Stemming the impact of health professional brain drain from Africa: a systemic review of policy options

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Abstract

Africa has been losing professionally trained health workers who are the core of the health system of this continent for many years. Faced with an increased burden of disease and coupled by a massive exodus of the health workforce, the health systems of many African nations are risking complete paralysis. Several studies have suggested policy options to reduce brain drain from Africa. The purpose of this paper is to review possible policies, which can stem the impact of health professional brain drain from Africa. A systemic literature review was conducted. Cinahl, Science Direct and PubMed databases were searched with the following terms: *health professional brain drain from Africa* and *policies for reducing impact of brain drain from Africa*. References were also browsed for relevant articles. A total of 425 articles were available for the study but only 23 articles met the inclusion criteria. The review identified nine policy options, which were being implemented in Africa, but the most common was task shifting which had success in several African countries. This review has demonstrated that there is considerable consensus on task shifting as the most appropriate and sustainable policy option for reducing the impact of health professional brain drain from Africa.

Introduction

Brain drain occurs when a country becomes short of skills due to emigration of workers with specialized skills.¹ Highly skilled health workers often migrate from poor to rich countries. In Africa, a sizeable number of health professionals migrate to developed countries leaving behind systems with acute staff shortages resulting in exacerbation of health inequalities that already exist. Brain drain of health professionals has resulted in an uneven distribution of health staff across the globe, with countries carrying the highest burden of diseases having the lowest numbers of health workers while those with relatively low need

have the highest numbers.² The greatest shortage of health workers is believed to be in South East Asia and the largest relative need to be in Sub-Saharan Africa where an increase of almost 140% is required to achieve adequate staffing levels.³

The developing world is likely to lose more health staff in the future as the demand for skilled health professionals by rich countries is set to increase due to their ageing populations.⁴ This implies that the distribution of health workers is most likely going to be further skewed in favor of the developed world. Latest figures suggest that Africa carries 25% of the world's disease burden, yet has only 3% of the world's health workers and only 1% of the world's economic resources.² Given these disturbing statistics, there is an urgent need to correct this rather unethical and social injustice which has been allowed to occur for many years.

In order to manage the outflow of health staff from Africa, there is need to prescribe a number of policy initiatives at regional, international and global levels and to also fully implement the recommendations of several studies done on health professional brain drain from Africa. It is vital for these policies and recommendations to be directed to the health workers who are the integral component of the health system. For instance, pouring money in the health system of African countries may not yield any desired change if health workers are not available, motivated, skilled and supported. The purpose of this paper is to review possible policies, which can stem the impact of health professional brain drain through a systemic review of most recent literature on brain drain from Africa and to also explore on instances when these policies have been applied practically.

Methods of research

Electronic searches were conducted in PubMed, Cinahl and Science Direct with the search themes *health professional brain drain from Africa* and *policies for reducing impact of brain drain from Africa*. References of identified articles were also browsed for relevant literatures. The search was limited to peer reviewed publications, which were written in English language.

Articles published from January 2005 to June 2012 were included in the study. After the initial search, articles were screened for relevance by reviewing the abstracts and titles. Studies were selected for full text appraisal if they suggested policies for stemming the impact of health professional brain drain from Africa.

The Appendix summarizes the type of data

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collected during the review. The data abstraction form was used as a quick guide to determine eligibility of articles considered for this review besides its primary role as a data collection tool. The form was completed for all articles, which met the inclusion criteria. Due to the inclusion of mixed methodology papers, a narrative synthesis approach was utilised to summarise and synthesize results. For the purpose of this study, authors were not consulted if there was any missing data on papers reviewed. All collected data was entered into a database managed by the researcher.

Results

The flow chart in Figure 1 shows the results of the search and study selection. A total of 425 studies were available after the initial search. The titles and abstracts of these studies were scrutinised for eligibility and 325 articles were excluded because they were not relevant to the study. The remaining 100 papers were reviewed and 77 were rejected due to unavailability of the full article or duplication. A total of 23 articles met the inclusion criteria and were included in this paper.

