Global Journal of Arts, Humanities and Social Sciences
Vol.7, No. 10, pp.31-54, December 2019
Published by ECRTD-UK
Print ISSN: 2052-6350(Print), Online ISSN: 2052-6369(Online)

EMIGRATION OF HEALTH PROFESSIONALS: AN IMPEDIMENT FOR ACHIEVING HEALTH MILLENNIUM DEVELOPMENT GOALS 4 & 5 IN THE DEVELOPING COUNTRIES

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ABSTRACT: *Aside the apathy of health professionals towards the rural health delivery due to lack of basic infrastructure and poor working condition, emigration of health professionals from the developing countries to developed and rich countries had been a major impediment for achieving the health Millennium Development Goals (MDGs) in its 15 years of implementation. The designers of the programme had failed to take into cognizance emigration of health providers (the implementing tools of health MDGs) and its effects on achieving the targeted goals in the developing and poor countries. Literature on emigration of health professionals before and during the implementations of health MDGs revealed that health professionals were moving out in large numbers to other destinations and consequently, the developing countries were left with very small fragment of supply of health providers as against their increasing population. The paper therefore examined the effects of emigration of health professionals on the indicators of MDGs 4 and 5, as well as the spatio-temporal trends of their destinations. Push-Pull and Good Governance Models provided the frameworks. Primary data were used to analyze the spatio-temporal trends, factors and consequences of emigration of health professionals in Nigeria between 1896 and 2010 in three selected health institutions in Southwestern Nigeria, while secondary data were sourced from the Nigeria Demographic and Health Survey (NDHS) 2008 and 2013 reports. These were used to explain the inadequacy of health providers in the country vis-à-vis their impacts on the indicators of MDGs 4 and 5 in the Six Geo-political Zones of Nigeria. In addition, the spatio-temporal trajectories of emigrated health professionals were mapped and analyzed to show the benefited countries. The findings showed that emigration of health professionals has been on the increase over time. This has contributed majorly to the inability of achieving the targeted MDGs 4 and 5 in some parts of the country, particularly in the rural areas and crisis prone geo-political zones in Nigeria. The benefiting destinations were majorly the United Kingdom followed by the United States of America, Canada, Saudi Arabia and UAE, where the need of health professionals is seemed to be superfluous. The study concludes that the rate of emigration of health professionals is alarming due to push factors in the country and which if not checked, could hamper the nascent achievements of MDGs 4 & 5 and healthcare delivery in Nigeria.*

KEYWORDS: emigration of health professionals, health millennium development goals, developing and developed countries, healthcare delivery in Nigeria.

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INTRODUCTION

Background of the Paper

The inability of developing and poor countries of the world to achieve the health Millennium Development Goals (MDGs) 4 and 5 targets, which meant to reduce child mortality by two-thirds and improve maternal health by three-quarters respectively has become a challenging issue among inter-governmental agencies and international organizations, after 15 years of its implementation. The planning and implementation of the programme were not carried out on a leveled playing field of availability and accessibility of health professionals between the world's poorest and richest countries (Martineau, Decker & Bundred, 2002). This was obvious at the rate in which the core health professionals (doctors, nurses and other paramedics) required for the implementation of the programme moving away from their home countries (where they are needed most) to developed and rich countries where they were supposedly superfluous (Dussault & Franceschini, 2003 & Abejide, 2009).

Majority of the world's poorest countries, particularly those in the sub-Saharan Africa countries have been experiencing losses of their skilled health professionals, ever before the formulation and during the implementation of the health MDGs via brain drain (Dovlo & Martineau, 2004; Stilwell, 2004; Hagopian, 2004, 2005; Kirigia et al, 2007; Pillay, 2007; Abejide, 2009; Fadayomi, 2009; Mullan et al, 2011 & Akhenaten et al, 2013). Despite the fact that those underprivileged countries are resource-constrained, crisis prone and war-ravaged and do not have enough medical schools to train skilled health professionals, yet, few of them being trained locally are leaving their home countries to the world's richest countries (Martineau, Decker and Bundred, 2002; Abejide, 2009 & Mullan et al, 2011). This therefore resulted in a loss of capacity of the health systems to deliver quality healthcare (MDGs 4 & 5 inclusive) equitably, mostly, in the rural areas of the sub-region and Africa in general. However, the achievements of the set targets of MDGs 4 and 5 would have been a landslide globally, if the migration dynamics of health professionals was considered by all stakeholders concerned with health issues and the designers of the programme (Martineau, Decker & Bundred, 2002).

Statement of Problems

Prior to the take-off of health MDGs in 2000, the global demand for health professionals increased on a large scale. The rich and developed countries wanted to maintain the successes they have achieved over time in the health sectors, particularly in the child-mother health. And, since global demand of core health workers exceeds supply, the flow of health professionals across borders becomes high (Pillay, 2007). Core health professionals moving from both rural and urban level poor developing public health sector to well organized and developed health sector. The movement is as a result of pull forces attraction via robust and prospering economy, operational social welfare incentives and technological knowhow working properly in rich and developed countries (Abejide, 2009 and Akhenaten et al, 2013). As a result, the developing countries are left with very small fragment of supply of health professionals to administer health policy and programme, as against their increasing population.

Aside the pull attraction of health professionals toward rich and developed nations, push forces generating by developing countries, particularly sub-Saharan African states have propelled emigration of the professionals. These forces have been in form of social, economic and political milieu that have made the sub-region repulsive for skilled professionals, since the era of statehood and self-determination (Fadayomi, 2009). In other words, forces propelling emigration from the developing countries are pivoted on two stands; bad governance and political instability. The former includes weak health system, economic crisis and corruption, low remuneration, poor working environment, lack of professional development opportunities, among others. The latter comprising political violence, insecurity, kidnapping, robbery, religious war or tribal killings, to mention just but a few (Kirigia et al, 2006). In sum, emigration determinants of the push (from origin) and pull (into destination) forces working together have worsened the already weak tertiary, secondary and primary health systems, making it extremely difficult for countries in sub-Saharan Africa, particularly Nigeria to achieve the health MDGs 4 and 5 by 2015.

The paper therefore poses some questions with respect to the above stated problems, which were answered in the subsequent sessions: What has been the trends of emigration of health professionals over time and at micro level? Where are the major destinations of these professionals? Why are they emigrating? What are the negative impacts of emigration of health professionals on healthcare delivery in general and particularly health MDGs 4 and 5? How could emigration of health professionals be managed to the advantage of the source countries? What roles could benefiting countries of these professionals, regional and international organizations, particularly those formulating health policy play to sustain healthcare programmes in the developing and poor countries?

Goals of the Paper

In order to answer the questions posed above, the paper therefore evaluated the trends (volumes, direction and destinations) of emigrated health professionals between 1986 and 2010 from selected two tertiary and one secondary health institutions in the South-west Geo-political zone of Nigeria. The trends of emigration were juxtaposed with child mortality and maternal health indicators based on the Nigeria Demographic and Health Surveys (NDHS) of 2008 and 2013 reports. These indicators were further analyzed in the six geo-political zones of Nigeria alongside the targets of health MDGs 4 and 5. Further, the paper examined factors prompting emigration of core health professionals and its consequences on equitable health care delivery. And, finally, it concluded by recommending some measures to mitigate emigration of health professionals and sustain the hitherto achievement of health MDGs in Nigeria.

To attempt the above exercise, the paper was divided into five sections. Section one dealt with the background to the paper, statement of problems and goals of the paper. Section two provided the conceptual and theoretical explanations in which the existing scholarly works on trends, causes and consequences of emigration of highly skilled professionals were reviewed and two conceptual frameworks- models of emigration of health professionals and good governance were adopted. Section three explained the methodology and methods of data collection. And finally, sections four and five respectively presented and discussed the collected data and concluded with suggested recommendations.

Conceptual and Theoretical Explanations

Trends in Emigration of Health Professionals in Developing Countries

The most common destinations for SSA-trained doctors, nurses and pharmacists were said to be the United Kingdom (UK), United States (US) and Canada, while other paramedics, such as medical laboratory scientists move to the oil-rich Gulf States (Hagopian et al, 2004; Docquier and Barghava, 2007; Clemens and Pettersson, 2008; Clemens, 2011). Therefore, the direction of their movement is majorly South-North and South-far East routes.

