



A Descriptive Analysis of Brain Drain and Effectiveness of Primary Health Care Systems in Cross River State, Nigeria

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Abstract: Aim: This study is a descriptive analysis of brain drain on the effectiveness of primary health care systems of Cross River State, Nigeria

Method: The descriptive survey research design was adopted in this study. the stratified and accidental sampling techniques were adopted in selecting the 284 respondents sampled for the study from the population. A validated 20 items opened ended and likert scale questionnaire was the instrument used for data collection. The face and content validity of the instrument was established by experts in Test and Measurement. The reliability estimates of 0.89 of the instruments were established using the Cronbach Alpha method. Pearson's Product Moment Correlation statistical tool was used to test the hypothesis formulated for the study. The hypothesis was tested at a 0.05 level of significance.

Results: The results obtained from the data analysis revealed that there is a significant relationship between brain drain and effectiveness of primary health care systems in Cross River State, Nigeria.

Conclusion: The finding concludes that there is a significant relationship between brain drain and effectiveness of primary health care systems in Cross River State, Nigeria.

Recommendation: Based on the finding of the study it was recommended among other recommendations that in spite of the difficulties brought on by the lack of adequate medical doctors, the Nigerian government at every level, in partnership with health institutions and hospital administrators must collaborate to strengthen Nigeria's healthcare sector through a variety of development initiatives to control, support, and sustain the system.

Keywords: Brain drain, Primary Health Care System (PHCs), Doctors, Nurses

INTRODUCTION

The emigration of health professionals in Nigeria deserves critical attention due to its adverse effects on the healthcare system for a country like Nigeria, which indirectly impacts population health outcomes and creates greater inequity among vulnerable populations. The medical brain drains "worsens the already depleted healthcare resources in poor countries and widens the gap in health inequities worldwide". An effective health care system (HCS) delivering optimal and accessible primary, secondary and tertiary care services cannot operate without adequate staffing of trained and devoted health professionals.

On October 1, 1960, Nigeria gained its independence from Britain. Today Nigeria, which consists of thirty-six states and more than 250 languages and ethnic groups, is the most populated country in Africa and has one of the highest gross domestic products in the continent (Central Intelligence Agency, 2018). In 2015, the estimated population of Nigeria was 182 million (United Nations, 2015b). With its growing population, Nigeria will require a greater supply of commodities to house, clothe and feed its nation. As the giant of Africa, Nigeria will need to improve greatly their health care system by addressing both supply (e.g. patient-physician ratio, equipment/technology, infrastructure) and demand needs (e.g. wait time, service quality, treatment

cost, salaries) as they are expected to become the third most populous country in the world by 2050 (United Nations, 2015b). If Nigeria plans to achieve health indicator outcomes recommended in the SDGs, Nigeria must focus more attention on increasing and retaining their health human resource supply as well as infrastructure and service demands to meet the overwhelming needs of its growing population, but the reverse is the case because it seems like the Nigerian government has no regard for medical practitioners and their welfare.

Brain drain is a subcategory of emigration. The term focuses on the outflow of human resources; specifically, individuals who have attained higher education or are highly skilled who settle temporarily or permanently in a host country often of high(er) social-economic level for trade or employment. The term, brain drain, was introduced in the 1960s to capture the large number of trained professionals mainly teachers, scientist and physicians seeking greater economic and social opportunities in developed nations (Schnidman, 2016). The brain drain of healthcare workers is defined as "the movement of health personnel in search of a better standard of living and life quality, higher salaries, access to advanced technology and more stable political conditions in different places worldwide" (Misau, Al-Sadat, & Gerei, 2010). Although brain drain is usually used in the context of cross-border and international migration from

developing country to developed country, it can also occur internally from rural areas to urban areas (Misau et al., 2010).

Although Nigeria holds one of largest supplies of human health resources in Africa, there persists a shortage of medical professionals needed to deliver critical health services effectively (Global Health Workforce Alliance, 2018). Global health expert and medical doctor Stella Anyangwe argues that countries with the highest burden of disease ought to have the greatest number of health care workers; however, this is not the case today and has never been the case. In fact, in 2006, 42% of the world's healthcare workers resided in the Americas while 3% resided in Sub-Saharan Africa (Anyangwe & Mtonga, 2017). Sub-Saharan Africa has the lowest density of healthcare workers in the world (Anyangwe & Mtonga, 2017).

