



INEQUALITY IN GLOBAL DISTRIBUTION OF SKILLED HEALTH PERSONNEL: A HEALTH-RELATED DISASTER TO ACHIEVING SDG 3 IN SUB-SAHARAN AFRICA

L.E.O Abejide, Tasi'u M. and Ogah H.I.

Dept. of Geography, Federal University Lafia, Nasarawa State

ABSTRACT: *Nearly all countries in the Sub-Saharan Africa (SSA) could not achieve the set targets of MDG 4 and 5 due to shortage of skilled health personnel. According to literature, the shortage (health-related disaster) was chiefly caused by the migration of health professionals from SSA to developed and rich countries and this has resulted to the weak health systems experiencing in the sub-continent. However, the first two set targets of SDG 3 meant to consolidate MDG 4 and 5 would be difficult to achieve, if the health workers shortage is not addressed. The paper therefore x-rays the trends and causes of skilled health personnel migration and how their migration is militating against achieving SDG 3. Ten countries were selected from SSA, based on their population size: three countries from the western and two each from the central, eastern and southern. Four prominent destination countries of migrant skilled personnel from SSA were equally selected. Data on migration of health professionals was collected from Southwestern Nigeria, while secondary data on child and maternal mortality were adopted and analyzed from the WHO and NDHS. The findings show that skilled health personnel are migrating to the rich and developed countries. The reasons of their migration are still pivoted on "Push-Pull" factors. The neonatal, under-five and maternal mortality (disaster) is still high in the selected SSA countries, particularly countries with low population size. The ratio of one skilled health personnel to a number of patients in SSA is significantly low compared to those of the rich and developed countries. The paper therefore concludes that for SSA countries to achieve SDG 3, government of both the sending and receiving countries, with the aid from international community should work towards the implementation of the WHO Global Code of Practice on the International Recruitment of Health Personnel in 2010.*

KEYWORDS: Migration of Skilled Health Professionals, Neonatal, Maternal Mortality, Sustainable Development Goals 3, International Recruitment of Health Personnel, Africa

INTRODUCTION

Despite the huge human and monetary resources devoted to the Millennium Development Goals (MDGs) programme between 2000 and 2015 by the United Nations and International Community, nearly all the Sub-Saharan African countries could not achieve the set targets of any of its 8 goals. Of particular interest was the Goals 4 and 5, which indicated the reduction of the under-five mortality rate by two thirds, and the maternal mortality by three quarters. Based on the final reports on MDGs, it was noted that the number of deaths of children under five has declined from 12.7 million in 1990 to almost 6 million in 2015 globally, of which most deaths occurred in Sub-Saharan Africa (SSA). In the case of maternal mortality, the



report stated that in Southern Asia, the maternal mortality ratio declined by 64 per cent between 1990 and 2013, and in SSA, it fell by 49 per cent (UN, MDGs Report, 2015). However, the report revealed that a lot of progress had been made in the decline of deaths of under-five and maternal, yet, there are other key factors militating against achieving MDGs 4 and 5, one of which is the inequality of global distribution of health workers.

On the one hand, according to the reports of the Global Health Observatory (GHO), an arm of World Health Organization (WHO) in 2018, it stated that despite all the progress made during the Millennium Development Goal (MDG) era on goals 4 and 5, major challenges persist in the MDG priority areas (countries that were far from achieving the MDG targeted goals). In other words, that if those challenges will need to be addressed and for further progress is to be made in reducing child and maternal mortality, among others, the weak health systems of some of the countries, which remain obstacles to progress should be addressed. Interpreting the “weak health systems” enunciated by GHO, Taylor et al (2011) stated that the fundamental root cause of the weak health systems of those countries was the international migration of health personnel from Low- and Middle-Income Countries (LMIC) to High-Income Countries. Furthermore, the authors, quoting the World Health Organization’s estimates recorded that the world faced a shortage of 4.3 million health professionals, while the greatest of this shortage was in SSA. According to the World Health Report (2006), it was estimated that Africa bears more than 24% of the world’s disease burden but has access to only 3% of the global health workforce. In contrast to the Region of Americas, which includes Canada and the United States, contains only 10% of the global burden of disease, yet almost 37% of the world’s health workers live in this region.

On the other hand, Sustainable Development Goals (SDGs), which was designed to consolidate the progresses achieved so far from the MDGs would equally not be able to achieve its Goal 3, which stated, to “ensure healthy lives and promote well-being for all ages,” and its set targets in SSA, if the global code of practice on international recruitment of health personnel adopted by the 193 member states of the World Health Assembly (WHA) in May 2010 (Taylor et al, 2011), is not of a major concern in the dialogues of the United Nations and its partners and, policy framework of the International Community. In all, across 10 goals with more than 50 SDG indicators have been selected to measure health outcomes, direct determinants of health and or health service provision viz-a-viz the integration of migration of health skilled personnel as the pivot of its achievement.

On this note, the paper therefore focuses on the first two targets of SDG 3. Target 3(i) states that, “By 2030, reduce the global maternal mortality rate to less than 70 per 100,000 live births.” And, target 3(ii) indicates that, “By 2030, end preventable deaths of newborns and children under 5 of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births.” The objectives of the paper are therefore, to: 1) x-ray the trends and causes of shortage of health workforce in SSA, 2) examine how the shortage of skilled health personnel has been affecting the delivery of adequate and quality health services, particularly of mother-child wellbeing and 3) suggests policy recommendations to overcome the inequality of the shortages (disaster) of health personnel, with reference to Nigeria and generally in the sub-continent.

To achieve the above aim, the paper is therefore divided into five sections: the first is the introduction; comprising the rationale and statement of problem for the paper, and the



second, is the review of the trends of migration of health workforce that cause shortage of their services from and the trends of neonatal, under-five and maternal mortality in SSA. The third section discusses methods of data collection on the inequality of health workforce, neonatal, under-five and maternal mortality in selected SSA countries. The fourth section presents the analyses and discussions of data collected, while the fifth concludes and proffers policy recommendations.

Trends and Causes of Migration of Skilled Health Personnel from and Neonatal, Under-five and Maternal Mortality in SSA: An Overview

The international migration of health personnel is not a new phenomenon and illegal, but what is of a great concern is the rate at which health professionals migrating abroad, and to countries where skilled health providers seemingly outnumbered the required universal ratio of health personnel to a certain number of populations. It is quite understandable that every country needs healthcare services, particularly the rich countries where the demographics are playing a key role in the supply and demand of health care. The ageing and shrinking population in most industrialized countries, where sophisticated health care is considered a basic right to all and sundry needed a radicalized health care labour market. However, in SSA, migration of the health personnel out of the sub-continent is placing increasing pressure on fragile health systems that are already overburdened.

Although there is lack of appropriate and adequate data from the SSA (source) countries to quantify the extent of migration of health professionals to rich and advanced countries, still, literature on international migration have acclaimed that emigration of skilled health personnel from developing countries to developed nations is causing shortages of their skills in the health systems of the sub-continent (Bhorat et al, 2002). According to several studies, the most prominent destinations of SSA-trained doctors, nurses and pharmacists were 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 2003, Zambia for instance, was in less fortunate circumstances having only 50 doctors left in the country out of the 600 it had trained since independence. Also, in Zimbabwe, out of 1200 physicians trained between 1990 and 2001, only 360 remained in the country in 2006 (IOM, 2006). Sankore (2006) submitted that SSA is the only sub-region where the absolute number of shortages of health workers (817,992) far outstrips the stock of 590,198. Hagopian, et al, (2005) revealed that there are no more than 22 pediatricians licensed in the entire country of Ghana, while not more than 10 specialists of any kind practicing in the primarily rural region north of the capital city, Accra. In other words, majority of countries in the sub-region are unable to meet the World Health Organization's recommended ratio of one physician per 5,000 people, while developed countries boast an average of 20 physicians per 450 people (Kana, 2009). 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).



