



Investigating determinants of brain drain of health care professionals in developing countries: A review

Andrew Chimenya* and Baomin Qi

Bolton Business School, University of Bolton, United Kingdom.

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ABSTRACT

Developing countries continue to lose a significant number of health care professionals to developed countries. Malawi is not an exception. Without health workers, health care cannot be delivered. The study assesses the determinants of brain drain of health care professionals in developing countries, the case of Malawi health sector. Health care professionals in developing countries suffer from low wages, unbearable working and living conditions in their country of origin and seek elsewhere for better salaries, safer working conditions, better living conditions and a better life. This has for several years created a brain drain of skilled labour from where it is most needed, leaving already fragile health systems even more vulnerable. However, the study finds that so far, too little attention has been paid to organizational factors that influence brain drain. This study presents insights on determinants of brain drain among health care professionals from developing countries to developed countries. The paper contributes to the understanding of main factors that influence brain drain in a developing context environment. To this end, the study informs public sector managers and policy makers the need to address these factors if they are to curb brain drain in developing countries.

Keywords: Brain drain, migration, developing countries, health sector.

*Corresponding author. E-mail: APC1MPO@bolton.ac.uk, achimenya@yahoo.com. Tel: 44 (0) 1204770070.

INTRODUCTION

The term brain drain was first coined by the British Royal Society to refer to the exodus of scientists and technologists from the United Kingdom and Canada in the 1950s and 1960s to the United States (Watanabe, 1969:401; Vidysagar, 2006:246) for better opportunities (Tucho, 2009). It is regarded as 'the international transfer of resources in the form of human capital and mainly applies to the migration of relatively highly educated individuals from developing to developed countries' (Beine et al., 2008:631). Specific to health workers, Dodani and LaPorte (2005:487) define brain drain as 'the migration of health care professionals in search of educational and professional advancement, higher salaries and better quality of life, often in a stable socio-political environment'.

For the past five decades brain drain has significantly amplified where the number of migrants has increased from 75 million in 1960 to approximately 215.8 million in 2010. This increasing trend is expected to continue in the

future due to the growing wage differentials, standards of living between developed and developing countries and prevalence of poverty, unemployment and political instability in many fragile and least developing countries (Migration and Remittances Factbook, 2011). Robinson (2008:219) agrees and states 'brain drain is immense and unlikely to go away especially in the poorest regions'. In Zimbabwe, for instance, where the political situation has been unstable since 2000, 51% of the Zimbabwean physicians and 24% of Zimbabwean nurses are estimated to be working elsewhere in the world (Clemens and Pettersson, 2008).

The past decade has seen developing countries losing a significant number of health care professionals to developed countries. Malawi is one of them. The magnitude of brain drain in Africa is wide, largely due to South-North brain drain. In the diagnosis of Africa's emigration brain drain, 16 million Africans are out of the continent (Kaba, 2011:187). In fact, about 17 sub-

Table 1. Comparison of health professionals per 100,000 populations.

Cadres	Botswana	South Africa	Tanzania	Malawi
Physicians	28.7	25.1	4.1	1.6
Nurses	241	140.2	85.2	28.6

Source: Ministry of Health and GTZ (2007).

Saharan countries have less than half of the WHO minimum standard for nurses of 100 nurses per 100,000 population whereas many Western countries have more than 1,000. Botswana, South Africa, Tanzania and Malawi have 241, 140.2, 85.2 and 28.6 nurses respectively per 100,000 people (Ministry of Health and GTZ, 2007:81) (Table 1). According to World Health Organization (Mullan et al., 2011), sub-Saharan Africa alone has an estimated 145 000 physicians to serve a population of 821 million and a major contributing factor is brain drain.

