Archives of Health Science
Research Article

An Assessment of the Prevalence, Pattern and Determinant of Brain - Drain Among Health Workers in Ovia - North East, Edo State Nigeria

Igben Onoriode Vincent_Junior,[1] Ehebha Santos Ehizokhale,[1] Gbagbeke Kelvin Obakore[2], Efe Ahama Endurance,[1] Enye Linus Anderson,[3] Okoro Ogheneyebrorue Godswill,[2] Ezebue Oghenegare Grace,[4] Oyefia_Emakpo Unuakpotovo,[4] Emeka Ikechuwu Wisdom[4] and Emeli Esther Chinweotuto[4]

[1]Department of Human Anatomy and Cell Biology, Delta State University, Abraka, Delta State, Nigeria
[2]Department of Human Anatomy, Achievers University, Owo, Ondo State, Nigeria
[3]Department of Human Anatomy, Afe Babalola University, Ado-Ekiti
[4]Department of Human Anatomy, Edo State University, Nigeria

***Corresponding author:** Okoro Ogheneyebrorue Godswill, Department of Human Anatomy, Achievers University, Owo, Ondo State, Nigeria

Abstract

The quality of performance in the health sector to a large extent depends on the availability and willingness of healthcare workers to work. The prevalence of brain drain among health workers has not been given adequate attention in Nigeria, as the migration of skilled health workers has negatively affected the quality of health care in the country. The aim of this study is to assess the prevalence, pattern and determinants of brain drain among health workers in Ovia North East, Edo state, Nigeria with the aim of addressing the factors of brain drain thereby encouraging health workers to stay back. A descriptive cross-sectional study design was adopted and a cluster sampling technique was however used to select respondents for this study. A sample size of 320 was adopted. A well- structured questionnaire was used. It was reviewed that the predominant age group of respondents was 26-35 years with 145 (48.3%) with the mean age of 33; while the age group with the lowest response was greater than 36 years with 65 (21.3%) respondents. A higher proportion of the respondents were female with 170 (56.7%). This suggests relatively younger population of healthcare worker in Ovia North East, Edo State participated in the study. Majority of the respondents, 210(70%) had good knowledge, compared to those with poor knowledge 90(30%).The most identified push factor of brain drain was limited education opportunity with 295 (98.3%).The least identified push factor was social and retirement benefits with 175 (58.3%). The most identified pull factor of brain drain was recognition of professional expertise with 295 (98.3%). The least identified pull factor was social and retirement benefits with 230 (76.7%). Lastly, 265(83.3%) agreed that financial remuneration was a major reason for migration of health workers to developed countries. There is a statistically significant relationship between socioeconomic or political situations in the home country of respondents and the prevalence of brain drain among health care workers. (p=0.001). This study revealed that a high level of brain drain among health professionals, is greatly owed to recognition of professional expertise and financial remunerations. Owing to this, there is urgent need by the Government to take full responsibility to curtail the current brain drain in the country because sooner or later the increasing levels of brain drain in the country would pose a great threat to the quality of health services of the country.

Keywords: Prevalence, pattern, determinants, brain drain, health care workers

Introduction

The "brain-drain" phenomenon has a long history. In 1963, the Royal Society defined "brain-drain" the migration of British scientists to the United States of America, which seriously deteriorated the British economy, but this term later became used to describe the emigration of scholars and professionals from Third World countries.[1, 2]

This "brain-drain" resulted in an unfair technological, scientific, and economical advancement of the richer (developed) countries, at the detriment of the poorer (developing) ones. This concept of "reverse technological transfer" was developed by the United Nation Conference on Trades and Development on 1972. After the end of the Soviet Union and of the Warsaw Treaty in the last decade of the past century, a huge brain-drain started from the eastern European countries; at the same time, a serious predicament of "brain-waste" is present nowadays, as not all the migrants are able to find a job at the level of their skill-set.[2]

