REVIEW ARTICLE

The Health Workforce Crisis: The Brain Drain Scourge

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Abstract

Background: *The magnitude of the health workforce crisis engendered by brain drain particularly in Africa, and nay more especially Nigeria, has been assuming increasingly alarming proportions in the past three decades. The challenge it poses in meeting the manpower needs in the healthcare sector as well as in the larger economy of the sending countries is enormous. This paper thus sets out to highlight the scope of this brain drain, its effects and the reasons sustaining it, as well as makes concrete suggestions to help stern the tide.*

Method: *A review of the literature on brain drain with particular emphasis on the health workforce sector was done, with focus on Africa, and specifically Nigeria. Literature search was done using mainly the Medline, as well as local journals.*

Results: *The historical perspectives, with the scope of external and internal brain drain are explored. The glaring effects of brain drain both in the global workforce terrain and specifically in the health sectors are portrayed. The countries affected most and the reasons for brain drain are outlined. Strategic steps to redress the brain drain crisis are proffered in this paper.*

Conclusion: *The health workforce crisis resulting from brain drain must be brought to the front-burner of strategic policy decisions leading to paradigm shift in political, social and economic conditions that would serve as incentives to curb the scourge.*

KEYWORDS: *Health workforce crisis, brain drain, Africa, Nigeria.*

INTRODUCTION

"The emigration of African professionals to the West is one of the greatest obstacles to Africa's development"[1].

"African governments have a great responsibility to ensure that brains remain in the continent; otherwise, in 25 years' time, Africa will be empty of brains"[2].

The above aptly capture the scenario of brain drain that is assuming a crisis proportion, especially with regards to the developing nations. This is even much more disturbing in the health sector that the 2006 World Health Report focuses on the theme of global health workforce[3]. The 2003 World Health Report had earlier asserted that the most critical issue facing healthcare systems was the shortage of people who made them work[4].

The issue of brain drain, therefore, is a very emotive subject[5]. It has been on from time immemorial, and only differs from one country to another in varying degrees[6]. The magnitude of the problem in Africa with its alarming increase presents such a growing urgency for action that the consequences of brain drain threaten to stunt the overall development of the continent[7].

Health, being a labour-intensive and labour-dependent service, is critically affected in the brain drain scourge[8]. It is this debilitating workforce crisis in the health sector that this paper seeks to explore in its multifaceted dimensions, ranging from the scope, burden and impact of brain drain in Africa in general and Nigeria particularly, to the factors that can redress this problem.

HISTORICALLY

According to the historical materialism point of view, the entire African continent is underdeveloped because the West (Europe and America) are developed. This is because the West plundered the economy of the African nations during the colonial era. These were the years of colonial brigandage and despoliation; the 'locust years'. Significantly, the manpower resources of African nations the working and active population through the process of slave trade, were carted away by the West. The infinite number of Africans shipped to the West constitutes a chronic brain drain[9].

For Nigeria, by 1924 when the late Dr. Nnamdi Azikiwe arrived in the United States (US) there were only 3 Nigerian students in the entire USA. Of those that came to the US then, 100% returned home[10]. Immediately after independence, Nigerians burning with patriotic fervour, returned home eagerly soon after their studies abroad[6]. Up till about 1980, most Nigerian students returned home. Nigerian doctors returned home by the first available transport after specialisation in Europe or America. They easily returned because they easily secured employment, the economy was robust and the

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currency was strong[6,11].

BRAIN DRAIN DEFINITION

Brain drain has been defined as the migration of skilled/trained intellectual and technical labour to more favourable geographic, economic or professional environments[12].

The brain drain (BD) in health sector is part of a global health workforce crisis because of the net migration of health professionals from resource-poor countries to resource-rich countries (external brain drain)[6,12].

Internal brain drain occurs when people are not employed in the fields of their expertise[5,13]. For example, medical doctors who become purely businessmen, running chains of companies, hotels, beer parlours or filling stations. This includes trained medical doctors who in the Nigerian political space turn full-scale politicians, either in elective offices governors, deputy governors, speakers of houses of assembly; or in appointive positions, such as secretaries to state governments etc. And these are quite a handful.

MAGNITUDE OF THE BD PROBLEM

Africa-Generic

Africa has already lost one-third of her human capital and is continuing to lose her skilled manpower at an increasing rate[14]. One in three African university graduates live and work outside Africa. There are currently more than 1 million Africans working outside Africa. There are currently over 300,000 highly qualified Africans in the diaspora, 30,000 of whom have their Ph.D degrees[10,14,15].

