'Where have all the health scientists gone?: A South African question'

Thematic Paper

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1. Introduction

The international migration of highly skilled personnel has increased significantly as a consequence of globalisation (Rogerson & Crush, 2007). This being said, the situation in South Africa is no different. The category of skilled professionals most affected by migration has been that of health professionals, which has had led to a serious depletion of the health workforce in sub-Saharan Africa. The exodus of the health workforce, termed the 'medical brain drain', has catalysed research and energised new policy debates that place a high priority on managing migration (Rogerson & Crush, 2007: 1). Yet, even with the acknowledgement of the dire situation of the human resources for health, the South African government has been slow in responding to this. It has adopted the occupation-specific dispensation model to remunerate health professionals

According to Robinson and Carey, much of the older literature looked at migration as being effected by a cause or an event that resulted in people deciding to migrate. The literature and theory presumed that people had no ability to influence their environment or circumstances; they were merely controlled by what happened around them. However, migration decisions are not made in isolation; the wider political, social and economic context of a country needs to be taken into account so that migration can be seen as part of a larger process (Robinson and Carey, 2000: 90).

There are also varying views as to the positive or negative consequences of migration on particular countries. Economist, Oded Stark, and others have argued that brain drain may lead to positive results. Even in the poorest countries, Cuba may well be a good example, the prospect of being able to emigrate may increase incentives to acquire education and skills and induce additional investment in education (Sriskandarajah, 2005: 2). Mills et al. (2008) in contrast however, question whether the recruitment of health care workers from sub-Saharan Africa should constitute a crime. What with developed countries knowingly employing doctors or nurses from the developing world, where far greater skills shortages exist.

It is proposed that a useful understanding of migration can be attained from applying Giddens' structuration theory, which attempts to resolve a fundamental division within the social sciences between those who consider social phenomena as products of the action of human agents in light of their subjective interpretation of the world, and others who see them as caused by the influence of "objective", exogenous social structures. Giddens attempts to "square this circle" by proposing that structure and agency be viewed, not as independent and conflicting elements, but as mutually interacting duality (Jones, 1999: 104). The theory emphasises the continuous interplay between human agency and structure. Human agency consists of two levels of consciousness; practical and discursive. Practical consciousness refers to knowledge or beliefs about social conditions, while discursive consciousness is how actors verbalise their social conditions (Robinson and Carey, 2000: 90). Therefore, with regards to migration, this decision "…is

not made whilst placing in suspension the rest of one's life, rather a specific migration exists as part of our past, our present and our future; as part of our biography" (Robinson and Carey, 2000: 91). Earlier research on migration of medical doctors to the UK in the 1980s showed that the most doctors migrated once they had received their basic training and they migrated in order to receive further training, always with the intention of returning to their country of origin (Robinson and Carey, 2000: 94). In South Africa, however, this is not the case.

Health worker migration, though an issue of national importance in the South African context is influenced and affected by regional as well as international factors. Brain drain cannot be reversed or prevented for we live in a global society, where geographical borders no longer dictate individual mobility. In the African human resources for health (HRH) context the management of HRH is what is required, to lessen the effects of citizens' decisions to migrate (Glassman, Becker, Makinen & de Ferranti, 2008). In order to fully comprehend the severity of the HRH situation within South Africa and the region, the first section of the paper aims to briefly sketch the extent of the migration figures, flows and patterns. There after the issues raised by interviewees will be discussed.

Migration flows, patterns and figures in South Africa

The migration of highly-educated, skilled workers from the world's poorest economies to the wealthiest is neither a new occurrence nor one that has diminished in the last half century. Throughout sub-Saharan Africa, the loss of highly-skilled tertiary educated emigrants, has persisted for decades and risen at a particularly staggering rate in recent years. From 1960 to 1975, sub-Saharan Africa (SSA) averaged a loss of 1,500 skilled emigrants per year. By the 1980s, the number had jumped to approximately 8,000; and by the 1990s, the most conservative estimates argued the loss of 20,000 highly qualified emigrants per year (IOM, 2007: 4). There is a great deal at stake. Africa carries 25% of the world's disease burden yet has only 3% of the world's health workers and 1% of the world's economic resources.[1]

Between 2000 and 2004, nearly 40,000 foreign nurses registered to work in the United Kingdom according to the government's official statistics. While nurses were attracted from a range of countries, the loss of nurses from sub-Saharan African countries was particularly severe. In the four year period, South Africa lost 6,028 nurses to the U.K.; Zimbabwe 1,561; Nigeria 1,496; Ghana 660; Zambia 44; Kenya 386; Botswana 226 and Malawi 192 (IOM, 2007: 4-5). In 2003, the UK granted work permits for 5880 health and medical personnel from South Africa, 2825 from Zimbabwe, 1510 from Nigeria and 850 from Ghana, despite these countries being included among those proscribed for NHS recruitment (Eastwood et al., 2005: 1893). Apart from the substantial flow of nurses, it is estimated that more than 13,300 physicians from sub-Saharan Africa were already registered and working in the U.K. at this time (IOM, 2007: 4-5).