One of the greatest challenge for health human resources is the brain-drain issue. [3] The global shortage of health workers presents an increasing and comprehensible concern for governments and policymakers working to ensure the United Nations Sustainable Development Goals for health 3(SDG3), which prioritize the requirement for universal and sustained access to health delivery and the equitable distribution of health services for all are met by 2030.[4]

movement of health professionals The term "brain-drain" refers to the exodus of medical professionals in search of higher pay, a better quality of life, access to cutting-edge technology, and more stable political environments. Despite the push and pull factors, the movement of healthcare professionals from underdeveloped to developed nations has remained important for decades. However, this movement has had a negative impact on the delivery of healthcare in underdeveloped nations.[5]

This migration has for several years created a brain-drain of skilled labour from where it is most needed, leaving fragile health systems even more vulnerable. This study will present insights on the determinants of brain-drain among health care professionals from developing countries like Nigeria, Edo State, Ovia north east, to developed countries. To this end, the study also aims to inform the public sector managers and policy makers the need to address these factors if they are to curb the brain-drain in developing countries.[6]

Materials and Methods

The design adopted for this research is the descriptive cross-sectional study design to assess the determinants of brain drain among health workers in Ovia North East LGA, Okada, Edo State, Nigeria. The convenient sample technique was however adopted and the reason for choosing this sampling technique was due to the target population available at the time of study and willing to participate. The population under study were all core healthcare professionals like doctors, nurses, pharmacists, medical laboratory scientists, physiotherapist, as well as radiographers in Ovia North East LGA, Okada, Edo State, Nigeria.

The simple formula for calculating the adequate sample size in prevalence study was employed; (4); n=Z 2P(1−P) d2 Where n is the sample size, Z is the statistic corresponding to level of confidence, P is expected prevalence (that can be obtained from same studies or a pilot study conducted by the researchers), and d is precision (corresponding to effect size).

This study spanned the period between April, 2022 - October, 2022. Conceptualization of the study and proposal writing were carried out in three month, data collection and analysis were done in three months and the final write up was carried out in one month. The tool used for data collection in this study was questionnaire. The questionnaire is divided into four sections:

Section One: Socio-Demographic Data was determined from the variables such as age, gender, level of education, health institution, and working experience (6 items)

Section Two: Prevalence and Pattern were investigated from the

variables such as level of prevalence towards brain-drain among health care workers in Ovia North East, Edo State (8 items). This captures the specific objective number 1 (to assess the prevalence \awareness, and pattern towards brain drain phenomenon among health workers in Ovia North East.

Section Three: Awareness of Health Care Workers towards brain-drain such as level of understanding of the concept "brain drain" among health workers (8 items). This captures the specific objective number 1 (to assess the perception towards brain drain among health workers in Ovia North East.

Section Four: Determinants of Health Care Workers (push and pull factors) were evaluated from the variables such as unsatisfactory and unstable political environment, opportunities for professionals or career advancements, and good working environment as a key factor totaling 15 items. This captures specific objectives 2 & 3 (to determine the push and pull factors of brain drain among health workers in Ovia North East)