Description of policies included in the studies

Overall, nine policies to reduce health worker brain drain from Africa were identified and they were implemented by countries mostly in the Sub-Saharan region. These policies were task shifting, remuneration, regulatory mechanisms, compensation, bonding, political stability, importing health staff, training more staff

and remittances. Figure 2 demonstrates the frequency these policies were discussed and implemented in the studies reviewed. Table 1 gives a detailed summary of the policies identified by each and every study included in this review and where the respective policies have been implemented.⁴⁻²⁶

Task shifting

Task shifting has been a popular policy in reducing the impact of health worker brain drain from African countries. Several African governments have been meeting specific health needs by establishing new cadres that are better retained in rural and hardship areas because their qualifications are not recognised internationally.¹² These cadres have played a pivotal role in initiating and delivering antiretroviral treatment (ART).^{5,9,12} Task shifting has also been successfully used in psychiatry where psychiatry nurses have performed the psychiatrists' roles well.²² In

Mozambique, a follow up study on task shifting revealed that 90% of non-physician clinicians in obstetric care were still working at a district hospital while almost all of the doctors had left.¹³ Most of the articles which discussed task shifting have revealed that moving away from the traditional doctor-centric model has increased the efficiency and quality of health services.^{9,14,15,27} Constraints of task shifting have also been reported and these include lack of standardisation between training programmes and resistance from professional staff.

Remuneration

Many health workers migrate due to poor remuneration and improving the health workers' salaries may reduce health professional brain drain. Many African countries have not successfully managed to tap into the benefits of remuneration because of the difficulties in sustaining decent salary packages. This review

identified one study where an occupation-specific dispensation model to remunerate health workers was implemented in South Africa.⁶ This resulted in the adjustment of nurses' salaries from 2008.

Regulatory mechanisms

Regulatory mechanisms such as recognising overseas qualifications have been embraced by South Africa.⁷ This can potentially facilitate the immigration of health professionals willing to work in Africa. Another study reviewed reveals that some African countries are using the voluntary World Health Organisation Global Code of Practice to guide their national action and multilateral cooperation. In this regard, Kenya has entered into bilateral agreements with Namibia, Lesotho and Rwanda regarding collaborative health workforce training with the hope of promoting circular migration of health professionals.⁸

Table 1. Details of studies included in the review.

