revealed that 46.7% of respondents had considered migrating abroad within the past year, while 35.8% were actively pursuing opportunities. Migration intent was highest among younger professionals, doctors, pharmacists, and public health specialists. Canada, the United States, the United Kingdom, and Australia emerged as the most preferred destinations. Respondents highlighted severe consequences of migration, including manpower shortages (41.2%), longer patient waiting times (54.4%), increased workload (37.1%), and reduced quality of care (55.1%), particularly in primary healthcare facilities. The study concludes that workplace dissatisfaction and limited career development opportunities significantly drive migration intent among healthcare workers in Oyo State. Addressing these challenges through improved remuneration, better working conditions, and structured professional growth pathways is essential to retaining skilled personnel. Without urgent interventions, health worker migration will continue to undermine healthcare access and system resilience in Nigeria.

Keywords: Brain Drain, Health Worker Migration, Job Satisfaction, Workplace Factors.

Introduction

Brain drain refers to the emigration of highly qualified professionals from their home countries to more advanced nations in pursuit of a higher quality of life, including improved pay, working conditions, and political stability [9, 10]. International worker migration plays a crucial role in the process of globalization and economic advancement in several emerging and underdeveloped nations. The number of international migrants living in a country different from their place of origin has

increased steadily over the last four decades, from around 76 million in 1965 to 188 million in 2005 [5]. International migration poses significant issues for Less Developed Countries, which are the countries of origin for international migrants. These migrants consist of a large number of individuals who possess advanced education and skills, originating from countries where there is a limited supply of human resources. This substantial influx is also a result of less trained individuals whose productivity and salaries are significantly

greater in other countries compared to their native country [5]. Although there is significant worry about the shortage of healthcare workers in Africa due to emigration, the absence of reliable data has resulted in a paucity of empirical evidence on this issue in recent decades. There is limited data on the impact of the emigration of health human resources (HHR) on the development of the nations they originate from. Previously, researchers would enquire about the impact of migration on development, specifically if it had a favourable or unfavourable effect [5, 18]. The topic of international migration of highly qualified professionals became prominent in the 1940s, as a significant public health concern, with the emigration of several European health professionals to the United Kingdom and the United States. By the mid-1960s, the magnitude of the losses had reached a level that raised worry. In 1979, the World Health Organization (WHO) released an extensive study involving 40 countries, which revealed that nearly 90% of all physicians who migrated were relocating to only five countries: Australia, Canada, the Federal Republic of Germany, the United Kingdom, and the United States [10].

Brain-drain involves the migration of skilled workers out of their countries to more developed countries in search of a better standard of living in terms of better remuneration, better working conditions, and political stability [9, 10]. Before the pandemic, the Nigerian health system faced poor funding, poor staff remuneration, and poor working conditions [9]. However, the emergence of the COVID-19 pandemic has further worsened those challenges and has created an atmosphere where Nigerian healthcare workers are further exhausted and dissatisfied with their jobs [14]. This has negatively affected healthcare delivery and medical education in Nigeria; hence, the need for urgent attention. Health worker migration entails the movement of skilled professionals,

including doctors, nurses, and other healthcare practitioners, from their countries of origin to other destinations, often in search of better opportunities, improved working conditions, or higher remuneration. Several studies have documented the patterns of health worker migration, highlighting disparities in migration flows between developed and developing countries. As of 2018, Nigeria had a Skilled Health Worker (SHW) density of 1.83 per 1000 [19]. The factors contributing to the low density of SHWs include a crisis in the educational sector, leading to low production of an adequate health workforce, poor management/leadership within the health system, political and economic crises leading to an increasing trend of migration of SHWs from Nigeria [3]. Between 2008 and 2021, a total of 36,467 Nigerian doctors migrated to the United Kingdom. There was a steady increase from 1,798 who migrated in 2008 to 4,880 in 2021. A larger trend was observed for nurses. Between 2002 and 2021, a total of 60,729 Nigerian nurses had migrated to the United Kingdom. There was a steady increase from 1,393 nurses who migrated in 2002 to 5,543 in 2021 [20].

The healthcare system in Nigeria is structured to prioritize community-based care, with primary healthcare serving as its fundamental component. Nevertheless, both the healthcare and education sectors encounter substantial obstacles, leading to a system that fails to adequately fulfil the requirements and ambitions of the population [1]. The failure of the healthcare system may be attributed to several issues, with deficiencies in community and basic healthcare services playing a crucial role. Despite extensive policy endeavours, there has been limited advancement in the reform of primary healthcare in Nigeria over the course of several decades [1]. Several solutions have been attempted, including government-led workforce retention policies, salary reviews, and international agreements aimed at regulating migration. While these

measures have had limited success, the most effective approach appears to be strengthening workplace satisfaction and career development opportunities within the local health system. However, such interventions face limitations such as inadequate funding, poor implementation, and lack of sustainable monitoring mechanisms.