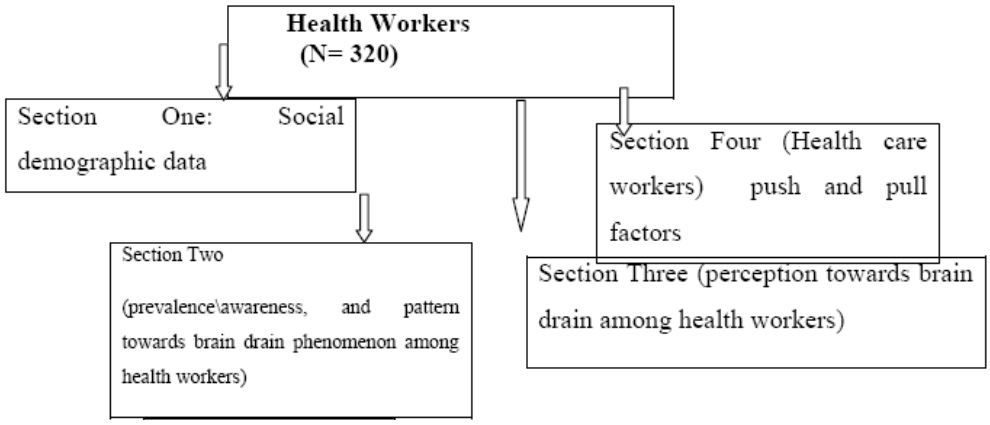

Figure 1: A flowchat of the distribution of subjects

Quantitative data was screened, serialized and entered into Statistical Package for Scientific Solutions (IBM SPSS statistics) version 21 for analysis, where frequency and other descriptive analyses were calculated including cross-tabulations which tested the hypotheses. Univariate analysis was conducted for relevant variables. Bivariate analysis was done to test for association between dependent and independent variables using chi-square test and Fisher's exact test. A p value <0.05 was considered statistically significant.

Results

The mean age group of respondents was 33 ±5.9 years. Majority of the respondents (one hundred and forty-five (48.3%) fall within the age of 26-35yrs). Only 30.3% and 21.3% fall within the age group of 18-25years and >36yrs respectively. One hundred and seventy (56.7%) were female, while less than half of the participants (43.3%) were male. More than half of the respondent (61.7%) obtained tertiary education, (31.7%) obtained Post-graduate, while (3.3%) were in secondary and others respectively. Two third of the respondent were Bini, (36.6%), while (23.3%) were Ibo, (20%) were Yoruba and others (Hausa, Urhobo, Idomo, Esan, Ibibio, Ijaw, Itsekiri, Ebira, Efrik) respectively. Also, majority of the respondents (50%) were Christians, only (26.7%) were Islam, while (23.3%) were African traditional religion. The larger proportion of the participant, two hundred (66.6%) were married, while (16.7%) were single and others (separated, divorce and widow) respectively (Table 1).

It was gathered from table 2 that more than half of the respondent (58.3%) agreed socioeconomic or political situations in their home country was the reason for brain drain among health care workers, while (41.7%) disagree. Most of the respondent (70%) agreed Quality of facilities and equipment was the reason for brain drain among health care worker, while (30%) disagree. More than half of the respondent (53.3%) agreed that Lack of opportunities for professional advancement was the reason for brain drain among

health care worker, while (46.7%) disagree. Majority of the respondent (63.3%) agree that quality of primary health care system was the reason for brain drain among health care worker, (36.7%) disagree. Most of the respondent (70%) agreed that lack of opportunities for teaching / research was the reason for brain drain among health care worker, while (30%) disagree. Most of the respondent (76.6%) agreed that quality and availability of allied health disciplines was the reason for brain drain among health care worker, while (23.3%) disagree. Almost all the respondent (86.7%) agreed that Patient load and work hours was the reason for brain drain among health care worker, while (13.3%) disagree.

Table 3 shows that most of the respondent (70%) have heard about brain drain and the common sources of information were from; non-governmental organization and governmental agencies, (26.6%), radio (15), newspaper (10) and television (35) constituting 60(20%), school and books (10%), parents and friends (3.3%), market and bill board (3.3%), church and seminar/workshop (3.3%), health personnel (3.3%). The most common definition of brain drain known was the migration of health personnel in search of the better standard of living and quality of life (77%), migration for higher salaries (5.7%), access to advanced technology (9.0%), and more stable political conditions in different places worldwide (8.3%). Few proportion of the respondent (33.3%) perceived search for improved technology was the cause of brain drain, to make money (30%), searched for improved living condition (16.7%), poor economy (6.6%), desire for overseas citizenship (6.6%), desire to settle down abroad (3.3%), and to improve knowledge and skills (3.3%). Less than half of the respondent (46.3%) already know common implications of brain drain as shortage of health manpower, dearth of highly skilled workers (22%), Receding medical education (11.7%), poor health outcomes in community (10.7%), and reduction in quality of care (9.3%). Majority of the respondent (66.7%) suggested motivating health workers-finance and professionally was the solution to the problem of brain drain, strengthening health systems (16.7%), and good economy and living conditions (16.7%).