Most studies on migration of health skilled professionals from SSA countries have attributed the causes of their 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 from 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 zero crime levels (Pillar, 2007) and presence of a network of fellow citizens in the host country (OECD, 2002).

Maternal mortality rates have been generally high in SSA countries when compared to those countries of destination of migrant health professionals from the sub-continent. For instance, in Nigeria, the 2013 NDHS that analyzed the maternal mortality rates based on seven years estimates preceding the survey (2006-2013) revealed that the country has maternal mortality ratio of 576 deaths per 100,000. This means that for every 1,000 live births, approximately six women died either during pregnancy, during childbirth, or within two months of childbirth. Also, in 2015, it was reported that at the close of the MDG 5, 303,000 women died due to complications of pregnancy or child birth, and nearly all (99.0%) of these deaths occurred in low- and middle-income countries, with almost two-thirds (64.0%) occurring in the SSA. In addition, according to data available to the WHO since 2007, it showed that over half of all births in several low- and middle-income countries were not assisted by skilled health personnel (UNICEF/WHO, 2018). As well in 2016, millions of births globally were not assisted by a trained midwife, nurse or doctor, but over three-quarters (78%) of births were in the presence of a skilled birth attendant (WHO, 2017).

On the other hand, both neonatal and child (under-five) mortality rates have been experiencing remarkable reductions globally. In 2016, the under-five mortality rate globally dropped from 93 per 1000 live births in 1990 to 41 per 1000 live births, while that of neonatal has fallen from 37 per 1000 live births to 19 per 1000 live births (WHO, 2018). However, newborn deaths represented one-third of all deaths among under-5 years of age, after the first month of life (neonatal) in SSA countries. Furthermore, the sub-continent had the highest under-five mortality rate (81.3 per 1000 live births) in 2015, which almost double the global rate (WHO, 2015). In all, the deaths of children at birth and those that could not reach age five have been attributed to some preventable causes. In such that, if the causes were been attended to by skilled health personnel, deaths among children of 0-59 months, would be reduced drastically, and SSA would be moving at the required speed to achieving target two of SDG 3 before its expiration in 2030.



METHODS OF DATA COLLECTION AND ANALYSES

Primary data on migration of health professionals from Nigeria to other countries were purposively collected from two tertiary teaching health institutions and one secondary teaching health institution in the southwestern Nigeria. 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. Secondary data on neonatal, under-five and maternal mortality rates were adopted from the World Health Statistics; a WHO database portal (2018) and the Nigeria Demographic and Health Survey (NDHS) 2018.

A systematic random selection of 348 respondents was carried out to capture the emigrated categories of health personnel (doctors, nurses, pharmacists and medical laboratory technologists) in the three institutions. Ten per cent of their population in each category of health professionals was selected in the UCH and OAUTHC and 20% in AMTH. One-round, self-administered questionnaire was randomly given to the sampled health personnel, with a focus for obtaining by proxy, information on country of destination and period at which their colleagues migrated. Also, reasons for migration and short- and long-term consequences of their colleagues' migration on them and their institutions between 1990 and 2015 were obtained. For the secondary data, 10 countries from the SSA were selected based on their population size and regional conglomeration. One country with largest population size and one with lowest were selected in each of the central, eastern and southern regions while three countries, one each with largest, medium and lowest population size were selected in the western region of the sub-continent. In addition, four prominent countries of destination of skilled health workforce from the SSA were purposefully selected, namely: The United Kingdom (UK); South-North route of destination, The United States of America (USA) and Canada; South-West, and Saudi Arabia; South-East destinations respectively, as presented on Table 1.

The data collected and adopted were analyzed using Microsoft Excel Package and the results of the analyzed data were presented in tables, figures, line and bar graphs.

Table 1: Selected SSA Countries and Prominent Countries of Destination

Name of Country	Estimated Total Population ('000s) 2016
South Africa	56,015
Swaziland	1,343
Rwanda	11,918
Democratic Republic of Congo (DRC)	76,736
Kenya	48,463
Sudan	39,579



Gabon	1,980
Nigeria	185,990
Mali	17,995
Gambia	2,039
USA	322,180
United Kingdom	65,789
Canada	36,290
Saudi Arabia	32,276

Source: World Health Statistics, WHO, 2018

FINDINGS AND DISCUSSIONS

Spatial Dynamics of Migration of Health Personnel from Southwestern Nigeria: Primary Evidence

Table 2 and Figure 1 depict the aggregate volumes and directions of emigrated doctors from the South-west geo-political zone of Nigeria.

Table 2: Primary Data of Destinations of Health Personnel, Southwestern Nigeria, 1990-2015.

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'Ivoire	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: Authors' Fieldwork, 2015

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.

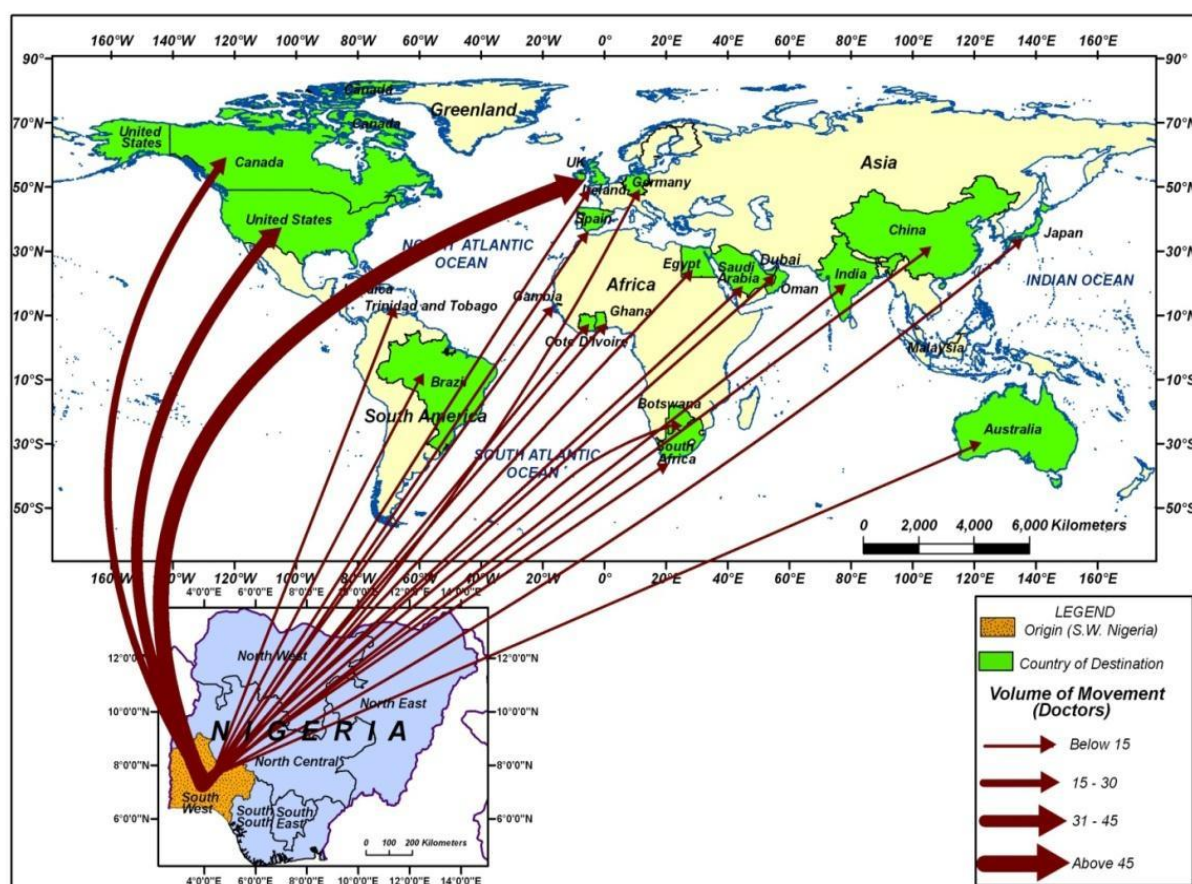


Fig. 1: Spatial Patterns & Destinations of Emigrated Doctors from South-West, Nigeria, 1990-2015

Source: Author's Fieldwork, 2015

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 2 and on Figure 2. 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.