Despite these challenges, previous studies have achieved progress in highlighting the drivers of health worker migration and raising global awareness of its negative impacts. Yet, little empirical evidence exists that directly links workplace satisfaction and career development with health worker migration and its consequences for healthcare access in Oyo State.

This study aims to investigate the influence of workplace satisfaction and career development on the migration of health workers in Oyo State, Nigeria, and assess the resulting impact on healthcare accessibility.

Unlike previous research that focused broadly on brain drain, this study uniquely combines workforce determinants with health system outcomes, offering context-specific evidence to inform retention policies at the state and national levels.

Materials and Methods

Description of the Site

The study was conducted in Oyo State, located in the southwestern region of Nigeria. Oyo State was chosen due to the prevalence of health worker migration as highlighted in anecdotal reports and government records, and the availability of healthcare professionals across primary, secondary, and tertiary facilities. The state represents a typical setting where the loss of health workers significantly affects healthcare delivery at the community level.

Description of the Experiments

A mixed-methods approach was employed, combining secondary data review with a

structured survey. Secondary data were obtained from government agencies, international organizations, and healthcare institutions. The primary data were collected through a survey administered to 377 healthcare professionals, including doctors, nurses, pharmacists, laboratory scientists, and community health workers. Stratified random sampling ensured diverse representation across healthcare cadres and facility types. Inclusion criteria covered healthcare professionals with at least one year of work experience in Oyo State, while trainees and non-healthcare workers were excluded. Data were collected using Open Data Kit (ODK) and supplemented with paper-based questionnaires to ensure coverage in low-connectivity areas.

Description of the Laboratory Methods

As this study focused on health worker migration and healthcare system impact, no laboratory experiments were performed. Instead, standardized and validated survey instruments were used to collect data on workplace satisfaction, career development, migration intent, and perceived consequences on healthcare delivery. Pre-testing was conducted on a pilot sample to ensure clarity and reliability of the survey tool.

Description of Statistical Methods Used

Quantitative data were analyzed using SPSS version 23. Descriptive statistics summarized respondents' sociodemographic profiles and workplace characteristics. Inferential statistics, including chi-square tests, t-tests, and analysis of variance (ANOVA), were applied to examine associations between workplace factors, migration intentions, and healthcare outcomes. Logistic regression analysis was employed to identify predictors of migration intent among healthcare workers. Data cleaning procedures were performed to address missing values, and ethical standards such as confidentiality and anonymity were strictly observed throughout the research.

Results

Demographic Profile of the Study Respondents

A total of 377 respondents were surveyed in the study. Table 1 presents the sociodemographic characteristics of the respondents participating in the study. The variables examined include age, gender, occupation, place of work, marital status, education, years of experience, current work setting, level and type of health facility, average income, and place of residence.

The respondents' ages were categorized into four groups: less than 25 years, 25-35 years, 36-45 years, and greater than 45 years. Most respondents (51.7%) were aged between 36 and 45 years. This was followed by the 25-35 years age group, representing 23.6% of the respondents. Those aged 45 years or older constituted 17.8%, while the least represented age group was less than 25 years, with 6.9%. The mean age of the respondents was 42.11 years $\pm$ 10.756. The gender distribution revealed a significant skew towards female respondents, who comprised 74.3% of the sample. Male respondents made up the remaining 25.7%. This indicates a predominance of female participation in the study.

The respondents' occupations were diverse, with the largest group being Community Health Officers (CHO), accounting for 32.6%. Community Health Extension Workers (CHEW) followed, making up 23.1%. Other notable occupations included nurses/midwives (11.7%), doctors/physicians/surgeons (10.6%), and record officers (5.8%). Less represented occupations included pharmacists (2.4%), health assistants (3.4%), and physiotherapists (0.3%). The primary place of work for most respondents was Primary Health Care facilities, representing 75.9%. Other places of work included teaching hospitals (6.6%),

general hospitals (4.8%), and tertiary hospitals (3.4%). A smaller percentage worked in private clinics (1.6%), pharmacies (1.3%), NGOs (2.4%), and the Ministry of Health (4.0%).

Most respondents were married (79.0%), while single respondents accounted for 17.5%. Those who were separated or widowed made up 0.8% and 2.1%, respectively. A minimal number of respondents chose not to disclose their marital status (0.5%).