High income countries, such as Australia, Canada, Saudi Arabia, the United States of America, the United Arab Emirates, and the UK have sustained their relatively high physician-to-population ratio, which is in sharp contrast to their lower income counterparts. The UK, for example, has over 100 times more physicians per population

[1] Editorial, The Lancet, Vol. 371, February 23, 2008.

than Malawi (Mills et al., 2008: 685). These countries have sustained their physician-to-population ratio by recruiting medical graduates from developing regions, including countries in SSA. Over half of the countries in sub-Saharan Africa do not meet the minimum physician to population ratio of one per 5000 – which is the WHO's 'Health for All' Standard (Mills et al.; 3008: 685). Although many countries within SSA have made considerable efforts to train their own doctors, the rate of loss of migration often outstrips production. In sub-Saharan Africa, 24 of the 47 countries have only 1 medical school, with 11 having no medical schools at all (Eastwood et al., 2005: 1893).

Table 1: Number of South African born workers practising a medical profession in selected OECD countries

Country	Practitioners	Nurses/Midwives	Other health professionals	Total
Australia	1114	1085	1297	3496
Canada	1345	330	685	2360
New Zealand	555	423	618	1596
UK	3625	2923	2451	8999
US	2282	2083	2591	6956
Total	8921	6844	7642	23407

Source: Department of Health, 2006, p48 based on OECD, cited in Rogerson, 2007: 16.

In the table above is it clear that in 2001 the largest number of South African born health professionals were in the United Kingdom followed by the United States. This ranking holds for practitioners, which include doctors, dentists, veterinarians, pharmacists and other diagnostic practitioners, and the category of nurses/midwives. Under the category of 'other health professionals', which includes assistants, the United States is the leading destination followed by the United Kingdom. The South African government observed that 11 332 doctors and 41 617 nurses were working in the public sector in South Africa in 2001 and stated that "the figures are very considerable and worrying, all the more since indications are that the trend is escalating" (Rogerson, 2007: 16). The perception is that there is not much being done by the South African government to curb the current migration situation or that the response has been slow. Even with the United Kingdom and South African Health Department's entering into the "UK-South Africa Memorandum of Understanding on the Reciprocal Exchange of Health Concepts and Personnel" in 2003, migration still persists. The UK-SA MOU is designed to more effectively manage health worker migration by creating opportunities for health professionals from both countries to undertake short-term placements that will foster knowledge exchange and the transfer of skills and technology by supporting collaboration between the countries' health systems and personnel. South Africa health workers are placed within the UK NHS and clinicians and health professionals from the U.K. find placement in rural South African health facilities. Since the inception of the MOU, the recruitment of health personnel has reduced and there has been a significant drop in the number of South African nurses registering to work in the U.K. (IOM, 2007: 31).

The UK-South Africa MOU might have been one factor contributing to this result, together with the implementation of the UK's comprehensive workforce strategy and ethical recruitment strategies and codes of practice. On the South African side of the agreement, administrators report that efforts are showing results in the strengthening of hospitals and health worker skills in targeted hospitals and medical centres'. However, some criticism concerning the MOU has come from the health workers who believe the MOU is limiting employment opportunities in UK for South African emigrants (Robinson and Clark, 2008: 692)

Another example of the South African Government trying to curb migration has been through the introduction of an occupation-specific dispensation model to remunerate health professionals. This dispensation is designed to address poor remuneration and career development for health professionals and is being rolled out over the next 3 years. Implementation began with adjustments of remuneration of nurses in January, 2008 (Pillay and Mahlati, 2008: 633). The outcome of the model is yet to be established.

Although the volume of flows of health professionals out of sub-Saharan Africa is not as great as that from other parts of the world, the effects of this loss in particular countries have exacerbated a deepening health care crisis. This situation has focused international attention on the exodus of skilled health professionals from Africa, including South Africa (Rogerson, 2007: 10). The magnitude of the health care worker crisis in Africa and South Africa should not be underestimated.