In the case of the volume of migration of health professionals from the developing countries, it was established that migration trends among the trained physicians in 28 SSA countries increased between 2002 and 2011, except for South Africa with a decreasing trend (Akhenatem, Cağlar and Sten, 2013). In 2006, the World Health Organization (WHO) annual report officially acknowledged that out of 57 countries, 36 of them in SSA suffer from severe shortage of health workers, such as doctors, nurses, pharmacists and medical laboratory scientists (MLS). Prior to the take-off of the health MDGS, between 1995 and 2001. Clemens and Pettersson (2006) reported that Tanzania and Zambia had lost 52% and 57% respectively of their physicians to developed and rich countries. In 2000, the starting year of the implementations of health MDGs, health professionals from Nigeria working in the US and UK were recorded to be 8,954 and 3,415 respectively (Docquier and Marfouk, 2006). In the same year, Clemens (2007) estimated the number of emigrated nurses from Nigeria to be 12,579, or 12 per cent of the total number of qualified nurses. In the fifth year of health MDGs' implementation, an estimated 8,805 of doctors and nurses qualified in Nigeria working in developed countries of the US, UK, Canada and Ireland (AMA, 2005 and MCI, 2005).

Unfortunately, not only the practicing physicians are moving, but also, the graduating medical students. In South Africa, out of the 19,500 graduates produced by the medical schools between 1990 and 2005, only 9,304 of them registered to be practicing in the country (Pillay, 2007 & Mullan et al, 2011). Ten per cent of them were reported to be practicing in Canada, 6 per cent in the UK and the remaining, in the USA, while few of them were in the OECD countries (OECD, 2003, Sankore, 2006). Hagopian et al (2004) identified 5,334 US-based international medical graduates who received their medical degrees from medical schools based in sub-Saharan African countries, with Nigeria, South Africa, Ghana, and Ethiopia, among others led flow.

Causes and Consequences of Emigration of Skilled Health Professionals in Developing Countries

Literature on migration of skilled professionals from SSA countries has attributed the causes of emigration to the push-pull forces emanating simultaneously from the origin and destination countries (Kirigia, 2006; Pillay, 2007 and Akhenaten et al, 2013). Migration of health professionals therefore depends on personal values as well as on the interplay of complex social, economic, political forces. The push-pull forces prompting migration of health professionals fro and into, were perceived from two angles: 1) the economic and 2) non-economic forces (Pillar, 2007). The economic push-pull forces are related to labour market conditions, such as employment rates and demand, wage differentials and benefits (Dovlo, 1999 and Hamilton and

Yau, 2003). In addition to these are work context issues, such as organizational capacity, workload and work associated risks, and career development opportunities (Pillar, 2007). The non-economic forces, which are termed as socio-political factors that prompt emigration of health professionals include secure and conducive living and working conditions (Kirigia, 2006), political stability and crime levels (Pillar, 2007) and presence of a network of fellow citizens in the host country (OECD, 2002).

The negative consequences of emigration of health professionals from source countries to recipient countries are of a great concern in literature. Pillay (2007) listed some findings of studies that corroborated the negative impacts of emigration of health professionals on developing countries' healthcare and health sector. First, a study conducted by the World Bank in 2001 revealed that there is a significant negative correlation between health worker density and mortality rates. Second, the study carried out by Mercer, Dal Poz, et al in 2002 showed a postive correlation between quality of care and healthcare outcomes and the availability of health personnel. In sum, as the number of trained health personnel drops, the ability of systems to deliver the requisite health services is reduced, both in terms of quality and quantity (Pillay, 2007).

Hagopian et al, (2005) further added three areas of negative concern in which emigration of health professionals affecting the source countries, particularly, the sub-Saharan Africa. The first is the loss of health services available to the populace. Sankore (2006) submitted that sub-Saharan Africa is the only sub-region where the absolute number of shortage of health workers (817,992) far outstrips the current stock of 590,198. Hagopian, et al, (2005) revealed that there are no more than 22 pediatricians licensed in the entire country of in Ghana, while not more than 10 specialists of any kind practicing in the primarily rural region north of the capital city, Accra. For instance, the reported doctor-patients ratio in the US was 1 to 358, the UK, 1 to 610; Italy, 1 to 165; among others. In its report, UNDP/Human Development Report (2004) corroborated the submission of Kana in the sense that the major benefitting countries of destination have very high ratio even above the WHO recommendation. For instance, the reported doctor-patients ratio in the US was 1 to 358, the UK, 1 to 610; Italy, 1 to 165; among others.

The second negative effect of emigration of health professionals is it diminishes the health sector's ability to organize and expand. And the third consequential effect is the depletion of important elements of the middle class in the sub-region. And finally, a negative impact termed as stress of or overloading on left-behind colleagues. This means that few left behind experienced colleagues are burdened with duty calls and consulting hours, therefore, working under stress; hence, low productivity and gradual collapse of some sensitive areas of health delivery. (Stilwell et al, 2003; Kirigia, 2006; Pillar, 2007 & Akhenaten et al, 2013).

Conceptual Theories and Frameworks

Two models adopted to explain the dynamics (trends, causes and consequences) of migration of health professionals in achieving the health MDGs 4 and 5 were the Lee's push-pull model, postulated in 1966 and the Good Governance Model developed by United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP, date not specific). The Lee's model posited that both the destination and the origin have characteristics that attract or repel migrants

(Figure 1). Individuals perceive these characteristics differently; hence, subjectivity plays an important role in their reaction to the stimuli they receive from the outside environ. But, basically, the push-pull model gives an idea of movement of people away from an area emitting 'push' forces/negative stimuli to an area with pull forces/positive stimuli.