A significant portion of the respondents had attained a Diploma/ND/HND (43.0%), followed by those with a first degree (BSc or equivalent) at 41.1%. Respondents with a second degree (Master's or equivalent) accounted for 12.5%, and those with a third degree (PhD or equivalent) were 0.8%. Primary and secondary education levels were minimally represented at 1.3% each. Respondents' years of experience in healthcare were grouped into three categories: 1-10 years (30.8%), 11-20 years (28.4%), and greater than 20 years (40.8%). The mean years of experience was 17.39 years with a standard deviation of 10.058. Most respondents worked in primary health facilities (79.0%), followed by secondary health facilities (8.2%) and tertiary health facilities (12.7%). A significant majority of respondents worked in public health facilities (86.5%), with the remaining 13.5% working in private health facilities. The average income distribution showed that 40.8% of respondents earned less than 50,000 Naira, 34.7% earned between 50,000 and 150,000 Naira, and 24.4% earned greater than 150,000 Naira. The mean income was 122,541.36 $\pm$ 331,520.228 Naira. The areas of residence were categorized into rural, semi-urban, and urban. Urban residents constituted 47.7%, rural residents 40.3%, and semi-urban residents 11.9%.

Table 1. Sociodemographic Variables of Respondent

Variable	Frequency (n=377)	Percentage
Age of Respondent		
Less than 25	26	6.9
25 - 35	89	23.6
36 - 45 yrs	195	51.7
Greater than 45 yrs	67	17.8
Mean Age	42.11±10.756	
Gender		
Female	280	74.3
Male	97	25.7
Occupation		
Adhoc Staff	9	2.4
CHEW	87	23.1
CHO	123	32.6
Doctor/Physician/Surgeon	40	10.6
Health Assistant	13	3.4
Medical Lab Scientist/Technician	10	2.7
Nurse/MidWife	44	11.7
Others	11	2.9
Pharmacist	9	2.4
Physiotherapist	1	.3
Public Health Specialist	8	2.1
Record Officer	22	5.8
Place of Work		
General Hospital	18	4.8
Ministry of Health	15	4.0
NGOs	9	2.4
Pharmacy	5	1.3
Primary Health Care	286	75.9
Private Clinic	6	1.6
Teaching Hospital	25	6.6
Tertiary Hospital	13	3.4
Marital Status		
Married	298	79.0
Separated	3	.8
Single	66	17.5
Widow	8	2.1
Choose not to disclose	2	.5
Your Highest Level of Education		
Primary Education	5	1.3
Secondary School	5	1.3
Diploma/ND/HND	162	43.0

1st Degree (BSc or equivalent)	155	41.1
2nd Degree (Masters or Equivalent)	47	12.5
3rd Degree (PhD or equivalent)	3	.8
Your Years of Experience in Healthcare		
1 -10 yrs	116	30.8
11 - 20 yrs	107	28.4
greater than 20 years	154	40.8
Mean year	17.39±10.058	
Level of Health Facility		
Primary	298	79.0
Secondary	31	8.2
Tertiary	48	12.7
Type of Health Facility		
Private	51	13.5
Public	326	86.5
Average Income (Naira)		
Less than 50,000	154	40.8
50,000 - 150,000	131	34.7
Greater than 150,000	92	24.4
Mean	122,541.36 ± 331,520.228	
In which type of area do you currently live		
Rural	152	40.3
Semi Urban	45	11.9
Urban	180	47.7

Impact of Migration of Health Workers on Health Sector

As seen in table 2, Respondents' perceptions regarding the overall impact of healthcare worker emigration reveal significant concerns. A combined 70.0% view the emigration as negative (33.4% negatively and 36.6% very negatively), highlighting widespread apprehension about its adverse effects on healthcare delivery in Nigeria. Conversely, only 8.0% perceive a positive impact, underscoring a minority viewpoint amidst prevalent challenges.

The survey highlights substantial workforce challenges resulting from healthcare worker emigration. Most respondents (41.2%) cite shortage of manpower as a critical issue, affecting service delivery and patient care. Additionally, 16.5% report increased overtime due to reduced staffing, exacerbating workload

and stress levels among healthcare professionals. The availability of treatment has been notably affected, with 49.0% indicating a large to very large impact due to healthcare worker migration. This finding underscores significant disruptions in healthcare access, contributing to longer waiting times for patients. Specifically, 54.4% note longer waiting times compared to five years ago, reflecting strained resources and reduced efficiency in service delivery.

Concerns about the quality of care emerge prominently from the survey results. Most respondents (55.1%) report a decrease in care quality, with 38.7% indicating a slight decrease and 16.4% noting a significant decrease. These findings highlight compromised patient outcomes and satisfaction amid staffing shortages and increased work demands. The migration of

healthcare workers has substantially impacted workload and stress levels among remaining staff. A significant proportion (37.1%) reports a significant increase in workload and stress, while another 37.7% note a slight increase.