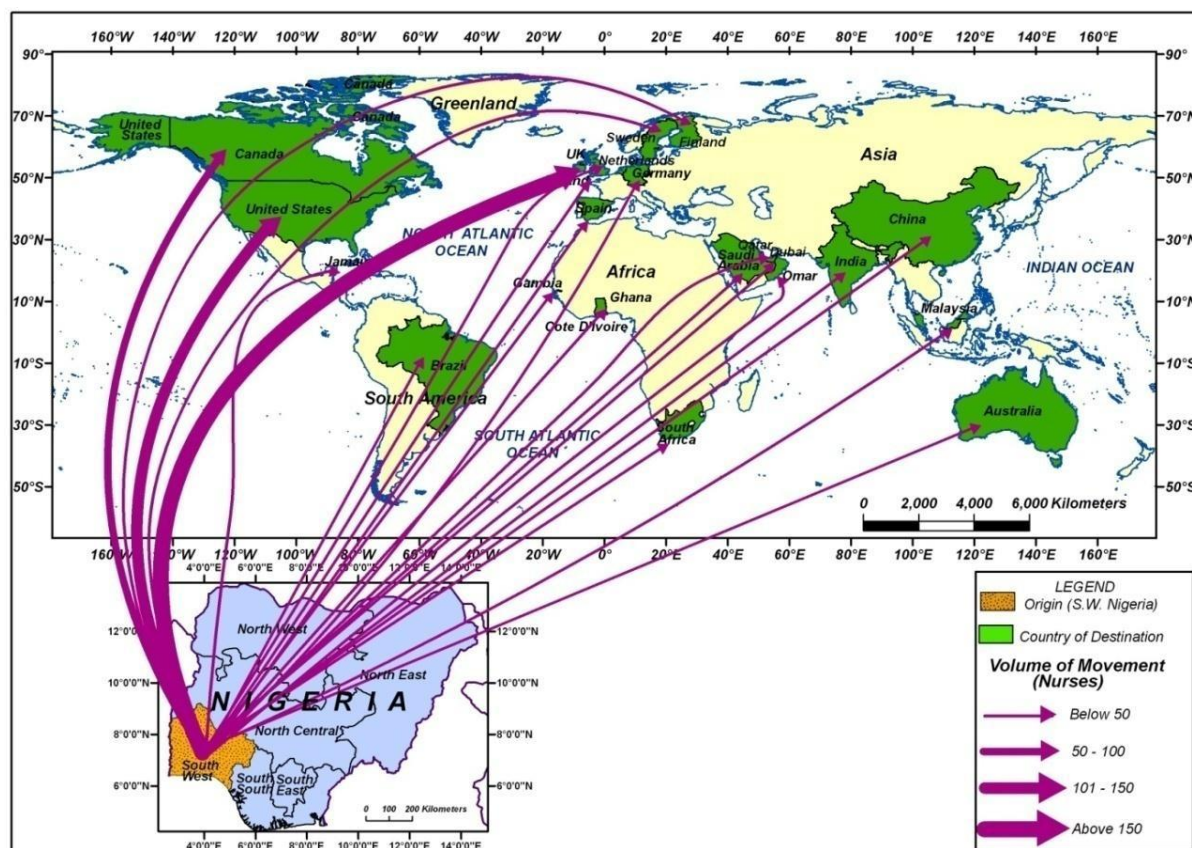


Fig. 2: Spatial Patterns & Destinations of Emigrated Nurses from South-West, Nigeria, 1990-2015

Source: Author's Fieldwork, 2015

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 2 and Figure 3 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.

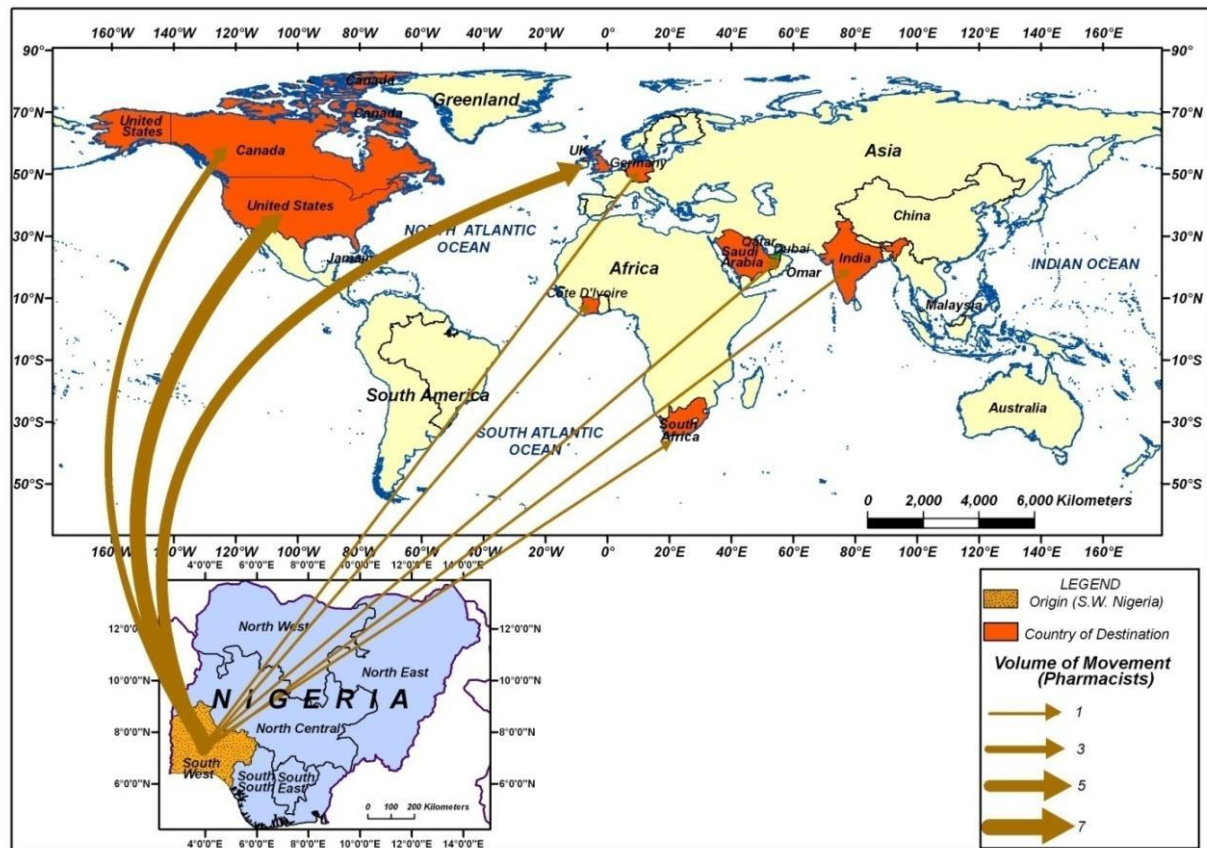


Fig 3: Spatial Patterns & Destinations of Emigrated Pharmacists from South-West, Nigeria, 1990-2015

Source: Author's Fieldwork, 2015

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 2 and Figure 4 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.