Empirical studies on determinants of brain drain have placed particular emphasis on different factors. For instance, Kangasniemi et al. (2007), Robinson (2008), Gibson and McKenzie (2011) state that advancing career and financial advantages are important incentives in the home country. However, Hall (2005) argues that problems of access to research and weak institutional support structures are additional key factors besides higher income that motivate researchers and scientists to move abroad. In sub-Saharan Africa, factors such as better employment opportunities, low wages and better conditions, greater work loads (Stillwell et al., 2004; Mensah et al., 2005; Muula and Maseko, 2006; Dodani and LaPorte, 2005; Buchan, 2006; Dovlo, 2007; Kainth, 2009; Lofters, 2012; Dimaya et al., 2012; Ngoma and Ismail, 2013) low level of development, political instability, policies, lack of training (Chibango, 2013) religious or ethnic fractionalization, geographical distance, former colonial links and linguistic proximity between countries of origin and destination are factors driving highly skilled migration (Docquier et al., 2007; Marfouk, 2007). The main contributing factors of brain drain are economic (Beine et al., 2008; World Bank, 2011); political, social and educational in nature (Akpokari, 1998; Adepoju, 1991; Takyi, 2002). However, the study has noted that push factors in developing countries are of organizational in nature for instance ambiguous career opportunities, low salaries, greater workloads, poor working conditions, lack of equipment and lack of training.

Several measures have been implemented to curb the brain drain. According to Chibango (2013:56) integrated policy approach is best suited for providing a long term solution to medical brain drain. According to Schrecker and Labonte (2004), some of the measures are as follows:

i) Increasing the number of training spaces available for health professionals in the industrialized countries.

ii) Additional development assistance specifically targeted at improving the ability of developing countries.

iii) To train and retain health professionals, for example by improving incomes and working conditions.

iv) Codes of practice for the recruitment of health professionals in developing countries.

v) Policies that acknowledge an ethical obligation to facilitate the return of health professionals to developing countries.

vi) Direct financial compensation for the losses to countries of origin associated with the emigration of health professionals, in the form of brain drain tax or increased generic bilateral aid flows.

Outline of structure

This paper is organised in the following way. The paper begins by introducing the research and its framework. This is followed by the rationale and statement of the problem, contribution to knowledge, aims and objectives. This is followed by determinants of brain drain of health care professionals in developing countries. Initiatives put in place by some countries to manage brain drain have also been discussed. Lastly, a conclusion is drawn.

The rationale and statement of the problem

Many developing countries, particularly in Africa, are experiencing the brain drain of health care professionals. This is affecting the health service delivery in developing countries. The main determinants of brain drain in developing countries particularly sub-Saharan Africa include economic, political, social and education factors. The problem, however, is that previous scholars have identified determinants of brain drain without adequately examining major factors that influence brain drain. As a result, they have not come up with proper assessment of measures against brain drain. In some contexts, while developing countries, Malawi not an exception have shown initial acceptance to increase wages and improving conditions of health care professionals for the fear of losing many health care professionals, brain drain is still taking place. Brain drain studies especially in developing countries have fallen short of assessing determinants of brain drain in developing countries. This study therefore fills the lacuna. The problem with this knowledge gap is that it makes public sector managers

fail to make proper interventions in an informed, well focused and coordinated manner to curb brain drain.

Contribution to knowledge

The paper contributes to the understanding of main factors that influence brain drain in a developing context environment. To this end, the study informs public sector managers and policy makers the need to address these factors if they are to curb brain drain in developing countries.

Research aims and objectives

The purpose of the research is to extend the work of previous scholars through assessing determinants of brain drain and measures to curb brain drain. To reach this aim of the study, the following objectives will be pursued:

- 1) To assess the main determinants of brain drain among health care professionals.
- 2) To assess the initiatives to curb brain drain in developing countries.

DETERMINANTS OF BRAIN DRAIN

Economic factors

The economic conditions of African countries have been on the decline for decades (World Bank, 2011). This deteriorating state of affairs has had adverse effects on the living standards and quality of life of Africans. The growing emigration of people from Africa to developed countries due to the deplorable economic climate in the source countries is attributable to this (Beine et al., 2008; Kwok and Leland, 1982). Docquier (2006:2) states 'migration pressure has increased over the past years and is expected to intensify in the coming decades given the rising gap in wages and the differing demographic futures in developed and developing countries'. The economic conditions in African countries have been on a steep decline especially during the 1980s. Among the regions classified as developing countries, sub-Saharan Africa's economic performance is the poorest (World Bank, 2011). This rising incidence of poverty combined with unemployment partly accounted for why skilled workers migrate to the developed countries for better opportunities and better living conditions. Highly skilled workers, defined primarily as those with no less than a university degree, often 'seek to maximize return on their investment and training by moving in search of the highest paid and/or most rewarding employment' (Iredale, 2009). The search for better living conditions, more

favourable rewards for labour and the need to escape the harsh economic realities in the region partly account for the migration of skilled human capital to the developed countries, especially the OECD.