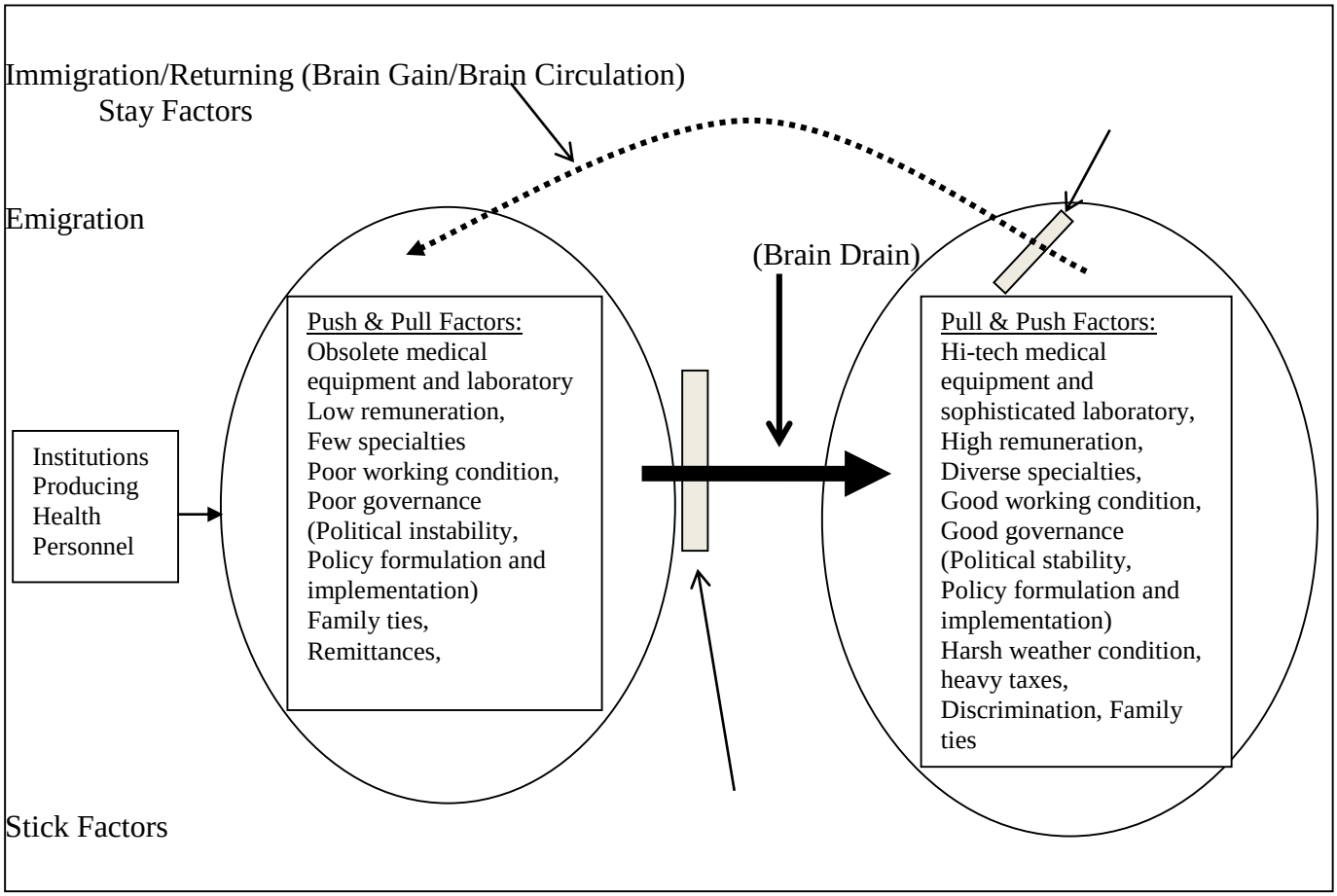


Fig. 1: Push-Pull Model of Migration
Source: Lee (1966) and modified by Abejide (2016)

Fig. 2: Good Governance Model
Source: Adapted from Oyefara (2013); UNESCAP (date not specific)

The Good Governance Model according to the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), the concept "governance" means the process of decision-making and the process by which decisions are implemented (Figure 2). Since governance is the process of decision making and the process by which decisions are implemented, then, an analysis on the formal and informal actors involved in the processes (Oyefara, 2013). Formal and informal structures of governance have been set in place to arrive at decision-making and implementing decisions made. Each of these structures depends on the level at which it operates, whether as decision-makers or implementers. However, before a government can be said to have administered good governance. According to (Oyefara) 2013, good governance has eight major characteristics, these are: participation, consensus orientation, accountability, transparency, responsiveness, effectiveness and efficiency, equitability and inclusiveness and following the rule of law.

In view of the above models, good governance, push-pull forces of migration of health professionals and achieving health MDGs 4 and 5 appear to be interwoven. Nigeria since independence in 1960 has been experiencing different forms of government, from democratic civilian to military back to civilian (1960-1983); military to interim civilian back to military (1983-1999) and back to democratic civilian since 1999 till date. Each of these administrations in one way or the other have neglected majority of the above-mentioned characteristics, which has resulted to the destruction of the essence of governance in the country. This however, has affected the processes of decision making and implementation and therefore formed a combination of push factors generally driving out health professionals from the country. The factors include, weak health system; insecurity, such as violence at the workplace and poor working conditions; low remunerations; lack of professional development opportunities; nepotism in recruitment and promotion; political unrest and civil or religious wars. Professionally speaking, the key push factors propelling emigration of health workers from and reasons of not returning after several years of sojourning back to Nigeria are, lack of research funding; poor research facilities; limited career structures, poor intellectual stimulation and lack of the evidence-based decision-making culture, leading to lack of potential contribution of researchers to national health development (Kana, 2009).

Unfortunately, the implementation of health MDGs began in the second year of the present democratic civilian government, which was pivoted on a very weak characteristics of good governance. The administration inherited severe corruption at all levels of its ministries and agencies with collapsed socio-economic infrastructure. Therefore, skilled health providers and other allied professionals to participate in the key areas of achieving the targets of health MDGs 4 and 5 had left the country.

METHOD AND MATERIALS

Sampling Technique and Sample Design

Two sampling techniques were used to design and collect data in the paper. First, is the primary sourced data, designed to acquire information on emigrated core health professionals in two tertiary and one secondary health institutions in 2012. The second framework is that of the Nigeria Demographic and Health Survey (NDHS, 2008& 2013), designed to provide population and health indicators at national, zonal and state levels. The sample design allowed for the computation and analysis of both primary and secondary sourced data.

Two tertiary teaching health institutions and one secondary teaching health institution were purposively selected in the southwestern Nigeria for the study. The two tertiary institutions are the University College Hospital (UCH), Ibadan in Oyo State and Obafemi Awolowo University Teaching Hospital Complex (OAUTHC), Ile Ife in Osun State, and Adeoyo Maternity Teaching Hospital (AMTH), Ibadan in Oyo State, as the only secondary health institution in the sample. The selection of these institutions was based on two grounds: one, the year of their existence, as the three institutions are the oldest health institutions in the respective states and two, for the relatively long migration experience they are known for overtime. The standardized sampling techniques of the NDHS were adopted for the secondary data.

Sampling Size

To capture the emigrated categories of health personnel in the three institutions, a systematic random selection of 348 respondents was carried out from complied lists of four. Ten per cent of the population in each category of health professionals (doctors, nurses, pharmacists, and medical laboratory scientists) were selected in the UCH and OAUTHC and 20% in AMTH.

The 2008 NDHS sample was selected using a stratified two-stage cluster design consisting of 888 clusters, 286 in the urban and 602 in the rural. A representative sample of 36,800 households was selected for the survey, with a minimum target of 950 completed interviews per state. On the other hand, the 2013 NDHS sample was selected using a stratified three-stage cluster design consisting of 904 clusters, 372 in urban areas and 532 in rural areas. A representative sample of 40,680 households was selected for the survey, with a minimum target of 943 completed interviews per state. In both of the surveys, the number of households was distributed proportionately among its urban and rural areas in each state.

Methods of Data Collection

The technique used to collect data about emigrated health professionals in the three health institutions was; the administration of a questionnaire to non-migrant and potential migrating health professionals. The method adopted to collect data for the 2008 and 2013 NDHS was the administration of three sets of questionnaires, namely; the Household, Women's and Men's questionnaires.

FINDINGS AND DISCUSSIONS

Table 1: Primary Data Source of Destinations of Health Professionals, Southwestern Nigeria, 1986-2010.

Destination	Doctors	Nurses	Pharmacists	MLS	Total
UK	61	122	5	2	190
USA	44	103	7	5	159
Canada	15	51	3		69
Saudi Arabia	2	22		6	30
Dubai	8	12	1	2	23
South Africa	9	5	1		15
Australia	11	1			12
India	7	2	1		10
Germany	4	1	1	1	7
Ireland	3	10			13
China	1	2			3
Jamaica		8			8
Omar		3			3
Caribbean		4			4
Gambia	2	1			3
Qatar		2			2
Egypt	1				1
Spain	2	1			3
Ghana	1	1		1	3
Trinidad & Tobago	3				3
Brazil	1	2			3
Cote d'Iviore	5		1		6
Botswana	1				1
Netherlands		1			1
Sweden		1			1
Japan	2				2
Finland		1			1
Total	183	356	20	17	576

Source: Author's Fieldwork, 2014

Table 1 and Figure 3 depict the aggregate volumes and directions of emigrated doctors from the South-west geo-political zone of Nigeria. The United Kingdom (UK) is the major orthodox destination for the South-North move of doctors from the country, in particular from its south-west geo-political zone.