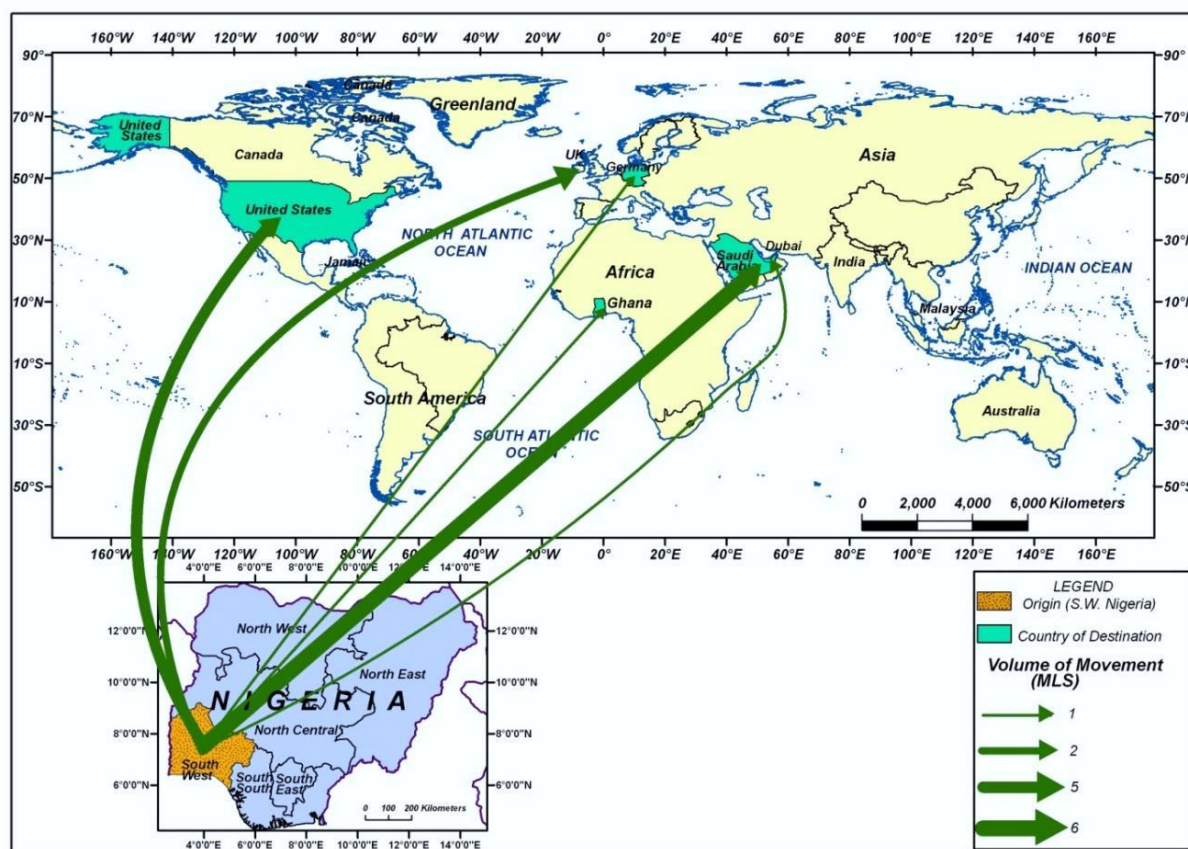


Fig. 4: Spatial Patterns & Destinations of Emigrated MLS from South-West, Nigeria, 1990-2015

Source: Author’s Fieldwork, 2015

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

The above figures (1-4) reflect the exact spatial patterns of migration of skilled health personnel in most of the SSA countries. The spatial moves of these skilled populations have exacerbated the fragile health systems of the sub-continent and equally depleted the middle class that supposedly bridging the gap between the rich and poor population in each of the regions of the SSA.

The volume of each of the categories of health personnel moving out of the three selected health institutions in South-west geo-political zone of Nigeria, when generalized and translated to their migration out of the other five regions (North-west, North-east, North-central, South-east and South-south) and at large, to other SSA countries, one would see that the health systems and health-related policies and programmes initiated by either of the home governments and or international community would be somehow difficult to implement.



Reasons for the Migration of Health Personnel

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.

Table 3: Working Condition as a Factor of Emigrated Health Professionals, Southwestern Nigeria, 1990-2015

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, 2015

However, it is evident according to the study that health professionals are not particular about salary and wages, but the provision of the state-of-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. The above analyses imply that the working environment at which health personnel carry out health services are not conducive in most of the SSA countries. This could be attributed to poor funding of the health sector and lack of political will from the government.

Trends of Maternal, Neonatal and Under-Five Mortality in SSA: Secondary Evidence

Figure 5 reveals that maternal mortality rates are still much higher in SSA countries compared to the countries of destination. Nigeria is having the highest maternal mortality rate out of the selected SSA countries, with 814 deaths per 100,000 live births. This followed by Gambia (706 deaths/100,000 live births), DRC (693 deaths/100,000 live births), Mali (587 deaths/100,000 live births) and Kenya (510 deaths/100,000 live births), among others. However, the figure also reveals that countries with lower population size are relatively having higher maternal deaths than those with higher population size. For instance, Gambia, with a population size of 2.03 million having maternal mortality rate of 706 deaths per 100,000 live births, this is outrageously high.



This implies that out of 1,000 live births, more than 7 women died either during pregnancy, during childbirth or within two months of childbirth. Generalizing this scenario, it seems nearly all the SSA countries, either with low or high population has high deaths of women at childbirth. Comparing this with the selected countries of destination, Canada has the lowest maternal deaths rate of 7 deaths/100,000 live births, followed by the United Kingdom. The USA has the highest with 14 deaths/100,000 live births and Saudi-Arabia, 12 deaths per 1,000 live births. In other words, it denotes that out of every 10,000 live births, Canada and Saudi-Arabia have less than one woman died either during pregnancy, during childbirth or within two months of childbirth. And, in the UK and USA, out of every 10,000 live births, not up to two women died either during pregnancy, during childbirth or within two months of childbirth.

According to Figure 5, under-five mortality rate is significantly high in all the selected SSA countries as against the countries of destination. Mali has the highest rates of 110.6 deaths per 1,000 live births, followed by Nigeria with 104 and DRC, 94.3 deaths per 1,000 live births respectively.