Forty-three percent of foreign-born Africans in the US have at least a bachelor's degree. Currently, Africa counts only about 20,000 scientists (3.6% of worlds' total) resident within her borders, whereas more African engineers and scientists are in the US than Africa. It has been estimated that each skilled individual leaving costs Africa $184,000, yet she spends $4 billion per year (35% of her total official aid) to employ 100,000 foreign experts who perform generic functions, such as technical assistance. Paradoxically she cannot spend a similar amount to recruit 1 million African professionals in diaspora[5,10,13-15].

Table 1 shows the pattern of emigration of skilled Africans to industrialised countries.

TABLE I: EMIGRATION OF SKILLED AFRICANS TO INDUSTRIALIZED COUNTRIES

Time Period	Average Annual Rate	Total Number
1960 – 1974	1,800	27,000
1975 – 1984	4,000	40,000
1985 – 1989	12,000	60,000
Since 1990	20,000	

*Adapted from IOM/ECA

Africa Health Workforce

The African health workforce is particularly in dire straits in a crisis situation. The training of a non-specialised doctor in Africa is estimated to cost about US $40 60,000, while the training of a paramedic in Africa costs about US $12,000; yet these health force skilled manpower migrate out of the continent. It is thus estimated that Africa subsidises North America, Western Europe and South Asia to an annual amount of US $500 million, healthwise. Over 35% of trained health professionals from Africa's poorest 20 countries have left for countries in North America and Europe[5,8,16,17].

The minimum standard set by the World Health Organization (WHO) to ensure basic healthcare services is 20 physicians/doctors and 100 nurses per 100,000 people. Yet 38 sub Saharan African countries have less than 10 doctors, and 13 of these have less than 5 doctors per 100,000 people. Seventeen sub-Saharan African countries have less than 50 nurses, and Malawi, 17 nurses, per 100,000. This is in comparison to Western countries that have averagely 222 doctors and more than 1000 nurses per 100,000 people[16,18,19].

Africa Health Workforce Drain: Specific Countries

Malawi has "exported" 20 more nurses than she graduated in the last few years[20], whereas **Zimbabwe** lost almost three-quarters of all her doctors to emigration during the 1990s, and over 20,000 of her nurses left to the UK and other Commonwealth countries in the year 2000 alone[5,17]. **South Africa** has 600 of her doctors registered in New Zealand alone, with 41,000 of her professionals having emigrated in the decade 1987 to 1997; the number of her registered pharmacists has dropped from over 11,000 to less than 9,000 over a few years[5,20].

Zambia has lost 75% of her doctors in recent years, and the public sector has retained only 50 out of 600 doctors trained in the country's medical school from 1978 to 1999. Currently, only about 400 doctors are registered in

practice in the country, out of 1600 doctors as at a few years ago; the rest have migrated. **Uganda** has had more of her doctors registered and practising outside the country[5,17,21].

Kenya loses an average of 20 medical doctors each month, with 50% of her graduates emigrating to South Africa. For **Ethiopia**, one-third of her medical doctors have already left the country, with more of her native-trained doctors practising in the city of Chicago alone than in Ethiopia. **Sierra Leone**, on the west coast of Africa, also has more of her medical doctors in Chicago than at home[5,10,21].

In **Ghana**, 50% of her nurses and 90% of the doctors leave for countries abroad. Sixty percent of her medical doctors were lost to emigration in the 1980s and, currently, about 600 - 700 of her doctors are practising in the US alone, representing approximately 50% of the total population of doctors in Ghana. **Benin Republic** has more of her medical doctors practising in France than in the whole of the country[5,8,21].

The Nigerian Scenario

Nigeria has an estimated 130 million people, out of Africa's 703 million population (19%). Between 1986 and 1990, the country lost 10,694 academics/professionals from tertiary institutions alone; with the total estimates, including those who left the public, industrial and private organisations, put at close to 30,000. In the USA alone, there are more than 100,000 Nigerian workforce immigrants, with Nigerians being the most educated ethnic group in that country. Sixty four percent of foreign-born Nigerians aged 25 years and older in the USA have at least a bachelor's degree[5,13,21-24].