This dual burden underscores the challenges faced by healthcare professionals in maintaining quality care amidst workforce constraints.

Table 2. Respondents view on the Impact of Migration on Health Sector

Variable	Frequency (n=377)	Percentage
In your opinion, How has the emigration of Healthcare professionals affected the overall healthcare system in Nigeria		
Negatively	126	33.4
Neutral	61	16.2
Positively	30	8.0
Very Negatively	138	36.6
Very Positively	22	5.8
How has emigration of Health workers affected your work (multiple response)		
Shortage of Manpower	282	41.2
Increased in Overtime	113	16.5
Reduction in Service being provided	88	12.9
Increased Errors	33	4.8
Patients/Clients Reporting problems	37	5.4
Longer waiting time of clients	103	15.1
No Impact	25	3.7
Others	3	0.4
To what extent has the migration of Health workers impacted the availability of treatment in your area		
Not at all	41	10.9
To a large extent	143	37.9
To a moderate extent	85	22.5
To a small extent	66	17.5
Very Large Extent	42	11.1
How long does patients typically wait for treatment in your facility now compared to 5 years ago?		
No changes	33	8.8
Significantly longer waiting time	70	18.6
Significantly shorter waiting time	38	10.1
Slightly longer waiting time	135	35.8
Slightly shorter waiting time	101	26.8
How has the quality of care at your facility been affected by the migration of health workers		
Decreased Significantly	62	16.4
Decreased Slightly	146	38.7
Improved Significantly	36	9.5
Improved Slightly	63	16.7

Not changed	70	18.6
How has the workload and stress level of staff at your facility been affected by the migration of Health workers		
No Changes	25	6.6
Workload and Stress significantly decreased	23	6.1
Workload and Stress significantly increased	140	37.1
Workload and Stress slightly decreased	47	12.5
Workload and Stress slightly increased	142	37.7

Relationship between the extent has the migration of Health workers impacted the availability of treatment in your area and their type and level of facility

The data presented in Table 3 elucidates the impact of health worker migration on the availability of treatment across different healthcare facilities and geographic settings. The statistics are segmented by the type and level of the health facility, as well as by the degree of impact ranging from "Not at all" to "Very Large Extent."

The analysis reveals a prominent disparity in the impact of migration, with Primary Health Care centers, which often serve as the backbone of healthcare in many areas, reported a substantial effect, with 39.16% experiencing a large extent of impact. The data also shows a stark variation when segmented by the level of healthcare facility. Tertiary facilities reported more moderate impacts, which could suggest better resilience or resource allocation that mitigates the effect of

staff shortages. However, the primary level showed the highest disruption, which could significantly affect healthcare access and quality in these areas.

In terms of geographic settings, the impact in urban areas closely mirrors the overall trends observed across all facilities, suggesting that urban centers, despite their better infrastructure, are not immune to the challenges posed by the migration of healthcare workers. Rural areas, however, reported lower levels of severe impact, which could be attributed to different baseline expectations and healthcare delivery models in these regions. Statistical tests such as the Chi-square show significant differences in the impact across different settings, with some p-values (e.g., .000 for the level of health facility) indicating highly significant variations. These statistical insights highlight the varying degrees of resilience and vulnerability across the healthcare system.

Table 3. Relationship between the Extent has the Migration of Health Workers Impacted the Availability of Treatment in your Area and the Type and Level of Facility

Variable	To what extent has the migration of Health workers impacted the availability of treatment in your area							
	Not at all	To a large extent	To a moderate extent	To a small extent	Very Large Extent	Total	χ^2	P-value
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)		
Type of area								
Rural	3 (5.887)	16 (31.37)	14 (27.45)	14 (27.45)	4 (7.84)	51 (100)	6.557	.161
Semi Urban	38 (11.66)	127 (38.96)	71 (21.78)	52 (15.95)	38 (11.66)	326 (100)		

Urban	41 (10.88)	143 (37.93)	85 (22.55)	66 (17.51)	42 (11.14)	377 (100)		
Level of Health Facility								
Primary	36 (12.08)	117 (39.26)	66 (22.15)	43 (14.43)	36 (12.08)	298 (100)	27.917	.000
Secondary	1 (3.23)	16 (51.61)	8 (25.81)	3 (9.68)	3 (9.68)	31 (100)		
Tertiary	4 (8.33)	10 (20.83)	11 (22.92)	20 (41.67)	3 (6.25)	48 (100)		
Type of Health Facility								
Private	3 (5.88)	16 (31.37)	14 (27.45)	14 (27.45)	4 (7.84)	51 (100)	6.557	.161
Public	38 (11.66)	127 (38.96)	71 (21.78)	52 (15.95)	38 (11.6)	326 (100)		

Relationship between the How long does patients typically wait for treatment in your facility now compared to 5 years ago and they type and level of facility

Table 4 explores the changes in patient waiting times for treatment in various healthcare facilities now compared to five years ago, offering a snapshot across different types of healthcare settings and levels of facilities. The data is segmented into five categories reflecting the extent of change: "Not at all," "To a small extent," "To a moderate extent," "To a large extent," and "Very Large Extent."