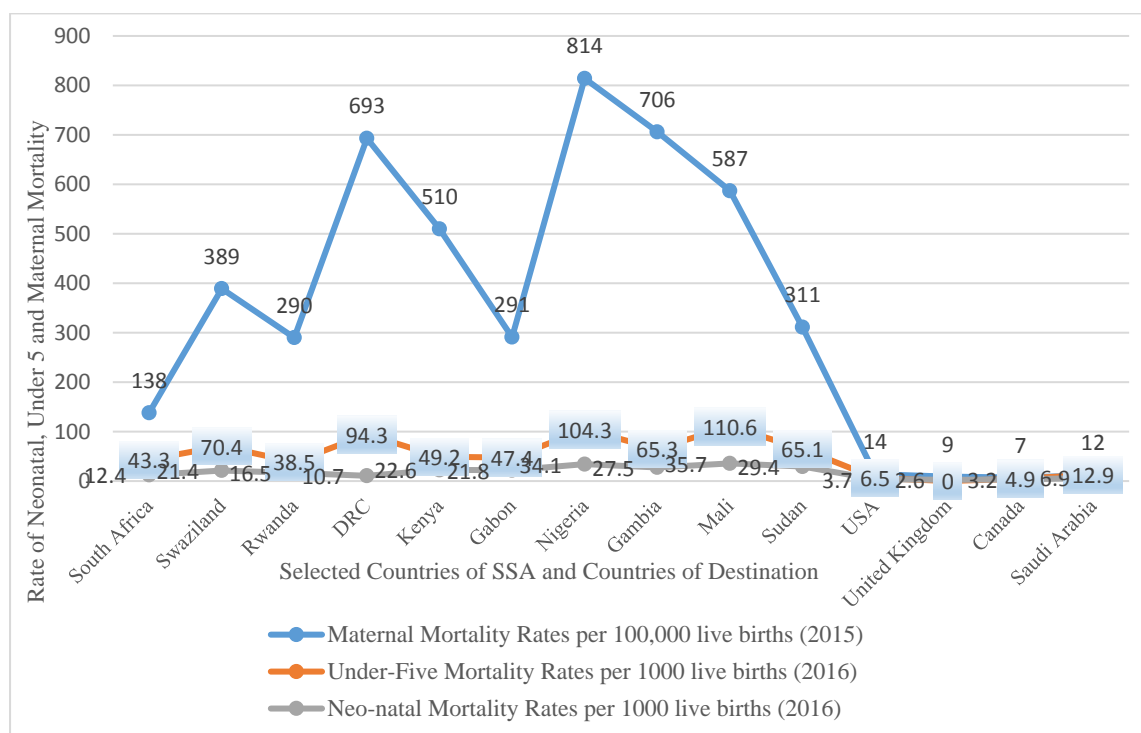


Fig. 5: Rate of Neonatal, Under-Five and Maternal Mortality in Selected SSA Countries and Countries of Destination

Note: Numbers obtained on neonatal, under-five and maternal mortality rates were based on comparable data.

Source: World Health Statistics (WHO), 2018.

Though, Rwanda has the lowest under-five mortality rate among the selected countries, with 38.5 deaths per 1,000, still, the number of deaths (approximately four deaths of under-5 out of 100 live births) of this age group is inimical when generalized with the total population of



children in the country. In contrast to the countries of destination, Canada has 4.9 deaths per 1,000 live births and the USA has 6.5 deaths per 1,000 live births. This denotes that each of these countries hardly have at least one death of 1000 children before reaching age 5, while Saudi Arabia with 12.9 deaths per 1,000 live births indicates that at most one child would die out of 1000 children before reaching age five.

Neonatal mortality, which means the probability of a child dying within the first month of life, according to Figure 5, though, show some forms of decline, its rates are still relatively higher in the selected SSA countries than the countries of destination. Out of the 10 SSA countries, DRC has the lowest rate of 10.7 deaths per 1,000 live births. This is followed by South Africa (12.4 deaths/1,000 live births) and Rwanda (16.5 deaths/1,000 live births). Mali has the highest of neonatal mortality rate of 35.7 deaths per 1,000 live births, followed by Nigeria with 34.1 deaths/1,000 live births. Gambia (27.5 deaths/1,000 live births), Gabon (21.8 deaths/1,000 live births and Swaziland (21.4 deaths/1,000 live births) are significantly high neonatal deaths with respect to their total populations.

Figure 6 depicts the proportional deficiency of skilled health personnel in providing prompt and consistent healthcare services to pregnant women during childbirth. All the three countries selected from the West Africa sub-region are mostly deficient in terms of attendance of skilled health personnel during childbirth (Gambia, 57%, Mali, 44% and Nigeria, 43%). As a result of this, their neonatal and maternal mortality rates are significantly higher than the remaining selected SSA countries.

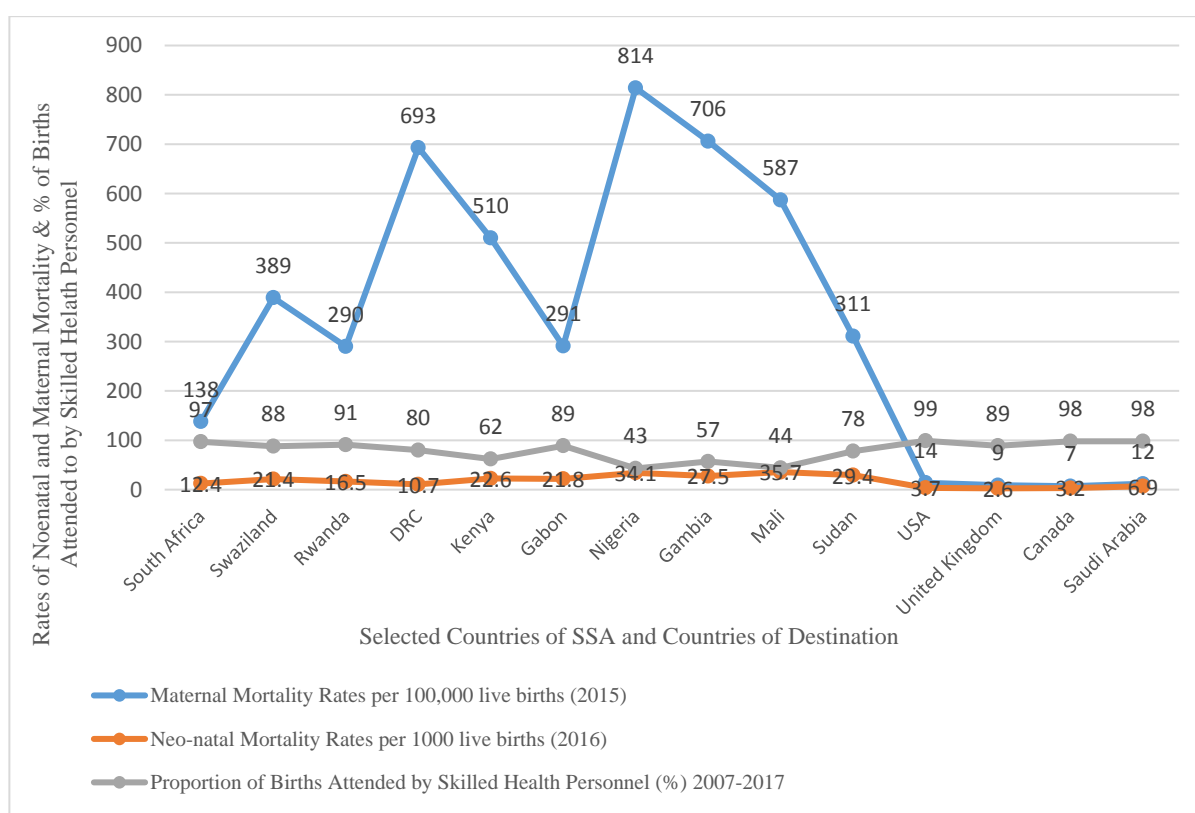


Fig 6: Rate of Neonatal and Maternal Mortality against Percentage of Births Attended to by Skilled Health Personnel in Selected SSA Countries and Countries of Destination

Source: World Health Statistics (WHO), 2018.



However, regardless of the high proportion attendance of skilled health personnel during childbirth in some of the selected SSA countries, neonatal and maternal mortality of these countries are still significantly high. The reverse is the case in the selected countries of destination of skilled health. The proportions of skilled health personnel are excellently high and both neonatal and maternal mortality are exceptionally low

Figure 7 shows the extent at which skilled health workforce are being distributed in the selected SSA countries and countries of destination. According to the figure, five out of ten of the SSA countries are having the highest shortage (disaster) of a physician to patients (1:10,000). Meanwhile, out of the five countries, Swaziland and Gambia with low total population are definitely facing the heat of the shortage (disaster). On the hand, all the selected countries of destination are at most three times above the WHO’s recommendation.