Political factors

Many African countries experience ongoing conflicts, wars, and civil strife. Some of these endless battles originate from inter- and intra-tribal tensions with strong ethnic biases. Also, the political instability in the continent may also be traced to the cold war between the superpowers that created regional and ethnic dynamics, which often pitted tribes against one another, and occasionally resulted in violence. The frequent tribal tensions and consequent inter-tribal wars create a situation of abject poverty, ill health, and a destabilized continent. Akpokari (1998:211) ascribes the rising migration not only to the inability of the states to distribute resources optimally and equitably among competing constituents, but also the consequent revival of old tensions which aggravates conflicts which in turn lead to refugees and migration. The unstable political environment, very weak economies, a history of military coups, and non-existent democratic institutions encourage individuals from Africa to emigrate to other nations, especially developed economies in Europe and the United States (Adepoju, 1991; Akpokari, 1998; Takyi, 2002). The annual average growth rate of skilled migration from Africa to the United States and other OECD countries between 1975 and 2000 is estimated to be twice as large as the growth rate of total immigration (Docquier and Rapoport, 2007). Thus, educated and skilled individuals from Africa often migrate to more stable economies primarily to flee from the unstable and often dire political climate, and, more importantly, for a better quality of life for the emigrants and their families. Adepoju (1991) opines that the alarming increase in the emigration rates from Africa is due primarily to the rapidly declining socio-economic and political climate in the region.

Social and educational factors

In the study on skilled migration and brain drain, Skeldon (2008:4) believes that 'the basic trend reflects an increase in the volume of skilled migration as part of global population movement'. Takyi (2002) highlights the role of higher education as a push factor in the debate of the rising number of African migration. The colonial era in Africa is characterized by an influx of Africans to Europe as the destination of choice for higher education. This is due mainly to the cultural and political ties to the countries that colonized the region. Post-independence in Africa and the emergence of the developed states as a

global technological and industrial nation leads to a growing increase in the number of Africans migration for the purposes of higher education (Takyi, 2002).

Most of the existing literatures recognize that the decision to migrate is the result of the interaction between several identifiable factors both from home and abroad. These factors are described in terms of push and pull factors (Blacklock et al., 2014:99; Alexis and Vydellingum, 2007:442; Ngoma and Ismail, 2013:747). Push factors alienate people and encourage professionals to leave their countries (identified as source or donor countries) in search of a location where these factors are insignificant or non-existent (known as the destination country). On the other hand, pull factors entice people from source to destination countries (Slote, 2011:181). According to Kainth (2009:85) pull factors refer to factors which attract migrants to an area because of opportunities for better employment, higher wages, facilities, supporting staff and better working conditions, relative political stability. It is the net interplay of multiple push and pull factors that contributes to this monumental person decision (Kainth, 2009:86).

Pull factors

According to Dimaya et al. (2012:3); Ngoma and Ismail (2013:747) higher wages and better employment opportunities and technologies in developed countries create incentives for skilled workers from developing countries to migrate. The continuing disparities in pay between richer and poorer countries offer a great deal of pull towards more developed countries. However, Stilwell et al. (2004) argue that factors affecting migration varies from person to person and the patterns are common within countries. In Cameroon for example, a lack of promotion opportunities, poor living conditions, and a desire to gain experience rank above poor wages as reasons why health-care professionals chose to migrate. By contrast, in Uganda and Zimbabwe, wages are the most important factor (Stilwell et al., 2004). This is concurred by Ngoma and Ismail (2013:749). A study by Vujicic et al. (2004) show that purchase parity physician wages in the USA are 22 times those in Ghana and about 4 times those of South Africa. Wages of nurses in Australia and Canada are 14 times those in Ghana and 25 times those of Zambia and about twice those of South Africa (The JLI Africa Working Group, 2006). However, a survey conducted by Gibson and McKenzie (2011) in three pacific countries shows that economic incentives for migration or income gains play a weaker role in determining highly skilled migration as compared to career opportunities and enabling environment for research. The dramatic increase in recent years in the number of nurses leaving the Philippines and certain African countries is greatly influenced by high rates of nursing vacancies in Canada, the United States, and the

United Kingdom (Stilwell et al., 2004).