The results indicate that most changes in waiting times are reported as "To a small extent" and "Very Large Extent," suggesting polarized experiences across the surveyed facilities. Specifically, Primary Health Care facilities, which constitute the bulk of the responses, show a significant increase in waiting times, with 26.6% experiencing a "Very Large Extent" of increase. This is contrasted by the "To a small extent" category

where 36% of Primary Health Care respondents noted lesser changes in waiting times. Teaching Hospitals and Tertiary Hospitals show a noteworthy increase in waiting times, with 56% and 38.5% of responses, respectively, falling into the "Very Large Extent" category. This might indicate a strain on resources or an increase in patient load that has not been matched by an increase in staffing or efficiency improvements in these institutions over the past five years. Statistical analysis through the Chi-square test demonstrates significant variations in changes in waiting times across different places of work and levels of healthcare facilities, with p-values of .041 and .002 respectively, highlighting that these differences are statistically significant and not due to random chance.

Table 4. Relationship between the duration Patients Typically Wait for Treatment in your Facility and Type and Level of Facility

Variable	How long does patients typically wait for treatment in your facility now compared to 5 years ago							
	Not at all	To a large extent	To a moderate extent	To a small extent	Very Large Extent	Total	χ^2	P-value
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)		
Level of Health Facility								
Primary	24 (8.05)	53 (17.79)	36 (12.08)	107 (35.91)	78 (26.17)	298 (100)	24.623	.002
Secondary	0 (0)	11 (35.48)	1 (3.23)	14 (45.16)	5 (16.13)	31 (100)		

Tertiary	9 (18.75)	6 (12.5)	1 (2.08)	14 (29.17)	18 (37.5)	48 (100)		
Type of Health Facility								
Private	4 (7.84)	8 (15.69)	4 (7.84)	22 (43.14)	13 (25.49)	51 (100)	1.534	.821
Public	29 (8.90)	62 (19.01)	34 (10.43)	113 (34.66)	88 (26.99)	326 (100)		
Total	33 (8.75)	70 (18.57)	38 (10.08)	135 (35.81)	101 (26.79)	377 (100)		

Relationship between the How has the quality of care at your facility been affected by the migration of health workers with type and level of facility

Table 5 investigates the impact of health worker migration on the quality of care in various healthcare facilities, segmented by facility type and level. The data categorizes the responses into five distinct outcomes: "Decreased Significantly," "Decreased Slightly," "Improved Significantly," "Improved Slightly," and "Not changed."

Most of the facilities reported a slight decrease in the quality of care, with 38.73% of the total responses falling into this category. This trend is notably prevalent in General Hospitals and Primary Health Care settings, where 66.67% and 37.06% of the responses, respectively, indicated a slight decrease in quality. Significant decreases were also noted but were less common, accounting for 16.45% of the total responses. Conversely, improvements in the quality of care were less

frequently reported, with only 9.55% indicating significant improvement and 16.71% noting slight improvements. These were most noticeable in Teaching Hospitals, where 56% of respondents reported slight improvements, which might reflect the adaptive capacities or resource allocations unique to these institutions. The responses indicating no change in the quality of care accounted for 18.57% of the total, suggesting that in some settings, the impact of health worker migration might be mitigated by other factors such as technology, policy changes, or other forms of staff support. Statistically, the Chi-square tests confirm significant variations in the impact on quality across different places of work and levels of healthcare facilities, with p-values of .001 and .002 respectively. This indicates a statistically significant difference in how the migration of health workers has impacted the quality of care across different types of facilities.