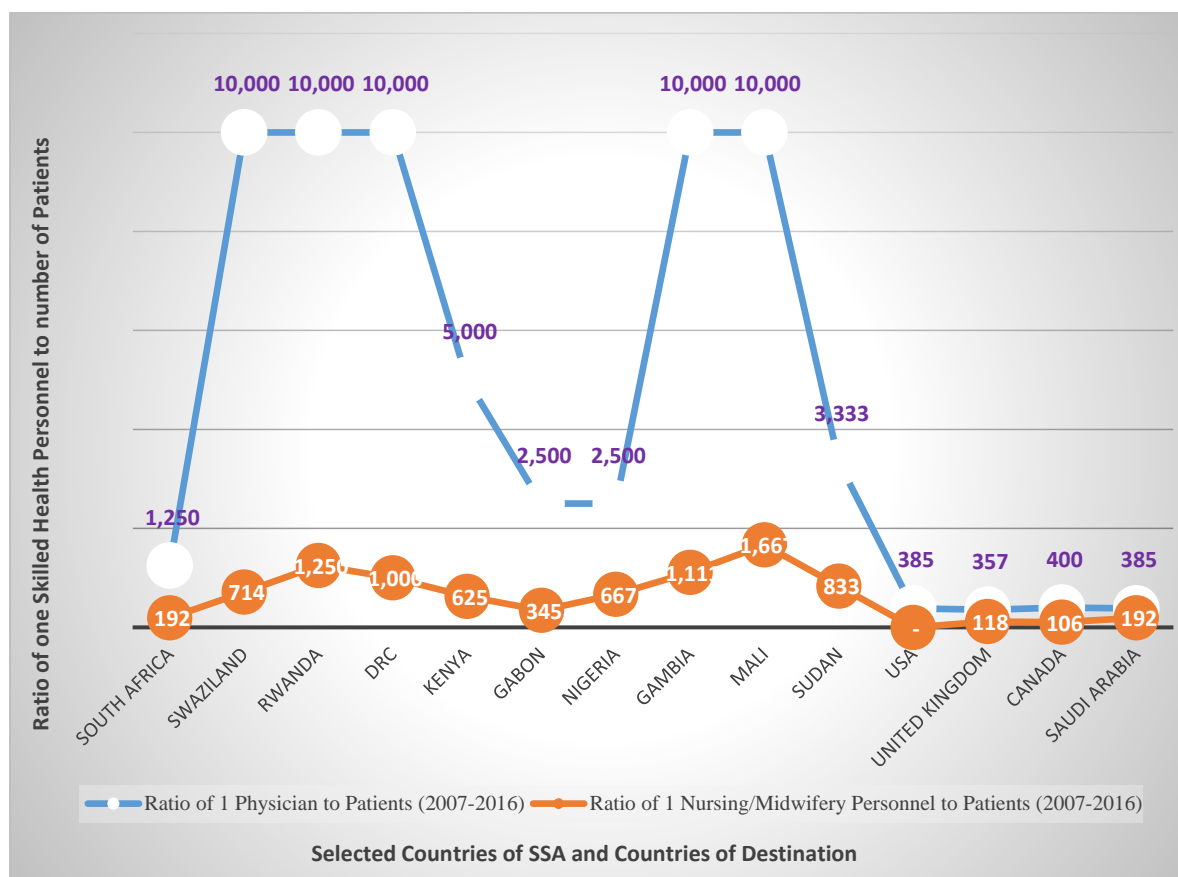


Fig 7: Ratio of One Physician/Nurse/Midwife to Patients in Selected SSA Countries and Countries of Destination

Source: World Health Statistics (WHO), 2018.

As regards the nurse-patient ratio, according to Figure 7, nearly all the selected SSA countries recorded significantly low nurse-patients ratio, except South Africa with one nurse to 192 and Gabon, a nurse to 345. Countries with overwhelming low nurse-patients ratio are: Mali



(1:1667) Rwanda (1:1250), Gambia (1:1111) and Sudan (1:833), while others are relatively low. In sum, it implies that none of the selected SSA countries is able to achieve the WHO's recommendation of physician-patient ratio of 1:1,000 and nurse-patient ratio of 1:300.

Trends of Under-Five and Maternal Mortality in Nigeria: Secondary Evidence

Figure 8 reveals the latest records on childhood mortality rates in Nigeria. Aside the major decline from 201 deaths per 1,000 live births in 2003 to 128 deaths per 1,000 live births in 2008, the rates have increased in the last 5 years preceding the 2018 survey. The survey records that neonatal from 37 to 38 deaths per 1,000 live births between 2013 and 2018, while under-five mortality increased to 132 deaths per 1,000 live births in 2018.

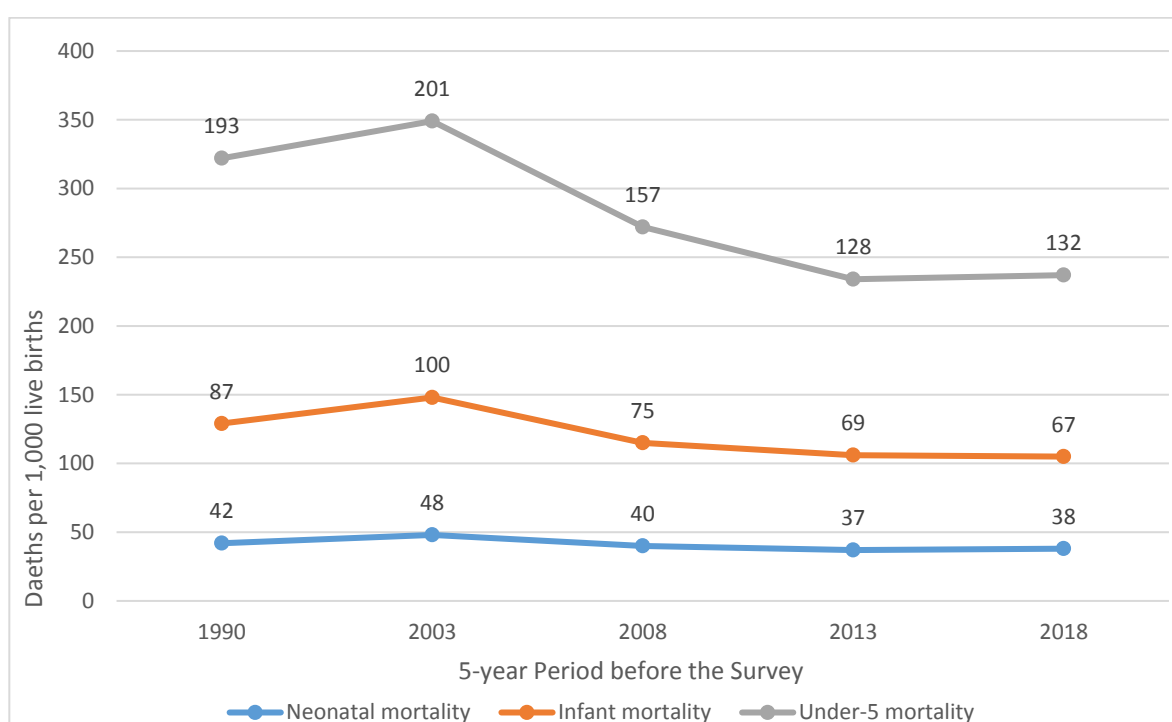


Fig. 8: Trends in Early Childhood Mortality Rates in Nigeria

Note: The data are the deaths per 1,000 live births in the 5-year period before the survey

Source: NDHS, 2018

Generally, it has been reported that the reason for the sudden increase in childhood deaths, particularly the under 5, is the probability of dying between the first and the fifth birthday. However, the causes of such deaths according to WHO are preventable diseases occurring in the first week of life. Neonatal deaths, for instance, prematurity, intrapartum-related events such as asphyxia and birth trauma, and neonatal sepsis accounted for almost three quarters of all neonatal deaths. While among the under-5, acute respiratory infection, pneumonia, diarrhea, measles and malaria have been alleged to account for nearly all deaths. Also, contributing to the deaths of childhood in Nigeria and mostly in all SSA countries are

congenital malformation and low birth weights, which could have been diagnosed and cured, if adequate and skilled healthcare providers are available for antenatal, natal and postnatal periods.