Push factors

Push factors in developing countries are poor working conditions, low job satisfaction and lack of training opportunities (Kaba, 2011:190) and wage differentials (Ngoma and Ismail, 2013:749). Other push factors according to Shinn (2008) are lack of professional opportunity, personal development, limited career advancement and poor supervision. Political and social unrest are other push factors (International Dialogue on Migration, 2011).

Dovlo (2007:137) argues that low salaries are a major reason for the brain drain. This is why according to Dodani and LaPorte (2005:489), the big gaps between the wage rates of skilled workers in developed countries and those in developing countries make brain drain difficult to control. Oberoi and Lin (2006:31) have a different opinion and state that when salaries in Botswana were increased, there was no reduction in the number of workers leaving the country. However, in the long run improved convergence and reduction in wage differentials can cause migration to fall (Ngoma and Ismail, 2013:749). Although Vujicic et al. (2004) argue that wage differentials are not impacting significantly on migration decisions, researchers such as Slote (2011:182), Ngoma and Ismail (2013:749), Mensah et al. (2005) and Muula and Maseko (2006) consider salary as an important part of the model. However, other financial aspects like allowances have also not been looked at to determine brain drain.

Brain drain is attributed to little opportunity for vertical progression; retention strategies focused on developing satisfying horizontal careers that is gaining greater command of work while remaining in one job or work place (Robinson, 2008:218). As such, there is insufficient adequately trained human capacity in sub-Saharan African countries to absorb, apply and make efficient use of the interventions being offered by new health initiatives (Robinson, 2008:219; Anyangwe and Mtonga, 2007:96). On the other hand, a host of economic issues is responsible for or at least exacerbates the flight of skilled persons. According to Shinn (2008), a country with a weak economy, high unemployment, significant corruption, periodic famine and substantial poverty is a prime candidate for brain drain.

For the health sector in developing countries, brain drain is seen to 'worsen the already depleted healthcare resources and widens the gap in health inequities worldwide' (Pang et al., 2002:500). This is exacerbated by the fact that most developing countries suffer from disease burdens necessitating adequate skilled personnel and have high population rates. To this end, Schrecker and Labonte (2004:409) observe that in 'Southern Africa, rapid out-migration of health

professionals is compounding the problems of health systems already faced with budget constraints and the impacts of HIV/AIDS'. Perhaps this observation made Stark (2004:15) to conclude that 'there is a strong consensus that deficiency in human capital is a major reason why poor countries remain poor'. World Health Organization (2006:107) reports that HIV/AIDS has rendered the health workplace a dangerous place in sub-Saharan Africa. As such, the fear of contracting HIV/AIDS through work related injuries is a push factor related to the functioning of the health systems. According to World Health Organization (2006), fear of HIV infection causes health workers to leave services. There are approximately 35.3 million people living with HIV worldwide and sub-Saharan Africa is the most affected region, with nearly 1 in every 20 adults living with it. Sixty nine per cent of the people living with HIV are living in this region (World Health Organization, 2013). Only a few African countries, notably Swaziland and Zambia have programmes to counsel, support and treat health workers exposed to HIV. In sub-Saharan African countries, between 15 and 30% of nurses are HIV positive (Buchan, 2006:17s). As one of the world's poorest countries, Malawi has a low life expectancy, high infant mortality and a high prevalence of HIV/AIDS (Bradby, 2014:4).

Brain drain in sub-Saharan Africa is deeply linked to the structural adjustment programmes imposed on many of these countries since the 1980s by international financial institutions like the IMF or the World Bank (Freitas et al., 2012). These programmes, which include privatization and the cut of public expenses on areas such education and health, have proved unsupportive of economic development, eventually inciting many of skilled professionals to search for better positions abroad (Freitas et al., 2012). From this perspective, the brain drain appears as a symptom of underdevelopment rather than its cause. (Table 2)

INITIATIVES TO CURB BRAIN DRAIN

Some countries such as Ireland, Taiwan, South Korea, China and India, have been very successful in slowing down the rate of emigration of their skilled people and have developed strategies to attract back those in the Diaspora, in effect reversing the brain drain. It is important to note that countries like Taiwan and South Korea have rapidly achieved a high level of development, partly through utilising their skilled human capital in the Diaspora. China and India, on the other hand are currently experiencing the highest rates of economic growth and diversification in the world and the engagement of their successful citizens in the Diaspora is contributing to this growth and development. The key issue is whether Malawi, other African and Latin American countries can utilise and benefit from their Diaspora communities to attain similarly successful

growth and overall development.