Table 5. Relationship between the Quality of Care at your Facility been Affected by the Migration of Health Workers with the Type and Level of Facility

Variable	How has the quality of care at your facility been affected by the migration of health workers							
	Decreased Significantly (n=62)	Decreased Slightly (n=146)	Improved Significantly (n=36)	Improved Slightly (n=63)	Not changed (n=70)	Total (n=377)	χ^2	P-value
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)		
Level of Health Facility								
Primary	50 (16.78)	114 (38.26)	33 (11.07)	42 (14.09)	59 (19.80)	298 (100)	24.47	.002
Secondary	6 (19.35)	18 (58.06)	1 (3.23)	3 (9.68)	3 (9.68)	31 (100)		
Tertiary	6 (12.5)	14 (29.17)	2 (4.17)	18 (37.5)	8 (16.67)	48 (100)		
Type of Health Facility								
Private	3 (5.88)	26 (50.98)	4 (7.84)	10 (19.61)	8 (15.69)	51 (100)	7.03	.134
Public	59 (18.10)	120 (36.81)	32 (9.82)	53 (16.26)	62 (19.02)	326 (100)		

Relationship between the How has the workload and stress level of staff at your facility been affected by the migration of Health workers and the type and level of facilities

Table 6 delves into the effects of health worker migration on the workload and stress levels of staff across different healthcare facilities and organizational levels. The variable outcomes are categorized as "Decreased Significantly," "Decreased Slightly," "Improved Significantly," "Improved Slightly," and "Not changed."

From the table, it's evident that a significant portion of respondents, 37.14%, reported an improvement in workload and stress levels, which can be primarily attributed to significant improvements, particularly in Primary Health Care settings where 38.11% reported this outcome. This finding might seem counterintuitive considering the typical negative impacts associated with staff migration; however, it might reflect adaptive changes in workflow or efficiencies gained

through other means such as technological integration or improved management practices. On the other side, a nearly equal proportion, 37.67%, indicated that workload and stress levels have not changed, suggesting that for many facilities, the migration of health workers has not markedly altered the status quo. This could be due to various compensatory mechanisms or possibly a reflection of initial over-capacities or under-utilizations. The data also reveals that only a small fraction, 6.63% and 6.10%, experienced a significant or slight decrease in workload and stress, respectively. This suggests that reductions in workload are uncommon, and when they do occur, they are not substantial. Statistical analysis using the Chi-square test confirmed significant differences in how workload and stress levels were affected, with a p-value of .000 indicating highly significant disparities across different types of facilities. This significance highlights the diverse impacts of health worker migration across the healthcare sector.

Table 6. Relationship between the How has the Workload and Stress Level of Staff at your Facility been Affected by the Migration of Health Workers and the Type and Level of Facility

Variable	How has the workload and stress level of staff at your facility been affected by the migration of Health workers							
	Decreased Significantly	Decreased Slightly	Improved Significantly	Improved Slightly	Not changed	Total	χ^2	P-value
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)		
Level of Health Facility								
Primary	21 (7.05)	17 (5.70)	117 (39.26)	30 (10.07)	113 (37.92)	298 (100)	31.884	.000
Secondary	0 (0)	0 (0)	11 (35.48)	2 (6.46)	18 (58.06)	31 (100)		
Tertiary	4 (8.33)	6 (12.5)	12 (25)	15 (31.25)	11 (22.92)	48 (100)		
Type of Health Facility								
Private	5 (9.80)	2 (3.92)	16 (31.37)	8 (15.67)	20 (39.22)	51 (100)	2.410	.661
Public	20 (6.13)	21 (6.44)	124 (38.04)	39 (11.96)	122 (37.42)	326 (100)		

Relationship between the How long does Patients Typically wait for Treatment in your Facility now Compared to 5 years ago and they Type and Level of Facility

Table 7 explores the changes in patient waiting times for treatment in various healthcare facilities now compared to five years ago, offering a snapshot across different types of healthcare settings and levels of facilities. The data is segmented into five categories reflecting the extent of change: "Not at all," "To a small extent," "To a moderate extent," "To a large extent," and "Very Large Extent."

The results indicate that most changes in waiting times are reported as "To a small extent" and "Very Large Extent," suggesting polarized experiences across the surveyed facilities. Specifically, Primary Health Care facilities, which constitute the bulk of the responses, show a significant increase in waiting times, with 26.6% experiencing a

"Very Large Extent" of increase. This is contrasted by the "To a small extent" category where 36% of Primary Health Care respondents noted lesser changes in waiting times. Teaching Hospitals and Tertiary Hospitals show a noteworthy increase in waiting times, with 56% and 38.5% of responses, respectively, falling into the "Very Large Extent" category. This might indicate a strain on resources or an increase in patient load that has not been matched by an increase in staffing or efficiency improvements in these institutions over the past five years. Statistical analysis through the Chi-square test demonstrates significant variations in changes in waiting times across different places of work and levels of healthcare facilities, with p-values of .041 and .002 respectively, highlighting that these differences are statistically significant and not due to random chance.