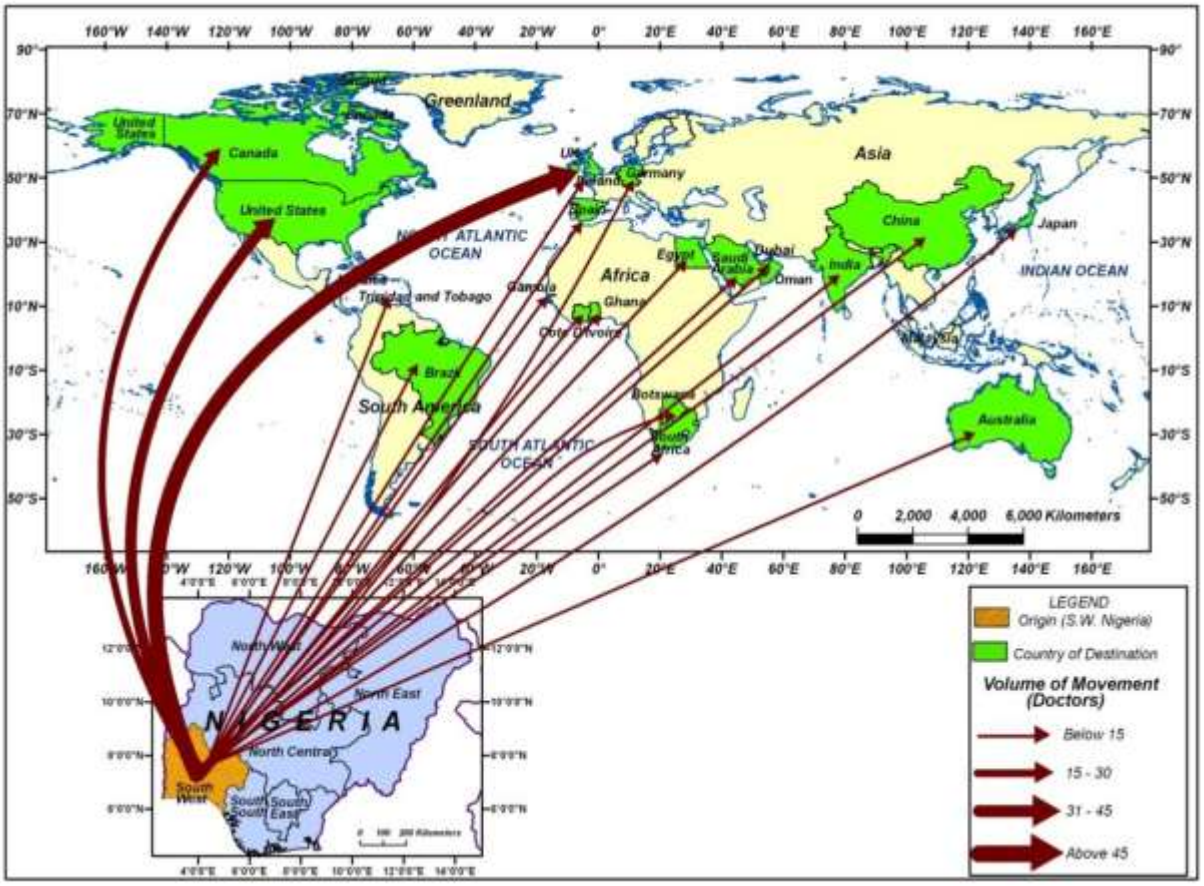


Fig. 3: Spatial Patterns & Destinations of Emigrated Doctors from South-West, Nigeria, 1986-2010
Source: Author's Fieldwork, 2014

The vectors, showing the volumes and directions of the moves, indicate the United States (US) and Canada come next; followed by Australia, South Africa, Dubai and India, to mention but a few.

The directions of the moves of nurses from the South-west geo-political zone of Nigeria were revealed in Table 1 and on Figure 4. The major direction is towards the developed North, which comprises the UK, US and Canada; followed by those in the south-west, that is, Jamaica and Brazil.

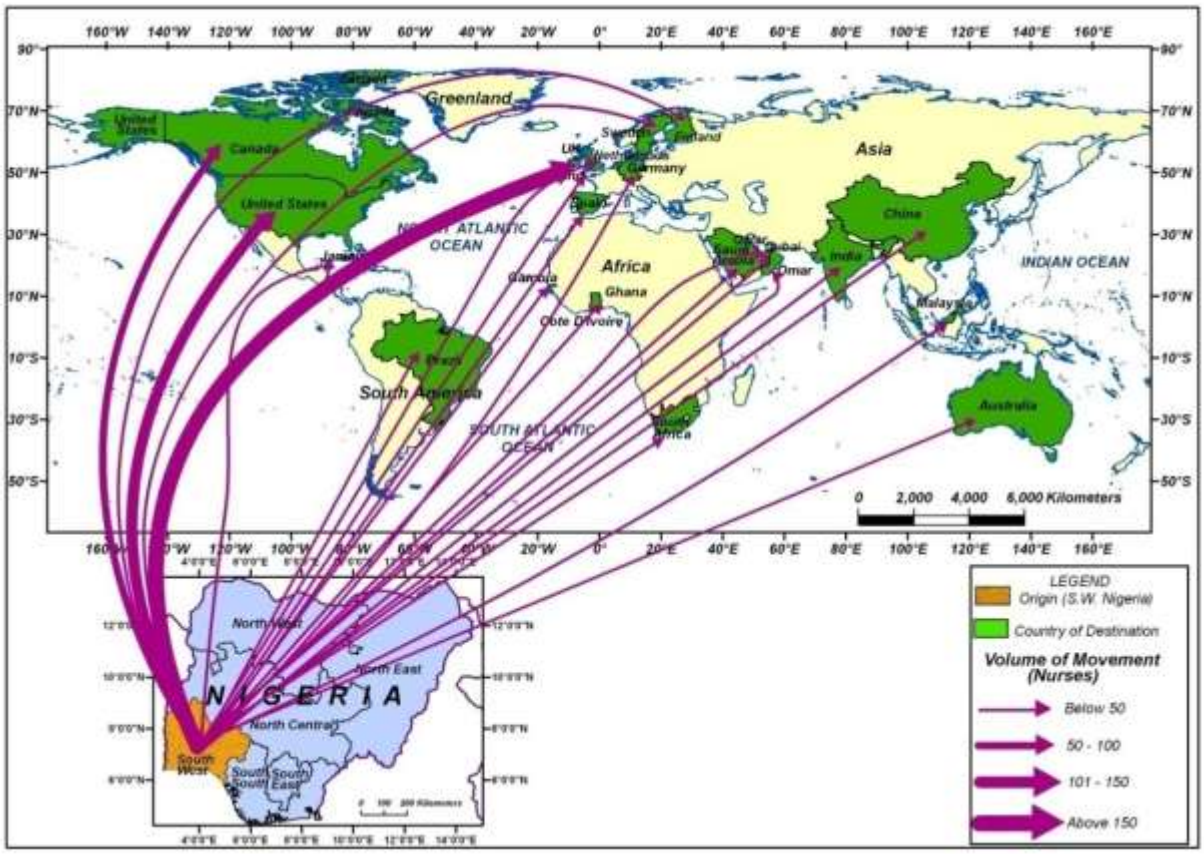
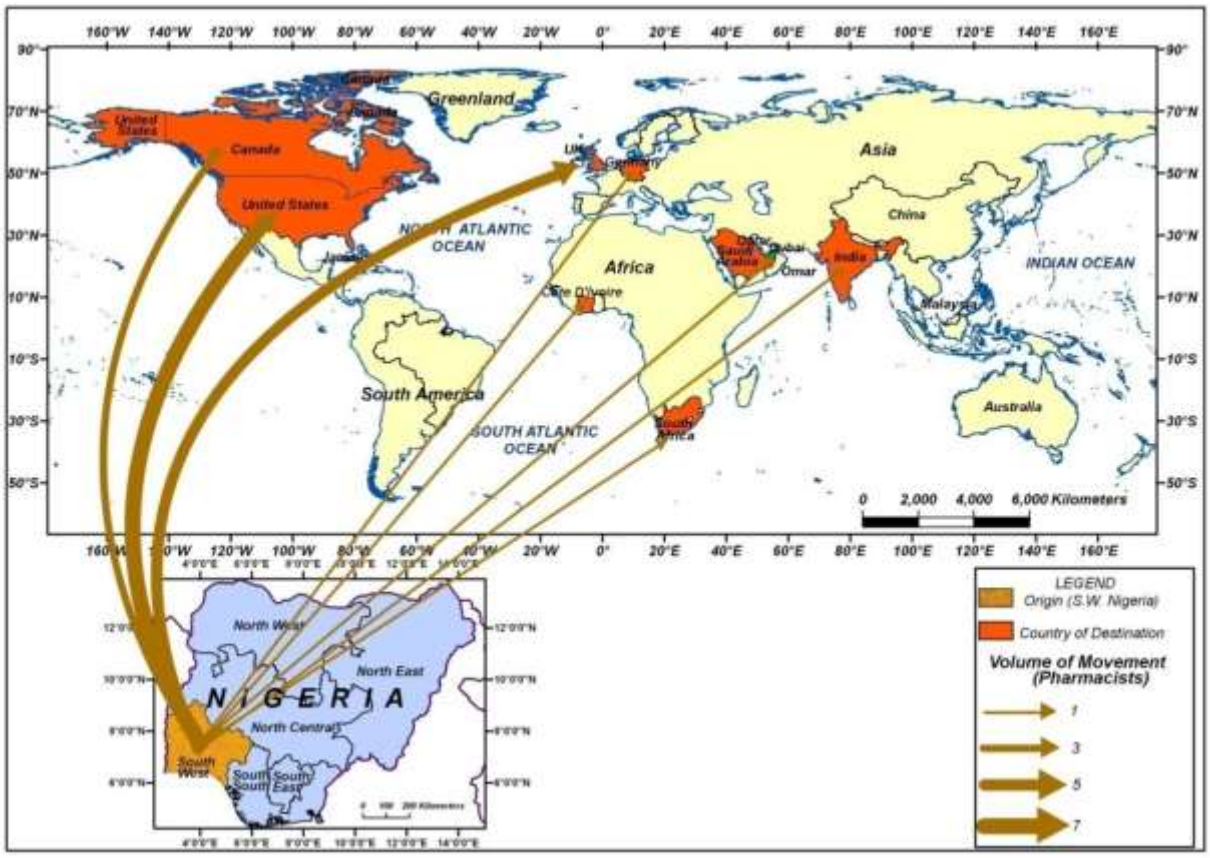