Taiwan and South Korea are further examples of the benefits of having strategies in place to reverse brain drain. The two countries have pursued similar strategies to achieve the physical relocation of their highly skilled and successful citizens in the Diaspora to their home countries. For example, according to Chang (1992), Taiwan has set up a government agency, the National Youth Commission, to encourage and coordinate the return. The Taiwan government has also established a 'Science Park' and provided tax and financial incentives for returnees to establish high-technology firms. Nolan and Pack (2007) state that much of today's prosperous and fast growing high technology sector in Taiwan is attributed to firms established by returnee scientists and engineers. According to Sameta (2013), South Korea focuses on attracting back its Diaspora scientists to help upgrade and boost its research institutions, such as the Korean Institute for Science and Technology. Returnees who joined KIST are allowed a great degree of research and management autonomy to reproduce the environment experienced and enjoyed in the USA. They are also offered salaries, housing and working conditions similar to those they enjoyed while in the USA. This emphasis on enhancing research and development through Diaspora returnees was crucial in South Korea's massive drive for industrialisation in the 1970s (Yoon, 1992). During the 1960s, only about 16 per cent of Korean scientists and engineers with a PhD in the USA returned to South Korea, this percentage jumped to about two-thirds in the 1980s (Kapur, 2001). China also require people who went abroad for education to put down deposits before they are allowed to go and the deposits would be forfeited if after graduation they did not return to China (Wong, 2009). According to Denton (2006), preventing nurses from leaving through the use of monetary or regulatory barriers does nothing to alleviate the factors that push them to leave. It also raises serious issues about the freedom and rights of individuals to live and work where they choose.

India's case is slightly different. Government efforts concentrate on attracting financial remittance from successful migrants in the Diaspora. The return of highly skilled 91 Indians, especially in the field of information technology, has been mainly driven by non-government voluntary initiatives. Indians living abroad, especially in the USA and Europe, have sought to invest in higher education institutions, especially in the field of science and technology. Diaspora Indians have also been active in facilitating technology transfer by setting up IT firms, usually as extensions, branches or manufacturing facilities for firms already established overseas (Kapur, 2001). However, it is the Indian Diaspora networks, established especially by those in IT, that have been very useful in the re-transfer to India of knowledge and the entrepreneurial culture vital for growth and development. According to IOM (2005), some governments are directly

Table 2. Summary of push and pull factors.

Push factors	Pull factors
Poor working conditions, lack of training opportunities, lack of career opportunities, low wages/salary, political instability, lack of research, poor quality education, poor supervision, and greater work loads	Higher wages/salary, better employment opportunities, better technologies, promotion opportunities, better working conditions, enabling environment for research, better career opportunities, better facilities, better political stability and supporting staff

Source: Ngoma and Ismail (2013), Blacklock et al. (2013), Dimaya et al. (2013), International Dialogue on Migration (2011), Kaba (2011), Slote (2011), Kainth (2009), Shinn (2008), Dovlo (2007), WHO (2006), Muula and Maseko (2006), Stillwell et al. (2004).

encouraging their nationals abroad to invest in their country of origin, sometimes with the help of special incentives or specifically tailored investment schemes. The Indian Government, for example, adjusted its citizenship policies to grant dual citizenship to Indians living abroad. This has helped to remove obstacles for Indians abroad to invest and travel in India (IOM, 2005). According to Quaked (2002), strategies for the promotion of economic growth by developing countries are helpful and necessary to draw back their highly skilled to help address the detrimental effect of the brain drain. Economic growth also reduces the rate of migration, as the disparities in salaries, quality of facilities and investment in research and development are reduced. When the powerful attraction of much higher levels of income and quality of life no longer obtains, highly skilled people are less likely to uproot themselves from their home environment and culture to move and live in a totally new one. The high level of economic growth that China and India have been enjoying for the last few years have had a positive effect on slowing down the rate of brain drain. Three out of the five countries considered above as successful examples of reversing the brain drain, namely Taiwan, South Korea and China, were not democracies when they started reversing their brain drain. This suggests that development drive and economic growth are crucial factors (Quaked, 2002). The Philippine Overseas Employment Administration was founded in 1995 to promote the return and reintegration of migrants. Many privileges are granted to returnees, including tax-free shopping for one year, loans for business capital at preferential rates and eligibility for subsidized scholarships. According to World Health Organization (2006) the Philippines experiment is seen as a role model.