In Nigeria, the latest World Health Organization reporting on the density of physician ratio is 4 per 10,000 population and density of nurse and midwives is 16.1 per 10,000 population (Global Health Workforce Alliance, 2018). In the US, the density of physician ratio is 24.5 per 10,000 population and density of nurse and midwives is 98.1 per 10,000 population (World Bank, 2018). Nigeria has continuously failed to meet the United Nations recommended minimum level of health workforce density at 2.5 health workers per 1,000 population (25 per 10,000 population).

Studies indicate several push and pull factors that serve as reasons for brain drains. 'Push' are those factors that occur within the county of origin, motivating professionals to leave. 'Pull' factors on the other hand are the deliberate and/or unintended actions that attract health professionals originating from the recipient country's policies and actions. Examples of "Push" factors include low remuneration, poor working conditions and low job satisfaction, political and ethnic problems as well as civil strife and poor security. Poor governance (or perceived poor governance) is an important issue for professionals to work elsewhere. The lack of technology and equipment to perform professional tasks for which staff are trained for will reduce job satisfaction. "Pull" factors on the other hand may arise because of increased demand for health professionals in developed countries, (e.g. aging populations requiring more care) and economic changes that make the health professions such as nursing unattractive to job market entrants. The use of a common language such as English and similarities in professional systems are also factors. A complex combination of both 'push' and 'pull' factors lead to a threshold decision to migrate. These combined 'push-pull' ingredients is described in terms of the gradients between situations in the country of origin of the health worker and in the receiving country. The causes of brain drain may also includes: harsh economic conditions, under employment, political instability, security risks, lack of research and other facilities, unsatisfactory working condition, desire for better career recognition.

There is evidence that the quality of health care is positively correlated with the number of healthcare workers, "especially in the domains of immunization coverage,

primary care, and infant, child and maternal survival" (Anyangwe & Mtonga, 2017). Medical professionals are the driving force of health care systems that provide treatment and care while preventing disease, reducing risk and relieving pain and suffering for patients. Their health knowledge, skills and training, are vital in reducing the disease burden (Anyangwe & Mtonga, 2017). Furthermore, "they play a critical role in maintaining and sustaining the health of a country's human resources" (Nigeria Health Watch & NOIPolls, 2017, p. 5). Due to the high level of brain drain, Nigerian are now so involved in medical tourism to other countries.

Medical tourism is a recent phenomenon that occurs when individuals seek medical attention internationally for their health care needs (Abubakar, Basiru, Oluyemi, Abdulateef, Atolagbe, & Adejoke, 2018). Today, medical tourism serves as a privilege for wealthy politicians and citizens in need of urgent and advanced medical attention. In November 2009, former Nigerian President Umaru Musa Yar'Adua traveled to Saudi Arabia for medical attention; he would not return to Nigeria until February 2010, dying a few months after his return (Soyombo, 2017). On January 19, 2017, President Muhammadu Buhari of Nigeria took an unannounced medical leave presented as a 10-day vacation to the United Kingdom (UK). He soon extended his stay for an unspecified number of days for medical treatment.

Nearly two months later, President Buhari returned to Nigeria on March 10, 2017, and designated Vice President Yemi Osinbajo to serve as acting president (Busari, 2017). Various media sources criticized President Buhari calling his vacation a cover-up for his deteriorating health and privilege to seek medical treatment abroad (Busari, 2017; Soyombo, 2017). The luxury to travel abroad for medical attention speaks to a larger issue about Nigeria's healthcare system.

The numbers of health professionals joining the brain drain has reached a peak in apparent response to huge demands emanating from Nigeria where Cross River State belongs, and this has impact on the effectiveness of the health system. These demands were occasioned by demographic changes, aging populations as well as a reduction in attracting recruits into the health workforce. Changes in working hours and conditions have also meant that an increase in requirements of doctors and nurses. The brain drains of professionals, combined with the health crisis described earlier together continue to threaten the entire development process on our continent. It is based on this problem that this study carried out a descriptive analysis of brain drain and effectiveness of primary health care systems in Cross River State, Nigeria.

Purpose of the study:

The purpose of this study is to examine brain drain and effectiveness of primary health care systems in Cross River State, Nigeria.

Specifically, the study sought to;

1. Evaluate the causes of brain drain in health care system.
2. Effects of brain drain in health care system
3. Barriers to health care delivery in Nigeria

Research question:

1. What are the causes of brain drain in health care system?
2. What are the effects of brain drain in health care system?
3. What are the barriers to health care delivery in Nigeria?