Reference	Policies/recommendations	Country
Mullan <i>et al.</i> , 2007 ⁵	NPCs were operating in 25 of the 47 Sub-Saharan African countries surveyed	Sub-Saharan Africa
Pillay <i>et al.</i> , 2008 ⁶	Improving health worker salaries by adopting an occupation-specific dispensation model to remunerate health workers. Implementation began with adjustments of nurses salaries in 2008	South Africa
Chopra <i>et al.</i> , 2008 ⁷	Policies suggested include introducing regulatory mechanisms that recognise overseas qualifications and involving the community	South Africa
Taylor <i>et al.</i> , 2011 ⁸	Embracing the voluntary WHO Global Code of Practice by committing to bilateral agreements regarding collaborative health workforce training and promotion of circular migration.	Kenya, Namibia, Lesotho, Rwanda
Gerein <i>et al.</i> , 2006 ⁹	Task shifting or substitution where the roles of a lower level cadre were enhanced resulting in increased efficiency and quality of health services	Burkina Faso, Malawi, Mozambique, Tanzania, Zambia
Eastwood <i>et al.</i> , 2005 ¹⁰	Suggests direct financial compensation to source countries, restriction of freedom of movement and use of auxiliary cadres. Implementing a Certificate of need whereby newly qualified graduates are required to serve in areas of need before migration and also bonding schemes	Ghana, South Africa
Manafa <i>et al.</i> , 2009 ¹¹	Production of lower level cadres	Malawi
Zachariah <i>et al.</i> , 2009 ¹²	Discusses task shifting in ART management where nurses have successfully initiated and managed ART at rural primary health clinics	Malawi, Lesotho, South Africa
Pereira <i>et al.</i> , 2007 ¹³	Engagement of non-physician clinicians in obstetric care	Mozambique
Bedelu <i>et al.</i> , 2007 ¹⁴	Evidence suggest that use of nurses and community cadres improved overall ART outcomes	South Africa
Shumbusho <i>et al.</i> , 2009 ¹⁵	Nurses were able to effectively and safely prescribe ART when given adequate training, mentoring and support	Rwanda
Oberoi <i>et al.</i> , 2006 ¹⁶	Zimbabwe importing up to 300 Cuban doctors per annum to meet demand	Zimbabwe
Mills <i>et al.</i> , 2011 ¹⁷	Suggests investment in training of health care workers in source countries by recipient countries	Sub-Saharan Africa
Kirigia <i>et al.</i> , 2006 ¹⁸	Considers reimbursement by source countries	Kenya
Wright <i>et al.</i> , 2008 ¹⁹	Discusses compensatory schemes from recipient to donor countries	Africa
Wasswa <i>et al.</i> , 2008 ²⁰	Training more health care workers	Ethiopia
Dovlo <i>et al.</i> , 2007 ²¹	Implementing use of health extension workers and community health nurses	Ethiopia, Ghana
Olowu <i>et al.</i> , 2010 ²²	Reinforces the success stories of remittances send from recipient countries	Cape Verde
Jenkins <i>et al.</i> , 2010 ²³	Discusses task shifting where psychiatric nurses performed psychiatrist roles successfully	Africa
Benedict <i>et al.</i> , 2012 ²⁴	Bonding of health professionals to government institutions after graduating	Zimbabwe
Oyere <i>et al.</i> , 2007 ²⁵	Reiterates importance of political stability in stemming brain drain	Kenya
Record <i>et al.</i> , 2006 ⁴	Introducing temporary migration scheme and resolving incidence of <i>market failure</i>	Malawi
Van Rensburg <i>et al.</i> ²⁶	Discusses the task shifting in South Africa's Free State programme	South Africa

NPCs, non-physician clinicians; WHO, World Health Organization; ART, antiretroviral treatment.

Compensation

Several studies have undoubtedly revealed shocking statistics on how much revenue African countries are losing to developed countries through the migration of trained health professionals. A Kenyan study reports lost revenue from investment for nurses of between USD 205750.00 and USD 4, 515869.00 per nurse.¹⁸ Logically and ethically, recipient countries would need to reimburse the source countries for costs incurred in producing health professionals. In this review, there was no successful reimbursement programme identified. In fact, the United Kingdom, Canada and Australia did not sign the Commonwealth Secretariat's Code of Practice for International recruitment of health workers due a clause related to the possibility of compensation.¹⁰ Some recipient countries have been viewing the aid they give to the source countries as some form of compensation, but countries such as Ghana who spend USD 9,000,000 annually on medical education have witnessed the reversal of the flow of aid.²⁸

Bonding

Bonding occurs when health professionals are asked to work for the government institutions after they graduate usually for a period equal to the number of years they trained. The challenge of this policy is that the government should be in a position of absorbing all the graduates when they qualify. This review identifies Zimbabwe as one of the African countries to successfully bond some of its health professionals,²⁴ but faced with a struggling economy, Zimbabwe has not been able to employ all of the nursing graduates. Ghana also tried bonding to retain nurses, but with limited success.¹⁰ The government of South Africa introduced the *Certificate of Need* where newly qualified graduates serve in areas of need before they are cleared to migrate.¹⁰

Political stability

Although political stability is a very important catalyst in health care workers migration, only one study in this review discussed the importance of political stability in staff retention. In Kenya, a slight reduction in brain drain was noted in 2002 and this was associated with the election of President Kibaki. There was evidence of a lot of Kenyan health professionals returning home after the 24 years rule by President Moi.¹