Table 7. Relationship between the duration patients typically wait for treatment in your facility and type and level of facility

Variable	How long does patients typically wait for treatment in your facility now compared to 5 years ago							
	Not at all	To a large extent	To a moderate extent	To a small extent	Very Large Extent	Total	χ^2	P-value
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)		
Level of Health Facility								
Primary	24 (8.05)	53 (17.79)	36 (12.08)	107 (35.91)	78 (26.17)	298 (100)	24.623	.002
Secondary	0 (0)	11 (35.48)	1 (3.23)	14 (45.16)	5 (16.13)	31 (100)		
Tertiary	9 (18.75)	6 (12.5)	1 (2.08)	14 (29.17)	18 (37.5)	48 (100)		
Type of Health Facility								
Private	4 (7.84)	8 (15.69)	4 (7.84)	22 (43.14)	13 (25.49)	51 (100)	1.534	.821
Public	29 (8.90)	62 (19.01)	34 (10.43)	113 (34.66)	88 (26.99)	326 (100)		
Total	33 (8.75)	70 (18.57)	38 (10.08)	135 (35.81)	101 (26.79)	377 (100)		

Relationship between the How has the quality of care at your facility been affected by the Migration of Health Workers with Type and Level of Facility

Table 8 investigates the impact of health worker migration on the quality of care in various healthcare facilities, segmented by facility type and level. The data categorizes the responses into five distinct outcomes: "Decreased Significantly," "Decreased Slightly," "Improved Significantly," "Improved Slightly," and "Not changed."

Most of the facilities reported a slight decrease in the quality of care, with 38.73% of the total responses falling into this category. This trend is notably prevalent in General Hospitals and Primary Health Care settings, where 66.67% and 37.06% of the responses, respectively, indicated a slight decrease in quality. Significant decreases were also noted but were less common, accounting for 16.45% of the total responses. Conversely,

improvements in the quality of care were less frequently reported, with only 9.55% indicating significant improvement and 16.71% noting slight improvements. These were most noticeable in Teaching Hospitals, where 56% of respondents reported slight improvements, which might reflect the adaptive capacities or resource allocations unique to these institutions. The responses indicating no change in the quality of care accounted for 18.57% of the total, suggesting that in some settings, the impact of health worker migration might be mitigated by other factors such as technology, policy changes, or other forms of staff support. Statistically, the Chi-square tests confirm significant variations in the impact on quality across different places of work and levels of healthcare facilities, with p-values of .001 and .002, respectively. This indicates a statistically significant difference in how the migration of health workers has impacted the quality of care across different types of facilities.

Table 8. Relationship between the Quality of Care at your Facility been affected by the migration of health workers with the type and level of facility

Variable	How has the quality of care at your facility been affected by the migration of health workers							
	Decreased Significantly (n=62)	Decreased slightly (n=146)	Improved Significantly (n=36)	Improved Slightly (n=63)	Not changed (n=70)	Total (n=377)	χ^2	P-value
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)		
Level of Health Facility								
Primary	50 (16.78)	114 (38.26)	33 (11.07)	42 (14.09)	59 (19.80)	298 (100)	24.47	.002
Secondary	6 (19.35)	18 (58.06)	1 (3.23)	3 (9.68)	3 (9.68)	31 (100)		
Tertiary	6 (12.5)	14 (29.17)	2 (4.17)	18 (37.5)	8 (16.67)	48 (100)		
Type of Health Facility								
Private	3 (5.88)	26 (50.98)	4 (7.84)	10 (19.61)	8 (15.69)	51 (100)	7.03	.134
Public	59 (18.10)	120 (36.81)	32 (9.82)	53 (16.26)	62 (19.02)	326 (100)		

Discussion

This study set out to assess how workplace satisfaction and career development influence health worker migration in Oyo State and the

resulting consequences for healthcare accessibility. This study, which included 377 participants, examined various sociodemographic factors and revealed that the bulk consisted of women aged between their

late thirties and mid-forties. These women were mostly engaged as Community Health Officers and Community Health Extension Workers at Primary Health Care institutions. The majority were married, held intermediate-level educational credentials, and had substantial experience in healthcare. Most of the participants were working in Nigeria, primarily in public health institutions, and had different degrees of income. Furthermore, the bulk of the participants lived in metropolitan regions, although a considerable proportion also lived in rural and semi-urban areas, therefore emphasizing the varied professional and demographic origins of the population. The socio-demographic profile of respondents in this study highlights a predominance of middle-aged females with significant healthcare experience, mainly employed in primary public health facilities and possessing higher education qualifications. This demographic pattern aligns with global trends towards a feminized healthcare workforce, especially in primary care roles, as documented in similar studies such as the one by [11]. The presence of a largely female, well-educated workforce in public health roles reflects broader societal norms, educational pathways, and policy-driven employment practices that favour female participation in healthcare.