Statement of hypothesis:

The hypothesis states that there is no significant relationship between brain drain and effectiveness of primary health care systems in Cross River State, Nigeria.

LITERATURE REVIEW

Adeloye, David, Olaogun, Auta, Adesokan, Gadanya, and Iseolorunkanmi, (2017) study explored causes of the recent health workforce crises in the Nigeria health sector occurring 2010 to 2016 and proposed preventative measures for future health crises. The researchers pointed out the irony of a “rapidly changing developing economy with a weak national health system governance and shortage of human resources for health” (Adeloye et al., 2017). They noted that Nigeria has a relatively weak health system with a health workforce density estimated at 1.95 per 1000 population, way below the United Nations’ minimum of 2.5 health workers per 1000 population. The cause of Nigeria’s health workforce crises is influenced by several factors including missed salaries, deteriorating health facilities, poor welfare and divisions among health workers, but most important of all poor health leadership (Adeloye et al., 2017). Regarding Nigeria’s booming population and collapsing healthcare system, the researchers recommended along with other resolutions to the health sector, supplying additional health care workers to cover the population in combination with other solutions (Adeloye et al., 2017).

Agboghroma and Gharoro (2015) study investigated the coverage and distribution of registered obstetrician/gynecologist in Nigeria from July 2012 through December 2013. Using a national survey extracted from the Society of Gynecologist and Obstetricians in Nigeria (SOGON), the researchers identified an estimate of 968 obstetrician/gynecologists (OBGYNs) in the country at the end of 2013; therefore, there was approximately 1 OBGYN for every 181,458 persons considering the projected population size in 2013 (Agboghroma & Gharoro, 2015). The researchers found that there were disparities among geopolitical zones in Nigeria; the southwest held the highest number of OBGYNs compared to the northeast with the lowest number. In Abubakar et al. (2018) study, the researchers examined the effects of medical tourism on Nigeria’s health sector. According to the Price Waterhouse Coopers (2016) report, Nigerians spend an estimated 1 billion USD on medical tourism each year. Abubakar et al. (2018) argue that approximately 1.2 billion USD is lost to medical tourism annually in Nigeria rather than invested into the health care system. Abubakar, Basiru, Oluoyemi, Abdulateef, Atolagbe, and Adejoke (2018) study revealed that due to the collapsing health care system in Nigeria, medical tourism is rapidly becoming normalized within Nigerian culture: about 5,000 Nigerians seek medical advice abroad monthly (Abubakar et al., 2018).

Gerein, Green, & Pearson (2016) study discussed the implications of health professional shortages for maternal health and health services in Sub-Saharan Africa. Inequitable distribution of health professionals between geographic areas and public to private health facilities is also highlighted. Understaffing in rural and poorer regions impacts the availability of skilled birth attendants and emergency obstetric services. The researchers attributed the depletion of health professionals in Sub-Saharan Africa to two factors: emigration and ill health due to HIV/AIDS in health workers. Other push and pull factors for Sub-Saharan Africa include poor salary, job dissatisfaction, organizational environment and availability of resources. Therefore, the researchers argue that the health workforce situation in Sub-Saharan Africa is in crisis.

Gerein et al. (2016) study reiterated that Sub-Saharan Africa experiences the greatest burden of maternal mortality and ill-health compared to all other regions. Overall, maternal mortality rates remain highest in Sub-Saharan Africa ranging from 24 in Mauritius to 2,000 in Sierra Leone maternal deaths to 100,000 live births. They explored how the shortage of health professional impacts maternal health through two inter-related processes: effects on existing workforce and efforts on maternal health care.

Effects of shortages on maternal health care include increased workload, increased wait-time for patient, reduced time for patient, poorer infection control. Additionally, effects on the existing workforce associated with maternal health care included “restricted availability of and access to services, and reduced volume and quality of services.” For maternal health professionals, the shortages were associated with increased workload and job dissatisfaction. Nevertheless, Gerein, Green, and Pearson (2016) found an association with the shortage of health professionals to poor quality of care and higher maternal mortality rates.