Importing health staff

Importing health staff may provide the much-needed immediate relief from health professional shortages. In Zimbabwe for instance, of the 1200 physicians trained between 1990 and 2001, only 360 remained in the country by 2006.⁸ Zimbabwe responded to

this by importing 300 Cuban doctors annually to meet demand.¹⁶

Training more staff

The impact of health professional brain drain may potentially be reduced by training more staff. Three studies in this review discussed the policy of health professional training. One study emphasized the need for desti-

nation countries to be involved in training health professionals in source countries¹⁷ while the other study cautioned against *market failure* whereby the costs of training medical staff lays with the state, but the benefits of working abroad are privately accrued.⁴ Another article discusses Ethiopia's plan to train extra 9000 doctors to fill the gap left by migration.²⁰

Key: N is number of studies included at that level

Figure 1. Flow chart of search strategy for review of literature on health professional brain drain from Africa.

Remittances

Theoretically, remittances from African expatriates abroad have the potential to strengthen the economy and if they are ploughed back into the health systems, Africa is set to benefit. However, on the ground, most of the money from health workers abroad is not channelled into the formal banking system and it is almost impossible for some African countries to fully utilise these funds for the benefit of the majority of the people. This review only identified one country where remittances were making a difference to the economy. Remittances are contributing 20% of Cape Verde's gross domestic product.²²

Discussion

Several studies included in this review have demonstrated the success of task shifting under different settings such as HIV/AIDS care,^{11,12,14,26,27} obstetrics¹³ and psychiatry.²³ Countries practising task shifting have been able to sustain these programs. Interestingly, the use of lower level cadres has been associated with improved health outcomes.¹⁴ In comparison with other policies, which have been implemented by African countries to reduce health professional brain drain, the concept of task shifting seems to be feasible. The success of task shifting can be attributed to the fact that this policy does not infringe on the rights of workers and in most cases it is community owned. Some studies have howev-

er hinted that some lower level cadres under the task shifting schemes are being lured from the public health system by non-governmental organisations¹¹ thereby undermining the gains from this policy.

This review has several limitations. All the articles in this study were reviewed by one researcher whereas ideally, two reviewers should have independently assessed each article for inclusion and exclusion to reduce bias a single reviewer might introduce. Furthermore, there was an insufficient number of high quality papers which discussed policies geared towards reducing the impact of health professional brain drain from Africa. Only 5.4% of articles from the original search ended up being included in this review.

This review might also have been limited due to the methods utilised. Non-English publications were excluded in this study raising the possibility of having missed relevant articles. Besides this, potential studies were excluded because they did not have full text articles readily available. Although the possibility of bias in the method of identifying and selecting studies for review was reduced by using a comprehensive search strategy, there is a possibility of publication bias since this review included only published articles. To counteract this, unpublished data could have been reviewed as well. The review also did not assess the quality of the included studies.

This review had a lot in common with other studies on health worker brain drain from Africa. Firstly, other systemic reviews have also been unable to find substantial amount of rel-

evant literature on successful policies that can reduce the impact of health worker brain drain from Africa⁷ and in addition to this, most of the data available tend to come from high-income settings and may not apply to developing countries. Most importantly, among the policy options identified by other systematic reviews, substitution or shifting tasks between different types of health workers is a common policy being applied by several low income countries.^{7,27}

Conclusions

This review has demonstrated that there is considerable consensus on task shifting as the most appropriate and sustainable policy option for reducing the impact of health professional brain drain from Africa. The paper has also revealed that implementing this policy in source countries is feasible given that it costs less to train lower level cadres. Very few studies which focused on policy options for reducing brain drain from Africa were identified, but apparently a lot of work has been done on brain drain. Future studies should therefore try to incorporate unpublished articles to increase the likelihood of capturing representative data.

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Figure 2. Frequency of policy implementation in reviewed articles.

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