South Africa and the United Kingdom signed an agreement in 2003 aiming at creating partnerships on health education and workforce issues and facilitate time limited placements and the exchange of information, advice and expertise. Within the framework of a Memorandum of Understanding, opportunities have been provided for health professionals from one country to spend time-limited education and practice periods in the other country, to the benefit of both (World Health, 2006). The Department of Health in the UK in 2001 developed its first Code of Practice for International Recruitment and

was updated in 2004. In addition, the Commonwealth Secretariat also developed a Commonwealth Code of Practice for International Recruitment of health care personnel in 2002. The World Health Organization (WHO) has recognized, in its 2006 report entitled working together for health. In 2007, the Health Worker Migration Policy Initiative, a partnership involving the WHO and the Global Health Workforce Alliance was formally established to address the critical global challenge of migration of health care personnel (Zubaran, 2012). Points base immigration system is now a common practice in developed countries. The aim of point based immigration system is to acquire high skilled and wealthy manpower from other parts of the world (Zubaran, 2012). While the reason behind high skill is the market demand for such manpower, the reason behind wealthy manpower is capital transfer and exclusion of immigrants from social security benefits to keep entitlements exclusive to natives.

In order to recoup the costs associated with brain drain migration tax, taxing citizen abroad is another strategy. According to Oberoi and Lin (2006), Eritrea's system requires external citizens to pay 2% income to the home government. This ensures that recruitment costs increase and potentially reduce migration. The money that is received is reinvested into the economy specifically for health training and development of facilities and public hospitals. Other incentives for retaining health workers according to Adzei and Atinga (2012) include the provision of housing facilities and acknowledging health staff performance.

Appropriate involvement in decision-making, training and development has been seen as important for retention of workers in Southern Africa health care systems. Retention strategies include orientation and induction programs for new entrants into the health care setting to assist the adjustment process into their new job. Promotion and cultural diversity, open communication and feedback mechanisms are also beneficial for retention (Oberoi and Lin, 2006).

THE EXAMPLE OF MALAWI

Malawi is a landlocked sub-Saharan African country sharing boundaries with Mozambique to the south,

southwest and east; Zambia to the west and northwest; and Tanzania to the north and northeast. The country is divided into three regions namely Southern Region, Central Region and Northern Region. The Northern Region is the least densely populated, whilst the southern region, home to numerous tea plantations, is the most populated. With a population of 15.9 million people, World Bank classifies Malawi as one of the poorest in the World (World Bank, 2014). The past decade has seen developing countries losing a significant number of health care professionals to developed countries. Malawi is not an exception. Malawi is one of the countries in the sub-Saharan Africa experiencing the brain drain of health care professionals, nurses in particular.

According to Denton (2006), Malawi one of the world's poorest countries trains 60 nurses per year, yet it loses around 100 nurses annually and more than half of them travel to United Kingdom. Meanwhile, Malawi has 75% vacancy rate for nurses (Kasalika, 2014). According to Yeates (2012), worsening health outcome in poorer countries and widening global health inequalities are directly linked to nurse migration. Brain drain is immense and unlikely to go away especially in the poorest regions (Robinson, 2008). According to Nove (2011), Malawi suffers from a severe shortage of nurses due to a low proportion of young people completing secondary education, the practice of girls marrying young, a shortage of nursing/midwifery tutors, midwifery not being a separate profession from nursing, short life expectancy resulting in high levels of death in service and brain drain. Quality health care in Malawi cannot be improved with shortage of human resource (Kasalika, 2014).