Table 4 show higher proportion of the respondent (93.3%) agreeing to low wage compensation of what constitutes brain drain is a key factor, while (6.7%) disagreed. (98%) of the respondent agree Limited education opportunity may contribute to brain-drain. Most of the respondent (94%) agree Poor job satisfaction is a major determinant. Eighty – three point three percent agreed inappropriate assignment of task may be a factor, (76%) agree yes lack of appropriate system of anonymous reporting is a major factor. High proportion of the respondents (65%) failure to sanction errant health worker adequately is contributory. Slightly half proportion (58.3%) agree that collusion among health workers is a determinant. Less than half proportion of the respondents (41.7%) disagree. High proportion of the respondent (88.3%) agree that lack of training programmers on code of conduct for health worker is a major determinant. Thirty-five (35%) of the respondent agree verbal abuse are example of other determinants, (28.3%) agree Medicare fraud are example of other determinants, while (26.7%) agree violence are example of other determinants. Almost all of the respondent (88.3%) agreed that job availability and attractive wages was a major determinant for brain drain. Almost, 90% all the respondents agree that opportunities for professional or career advancement was a contributory determinant. The highest proportion, 98.3% of the respondents were of opinion that recognition of professional expertise was a key pull factor for brain.

Table 1: Socio-Demographic Characteristics

Variables	Frequency(n=300)	Percentage (%)
Age (years)		
18 -25	90	30.3
26 -35	145	48.3
>36	65	21.3

Gender		
Female	170	56.7
Male	130	43.3
Level of education		
Tertiary	185	61.7
Post Graduate	95	31.7
Secondary	10	3.3
Others	10	3.3
Ethnicity		
Bini	110	36.6
Ibo	70	23.3
Yoruba	60	20.0
Others	60	20.0
Religion		
Christianity	150	50.0
Islam	80	26.7
African Traditional Religion	70	23.3
Marital Status		
Married	200	66.6
Single	50	16.7
Others**	50	16.7

**Mean Age= 33.0 (SD=5.9) years*

***Others: Separated (10), Widow (35) Divorce (5)*

Table 2: Prevalence/pattern towards brain drain among health care workers

Socioeconomic or political situations in their home country		
Yes	175	58.3
No	125	41.7
Quality of facilities and equipment		
Yes	210	70.0
No	90	30.0
Lack of opportunities for professional advancement		
Yes	160	53.3
No	140	46.7
Quality of primary health care system		
Yes	190	63.3
No	110	36.7
Lack of opportunities for teaching / research		
Yes	210	70.0
No	90	30.0
Physician remuneration		
Yes	250	83.3
No	50	16.7
Quality and availability of allied health disciplines		
Yes	230	76.6
No	70	23.3
Patient load and work hours		
Yes	260	86.7
No	40	13.3

Table 3: Awareness and perception of brain drain among health care workers

Variables	Frequency(n=300)	Percentage (%)
Awareness of brain drain		
Yes	210	70
No	90	30
Source(s) of Information on brain drain (n=210)		
Non-governmental organization and government agencies	80	26.6
Radio, newspaper and television*	60	20
School and books	30	10
Parents and friends	10	3.3
Market and bill board	10	3.3
Church and seminar/workshop	10	3.3
Health personnel	10	3.3
Understand of what brain drain is all about		
The migration of health personnel in search of the better standard of living and quality of life	231	77
Migration for higher salaries	17	5.7
Access to advanced technology	27	9.0
more stable political conditions in different places worldwide	25	8.3
Perceived causes of brain drain and their solution		
Search for improved technology	100	33.3
To make money	90	30.0
Search for improved living condition	50	16.7
Poor economy	20	6.6
Desire for overseas citizenship	20	6.6
Desire to settle down abroad	10	3.3
To improve knowledge and skills	10	3.3
Common implications of brain drain		
Shortage of health manpower	139	46.3
Dearth of highly skilled workers	66	22
Receding medical education	35	11.7
Poor health outcomes in community	32	10.7
Reduction in quality of care	28	9.3
Suggested solution to the problem of brain drain		
Motivate health workers-finance and professionally	200	66.7
Strengthening health systems	50	16.7
good economy and living conditions	50	16.7

