

## Brain-drain and health care delivery in developing countries

Yusuf Abdu Misau,<sup>1</sup> Nabilla Al-Sadat,<sup>1</sup> Adamu Bakari Gerei<sup>2</sup>

<sup>1</sup>Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Malaysia

<sup>2</sup>Department of Internal Medicine, Faculty of Medicine, Ahmadu Bello University, Zaria, Nigeria

### Abstract

Migration of health workers 'Brain drain' is defined as the movement of health personnel in search of a better standard of living and life quality, higher salaries, access to advanced technology and more stable political conditions in different places worldwide. The debate about migration of health workers from the developing to the developed world has remained pertinent for decades now. Regardless of the push and pull factors, migration of health care workers from developing countries to developed ones, have done more harm than good on the health care deliveries in the developing countries. This article reviews the literature on the effects of cross-border migration of health care professionals.

### Introduction

Migration of health workers 'Brain drain' is defined as the movement of health personnel in search of the better standard of living and life quality, higher salaries, access to advanced technology and more stable political conditions in different places worldwide.<sup>1</sup> Brain drain may be within countries (internal brain drain), but in most cases refers to cross-border or international migration and often from the developing countries to the developed ones.

International migration of highly skilled professionals first emerged as a major public health issue in the 1940s, when many European health professionals emigrated to the United Kingdom and the United States. By the mid 60s, the losses were enough to cause concern. In 1979, WHO published a detailed 40-country study on the importance and flow of health professionals, which findings suggested that close to 90% of all migrating physicians were moving to just five countries: Australia, Canada, the Federal Republic of Germany, the United Kingdom, and the United States.<sup>2</sup>

The strength of any nation depends to a large extent on its productivity, which in turn

depends on the well-being of the population. Emigration of health care professionals has both short and long-term consequences on the sustenance of the originating countries. Sub-Saharan Africa in particular faces the greatest challenges, with 11% of the world's population and 25% of the global disease burden;<sup>3</sup> yet the region has only 3% of the global health workforce and accounts for less than 1% of health expenditures worldwide. The proportion of effects of brain drain depends on the extent of a country's development. Developed countries, overall, have large numbers of scientists and healthcare and other professionals, the developing countries may have just a handful. A major obligation of any government to its population is to pursue and implement policies that increase numbers of these key professionals to a desirably stable level, or where they are already approaching stability, to maintain them at those levels.<sup>4</sup>

### The many ills of brain drain in developing countries

The health care system in the developing countries faces many problems, human resource being one of the majors. The system is structurally and systemically fragile and weak to provide effective service where it is most needed. Brain drain appears to have complicated the situation and made matters worse. By contrast, North and South America, which together have 14% of the world's population but only 10% of the global disease burden, employ 37% of the global health workforce and contribute over 50% of the pool of global health expenditure.<sup>3</sup> Malawi in southern Africa now had about 100 doctors and 2000 nurses to serve a population of 12 million people. The hospital beds in many poor countries are full and overflowing. Staff are unable to keep up with the seemingly endless flow of patients near death.<sup>5</sup> The negative impact of brain drain can be masked in the urban areas of developing countries with higher concentration of public and private health centers, but such effects remain clear in the rural areas. As at 2006, more than 25% of doctors in the US are foreign trained, and US had an estimated ratio of 25.6 doctors per 10,000 population. In comparison, the small country of Lesotho in southern Africa has 0.5 doctors per 10,000 population, and an adult HIV prevalence rate of 28.9%, in addition to tuberculosis, malaria, and the host of other lower respiratory and gastrointestinal illnesses that plague that part of the world.<sup>6</sup> Uganda had only one doctor per 24,700 inhabitants, and Zambia needs 15,000 physicians for its health care system to work properly, but only around 800 are registered.<sup>6</sup> The physician-to-population ratio is estimated to be 13/100,000 in Africa, compared with

Correspondence: Yusuf Abdu Misau, Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Malaysia. E-mail: yusufmisau@yahoo.com

Key words: migration, health workers, developing countries.

Received for publication: 15 February 2010.