Fig. 4: Spatial Patterns & Destinations of Emigrated Nurses from South-West, Nigeria, 1986-2010
Source: Author's Fieldwork, 2014

Other destinations are the Middle-East, Europe, South-East Asia and Far East. Countries featuring among these other destinations include Saudi-Arabia and Dubai, Germany and Spain, India, China and Australia.

Table 1 and Figure 5 show the trends in volume and direction of pharmacists from south-west of the country. The US and Canada have the highest volumes of movers; followed by the UK.

Fig. 5: Spatial Patterns & Destinations of Emigrated Pharmacists from South West, Nigeria, 1986-2010
Source: Author's Fieldwork, 2014



Others are the Middle-East and Far East of South Asia, with Saudi Arabia and India as main hosting countries. Next is South Africa, that is, South-South route within the continent, as the destination of emigrated pharmacists from the geo-political zone.

The Middle-East, as revealed by Table 1 and Figure 6 is the major direction of Medical Laboratory Scientists (MLS) from the south-west geo-political zone of Nigeria, with Saudi Arabia as the major country.

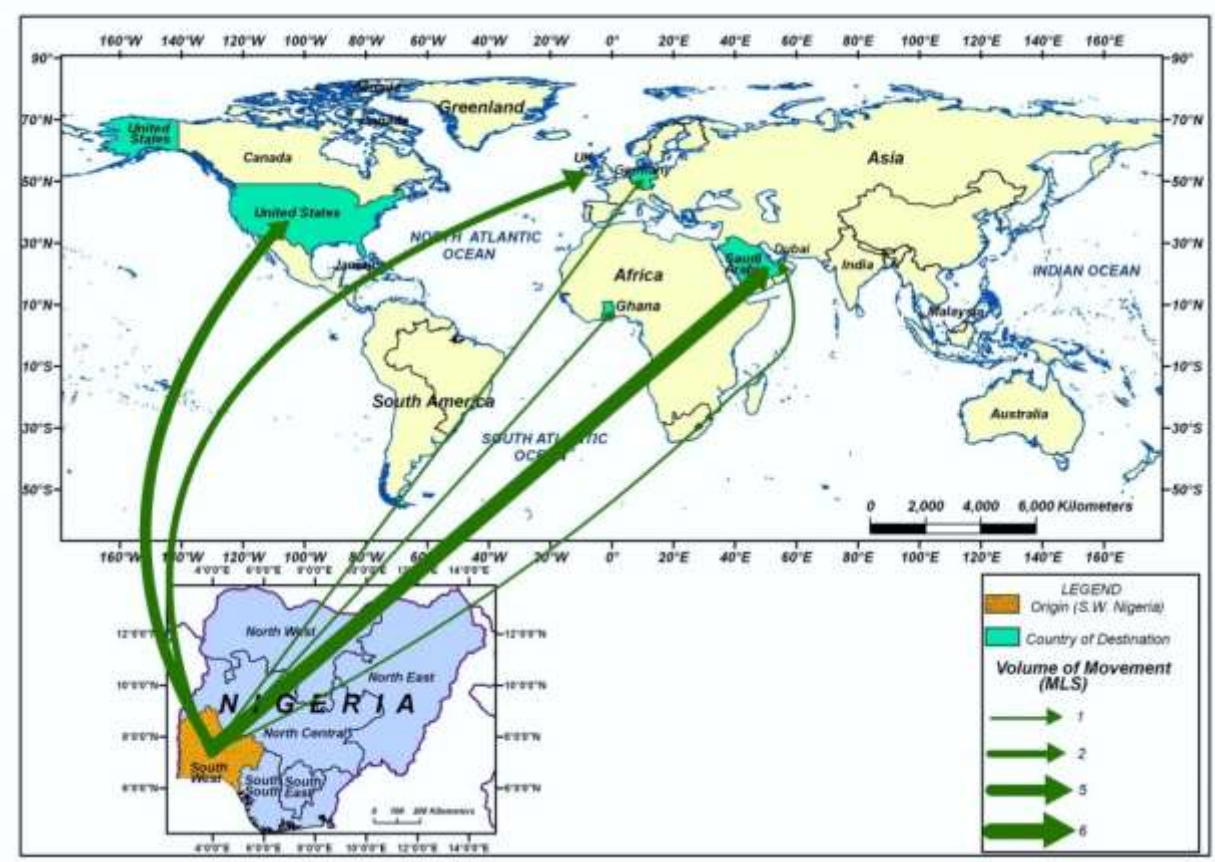


Fig. 6: Spatial Patterns & Destinations of Emigrated MLS from South-West, Nigeria, 1986-2010
Source: Author's Fieldwork, 2014

It was followed by the US and UK, while very few of the MLS moved to Europe and within the sub-region.

Table 2 indicates that the population of emigrated core health professionals (doctors and nurses) in the major receiving countries has been on the high side prior to the implementation of health MDGs 4 and 5 in 2000. The estimated figures of emigrated professionals recorded for Nigeria was 17,186, followed by Ghana (6,292), Kenya (6,014), Uganda (2,671), Zambia (1,614) and Sudan (833).

Table 2: Censuses of Professional Physicians and Nurses Born in Selected sub-Saharan African Countries Appearing in Three Major Receiving Countries Circa in 2000: Evidence from Secondary Data.

Source Country	Major Receiving Country						Row Total
	UK		USA		Canada		
	Physicians	Nurses	Physicians	Nurses	Physicians	Nurses	
Nigeria	1,997	3,415	2,510	8,954	120	190	17,186
Ghana	590	2,381	850	2,101	95	275	6,292
Kenya	2,733	1,336	865	765	180	135	6,014
Sudan	606	42	65	85	15	20	833
Uganda	1,136	714	290	291	165	75	2,671
Zambia	456	664	130	299	40	25	1,614

Source: Michael Clemens and Gunilla Pettersson (2006)

The Table above depicts a disturbing scenario that was inimical to the achievement of any set goals of healthcare programme. The expected health professionals (doctors and nurses) that are very keen to the delivery of healthcare in the developing (source) countries were residing and working elsewhere outside their home countries. This implies that the targets of health MDGs 4 and 5 targets could have been possibly attained in the developing countries (sub-Saharan African countries) had it been the colossal flight of health professionals from their home countries was considered alongside with the planning of the programme.

Table 3 reveals the multi-faceted reasons that sum up working condition as a factor for health professionals emigrating from Nigeria to other countries. Inadequate medical equipment came first with and was cited by doctors (64.6%), nurses (58.4%), MLS (62.5%) and pharmacists (36.3%). This is followed by low remuneration, by about one-fifth of the nurses (22.5%) and doctors (17.8%), a quarter of the MLS (25.0%) and a little bit above two-fifths of the pharmacists (45.5%).