Multiple responses*

Table 4: Determinants of choice of health care workers towards brain-drain among health care workers

Variables (Push Factor)	Frequency(n=300)	Percentage (%)
Low wage compensation of what constitutes brain drain is a key factor		
Agree	280	93.3
Disagree	20	6.7
Limited education opportunity may contribute to brain-drain.		
True	295	98.3
False	5	1.7
Poor job satisfaction is a major determinant.		
True	282	94
False	8	6
Unsatisfactory or unstable political environment is another push determinant.		
Agree	290	96.7
Disagree	10	3.3
Understaffing may be a factor.		
Agree	250	83.3

Disagree	50	16.7
Supremacy in Nigerian Health sector is a major push factor.		
Yes	230	76.7
No	70	23.3
Personal development is contributory		
Yes	195	65.0
No	105	35.0
Social and retirement benefits are a determinant.		
Agree	175	58.3
Disagree	125	41.7

Table 5: Relationship between Socio-demographic characteristics vs Prevalence of brain drain among health care workers

VARIABLES	Socioeconomic or political situations in their home country		Total (%)	Statistics (X^2) p – Value	
	YES (%)	NO (%)			Remarks
AGE (Years)					
18 -25	70(28.6)	21(35)	91(30.3)		This result is
26 -35	115(46.9)	35(58.3)	145(48.3)	X^2=295.290*	Significant at
>36	60(24.5)	4(6.6)	64(21.3)	p- value is 0.001	p<0.05
Sex					
Male	120(48.9)	50(90.9)	170(56.6)	X^2=227.357*	This result is
Female	125(51)	5(9.1)	130(43.4)	p- value is 0.001	Significant at p<0.05
Level of Education					
Tertiary	180(68.9)	5(12.8)	185(61.6)	X^2=261.603*	This result is not
Post Graduate	65(24.9)	30(76.9)	95(31.6)	p- value is 0.001	Significant at
Secondary	10(3.8)	0(0)	10(3.3)		p<0.05
Others	6(2.3)	4(10.2)	10(3.3)		
Ethnicity					
Igbo	100 (37.7)	10(28.5)	110(33.3)	X^2=768.435	
Hausa	60(22.6)	10(28.5)	70(23.3)	p- value is 0.001	This result is not
Yoruba	50(18.8)	10(28.5)	60(20)		Significant at
Others	55(20.7)	5(14.3)	60(20)		p<0.05
Religion					
Christianity	100(58.8)	50(38.5)	150(50)	X^2=232.235	This result is
Islam	50(29.4)	30(23.1)	80(26.7)	p- value is 0.000	Significant at p<0.05
African Traditional Religion	20(11.7)	50(38.5)	70(23.3)		
Marital Status					
Married	115(56.6)	85(87.6)	200(66.6)	X^2=408.905	This result is
Single	40(19.7)	10(10.3)	50(16.7)	p- value is 0.000	Significant at
Others	48(23.6)	2(2.1)	50(16.7)		p<0.05

**Shows significant relationship*

Table 6: Relationship between Socio-demographic characteristics vs Awareness of brain drain among health care workers

VARIABLES	Awareness of Brain drain		Total (%)	Statistics (X^2) P – Value	Remarks
	Good awareness (%)	Poor awareness (%)			
AGE (Years)					
18-25	60(28.5)	31(34.4)	91(30.3)	X^2=198.391*	This result is
26-35	140(66.6)	5(5.5)	145(48.3)	p- value is	Significant at
>36	10(4.7)	54(60)	64(21.3)	0.001	p<0.05