Accepted for publication: 7 May 2010.

This work is licensed under a Creative Commons Attribution 3.0 License (by-nc 3.0).

©Copyright Y.A. Misau et al., 2010  
Licensee PAGEPress, Italy  
Journal of Public Health in Africa 2010; 1:e6  
doi:10.4081/jpha.2010.e6

280/100,000 in the United States.<sup>7</sup> Despite these loop-sided statistics, about 23,000 qualified academics emigrate each year from Africa alone. In the year 2001, a Manila based newspaper reported 13,536 Filipino -nurses left the country, whereas only 4780 graduated.<sup>6</sup> A survey of Ghana's health-care facilities in 2002 found that 72% of all clinics and hospitals were unable to provide the full range of expected services, due to a lack of personnel. Forty-three percent were unable to provide full child immunizations, 77% were unable to provide 24-hour emergency services and round-the-clock safe deliveries for women in childbirth. According to Dr. Ken Sagoe, of the Ghana Health Service, these statistics represent a severe deterioration in Ghana's health capacity. Sagoe also points out that 604 out of 871 medical officers trained in the country between 1993 and 2002 now practice overseas. Zimbabwe, similarly, trained 1200 doctors during the 1990s, but only 360 remain in the country by the year 2000. In Kadoma, eight years ago, there was one nurse for every 700 residents; currently there is one for every 7,500. In 1980, the country was able to fill 90 percent of its nursing positions nationwide; currently only 30 percent are filled. In addition to scarcity of personnel, the International Labor Organization estimates that 18-41% of the health-care labor force in Africa is infected with HIV. Over the last five years, the governments in developing countries have lost large segments of health administrators, nurses, and physicians to foreign Non-Governmental Organizations, which can easily outbid the public sectors for the services of local health talents.

### Brain drain medical education in developing countries

With continues exodus of the younger age group of medical personnel from the developing countries, the sustenance of medical education

depends on the few aging generation of health care personnel, often too weak and exhausted. At the level of research and postgraduate training, there are only a few medical journals published in Africa, some of which are published irregularly and are "probably" of low quality. Consequently, researchers do not wish to publish their papers in such journals and therefore a vicious cycle is created; the small number of submitted papers results in accepting poor quality papers or irregular publication of the journal. Irregular publication then also results in the authors not submitting papers as they are not sure whether and when their papers will be published, a "vicious circle of inadequacy" thus persist that explain why such journals cannot make an impact on the scientific world. However, some researchers believe brain drain could impart positively on medical education, as it will lead to beneficial international collaboration in health care research and development.<sup>8</sup>

### Brain drain and the economy of developing countries

As a rule of thumb, migrates from developing countries are young (aged between 15 and 45 years) and have higher levels of education and income than individuals of the same age who remain in the home country. Healthcare is one of the knowledge-intensive industries that generate enormous revenues in Europe, Japan and the United States to the detriment of the countries that invested in training the healthcare personnel. These industries creates and sustain a steep and dynamic gradient of career opportunities that attracts and concentrates talented individuals from around the world, which in most instances came from the developing countries. In addition to laws that confer preferential immigration status on individuals who have advanced degrees in science and engineering, employment opportunities also affect mobility both within countries (from public to private and academic to productive sectors) and among countries.

In a study conducted in Kenya, the cost of tertiary education of a single doctor in Kenya is approximately US\$ 48,169. The total cost of secondary education per student is US\$ 6865 and that for primary education US\$ 10,963. Thus, the total education cost per medical doctor is US\$ 65,997. This figure does not represent the loss incurred by society because of emigration of a single medical doctor. The real loss is the cumulative dollar value of the investment made by the Kenyan society in producing a doctor who decides to emigrate for a period of  $t$  years. With the assumption that: the average age of emigrating doctors is 30 years; the average statutory pensionable age for Europe and Americas is 62 years, an emigrant doctor would work for 32