More than 27,000 Nigerian scientists are in the USA. Of the 7 best Information Technology faculties now in the US, 6 of them have Nigerians at the head. By 1993, the UNDP had documented more than 21,000 Nigerian doctors practising in the US alone; and adding the number then in Saudi Arabia, the Gulf states, Europe, Australia and other African countries, the figure was estimated close to 30,000. In 2006, the number of Nigerian doctors practising in the US has increased to 29,000, with the total number of doctors practising in the country, Nigeria, put at 35,000[5,22,25-27].

The WHO documents that one in seven African doctors is from Nigeria. The number of Nigerian nurses, emigrating legally, to work in Britain was 347 (between April 2000 March 2001) and 432 (between April 2001 March 2002). WHO clearly documents that about half of all skilled workforce loss in the country is medical. These depict a veritable continuing crisis with us[28-30].

COUNTRIES AFFECTED MOST BY BD

These are mainly in 4 categories:

(i) **Sending countries (African):**, These are notably Ethiopia ranked first, having lost more than 75% of her human capital from 1980 to 1991. Others are Nigeria, Ghana, South Africa, and others, as enunciated above.

(ii) **Other Sending countries (Non African):** They include Philippines and China. They train surplus health workers, they expect to migrate.

(iii) **Peculiar countries** Ireland is a good example here. She had a massive BD in the 1960's due to poor economy, but now is an investment haven in Europe as it now boasts of returning talent pool of her citizens.

(iv) **Recipient countries** especially for health workers. These include, in their order of drawing power manpower need, US, UK, Canada, New Zealand, Australia and West Germany. These countries commonly experience workforce shortage in the rural, remote and outer urban areas. This is mainly due to:

(a) Inadequate workers (US still has a shortage of 126,000 nurses and UK of about 21,000 nurses, while Australia requires about 1,000 overseas trained doctors every year)

(b) Health professionals preference for inner urban, richer areas.

These factors lead to their heavy reliance on overseas trained health workers in "areas of need", some of whom they are ready to pay more than twenty times their salaries in their countries of origin[5,12,13,21,31].

REASONS FOR BRAIN DRAIN

These are categorized into three:

(i) Global

(ii) The Push and Pull Factors

(iii) Related Determinant Factors

(i) **Global** This includes reasons that are global in nature, affecting the recipient and the sending countries alike. Among these are:

(A) Pressure on health providers in rich recipient countries, who become desperate for more workers, especially in rural areas.

(b) **Profit** by recruitment agencies, who facilitate migration as a lucrative business, which serves as obvious incentive to increase migration from the sending countries.

(c) **Professionals** who are involved, especially in sending countries, who experience a number of forces/factors relating to emigration.

(ii) **The Push and Pull factors**

The **push factors** encourage emigration from country of origin. The **pull factors** include the degree of lack of health professionals in the recipient countries, that with attendant factors, pull the professionals to work in their (recipients) countries[8,12]. Some of these factors bother on the working and living conditions, pay package, availability of research facilities and even degree of political stability **(Table II)**.

TABLE II: THE PUSH AND PULL FACTORS

PUSH FACTORS	PULL FACTORS
• Poor, unsatisfactory working conditions, low prospect of professional development	• Better working conditions, job and career opportunities and professional development
• Poor and eroding wages & salaries (South Africa $500 - $3500/month **cf** $5,000 - $10,000 recipient countries)	• Higher wages and income
• Poor living conditions – lack of transport, housing, other utilities	• Higher standard of living
• Under-utilization of qualified personnel	• Full utilization and regard of professional worth
• Lack of research/other facilities: support staff, inadequate research funds, professional equipment/tools	• Substantial research funds, advanced technology, modern facilities experienced support staff
• Social unrest, political conflicts and wars	• Political stability
• Declining quality of educational system	• Modern educational system, prestige of 'foreign training'
• Mediocrity, discrimination in appointments and promotions (cronies/lackeys of civilian/ military dictators and potentates)	• Meritocracy, transparency active recruitment by recipient countries
• Lack/limitation of civil liberties and freedom, social insecurity, tardy judicial system	• Civil liberties, intellectual freedom, security and the rule of the law

These factors embrace social-cultural reasons, family affiliations as well as business ties, as seen in **Table III**.

STICK FACTORS	STAY FACTORS
Reasons for not leaving home country.	(Retention: reasons for skilled health professionals staying in their new country).
• Cultural comfort (home).	• Relatives living also in new country.
• Social and professional networks.	• Better opportunities for children.
• Family ties.	• Ability to send remittances home (from Nigerian Diaspora: Remittances 8 yrs ago $500 million 2006 - $4 billion: 2nd highest foreign revenue source after oil).
• Owning a business.	