Gender				X^2=98.319*	
Male	130(56.5)	40(57.1)	170(56.6)	p- value is	This result is
Female	100(43.4)	30(42.8)	130(43.4)	0.012	Significant at p<0.05
Level of Education					
Tertiary	180(61.0)	5(100)	185(61.6)	X^2=277.444*	This result is not
Post Graduate	95(32.2)	0(0)	95(31.6)	p- value is	Significant at
Secondary	10(3.4)	0(0)	10(3.3)	0.001	p<0.05
Others	10(3.4)	0(0)	10(3.3)		
Ethnicity					
Igbo	70(35.8)	40(38.0)	110(33.3)	X^2=231.973*	
Hausa	50(25.6)	20(19.0)	70(23.3)	p- value is	This result is not
Yoruba	60(30.7)	0(0)	60(20)	0.001	Significant at
Others	15(7.6)	45(42.8)	60(20)		p<0.05
Religion					
Christianity	145(49.1)	5(100)	150(50)	X^2=25.714*	This result is
Islam	80(27.1)	0(0)	80(26.7)	p- value is	Significant at
African Traditional Religion	70(23.7)	0(0)	70(23.3)	0.001	p<0.05
Marital Status					
Married	150(65.2)	50(71.4)	200(66.6)	X^2=255.556*	This result is
Single	40(17.4)	10(14.2)	50(16.7)	p- value is	Significant at
Others	40(17.4)	10(14.2)	50(16.7)	0.001	p<0.05

The entire socio-demographic variables shows positive relationship between Awareness of Brain drain at p<0.05 as shown above. This implies that large proportion of the health workers, Two hundred and ten (70%) under study agree with the fact that they understand what brain drain is all about.

Discussion

Majority of the participants in the study fell within the age of twenty-six to thirty-five and female participants were more participants. This was similar to findings from a study done in the year 2015 among the medical practitioners and nurses.[7] This study shows that respondents had intentions to migrate at younger ages when they were still very active in the work force than at older ages. The mean age of the female respondents was greater than the mean age of the males. This may be due to the fact that a larger proportion of the middle cadre health personnel who make up the bulk of the healthwork force are dominated by the female sex especially due to the nursing health sector where most of the health workers are females, this leads to gender inequality within the health sector. This finding is similar to a survey done in EnuguState, Nigeria in 2018, where more than two third of the respondents were female.[8]To correct this female gender predominance in the health sector, implementation of SDG-5; gender equity is a key factor.

Majority of respondents in this research were educated as more than half had tertiary level of education and one third had postgraduate level of education. There was statistically significant association between level of education and awareness of brain drain (p=0.001), respondents with higher educatonal qualification were less likely to migrate. This is similar to findings in a study conducted in Benin city[8], where over 80% of respondents were more inclined to migrate with the intent of criterion "better educational opportunities for self" as a migration tendency. This determinant to acquire more knowledge and professional development may have contributed to the reason why most of the respondents are migrating every day. This can affect the health and general wellbeing to the people as there would be no manpower to ensure that the health care system functions in providing care for the people[8].

Two-third of the respondents were Bini, the predominant tribe in this study was Bini, which is one of the major tribes in Edo state. This study revealed that majority of respondents agreed with the fact that socioeconomic or political situations in the

home country was the reason for brain drain among health care workers. This is similar to a study done in Canada in 2014 where brain drain was a result of socioeconomic or political situations in their home country accounted for 50%.[3]

Majority of the respondents have heard about brain drain and the common sources of information were from; non-governmental organisation and governmental agencies, radio, newspaper and television, school and books, parents and friends, market and billboard, church and seminars/workshops, health personnel, and so this means that there is good awareness of brain drain among health care workers.[8]

It is generally believed that migration is mostly for economic and political reason, and the results from this study confirms. In a study in Lagos State, 2020, it was found that desire for more income, access to technology, security, and improved prospects for dependents were the major reason for emigration.[9] In contrast, our study revealed that the reasons for emigration were access to further training, professional development, and job satisfaction; this was closely followed by improved remuneration and an attempt to escape from the poor health care system and employment uncertainity, this implies that the already poor health system of the home country becomes worse as health care workers decide to leave for these reasons, instead of staying back to develop the health care system. Perception and reasoning do change over time, and this might be responsible for the dissimilarity in the result of our study when compared with that of the study above. This dissimilarity might be due to the fact that health care workers have an increased interest in personal skills development rather than just earning income, as, the more skills gained will translate to more income gained. This implies more health professionals will emigrate inorder to develop skills and leave the home country deficient, resulting in poor healthcare system. It is also possible that perception of the average medical doctor could have changed considering the recent improvement in remuneration of Nigerian doctors, this could imply that healthcare workers in Nigeria might be encouraged to stay back and improve the healthcare system of the country.[9]