years before retirement; and the feasible average interest rate on fixed deposits in Kenya is 6.65%, if the amount of US\$ 65,997 (i.e. cost of educating one medical doctor) were put into a commercial bank for a period of 32 years at a fixed deposit interest rate of 6.65% *per annum*, the investment will grow to US\$ 517,931. This is obtained by applying the standard compounding formula:  $[(\text{initial investment}) \times (1+r)^t] = [\text{US\$ } 65,997 \times (1+0.0665)^{32}]$ . Therefore, on average, for every doctor that emigrates, a country loses about US\$ 517,931. The economic loss incurred by Kenya as a result of the brain drain of 167 medical doctors is US\$ 86,494,477, i.e.  $167 \text{ doctors} \times \text{US\$ } 517,931 \text{ per doctor}$ .<sup>9</sup>

### Rationalizing brain drain?

There are often multiple reasons why healthcare workers leave their countries of origin, the so-called "push and pull" factors. Higher education is one, as Dr. Zarmeneh Aly identified why medical graduates of Pakistan emigrate to the West: "the long-standing belief of young doctors and their parents who train outside their home country is superior and a mark of achievement. The expectation of bigger incomes. The lure of high-tech training and super-specialization. A reaction against the Pakistani government's poor management of the education system, and the corruption associated with this management, in favor of what are perceived to be the more merit-based medical training systems of the West".<sup>10</sup> Other reasons for healthcare workers migration are lack of opportunity, high unemployment in health labour markets, new communication technology such as electronic recruitment of medical workers and deplorable state of health care in most developing countries. Curiously, medical schools in developing countries are also seen as role models encouraging brain drain, when they are openly expressing pride having trained students who are practicing in the developed worlds.

### Where lies the solution?

The answer to this question is as diabolical as brain drain itself. In the past, many attempts aimed at solving brain drain issue were unsuccessful, maybe because even if one adjusts the push factors, it may be outside one's domain to adjust the pull factors. It therefore takes a concerted, holistic and sincere approach if we are to expect any change. For the developing countries, there is need for policies that have deep-seated nationalistic base. It goes beyond just increasing salaries; even if you give medical workers the highest salary today, the next day inflation will take away all that come with the salary hike.

Some practical steps taken by the British government in recent terms are commendable, in that they tend to have positive result in discouraging medical workers, in Commonwealth developing countries from migrating to Britain.

### Conclusions

Migration of medical personnel impart more negatively on the health care of the exporting countries than positively. Moreover, because of the nature and complexity of this problem, sincere and committed efforts are needed from both the medical workers and the governments of developing and developed countries. There is need to change not just the process, but the entire systems in most of the developing countries. The governments should chose between politics and people, while the medical workers should balance their individual needs with ethics.

### References

1. Dodani S, LaPorte RE. Brain drain from developing countries: how can brain drain be converted into wisdom gain? *Journal of the Royal Society of Medicine* 2005;98:487-91.
2. Ahmad, O.B. Brain drain: the flight of human capital. *Bulletin of the World Health Organization*, 2004;82:797-8.
3. Who, T. 10 facts on health workforce crisis. 2006.
4. Meso, A.I. Brain drain: poor countries lose most and benefit least. *Nature* 2007;447:28.
5. Green, S. Brain Drain Adds To AIDS Crisis in Developing World. *AIDS Treatment News* 2006;7-8.
6. Richards, R. The Health Professional Brain Drain. *Education for Health* 2003;16:262-4.
7. Hagopian A, Thompson MJ, Fordyce M, et al. The migration of physicians from sub-Saharan Africa to the United States of America: measures of the African brain drain. *Human Resources for Health* 2004; 2:17.
8. Astor A, Akhtar T, Matallana MA, et al. Physician migration: views from professionals in Colombia, Nigeria, India, Pakistan and the Philippines. *Social Science & Medicine* 2005;61:2492-500.
9. Kirigia JM, Gbary AR, Muthuri LK et al. The cost of health professionals' brain drain in Kenya. *BMC Health services research* 2006;6:89.
10. Aly Z, Taj F. Why Pakistani Medical Graduates Must Remain Free to Emigrate. *PLoS Medicine* 2008;5:e2.