According to Figure 9, over half (53.9%) and above (89.2%) of the sampled women who had given birth in the 5 years preceding the survey received antenatal care by skilled healthcare provider in all the six geo-political zones of Nigeria. The figure also indicates that very low percentages of women sampled in the North East (19.0%) and North West Zone (27.7%), but slightly above half (53.8%) in the North Central were delivered by skilled healthcare provider during childbirth. In addition, South West had the highest proportion of women (77.3%) that had postnatal check in the first 2 days after birth, while the North West had the lowest (21.0%).

According to the residency, the figure reveals that in all the maternal health care indicators for women during antenatal, natal (childbirth) and postnatal, the proportion of the rural residents were significantly low to those in the urban. Sixty-six per cent of births to urban mothers were assisted by a skilled provider and 61.4 per cent had postnatal check in the first 2 days after birth, as compared to 29.1 and 29.6 per cent, respectively, of live births to rural women.

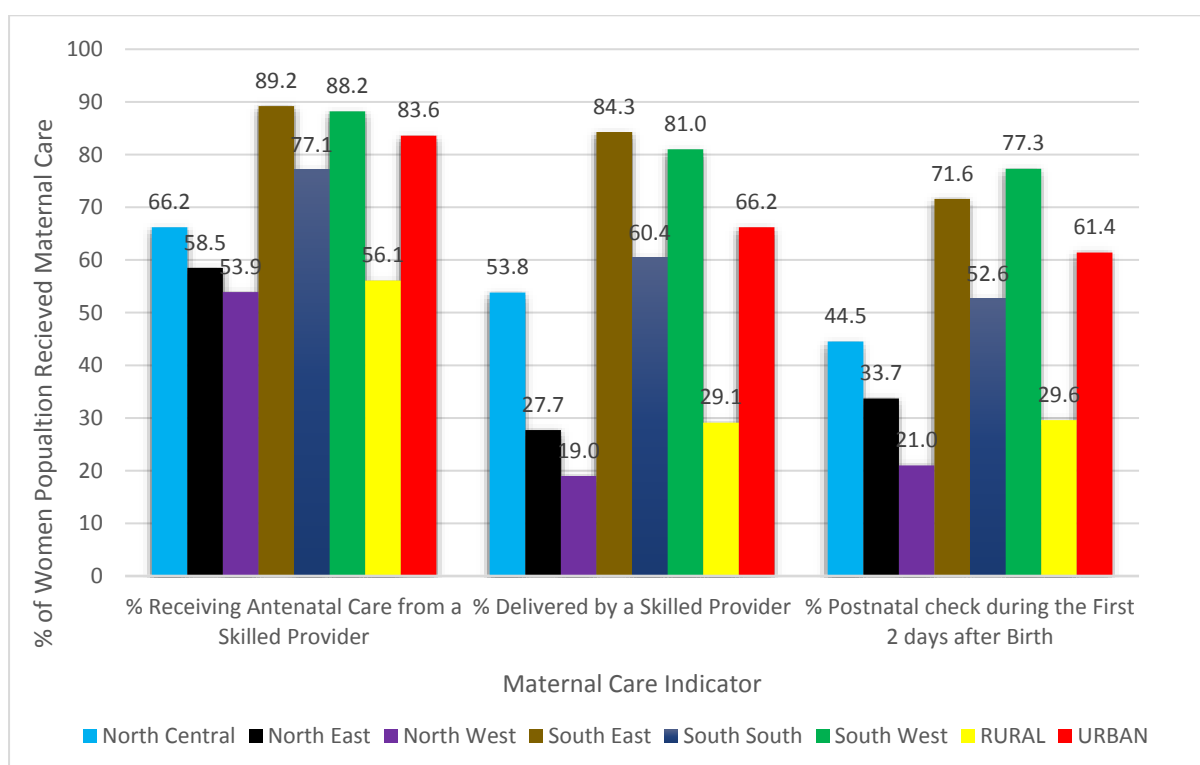


Fig. 9: Percent Distribution of Women Received Maternal Healthcare by Six-Geopolitical Zone and Place of Residence in Nigeria

Note: NDHS specification of skilled health provider includes doctor, midwife, nurse, community health extension worker or traditional birth attendant.

Source: NDHS, (2018)



In sum, Figure 9 implies that on the total, slightly above two-thirds (67.0%), slightly above two-fifths (43.4%) and approximately, 42.0 per cent of women, respectively, reportedly to have received antenatal care by skilled healthcare provider, been delivered by skilled healthcare provider during childbirth and had postnatal check in the first 2 days after birth.

It has been noted that a large proportion of maternal and neonatal deaths occur during the first 48 hours after delivery, therefore, the above analysis implies that there is tendency for the maternal mortality rates to either remained stagnant or increasing in Nigeria. This could be aided due to non-accessibility to proper medical diagnosis and attention before, during and after delivery. Also, shortage of skilled health provider in the urban and apathy of health workers towards the rural residency and unhygienic conditions during delivery that could increase the risk of complications and infections that lead to death and serious illness for the mother and/or baby.

RECOMMENDATIONS AND CONCLUSION

With respect to the above data collected, adopted and analyzed, the paper hereby recommends the following policy-oriented remedies to rectify the shortages (disaster) of health personnel in SSA.

1. The United Nations and its partners, and the International Community should critically take the issue of global shortage of health workforce seriously by working out modalities of balancing the unequal distribution experiencing by countries with acute shortage. Modalities in terms of ethical international agreements and code of practices that meet the needs of government, employers, employees, and professional organization, should address the migration of health workers and the provision of adequate health services in both developed and developing countries.
2. Aside the intervention from the international community to SSA countries in health crisis, multilateral framework between countries in the sub-continent and benefitting countries of destination should be intensified. For instance, the U.S. initiative to transform medical education in the SSA countries, which started with South Africa, Malawi and Nigeria by the Medical Education Partnership Initiative (MEPI), along with the U.S. Agency for International Development, the Center for Disease Control and Prevention and the Department of Defense should be extended to all other countries in the sub-continent. Likewise, other major countries benefitting from migration of health professionals from SSA should follow the example of the U.S.
3. According to the data adopted and analyzed, it was noted that the trend in recruiting health professionals by developed countries from developing countries, with their increasingly ageing population is due to high demand of labour intensive care. This is a short-term fix for one part of the world and a disaster for another. The disaster that would continue unless the majority of professionals return home with better skills and training to use among populations in great need. Therefore, major benefitting countries of destination of migrant health personnel from SSA countries should engage in bilateral agreement with countries of origin, on a short-term exchange programme of the health personnel for a period of time, back to their home countries. This however on the long run would spur into them returning to their source countries permanently.