Table 3: Working Condition as a Factor of Emigrated Health Professionals, Southwestern Nigeria, 1986-2010

Components of Factor Emigration	Class of Professionals									
	Doctors		Nurses		Pharmacists		MLS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%
Inadequate medical facilities	40	64.6	52	58.4	4	36.3	5	62.5	101	59.4
Low Remuneration	11	17.8	20	22.5	5	45.5	2	25	38	22.5
Inadequate funds for research	6	9.6	15	16.9	0	0	1	12.5	22	13.0
Inadequate training	3	4.8	2	2.2	2	18.2	0	0	7	4.1
Poor staffing	2	3.2	0	0	0	0	0	0	2	1.2
Total	62	99.8	89	100	11	100	8	100	170	100.0

Source: Author's Fieldwork, 2014

According to the above Table, it has been revealed that close to two-thirds (59.4%) of health professionals in the institutions were not satisfied with the equipment and facilities they are working with, hence making the component first on the list of the predisposing factors for migration. However, it is evident according to the study that health professionals are not particular about salary and wages, but the provision of the state-to-art equipment. Other reasons predisposing migration of health professionals were inadequate funds for research that nurses (16.9%), doctors (9.6%) and MLS (12.5%) cited. In addition, fewer percentages of the pharmacists (18.2%), doctors (8.0%) and nurses (2.2%) cited, inadequate training and poor staffing as another prompting factor of migration.

Tables 4 depicts majority of respondents from UCH (76.9%), AMTH (86.2%) and OAUTHC (83.3%) citing loss of expertise and experienced personnel as the leading negative impact of emigration of health professionals on the selected institutions. This is followed by decline in research work and training by 15.3, 11.2 and 2.1 per cent of respondents respectively in UCH, AMTH and OAUTHC and increase in workload by 7.8, 2.8 and 10.5 per cent respectively of those in UCH, AMTH and OAUTHC.

Further breakdown of the analysis shows majority of the doctors in UCH (79.2%), AMTH (66.6%) and OAUTHC (93.7%) affirmed emigration of their colleagues resulted in loss of skilled colleagues. Similarly, AMTH (96.2%) and OAUTHC (79.4%) had majority of their nurses assenting to a loss of expertise and experienced personnel. as leading negative impact of emigration on the Non-migrant. The same applies to all the pharmacists in UCH (100%) and to substantial percentages of MLS in UCH (50%), AMTH (33.4%) and OAUTHC (75.0%).

Table 4: Data on Negative Impact of Emigration of Health Professionals on Selected Health Institutions

Institution	**UCH**									
	Class of Professionals									
	Doctors		Nurses		Pharmacists		MLS		Total	
Impact of emigration	Count	%	Count	%	Count	%	Count	%	Count	%
Loss of expertise and experienced personnel	15	79.2	0	0	3	100	2	50	20	76.9
Increased workload	2	10.4	0	0	0	0	0	0	2	7.8
Decline in research work & training	2	10.4	0	0	0	0	2	50	4	15.3
Total	**19**	**100**	**0**	**0**	**3**	**100**	**4**	**100**	**26**	**100**
Institution	**AMTH**									
	Doctors		Nurses		Pharmacists		MLS		Total	
Impact of emigration	Count	%	Count	%	Count	%	Count	%	Count	%
Loss of expertise and experienced personnel	4	66.6	26	96.2	0	0	1	33.4	31	86.2
Increased workload of Non-migrant	1	16.7	0	0	0	0	0	0	1	2.8
Decline in research work & training	1	16.7	1	3.8	0	0	2	66.6	4	
Total	6	100	27	100	0	0	3	100	36	100
Institution	**OAUTHC**									
	Doctors		Nurses		Pharmacists		MLS		Total	
Impact of emigration of health professionals	Count	%	Count	%	Count	%	Count	%	Count	%
Loss of expertise and experienced personnel	15	93.7	22	79.4	0	0	3	75	40	83.3
Increased workload of Non-migrant	1	6.3	4	14.2	0	0	0	0	5	10.5
Decline in research work & training	0	0	1	3.2	0	0	0	0	1	2.1
No effect, vacancies are filled up	0	0	1	3.2	0	0	1	25	2	4.1
Total	16	100	28	100	0	0	4	100	48	100

Source: Author's Fieldwork, 2014

Increase in workload was mentioned by relatively very few doctors in UCH (10.4%), AMTH (16.7%) and OAUTHC (6.3%), while decline in research work and training scored lowest among doctors in UCH (10.4%) and AMTH (16.7%). In addition, very few nurses (3.2%) and MLS (25.0%) in OAUTHC believed emigration of colleagues had little or no effect on either they themselves or their institutions.

Figure 7 shows the estimates of infant and under-five deaths in the six geo-political zones and their residential location in Nigeria, as recorded in the NDHS, 2008. Generally, both estimates of the indicators were extremely high when compared with the MDGs 4 and 5 targets. The North-east geo-political zone recorded the highest estimates of both indicators (infant and under-five deaths), while the North-west zone had a very high estimate of under-five deaths, but comparatively low infant mortality. The southern part of the country recorded moderately low estimates of deaths of both infant and child, with the South-west Geo-political Zone having the lowest estimates in the country.

Aside the disparity among the Geo-political Zones, Figure 4.3 reveals a wide gap in the deaths of infant and child deaths based on residential difference (urban and rural). Further analysis of the estimates shows that approximately seven infants and six under-five children die out of every 10 children in the rural areasof the country as against one in the urban areas.

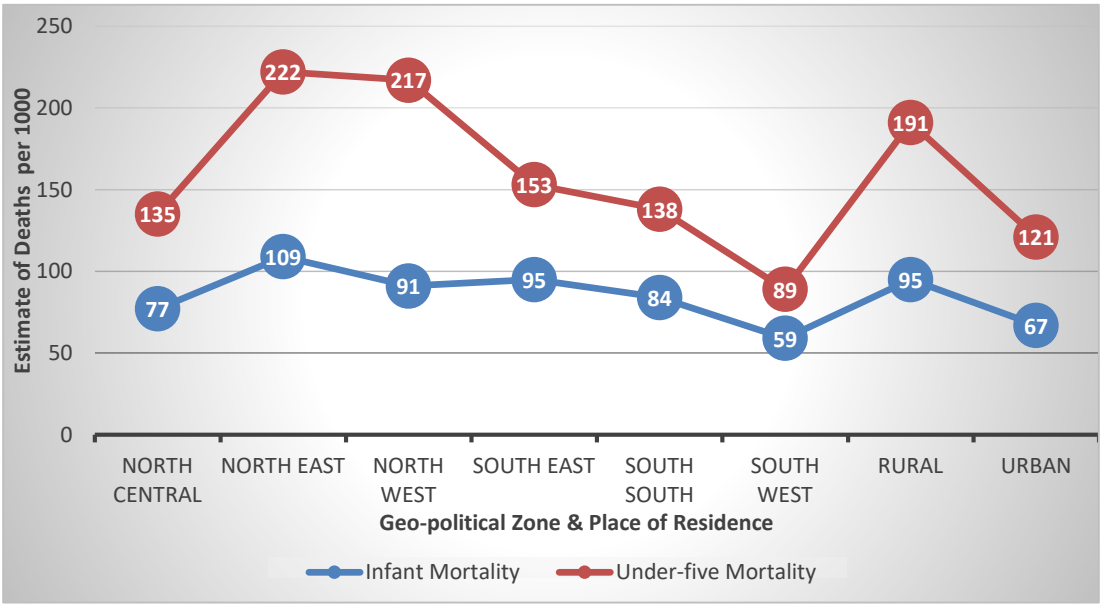


Figure 7: Infant and Child Mortality Trends by Geo-political Zones and Place of Residence
Source: NDHS, 2008

According to PRB (2014), Figure 8 indicates that a year before the expiration of the implementation of health MDGs, Nigeria, a source of emigrated health professionals could not

attain the set target of two-thirds reduction of deaths among the infant children. Analysing the data obtained from the PRB dataset in 2014, it shows that Nigeria could only achieve 54.9 per cent of reduction IMR instead of 66.6 per cent, with a standard deviation of -11.7, while the major receiving countries of its emigrated health profesionals were above the target.