Another study stated the effects of brain drain in Nigeria and this included: high mortality rate, under development of the nation etc. The real beneficiaries of medical migration are the destination countries. The health care system in the developing countries faces lots of problems and human resources being one of the major. The system is systemically and structurally fragile and weak to provide health services where it is most needed, and brain drain appears to have complicated the situation and made matters worse (Agboghroma, & Gharoro, 2015). Migration of medical personnel impact more negatively on the health care of the exporting countries than positively. Factors influencing brain drain among Medical Personnel in Nigeria revealed that the reason for migration is mainly caused by the working conditions within an organization. About 36% of respondents agreed that the motivation of workers is at a very low level and that the effect of brain drain was also significant on the provision of medical services, training, and development of future medical personnel (Anyangwe & Mtonga, 2017).

Another study revealed that the movement of physicians from lower to higher income settings has substantial economic consequences and also increased mortality seen on the host countries where the physicians migrate from

(Busari, 2017). The WHO estimates a global shortage of 2.8 million physicians with severe deficiencies especially in low- and middle-income countries. In another finding, Abubakar, Basiru, Oluyemi, Abdulateef, Atolagbe, and Adejoke, (2018), it was difficult to exactly substantiate the direct impact of health worker emigration on mortality and morbidity. Sceptics pointed out that casual direct impacts of brain drain are difficult to show with absolute certainty.

MATERIALS AND METHODS

Experimental setting:

The study utilized a descriptive survey research design. According to Salaria (2012), it is a research design that is used when the goal of a survey is to gather and evaluate information about the examined phenomena from a representative of the entire population with the hope of generalizing the findings to the entire population.

Participants/Sample:

The population for the study comprised of 1, 892 primary Health care workers in Cross River State (Source: Cross River State Primary Health Care Development Agency, 2023). Stratified sampling technique was used to place the number of Health care centers and workers in stratum from where the sample was drawn. Furthermore, 15 percent of health centers in Cross River State and 15 percent of staff were used for the study, hence a sample size of 284 health

care workers from 19 health care centers were used for the study. The study used the accidental sampling approach in administering the research instrument on the respondents as at the time of administration of the instrument.

Instrumentation:

The instrument for data collection was a questionnaire titled, Brain Drain and Effective Health Care System Questionnaire (BDEHCSQ). The instrument contained 20 items ranging from Section A, B and C. The instrument was subjected to face validity and the reliability estimate of the instrument was ascertained using the test-retest method and the result was .89.

Statistical analysis:

The findings were given in frequencies, percentages, tables, and inferential statistics because all hypotheses were evaluated using Pearson’s Product Moment Correlation at 0.05 level of significance (i.e., 95% confidence interval).

RESULTS

To answer the research questions addressed in this study, mean and standard deviation analyses as well as item-by-item analyses were used with the help of Statistical Package for Social Sciences (SPSS) version 24. The hypothesis was tested using Pearson’s Product Moment Correlation statistical tool.

TABLE 1: Personal data of respondents

Variable		Frequency	Percentage
Sex	Male	136	47.9
	Females	148	52.1
	Total	284	100
Age	<20 years	22	7.7
	21-30 years	172	60.6
	≥31 years	90	31.7
	Total	284	100
Working experience	10 years and less	49	17.3
	11-20 years	54	19.0
	21-30 years	102	35.9
	31 and above	79	27.8
	Total	284	100
Respondents’ opinion of the causes of brain drains in primary health care system			
What do you think are the causes of brain drain?	Mass unemployment	89	31.4
	Poor salaries	92	32.4
	Political crisis	23	8.1
	Lack of quality education	41	14.4
	Poverty	12	4.2
	Religious crisis	27	9.5
Total	284	100	
Respondents’ opinion on the effects of brain drains in primary health care system			
Which of the following is a major effect of brain drains in primary health care system?	Job stress due to insufficient hands	63	22.2
	Occupational burnout	59	20.8
	Low quality service delivery	162	57.0
	Total	284	100
Respondents’ opinion on the barriers to quality health care system			
What is the major barrier to health care delivery?	Crime	55	19.3
	Corruption	131	46.1
	Poor working conditions	54	19.1
	Inadequate training facilities	44	15.5
	Total	284	100

Source: Field work (2023)

From the result of 284 respondents used in the research, 136 respondents (47.9%) were males while 148 respondents (52.1%) were females. This outcome is as shown in Table 1 and these results showed that there are more males than females in the studied region. Going forward to the results of the age distribution, of the 284 respondents, 22 respondents (7.7%) were 20 years old or younger, 172 (60.0%) were in the range of 21-30 years old, while 90 respondents (31.7%) were 31 years of age or older. Furthermore, the results of respondents' on working experience showed that out of the 284 respondents used in the research, 49 (17.3%) have 10 years' experience or less, 54 (19.0%) have working experience of 11-20 years, 102 (35.9%) have working experience of 21-30 years, and 79(27.8%) have working experience of about 31 years and above.