BRAIN DRAIN AS HEALTH WORKFORCE CRISIS

Brain drain is not only a potent, but is also a real health workforce crisis because of:

(i) the problems it causes
(ii) its impacts/effects especially the irredeemably negative

(i) BD Why Is It A Problem?

Many reasons abound to portray the problems of BD, notable among which are:

(a) The huge investment in training the health professionals by the sending countries, who are subsequently lost to the recipient countries through this hidden transfer of wealth/technology.
(b) Migration widens the service provision gap between the drained and recipient countries (1 doctor: 500 people in the recipient nations vs 1 doctor: 25,000 people in the sending countries)[12].
(c) There is increased dependence on foreign technical assistance by the sending countries as the gaps left by migrating health professionals are rather filled at higher cost to these nations with professionals from rich countries.
(d) BD creates a political and moral paradox, as the poorer African countries is are giving developmental assistance and budgetary supplement to wealthier recipient countries; making the rich nations richer and the poor nations poorer[10,12,13].

(ii) BD Its Impacts / Effects

Positive Impacts

BD, as much as it looms large as a health workforce crisis, still has some positive aspects worth acknowledging. These include:

(a) Contribution of new skills (talent pool) when migrants return, as in the Ireland experience;
(b) Remittances boost household welfare, for example, Nigerians in diaspora are said to contribute informally to the economy through remittances and gifts to their families back in the country, to the tune of US$1.2 billion yearly;
(c) Remittances from those in diaspora support the respective national balance of payments of their countries'; Nigerians are remitting US$2.8 billion officially to the economy, whereas about US$45 billion is reported to be remitted back to Africa, yearly;
(d) The emigrants contribute to Africa's greatest resource - that is her people, the sons and daughters of the soil, the relevant involvement of these Africans in ICT and digital revolution is creating more networks and opportunities for information exchange around the world.
(e) More Africans are taking part, and mounting the world stage, in global debates, inventions and development, thus making Africa to no longer remain marginalised or isolated;
(f) By far, and perhaps the greatest of the positive impacts is the fact that Africa is still able to produce output of skilled professionals actively sought by countries from abroad, where they compete favourably; this is thus a foundation that can be continuously built upon for the future[5,21,32].

Negative Impacts

The foregoing notwithstanding, there is still no equitable comparison or balance for the socioeconomic costs and adverse effects on the economies of the sending nations of the outflow of skilled health workforce in the form of BD.

Socially, BD makes it difficult creating a middle class (of doctors, engineers, other professionals), but rather gives rise to a two-class society: a class of largely unemployed and poor people and that of a few very rich, most likely corrupt bureaucrats and officials. BD also gives rise to poor leadership, as a large educated and empowered middle class, of every hue, would have ensured enforcement of good governance and due process, with the opposite being the case where there is a drain of this class. Furthermore, BD continually

depletes the health workforce: the poor are forced thus to seek medical care from traditional healers while the elite fly to the West for their routine medical checkups[1,13,21].

Economically, if BD persists unchecked, it leads to the best and brightest of brains, skills and hands being lured outside the shores of their lands, thereby slowly bleeding Africa to death. Economic growth and poverty alleviation will remain mere academic exercises where the natural human resources and those with knowledge to create wealth are rather 'exported'. More so, those emigrating out of Africa, especially the health workforce are the ones with technical expertise, entrepreneurial and managerial skills, leading to increasing endemic corruption and making it easier for the citizens' will and good to be eroded. Additionally, a large middle class, where the health workforce belong, would have built a large tax base which, in turn would enable good and well equipped hospitals, among others, to be built[6,10,13,21].

REDRESSING THE BRAIN DRAIN CRISIS

There is a brain drain crisis in our hands, and it is not about to end. The reality is that an African professional will not resign from his $50,000 a year job to accept a $500 a year job in Africa, no matter his degree of patriotic fervour[13]. Therefore, what measures can be taken to induce Africans, particularly the health workforce, living abroad to return home and to encourage these professionals to remain at home?

A. The government will need to:
   (i) Build a data bank of health professionals as lack of data is a significant problem[10,12,30];
   (ii) Change national priorities increase education and health budgets[5,10,13];
   (iii) Invest in infrastructure and rehabilitation of healthcare systems, as the current efforts towards the National Health Insurance scheme and the VAMED projects appear to be addressing[5,6,11,27].