The magnitude of brain drain in Africa is wide, largely due to South-North brain drain. In the diagnosis of Africa's emigration brain drain, 16 million Africans are out of the continent (Kaba, 2011:187). Malawi is estimated to have only 28% of nurse positions filled (Clark et al., 2006). Literature by Kaba (2011) states that in the diagnosis of Africa's emigration brain drain, 16 million Africans are out of the continent and the magnitude of it in Africa is wide, largely due to South-North brain drain. Malawi with 3000 nurses in the public sector has the lowest number of nurses in the SADC (Nurses and Midwives Council of Malawi, 2006). Countries of the global core where health professionals immigrate face manpower shortages in their health delivery systems. In light of these manpower shortages, developed countries such as the UK, USA and Canada have had in market terms, a higher demand for health care workers that has not been satisfied domestically and have imported such labour (Prescott and Nichter, 2014). Data from the World Health Organisation (WHO, 2006) indicate that nurses and midwives trained in sub-Saharan Africa and working in Organisation for Economic Co-operation and Development (OECD) countries represent 5% of the workforce. In the UK, there is an increase of nurses on the Nursing and Midwifery Council (NMC) register coming

from South Africa, Zimbabwe, Nigeria, Ghana, Malawi, Kenya and Botswana (NMC, 2009). Increased demand for health workers in high-income countries leads to a growth in career options for qualified health personnel (Aitken and Kemp, 2003). Migration has become an important option for Malawian nurses leaving the public health service.

According to Clemens and Pettersson (2008), 17 percent of Malawian nurses were overseas in 2000, and a total of 633 nurses had been validated to work overseas as shown in Table 3. Validation figures provide important data on intention to migrate and refer to those nurses requesting appropriate documentation to migrate. For nurses to gain employment overseas in Malawi, they must first seek validation from the Malawi NMC and then provide proof of qualification from their training institution. Health care professionals leave Malawi for UK mostly due to opportunities in the UK for further education and having a higher living standard, and improvements in salaries and working conditions. Language and training links resulting from colonial ties also contribute to the appeal of the UK (Young, 2011). The Malawi government in cooperation with international development partners set up various measures that are seen to go a long way in addressing the problem of brain drain in Malawi. In particular, a human resources plan for the health sector which was to work as a broader policy document for addressing brain drain was developed to form part of the Fourth National Health Plan. To realize the plan, the Ministry of Health (MOH) developed a financing plan in 2000, the government invested HIPC funds and GTZ funded activities that would support the reopening of CHAM training facilities that were closed due to lack of enough tutors and operating resources. In addition, by 2001 the MOH came up with a Six Year Emergency Pre-Service Training Plan, an Emergency Human Resource Program in 2004 and a Human Resource for Health Strategic Framework in 2005 which presented various interventions as measures to control the brain drain situation in Malawi. Specifically, the six year EHRP primarily focused on financial and non-financial incentives (including salary top-ups), expanded pre-service education, the use of international volunteers, technical assistance to improve management, and a more robust monitoring and evaluation system (DFID, 2010; Palmer, 2006). Drawing funding from the Malawi Government, DFID, and the Global Funds, the main aim of the plan is to raise Malawi's staffing levels to be at par with other economically equally placed countries in the region, like Tanzania. The EHRP is also institutionalized within the human resources management pillar of the 2004 Joint Program for Work operationalized through the Health Sector Wide Approach (SWAP) to specifically support the realization of Essential Health Packages. Malawi government has put various measures in place to curb the problem of brain drain in Malawi among health care professionals. These measures include salary top ups,

Table 3. Number of Malawian nurses validated to work overseas, 2000-2008.

Year	Number validated
2000	90
2001	111
2002	90
2003	81
2004	85
2005	98
2006	30
2007	23
2008	25
Total	633

Source: NMC Malawi unpublished data (2009).

offering various forms of training for health personnel and bonding contracts (DFID, 2010).

CONCLUSION

This paper attempts to assess determinants of brain drain among health care professionals. Although, the migration of health workers is partly an attribute of available vacancies in developed countries, this study has shown that economic, political, social and educational factors contribute to brain drain. However, among the many factors significantly related to brain drain organisational factors are equally crucial. Even though the decision to migrate is basically a personal one and therefore prone to varying personal circumstances. Without addressing these, any attempts to improve and sustain health care systems in affected countries such as Malawi will ultimately be a failure.

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