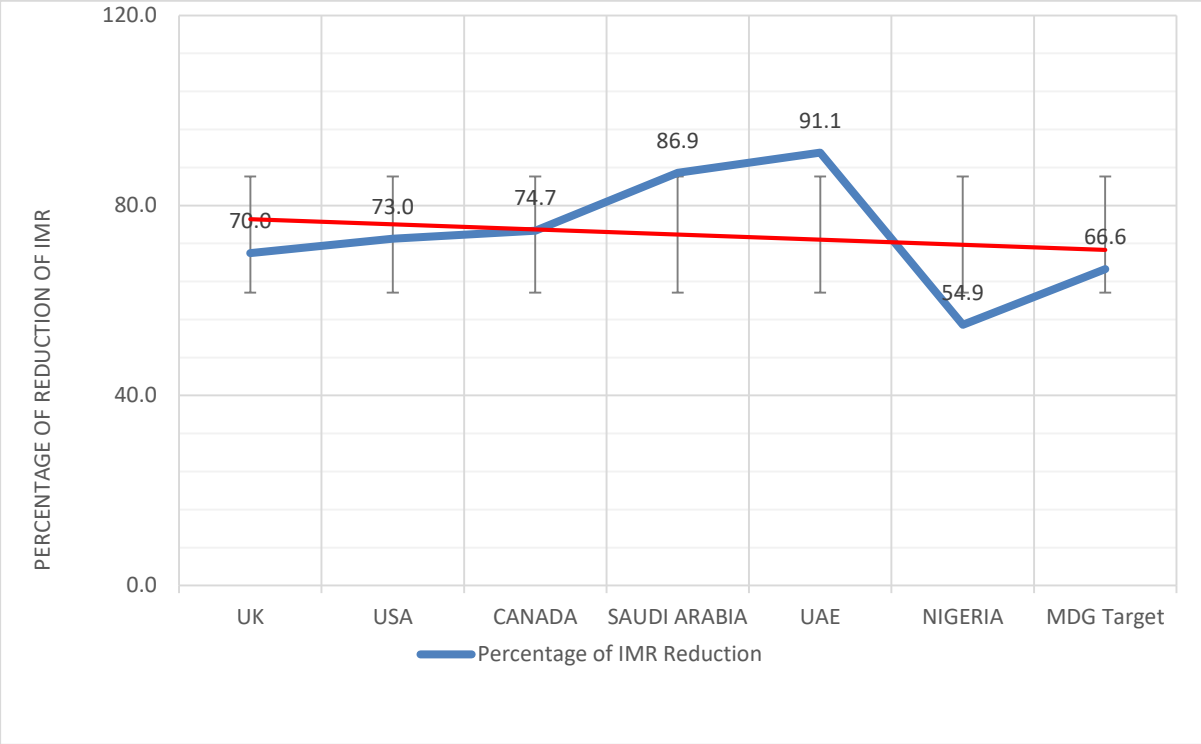


Figure 8: Percentage of IMR Reduction in Major Receiving Countries against Source Country (Nigeria)
Source: Population Reference Bureau, 2014

This on the first hand implies that the loss of large volume of the core professionalsfrom the health sector of the developing to developed countries had contributed to the inability of the country to attain the target of health MDG 4. On the other hand, the developed and rich countries of destiantion were prospering with steady decrease in the death of their infants, plus abundant and accessible health professionals, thus, attained the targets of MDGs 4 before 2015.

Figure 9 indicates that maternal mortality ratio (MMR) is very high in the Northern part of Nigeria when compared with the Southern region. In general, all the three geo-political zones constituting the North had relatively low percents distribution of women received antenatal care or delivered during child birth by skilled health professionals.

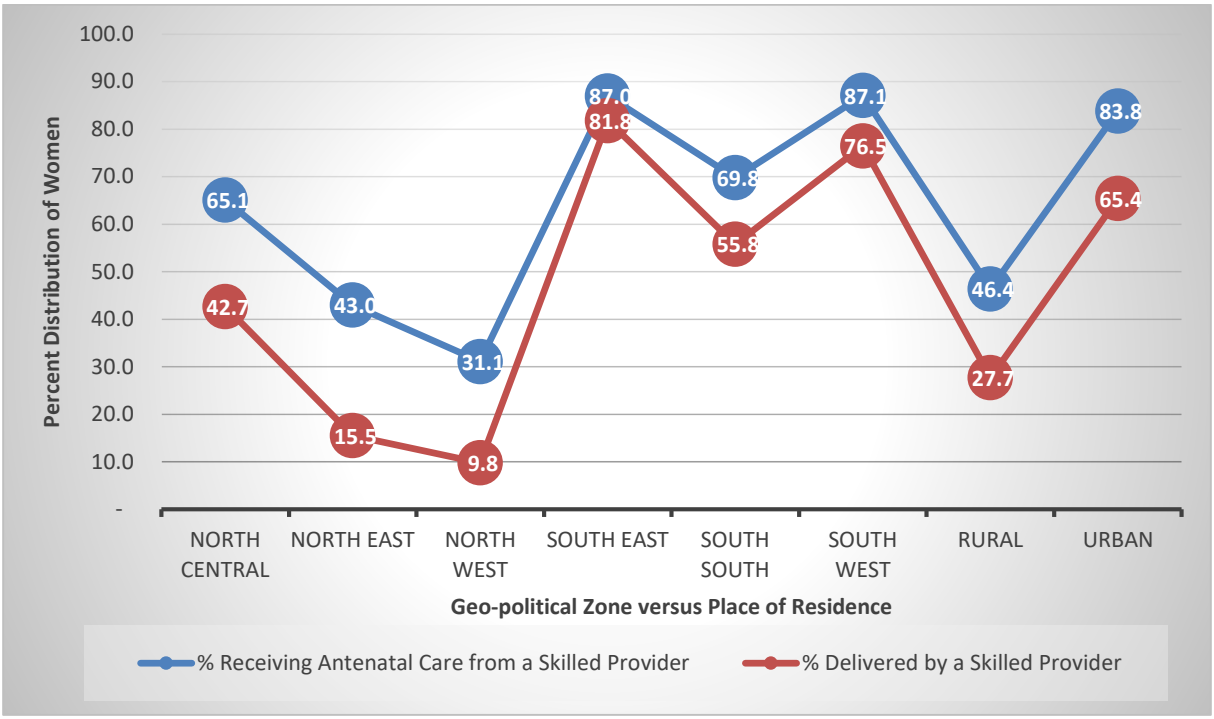


Fig. 9: Percent Distribution of Women Received Antenatal and Delivered by Skilled Provider by Geo-political Zone and Place of Residence
Source: Nigeria Demographic and Health Surveys (NDHS), 2008

On the other hand, maternal mortality ratio among child-bearing women in the rural areas of the country was very high when compared with their urban folks (Figure 4.5). Over half (53.6%) and above three-quarters (77.3%) of child-bearing women sampled in the rural area respectively could not receive antenatal care and being delivered at birth by skilled health providers.

The 2013 NDHS analyzed the maternal mortality ratio based on seven years estimates preceding the survey (2006-2013). The survey recorded maternal mortality ratio of 576 deaths per 100,000, which means that for every 1,000 live births, approximately six women died either during pregnancy, during childbirth, or within two months of childbirth. This ratio was higher than that of 2001-2008 survey with estimated value of 545 deaths per 100,000. Though, the estimated value according to the survey was reported not to have any statistical significance, still, the figure was extremely high as against what they had in the major receiving countries.

Figure 10 depicts the maternal mortality ratio scenario between the major receiving countries of emigrated health professionals as against Nigeria, the source country. Although the maternal mortality ratio of the country has been declining overtime from 1,170 in 2000 to 814 in 2015, (a difference of 356 deaths per 100,000), yet, the estimated value of 814 women dying out of 100,000 population either due to complications from pregnancy, of childbirth or weeks after delivery was too far from attaining the target of MDG 5.