B. Embracing the diaspora option: The diaspora option ('virtual participation') is that which encourages highly skilled expatriates to contribute their experiences to the development of their country without necessarily physically relocating. This concept and orientation emerged in the 1990s and appears a more realistic strategy to alleviate BD consequences. It is that which has given rise to conception of Association of Nigerians Abroad (ANA), Nigerian National Volunteer Service (NNVS), NIDO (Nigerians in Diaspora Organisation), with July 25 declared as Diaspora Day in Nigeria every year. This is what has also informed the refocusing of NEPAD (the New Partnership for Africa's Development), the formation of ANPA (the Association of Nigerian Physicians in the Americas), and the MANSAG (Medical Association of Nigerian Specialists and General Practitioners), all geared towards promotion of collaboration and positive action between Africans abroad and those at home[5,18,21,32-34].

C. Strategies for managing the 3 major factors motivating health workforce BD or demotivating the reversal of BD. These range from optimal utilisation of the skills of the health professionals, enhancement of their remuneration to provision of adequate incentive schemes to improve their attractiveness of Nigerian health professionals returning to the country or remaining within the country. These strategies stretch from the short term to long term targets. These factors are summed up in **Table IV**.

D. Finally the most effective high ground for sustainability of efforts to redress BD health workforce crisis is the palpable demonstration of sincerity of purpose, morality in governance and public administration as well as transparent accountability. After all "righteousness exalts a nation, but sin/corruption is a reproach to any people"[35].

CONCLUSION

The health workforce crisis with regards to brain drain and 'brain waste' of medical professionals is critical. The reasons sustaining this scourge are topical and real. Any investment into this scenario has a favourable cost-benefit outcome; it is not only ethically sound, socially responsible, but also politically sensible and morally correct. No effort should be spared in creating the necessary political, social and economic conditions that would serve as incentives to curb the brain drain.

TABLE IV: STRATEGIES FOR MANAGING THE MAJOR FACTORS MOTIVATING BD

	Issue	Motivation to Migrate	Suggested Management Strategies	
			Short-term	Long-term
1.	Doctors trained to levels superior to local health realities.	Doctors complain of 'brain waste', and seek better opportunities for professional development in countries with better medical infrastructure.	Develop basic minimum standards for all general hospitals, and provide emergency funding for maintenance to equip hospitals to standards that make medical practice rewarding for patients and staff; provide inexpensive loan schemes to assist doctors set up private clinics and hospitals, particularly in rural areas, that meet detailed minimum standards.	Encourage establishment of paying private universities to train doctors; training of allied medical staff such as assistant medical officers, community health officers in rural areas.
2.	Poor remuneration.	In terms of purchasing power parity, Nigeria-based doctors typically earn about 25% of what they would have earned if working in Europe, North America or the Middle East. Emigration is viewed by underpaid doctors as the most effective strategy to address such salary disparities.	Increase public sector salaries; provide perks for resourceful doctors willing to undertake operational research and/or work on underserved diseases like tuberculosis, and in underserved (e.g. northern) regions, on a competitive basis; encourage health-based NGOs to incorporate supplemental doctors' (and other health workers') remuneration into their funding proposals.	Provide non-financial incentives such as sponsorship to overseas training, conferences; support housing and transport; well equipped centres of medical excellence where doctors with ambition are encouraged to attract international research grants would provide professional and pecuniary satisfaction.
3.	Limited incentives for overseas-based Nigerian doctors willing to relocate and work in Nigeria.	Scores of Nigerian doctors currently overseas are willing to return to Nigeria provided appropriate employment opportunities are available. Unfortunately, not only are such opportunities very scarce, there is growing unemployment among registered doctors in Nigeria Furthermore, there is little enthusiasm by locally based senior medical staff to create openings for overseas-based doctors. Also, accreditation processes are rather cumbersome.	Develop incentive schemes to improve attractiveness of return to Nigeria's health sector for overseas-based doctors, as is currently the case in Thailand and Ireland.	Strengthen bilateral agreements between Medical and Dental Council of Nigeria (MDCN) and overseas accreditation bodies, to reduce the bureaucracy currently involved in accrediting or certifying qualifications by the returning doctors; provide stimulating environment for intellectual growth such ancillaries as computers, internet, learned journals.

**Modified from Awofeso N. BMJ, 2004*[29]

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