The prevalence of respondents who had attained tertiary level of education in this study is similar to a study conducted in eastern part of Nigeria in the year 2019 [10] where the majority of respondents obtained tertiary level of education. This result better represents the baseline effects of tertiary education on knowledge about brain drain. The implication of this finding is that despite the high level of education, an average worker could not afford the basic necessity of life for themselves and their children, thus, when the situation becomes unbearable, it prompts an individual to search for greener pasture outside his or her country. Mostly affected group are the professionals and high level man power in the health sector. This form of movement across national frontier of border of one's country often leads to brain drain. Hence, there is need for adequate funding for health care personnel by the government or other non-governmental organizations, so that there will be match with international standard where take home packages and other health care workers become the major priority. This will be a strategy in actualizing the sustainable development goal 3 (SDG) agenda which recognizes that opportunities to improve health can be found in specific health interventions (SDG 3; good health and well-being).[10]

Regarding the prevalence of brain drain among health care workers, it was revealed that almost all the respondents agreed that physician remuneration was the reason for brain drain among health care worker. This finding collaborates with the study conducted in Ekiti state in year 2019 which shows that low wages and salaries has a statistically significant effect on brain-drain among health workers in public teaching hospitals in Ekiti State.[9] This could be accredited to the fact the Nigerian health workers are least paid when compared with their counterparts in the same level in other countries despite spending the highest amount of time with patients in the hospital. Thereby, they tend to move out of Nigeria to neighboring countries that pay them greater amount. The implication of this

finding is that an upsurge in the low wages and salaries causes a rise in brain-drain among health workers. Therefore, a better financing structure that will translates to more remuneration, increased training opportunities for doctors, availability of equipment and other consumables should be encouraged.[10]

More than half of the respondents agreed that socioeconomic or political situations in their home country were the reason for brain drain among health care workers. This finding is in agreement with the findings conducted among public healthcare workforce in Nigeria in the year 2022[10] where salary & compensation and socioeconomic or political situation of the country has a statistically significant impact on job related brain drain. This implies that a rise in the political instability level would breed an increase in brain-drain among health workers significantly. The implication of this finding is that it has become a general knowledge that Nigeria is not at peace at present, on daily basis, the raise of insurgency, killings here and there, kidnapping and the likes keeps increasing. Hence, the health workers tend to leave the nation for better nations with peaceful and progressing economy compared to Nigeria.[10]

In the current study, it was revealed that over half of the caregivers had good awareness on the brain drain and most of them had positive perception towards the brain drain. This is likened to the study conducted among six hundred health care workers in Lagos State in the year 2011[11] where more than one third of the respondent had good awareness of brain drain among health care workers. This is probably due to the fact over half of the caregivers were educated; most of the respondent understand what is meant by brain drain. The implication of this finding is that, having good knowledge of what brain drain is all about allows for health care workers to be informed and aware of the study they are under, so as to give appropriate responses. Health care workers considered to settle down in the presence of juicy and attractive packages and better standard of living promised by employment agencies abroad.

The present study reveals that higher proportion of the respondents agreed that poor wages is a major determinant. This outcome takes a similar position to the recent study done in FCT, 2022[10] that found that low wages and pay are part of the sources of dissatisfaction that demotivate the Nigerian healthcare workforce. Also, the study conducted in Lagos, 2022.[8] It was revealed that poor wages and income in the public health industry have forced medical doctors out of the country, and this adversely affects the patient outcome in the sector as there isnt adequate manpower to care for patients.[8]