4. Government at all levels of SSA countries should strive arduously to drastically work on pull incentives that would attract the return of migrant health professionals, such that were clearly lacking when migrant they made their decisions to leave in the first place. Such pull incentives are, a stable environment, a health infrastructure that works and adequate, which would provide them personal growth and development as well as a job that will allow them to live comfortably.
5. In all, the success of SDG 3 cannot be guaranteed in SSA and other developing world without the engagement of the private sector in partnerships that develop and implement innovative strategies to meet the global demand for health care. To corroborate this, quoting some excerpts from the speech of the Nigeria Minister of Health, during the 62nd National Council on Health. He said, “All stakeholders must work together to ensure that maternal deaths are reduced by 90 per cent (less than 3000 maternal deaths per year) by 2030...Of utmost priority is the need to develop viable and sustainable framework that would address both maternal and child morbidity and mortality....” The Minister then concluded, “These frameworks must include the private sector support as they serve as a strategic source of healthcare service delivery enhancement.” (SaharaReporters, Sept 12, 2019)

In conclusion therefore, the paper has presented the evidence that health personnel are emigrating from SSA countries to rich and developed countries of the world. And, that their emigration is creating disastrous shortages of health providers for fundamental health-related services to populations in need, as well as weakening the health systems of the sub-continent. Rather, they are moving to developed and rich countries where though, health services and provision are highly demanding, but health providers are superfluous.

The data adopted and analyzed reveal that though there were progresses in the reduction of neonatal deaths in the sub-continent, yet, many newborn babies die due to lack of proper medical attention by skilled health provider during and some hours of after delivery. Therefore, more efforts in terms of availability of skilled health providers and working environment, particularly in the rural residency as well as the urban are still needed to be able to achieve the 12 deaths per 1,000 live births of the SDG 3(ii). In addition, the data noted the fluctuation in the rates of under-5 child and maternal deaths, which if not address could impede nearly all SSA countries from achieving SDG 3(ii); reduction to 25 deaths per 1,000 and 70 deaths per 10,000 live births of under-5 and maternal mortality.

Aside the repelling factors, such as intra- and inter-tribal war, religious terrorism, communal crisis and poverty, among others that have characterized the majority of the SSA countries, governments of most countries have been trying to cope with the few health personnel left behind. On this note, it is therefore imperative that the global code of practice on international recruitment of health personnel initiated by WHO during the World Health Assembly (WHA) in 2010 should be given an immediate and adequate priority, if the success of SDG 3(i & ii) would be guaranteed in the SSA countries.



REFERENCES

- Akhenaten Benjamin SiankamTankwanchi, ÇağlarOzden, Sten H. Vermund (2013). Physician Emigration from Sub-Saharan Africa to the United States: Analysis of the 2011 AMA Physician Masterfile. *PLOS Medicine* DOI: 10.1371/journal.pmed.1001513 Aug 14, 2014
- American Medical Association, (2005). Short Supply of Foreign Doctors. Archived from the original version edition: www.ama.org
- Bhorat et al, (2002) Skilled Labour Migration from Developing Countries: Study on South and Southern Africa. International Migration Programme International Labour Office, Geneva
- Clemens M., (2007). Do Visas Kill? Health Effects of African Health Professional Emigration, Working Paper 114, Centre for Global Development.
- Clemens M., Pettersson G., (2006). "Medical Leave: A new Database of Health Professional Emigration from Africa", CGD Note (Washington, DC: Center for Global Development).
- Clemens, M., Petterson G., (2008). New data on African Health Professionals Abroad. *Human Resources for Health* 6(1). 3
- Docquier F., Marfouk A., (2006). International Migration by Educational Attainment (1990-2000), in C. Ozden and M. Schiff, International Migration, Remittances and Development, Palgrave Macmillan, New York.
- Docquier F., Barghava A., (2007). A new panel dataset on physicians' emigration rates (1991–2004).
- Dovlo D., (1999). Issues Affecting the Mobility and Retention of Health Workers/Professionals in Commonwealth African States. Consulting report- Commonwealth Secretariat, London.
- Hagopian A, et al., (2004). The Migration of Physicians from Sub-Saharan Africa to the United States of America: Measures of the African Brain Drain. *Human Resources for Health*. Vol. (2) 17.
- Hagopian A, et al., (2005). 'The Flight of Physicians from West Africa: Views of African Physicians and Implications for Policy.' *Social Science & Medicine*. Vol. 61. 1750-1760.
- Hamilton K, Yau J., (2003). The Global Tug-of-War for Health Care Workers. Retrieved from <http://www.migrationinformation.org>
- Kana M. A., (2009). From Brain drain to Brain Circulation. *Jos Journal of Medicine*. Vol. 4 (1)
- Kirigia J. M., (2006). The Cost of Health Professionals' Brain Drain in Kenya. *BMC Health Services Research* (6) 89.
- MCI (2005). Human Resources Strategies, in Consolidating the Gains: Managing the Challenges. 1999 *Health Sector Review*, Government Republic of Ireland.
- Nigeria Demographic and Health Survey (2018). National Population Commission, Federal Republic of Nigeria, Abuja, Nigeria and ICF Macro, Calverton, Maryland, USA
- OECD (2002). 'International migration of physicians and nurses: causes, consequences and health policy implications.' Working Party on Social Policy pp. 6-8.
- Pillay R., (2007). 'A Conceptual Framework for the Strategic Analysis and Management of the Brain Drain of African Healthcare Professionals', *African Journal of Business Management*, pp. 026-083.



- Sankore, R., (2006). How the Brain Drain to the West Worsen African's Public Health Crisis. *Pambazuka News*, Issue 269. www.pambazuka.org
- SaharaReporters (2019). Okowa, Health Minister Decry Nigeria's High Maternal Mortality Rate. @SaharaReporters, online news, accessed on 12th September, 2019. New York.
- Taylor A. A, Lenias H, Bjørn-Inge, L &Daulaire, N., 2011. Stemming the Brain Drain- A WHO Global Code of Practice on International Recruitment of Health Personnel. *The New England Journal of Medicine*, 365 (25) December.
- WHO global database on maternal health indicators, 2017 update [online database]. Geneva: World Health Organization (http://www.who.int/gho/maternal_health/en/).
- UNICEF/World Bank (2015). Levels & Trends in Child Mortality. Report 2015. Estimates developed by the UN Inter-agency Group for Child Mortality Estimation. United Nations Children's Fund, World Health Organization, World Bank and United Nations. New York (NY): United Nations Children's Fund; 2015 (http://www.unicef.org/publications/files/Child_Mortality_Report_2015_Web_9_Sept_15.pdf, accessed 22 March 2017).
- UNICEF/World Bank (2017). Levels & Trends in Child Mortality. Report 2017. Estimates developed by the UN Inter-agency Group for Child Mortality Estimation. United Nations Children's Fund, World Health Organization, World Bank and United Nations. New York (NY): United Nations Children's Fund; 2017 (http://www.childmortality.org/files_v21/download/IGME%20report%202017%20child%20mortality%20final.pdf, accessed 12 April 2018).
- UNICEF/WHO (2018)databaseof skilled health personnel, based on population-based national household survey data and routine health systems data (https://data.unicef.org/wp-content/uploads/2018/02/Interagency-SAB-Database_UNICEF_WHO_Apr-2018.xlsx).
- World Health Organization (2016). Disease burden and mortality estimates [website]. WHO-MCEE estimates for child causes of death 2000–2016. Geneva: (http://www.who.int/healthinfo/global_burden_disease/estimates/en/index3.html).
- The World Health Report (2006). Health Workers: A Global Profile. Geneva, World Health Organization, 2006:1-17
- United Nations, (2015). The Millennium Development Goals Report, 2015Summary. New York.

Copyright © 2020 The Author(s). This is an Open Access article distributed under the terms of Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), which permits anyone to share, use, reproduce and redistribute in any medium, provided the original author and source are credited.