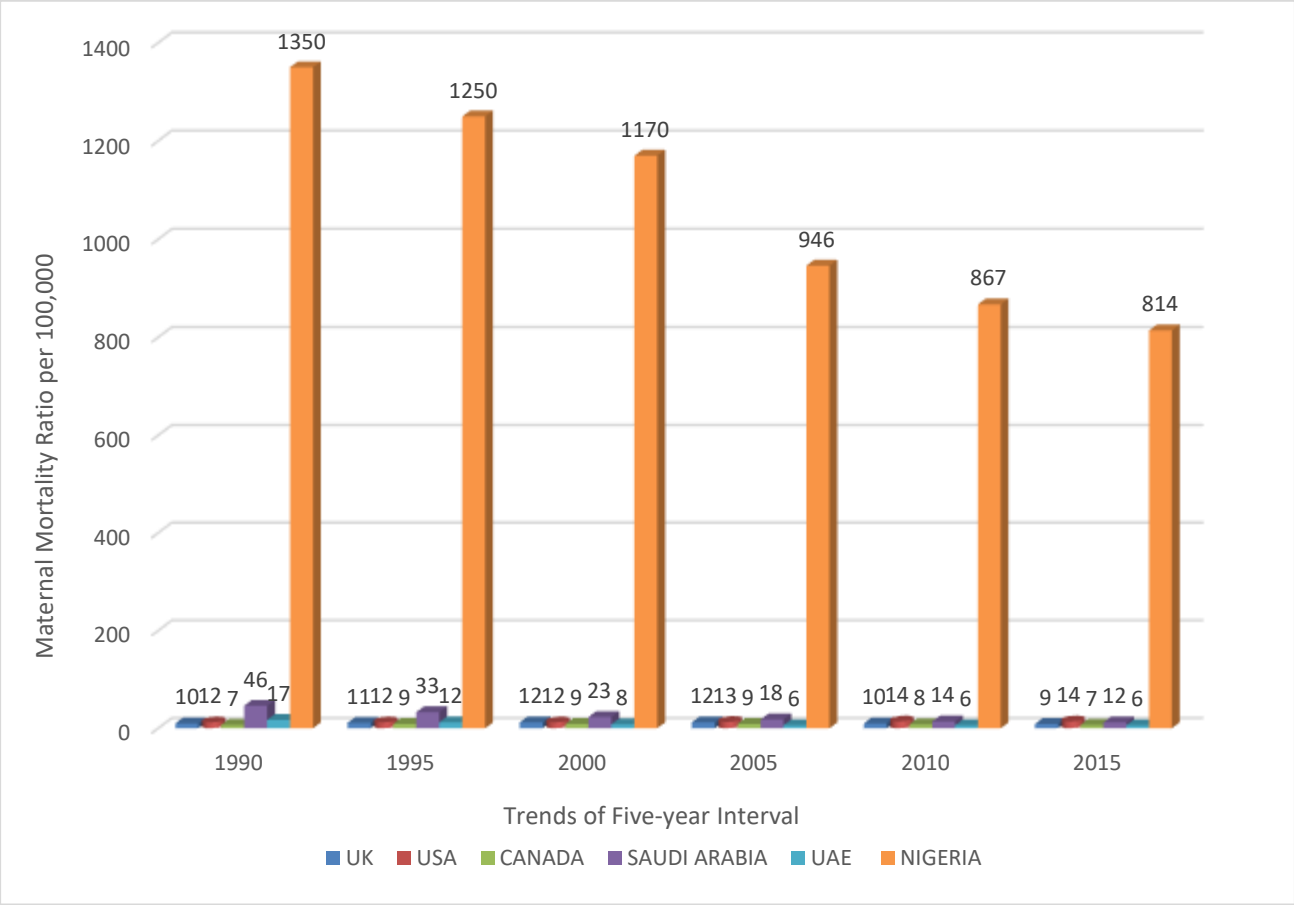


Fig. 10: Maternal Mortality Ratio of Major Receiving Countries versus Source Country (Nigeria)
Source: WHO, UNICEF, UNFPA and the World Bank, 2015

However, the developing countries, particularly the sub-Saharan African countries are still lagging behind, even, after the expiration of the implementation of the health MDG 5 in 2015. According to the UNICEF reports in 2015 on MDG 5, it was submitted that every region has advanced, but the levels of maternal mortality remain unacceptably high in sub-Saharan Africa countries. The question therefore is, why is the sub-region not advancing?

Majority of the developing countries, principally those in the sub-Saharan Africa had experienced the negative impacts of emigration of health personnel even prior to and during the implemntation of health MDGs (Table 2). Mali, for instance had to close down close to three-fifths (57%) of its community health posts due to lack of personnel (USAID, 2003). In Zambia and Malawi, the growth in the number of health facilities was reported to have outstripped the health system's ability to staff them (Dolvo and Martineau, 2004).

In Nigeria, although emigration of health professionals from the country is inevitable, nevertheless, acheiving the targeted goals of the MDGs 4 and 5 ought to have been possible, if

health personnel were in abundance. The pathogenic (biological) causes of deaths among the infant and children less than five years, such as pneumonia, diarrhea, malaria, measles, and HIV infection are the preventable and curable infections (Abejide & Kupoluyi, 2007). Unfortunately, these infections were mostly not attended to by professional health providers, practically due to their non-availability, predominantly common in the rural areas of the country (Figure 7).

Aside some tertiary and very few secondary health institutions that are having specialty of peadiatric branch of medicine, virtually none of the primary healthcare facilities in the country, in which rural healthcare system falls into has such specialty. Only some volunteered medical workers, in particular, the non-governmental organizations, occasionally do visit the rural areas where peadiatric diseases are endemic. In general, poor working conditions and lack of basic infrastructural facilities in all the three tiers of healthcare sector; a result of bad governance in the country have prompted emigration of health professionals, principally the doctors and nurses (Tables 3 & 4), hence reducing the chances of optimal achievement of health MDG 4.

In the case of maternal mortality ratio, haemorrhage has been identified as a leading cause of maternal mortality. Cases of indirect pre-existing medical conditions aggravated by pregnancy, such as hypertensive disorders of pregnancy, especially eclampsia, as well as sepsis, embolism and complications of unsafe abortion are causes of maternal deaths, which can all be prevented if births are attended to by skilled health personnel (Say L et al. 2014). Availability of and accessibility to doctors, nurses or midwives, who are regularly supervised, with proper equipment and supplies to refer women to, in a timely manner of emergency obstetric care, when complications are diagnosed are lacking, particularly in the rural areas, crisis-prone and war zones in Nigeria (Figure 9). Complications that require prompt access to quality obstetric services equipped with life-saving drugs and the ability to provide blood transfusions needed to perform Caesarean sections or other surgical interventions care are nightmares to the rural women residents due to absence of experts in the field of obstetrics and gynecology, hence, increasing maternal deaths and the inability of Nigeria to achieve the target of health MDG 5 (Figure 10).

CONCLUSION AND RECOMMENDATIONS

In conclusion therefore, emigration of health professionals from developing countries to developed and rich countries before and during the execution of health Millennium Development Goals had significantly disenfranchised many less privileged countries, particularly those in the sub-Saharan Africa achieving the targets of health MDGs 4 and 5. On the one hand, the inability of those poor countries to achieve the targets of health MDGs had been largely hinged on bad governance which led to high ‘push-pull’ gradients. On the other hand, the prospering economy, operational social infrastructure and high-level technological advancement available in the developed and rich countries have been identified as baits pulling out human resources from developing countries. A situation that affects economic prosperity, social structure and provision of quality healthcare in the less privileged and poor countries of the world.

In order to mitigate emigration of health professionals from developing countries to developed and rich countries and for such move to have positive impacts on the healthcare provision and health sector in the source country, the following recommendations are therefore proposed:

1. Developing countries should address the push factors by ensuring socio-political stability and increasing economic growth. This would minimize the endogenous factors that prompt emigration of health professionals.
2. There should be bilateral and multilateral agreements between the source countries and recipient countries, in terms of formulating policy that would encourage voluntary short term and or long-term visit of emigrated health professionals to their countries of origin. This would assist the home countries' healthcare system meeting up with the existing and future planned health policy and programme.
3. Health agencies and organizations concerned with health policy formulation should always consider the socioeconomic disparities and different levels of health quartile between the developing countries and industrialized and rich countries; by providing a levelled playing field for availability and accessibility of health workers whenever any global health programmes are to be implemented.
4. Emigration of health professionals has become a reality of the 21st century, it is therefore imperative that global governance of migration of skilled professionals becomes part of the global policy agenda. Regional and global organizations such as African Union, NEPAD, WHO, World Bank, UNICEF and UNFPA, recipient country organizations such as the G8 and OECD as well as other key custodians of the global economy such as International Labour Organization need to set the agenda to achieve equitable healthcare for all.

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