Further exacerbating the loss of health professionals within South Africa over the past years has been the media and political responses to the phenomenon. Political leaders have even gone as far as declaring emigrants as unpatriotic and selfish, while the media make wild and unsubstantiated statements as to the extent and motivations of emigration (McDonald and Crush, 2002: 1).

In the early 1990s, for example, the brain drain became a card in the hands of those arguing for the entrenchment of white political privilege. The issue re-emerged with unexpected strength after 1994. Banner headlines, declaring an "Exodus as Rainbow Nation's iridescence fades" (Financial Mail, 25 October 1996), "74% with skills want to quit SA?" (Sunday Times, 13 September 1998) and "Brain Drain Reaching Mind-bending Proportions" (Cape Argus, 4 August 2000), contributed to a moral panic over the state of the country's social and economic stability. Equally malevolent from government officials attempting to defend their post-apartheid record have served to polarize controversy on the subject, which started with a speech in Mauritius at a South African Development Community (SADC) conference by then President Nelson Mandela where he suggested that "whites were running away from their country" and asserted that "the real South Africans were being sorted out in the process" (McDonald and Crush, 2002: 1-2).

The financial implications of training and losing health professionals within the South African context also need to be considered. The UN conference on Trade and Development has estimated that each migrating African professional represents a loss of $184 000 to Africa, and the financial cost to South Africa, 600 of whose graduates are in New Zealand, is estimated at $37 million (Eastwood et al., 2005: 1894).

As most low and middle-income developing countries are effectively only source countries of skilled health labour for the more advanced industrial economies, South Africa's experience as both source and recipient country is unique. Particularly striking is the fact that the country's patterns of health worker migration mirror the broader tendencies of general skilled labour migration in and out of South Africa (IOM, 2007: 8).

The focus of this paper is on the experiences of doctors and health professionals, mostly from academic institutions in South Africa and the UK, who are currently in the United Kingdom (UK) and of those who have lived and worked there for different lengths of time and have returned to South Africa. The term health professionals encompass nurses, physicians, dentists, pharmacists as well as veterinarians. In the case of the study, the sample was mostly represented by medical doctors/practitioners with a strong focus on research, but also included health professionals such as biostatisticians and a nurse. Their reasons for leaving South Africa were questioned and pertinent issues raised with regards to the social considerations and work conditions; both clinically and within the health research environment; are highlighted.

2. The effects of migration in the South African context

The health professionals who migrate from South Africa are highly-skilled individuals having received good medical training from different institutions. As a developing country, South Africa, also has the advantage of being advanced/innovative in many fields for example infectious diseases. South African health professionals are also seen as hard working, and these attributes all contribute to why developed countries wish to have and lure South African health professionals to their health systems.

The entrance requirements into a South African medical school are stringent. Individuals need to achieve extremely high results at the end of their secondary education to be considered. Higher education institutions do obtain public funding from government, but it is still required that students pay for their tertiary education. For those fortunate in obtaining bursaries their fees are covered, where as others obtain financial support through student loans or their family. Thus at an individual level, due to the prolonged length of time required to complete ones degree, the financial burden of pursuing the field of medicine is high.

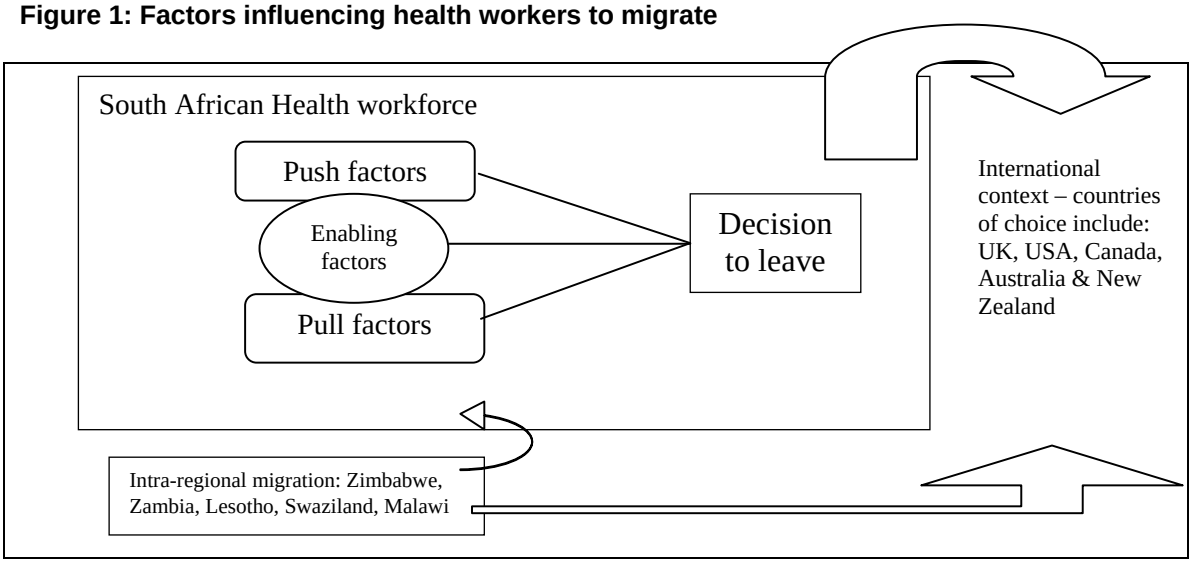
On completion of their medical degrees, health professionals are further assailed by problems such as: affirmative action (especially in the case of white males), lack of investment in infrastructure as well as possible HIV infection due to lack of surgical requirements. Poor working conditions and remuneration; especially in academic/public hospitals; also add to the multitude of problems that health professionals experience within South Africa.