In terms of the causes of brain in health care system in Cross River State, the results showed that out of the 284 respondents used in the study 89 (31.4%) agreed that it is caused by mass unemployment, 92 (32.4%) agreed that it is caused by poor salaries, 23(8.1%) agreed that it is caused by political crisis, 41(14.4%) agreed that it is caused by lack of quality education, 12(4.2%) agreed that it is caused by poverty, while 27(9.5%) agreed that it is caused by religious crisis.

In terms of the effect of brain drains, out of 284 respondents, 63 respondents (22.2%) agreed that brain drain leads to job stress as a result of insufficient hands, 59 (20.8) agreed that

it leads to occupational burnout, while 162 (57.0) agreed that it results to low quality service delivery.

Test of Hypothesis:

Hypothesis one

The hypothesis states that there is no significant relationship between brain drain and effectiveness of primary health care systems in Cross River State, Nigeria. The independent variable is brain drain while the dependent variable is effectiveness of primary health care systems. The items used in measuring this hypothesis were derived from questionnaire items 1-15 16-20 of Section C. Pearson's Product Moment Correlation Coefficient Analysis test statistic was employed in testing the hypothesis for this study.

The result of the analysis in Table 2 revealed that brain drain produced a mean score of 10.60 with a standard deviation of 2.11 while effectiveness of primary health care systems produced a mean score of 14.11 with a standard deviation of 1.55. The result further revealed that the calculated r-ratio of .027 obtained with a p-value of .003 at 282 degrees of freedom met the condition required for significance at.05 level. Based on this, the null hypothesis which stated that there is no significant relationship between brain drain and effectiveness of primary health care systems in Cross River State, Nigeria was rejected indicating that there is a significant relationship between brain drain and effectiveness of primary health care systems in Cross River State, Nigeria.

TABLE 2

Pearson's Product Moment Correlation Coefficient Analysis of the relationship between brain drain and effectiveness of primary health care systems (N=284)

Variables:	x	S.D	r	P-value
Brain drain (x):		10.60	2.11	
Effectiveness of health care system (y):	14.11	1.55	.027	.003

*Significant at 0.05 level; df= 282

Discussion of finding:

The investigation's findings showed that there is a significant relationship between brain drain and effectiveness of primary health care systems in Cross River State, Nigeria. This study highlights the importance of staff welfare and mass employment in the health care system in the study area. The study supports Adeloye et al., (2017)who pointed out the irony of a "rapidly changing developing economy with a weak national health system governance and shortage of human resources for health". They noted that Nigeria has a relatively weak health system with a health workforce density estimated at 1.95 per 1000 population, way below the United Nations' minimum of 2.5 health workers per 1000 population. The cause of Nigeria's health workforce crises is influenced by several factors including missed salaries, deteriorating health facilities, poor welfare and divisions among health workers, but most important of all poor health leadership. Abubakar, Basiru, Oluyemi, Abdulateef, Atolagbe, and Adejoke (2018) study revealed that due to the collapsing health care system in Nigeria, medical tourism is rapidly becoming normalized

within Nigerian culture: about 5,000 Nigerians seek medical advice abroad monthly (Abubakar et al., 2018).

CONCLUSION

The study concludes that there is a significant relationship between brain drain and effectiveness of primary health care systems in Cross River State, Nigeria. The economy of the nation is at risk when HCW leave, and communities suffer as a result, leading to developmental problems, a rise in health conditions and medical morbidity, an increase in death rates, and an overall deterioration in the health status of the citizens. It is obvious that without changing the political system and its policies, the healthcare system cannot be improved. A new perspective must be taken in the medical industry.

RECOMMENDATIONS

Based on the findings of the study, it was recommended among others that;

1. In spite of the difficulties brought on by the lack of adequate medical doctors, the Nigerian government at every level, in partnership with health institutions and hospital administrators must collaborate to strengthen Nigeria's healthcare sector through a variety of development initiatives to control, support, and sustain the system.
2. The incidence of brain drain would be reduced if policies that would guarantee job security, especially for post-fellowship resident doctors were implemented.
3. The government of Nigeria needs to raise the pay of healthcare workers and review it regularly to correspond with the existing economic situation, improve their job satisfaction and guarantee job security for them.

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