Majority of the respondent agrees that poor job satisfaction may contribute to brain-drain. The outcome of this finding takes a similar dimension to the study done in Lagos, 2020[11] whose research revealed the high level of job dissatisfaction among nurses in the public health industry in Nigeria was a result of a poor work environment. This is completely affecting patients' outcomes and healthcare excellent service delivery, increasing morbidity and mortality rates in Nigeria. Consequently, reward and recognition necessary to create a motivational strategy for the professional medical healthcare employees are lacking in greater measure, and this produces work discontentment for the workers, Governmental and non-governmental agencies, Health facilities and leading health professionals should come together to implement awards and recognitions for striving health personnel, thereby increasing competition and motivation to perform job at an optimal level there improving the general wellbeing of the nation in keeping with SDG3.[10]

Conclusion

In this study, majorty of health professional in IUTH and PHC have awareness of the concept of brain drain and major sources are from NGOs, radio, newspapaper and television. Majority of the respondents agreed that physician remuneration and patients load and work hours were the reasons for brain drain

prevalent among health care workers compared to other variables.

In this study, limited educational opportunity, unsatisfactory or unstable political environment, poor job satisfaction, low wage compensation and personal development were the five most important push factors of brain drain compared to other variables.

In this study, need for improving professional expertise, good working environment, opportunities for professional or career advancement, job availability and attractive wages, and personal development were the five most important pull factors of brain drain that attracts healthcare workers to other countries compared to other variables.

Authors' Contribution

All authors read and contributed to the manuscript.

References

[1] Human capital flight. https://en.m. wikipedia.org/wiki/Human_capital_flight.

[2] Brandi Maria Carolina. The history of brain drain. https://www.researchbate, net/publication/290779560.

[3] Chen, 2004. Brain drain phenomenon among healthcare workers. https://www. researchgate.net/publication/349110632.

[4] Medical brain - drain : How many, where and why. https://www.donau.uni. at/ dau/jci.831e606-7e22-49do-b472-0212e61a7591/Article_Medical%20brain %drain.pdf.

[5] Yusuf et al, 2016. Brain brain and healthcare delivery in developing countries. https://www.ncbi.nih. gov/pmc /articles/pmc5345397/.

[6] Adekola, S. & Walton Roberts, M. (2017). A transnational case analysis of nigerian migrant health care. https://scholars. wlu.ca/cgi/viewconent,cgi?article=3112&c ontext=etd

[7] Naicker, Plange- Rhule, Tutt, and Eastwood(2009). How can brain drain be converted into wisdom gain.

[8] Astor A, Akhtar T, Matallana MA, Muthuswamy V, Olowu FA, Tallo V, *(2015).* Physician migration: Views from professionals in Colombia, Nigeria, India, Pakistan and the Philippines. *Soc Sci Med* ;61:2492-500.

[9] Ibrahim A, Delia ZI, Asuku ME, Dahiru T. Communication skills among surgical trainees: Perceptions of residents in a teaching hospital in Northern Nigeria. *Nigerian Journal of Surgery*. 2011;17:5-10.

[10] Egbi OG, Unuigbe EI. (2014). Choice of medical specialties amongst final year medical students in two universities in South-South, Nigeria. *West Afr J Med* 2014;33:44-50.@ https://www.njmonline. org/article.asp?issn=1115-2613; year =2022;volume=31;issue=1; spage=20;epage=24; aulast= Akinyemi

[11] Akinwale, O. E., & George, O. J. (2020). *Work environment and job satisfaction among nurses in government tertiary hospitals in Nigeria*. Rajagiri Management Journal, 14(1), 71–92.

[12] Ossai EN, Una AF, Onyenakazi RC, Nwonwu EU. (2020). Emigration plans after graduation of clinical medical students of Ebonyi state university Abakaliki, Nigeria: Implications for policy. Niger J Clin Pract 2020;23:995-1003.@https://www. njmo nline.org/article.asp?issn=1115-2613; year =2022; volume=31; issue=1; spage=20; epage=24;aulast=Akinyemi

Citation: Igben Onoriode Vincent_Junior et al., (2023), "An Assessment of the Prevalence, Pattern and Determinant of Brain - Drain Among Health Workers in Ovia - North East, Edo State Nigeria", Arch Health Sci; 7(1): 1-11.

DOI: 10.31829/2641-7456/ahs2023-7(1)-015