The effect of health workers migrating to another country not only affects the South African health system at a macro-level, in terms of lower physician-to-population ratios, but has serious implications for the health of citizens. Those health professionals who remain within the health system have increased workloads and need to function under even harsher working conditions. Which in turn may lead to "burn out" and health professionals reassessing whether they really wish to work under such circumstances – either driving them from the medical profession or out of the country.

2.1 How do health professionals decide to leave South Africa?

There are a myriad of reasons why individuals make the decision to relocate to another country and the following sections will examine the push & pull factors which influence those decisions. The health sector has been especially hard hit by the brain drain from South Africa. Unless the push factors are successfully addressed, intense interest in emigration will continue to translate into departure for as long as demand exists abroad (and there is little sign of this letting up.) (Pendleton, Crush & Lefko-Everett, 2007: 1). Health professional decision-making about leaving, staying or returning is poorly-understood and primarily anecdotal. To understand how push and pull factors interact in decision-making (and the mediating role of variables such as profession, race, class, age, gender income and experience), the opinions of health professionals themselves need to be sought (Pendleton, Crush & Lefko-Everett, 2007: 1).

Figure 1: Factors influencing health workers to migrate



Any migration, especially to another country, is the outcome of a balance between push and pull factors, with source and destination countries weighed against each other in a complicated form of cost-benefit analysis (Dodson, 2002: 58). Lin (2002) regards the notion of social capital as simple and straightforward and sees it as "investment in social relations with expected returns in the market place" (Lin, 2002: 19). In the migration literature, migrant social capital is commonly understood as information about or direct assistance with migrating which is provided by prior migrants that in turn potentially decreases the costs of moving for potential migrants. Potential migrants access these resources through migrant networks, which are a set of interpersonal ties based on similarity, friendships; field of work/study or shared community of origin (Garip, 2008: 593). Yet, having said that, the motivations and expectations behind migration decisions and the very nature of these decisions are extremely diverse (Agadjanian, Nedoluzhko & Kumskovo, 2008: 623).

Depending on the precise combination of factors involved, emigration can be perceived by those involved as a positive step in search of new opportunities and experiences or as reluctant but unavoidable flight from one's home country (Dodson, 2002: 58). The

literature also distinguishes between motivations that propel long-term/permanent migration and those that drive temporary/short term moves. Even with this distinction however, it should be remembered that migration intended as temporary often morphs into permanent and, vice versa, the intended permanent/long term relocations are sometimes cut short for a variety of reasons (Agadjanian, Nedoluzhko & Kumskovo, 2008: 623). In the case of our sample, most of the South Africans who returned went to the UK with the intention of temporary migration for different reasons; be it to study, travel or to repay debt. Their intention was always to return to South Africa, the closest to "emigration" were those who had no immediate clear plans for returning to South Africa, and our responses from South Africa should be interpreted in this way.

The financial attractiveness of the North is what lures some health professionals, "Richer countries and health systems pay better salaries." The significance of wage differentials in accounting for the South-North movement of health care professionals cannot be over-emphasized (Rogerson, 2007: 10). Nor can it be ignored, because health professionals who "hop on" the conveyor belt of mobility may not return to their home country, and so doing complete the circular flow of migration, which would then positively affect the sending country.