The impact of migration on healthcare delivery was also evident. Respondents reported manpower shortages, longer waiting times, and a decline in the quality of care, especially in primary healthcare facilities. These findings are consistent with earlier research showing that health worker emigration undermines health systems in low- and middle-income countries [9, 10]. For example, Misau et al. in 2010 emphasized that brain drain exacerbates workforce shortages [10], while Lawal et al. in 2022 demonstrated how the COVID-19 pandemic accelerated migration trends among Nigerian health workers [9]. Similarly, studies in Ethiopia and

Kenya have shown that shortages of healthcare personnel due to migration significantly reduce service accessibility and compromise patient outcomes [13, 20]. Also, These findings resonate with similar studies, such as those by [16] which discuss the global impact of access to service due to health worker migration in source countries, emphasizing the resultant strain on health systems and the need for strategic interventions to mitigate these effects. Such comparisons underline the consistency of migration impacts across different regions, reinforcing the global nature of the issue and the necessity for comprehensive policy responses.

The predominance of female respondents in this study reflects the feminization of the healthcare workforce, a trend documented globally [12]. However, migration intent was stronger among younger and male health workers, supporting previous findings that demographic and professional factors shape mobility decisions [20]. The preference for Canada, the United States, the United Kingdom, and Australia as destinations echoes global migration patterns, where skilled workers gravitate toward countries offering better remuneration and career growth [4].

Comparing these findings with existing literature, the trend of increased impact on healthcare delivery due to health worker migration is well-documented. Studies often point out that migration leads to workforce shortages that directly affect service availability and quality, particularly in primary care and rural settings. For instance, research published by [17] has highlighted how migration from low and middle-income countries to more affluent regions exacerbates healthcare disparities by draining resources and expertise needed most in underserved areas.

While this study provides important insights, it has some limitations. The cross-sectional design captures migration intent but not actual migration behaviour, and responses

may reflect temporary economic or political conditions. Future longitudinal studies would help track health worker movements over time. Additionally, qualitative research is needed to explore personal motivations and lived experiences that quantitative data alone cannot capture. Finally, further evaluation of existing retention strategies, such as salary reforms and training programs, is necessary to identify interventions most effective in the Nigerian context.

In conclusion, this study strengthens the evidence that workplace dissatisfaction and poor career prospects are central to health worker migration in Nigeria. Consistent with findings across Africa and other low- and middle-income countries, the results underscore the urgent need for sustainable retention policies that improve working conditions, provide fair remuneration, and expand career development opportunities. Without such measures, the migration of skilled health professionals will continue to threaten healthcare accessibility and quality in Oyo State and beyond.

Conclusion

This study has shown that workplace dissatisfaction and limited career development are key drivers of health worker migration in Oyo State, Nigeria. Nearly half of respondents had considered leaving within the past year, with many linking migration to shortages of manpower, longer waiting times, heavier workloads, and declining quality of care. Primary healthcare facilities, the foundation of community health delivery, were identified as the most affected, highlighting the potential long-term risks for healthcare accessibility and equity.

Migration must therefore be understood not only as an individual career choice but as a systemic issue with far-reaching implications for Nigeria's health system. Addressing these challenges requires sustainable strategies that go beyond short-term fixes. Improving

remuneration, ensuring safe and supportive working environments, and creating structured opportunities for career growth are essential to retaining skilled workers. Tailored interventions for younger professionals and gender-sensitive approaches are also needed, given the demographic patterns identified in this study.

Future research should track actual migration trends over time and assess the effectiveness of workforce retention policies. By addressing the root causes of dissatisfaction and investing in professional development, Nigeria can safeguard healthcare delivery and build a stronger, more resilient health system.

Conflict of Interest

The Author declares there is no conflict of interest.

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Ethical Approval

Ethical approval for this study was obtained from the Ethics Committee/Institutional Review Board of the Ministry of Health, Oyo State, with NREC Assigned number (NHREC/OYOSHREC/10/11/22).

Participation was voluntary, and informed consent was obtained from all respondents. Confidentiality and anonymity were strictly maintained throughout the study, and data were used solely for research purposes.

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Data Availability

The datasets generated and/or analyzed during the current study are not publicly available due to confidentiality agreements with participants, but are available from the corresponding author on reasonable request.

Author Contributions

1. **Ayomide Oluwaseyi Aibinuomo:** Conceptualization, Study design, Data

collection, Data analysis, Writing – original draft.

2. **Abiodun Paul Olaiya:** Methodology development, Supervision, Writing, review and editing.
3. **Tolulope Deborah Akande:** Data collection, Literature review, Draft editing.
4. **Ugba Faith Ehiage:** Data analysis, Interpretation of results, Writing – review.
5. **Abayomi Olusegun Ayinde:** Data collection, Data validation, Proofreading.

All authors read and approved the final manuscript.

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