A range of different factors have been aired in international research, much of which analyses flows in terms of 'push' and 'pull' forces. Push factors focus on issues of pay, working conditions, and broad management and governance factors that galvanize health professionals to exit their own health systems and migrate from their country. By contrast pull factors that tend to catalyze movement relate to shortages and active recruitment from high-income countries. In the case of Africa, Dovlo and Martineau view the migration decision as linked to the emergence between source and destination of "gradients" of six sets of factors:

- Income or remuneration gradient: the differential in salaries and living conditions between home and the destination country.
- Job satisfaction gradient: perceptions of good working conditions or environment and utilization of one's skills to the best technical and professional ability.
- Organizational environment/career opportunity gradient: differences in opportunities for career advancement and specialization and a well-managed health system.
- Governance gradient: differences in administrative bureaucracy, efficiency and fairness with which broader governmental services are managed.
- Protection and risk gradient: differences in the perception of risk (especially from HIV/AIDS in Africa and the lack of protective equipment) compared to that in recipient countries.
- Social security and benefits gradient: health professionals are concerned about their security after retirement (Rogerson, 2007: 11).

At the point when different "gradients" align it results in individuals making their decision to relocate. This point of alignment is difficult to find because it has to be at the right time of interviewing, otherwise responses are vague and avoidant of "emigration" terminology.

Background to the study

The Researching Inequality through Science and Technology (ResIST) project comprised 4 work packages or research projects. The researchers were contracted by ResIST, from the Centre for Research on Science and Technology, Stellenbosch South Africa; University of Liverpool; METUTECH, Turkey and ISI-FHG, Germany. The aim of WP 2 was to investigate the availability and effective utilization of human resources in science and technology between key 'donor' regions and a host region. In order to understand this process better it was decided to concentrate on case studies that would study different country contexts and different sectors.

The fieldwork for the study focused around on cases studies. The first, concerns the mobility of South African health professionals to and from the UK, the second, Turkish ICT researchers to and from Germany. Structured interviews were undertaken with 20-25 mobile researchers in the UK and Germany and with 20-25 returnees/potential leavers in South Africa/Turkey. These were transcribed and analyzed using a qualitative data analysis package. For the purposes of this paper however, only the South African and UK interviews were analysed. In the case of the study, the sample was mostly represented by medical doctors/practitioners with a strong focus on research, but also included health professionals such as biostatisticians and a nurse.

2.2. Why do health professionals leave?

2.2.1. Pull Factors

Drawing from the above gradient, the following factors could be recognized in the South African responses: scholarship & training opportunities, wishing to gain work experience, better resources and facilities as well as international experience were but some of the driving forces behind their decisions to relocate, as the following quotations illustrate:

> *"So then after the Masters, ...erm..., I think I worked for another few months but I got a bursary to come and study my PhD at the University of Leeds"* [43: 6].
>
> *"I wanted a much more varied and larger breadth of training, that was the main driver to go overseas, and yah, that was it really"* [48: 5].
>
> *"But I mean, that's something else I think the prime motivator was to get some international experience"* [34: 7].

These statements concur with what Rogerson & Rogerson (2002: 86) put forward, in that the reasons skilled personnel depart from their home country include seeking broader international work experience.

Another reason why it was deemed important to move beyond their home country, according to some respondents, was that one could establish oneself in your career outside of South Africa, where one had access to the latest technology and knowledge in the given field and could also build up good contacts. As the following quotation illustrates:

> *"…but overall in this kind of area that I work in I think if you want to develop contacts and establish yourself as a researcher you need to do that outside of*

South Africa and then once you've established yourself and you are known within the field and you can generate your own funding that is the moment that you can return" [35: 20].

Whereas some South African interviewees saw their opportunity within England as an opportunity to make money for the purposes of travelling, another saw it as an opportunity to repay their study debt so that they could continue studying without accruing further debt,

"*I went over for a specific reason and that was to make as much money as possible so I could repay my study debts. I just didn't want to come back and start another cycle of learning with... with a lot of study debt"* [60: 10].

2.2.2 Push Factors

A prominent issue that arose from the interviews was with regards to the research environments in which the health professionals were based within the South African context. One respondent noted… *"It's just because research in South Africa's very, primitive and small scale…"* [39: 11].

One interviewee commented on the lack of expertise within the South African context, with regards to their field of study, so going overseas to join a different research group was the only reason for their relocation:

"So for me it was a matter of, first of all coming here, so, so going overseas to a different group in my case particularly to learn about sort of the macrophage biology because that, there was, weren't particularly strong groups within South Africa that were doing that, so that was the first reason" [35: 12].

Another interviewee made similar comments regarding their field of study in pharmaceutical medicine…*"it was really a combination of stuff, because my personal area of interest is pharmaceutical medicine, so it was really to go get experience in pharmaceutical medicine"* [58: 1].

While in these receiving countries, respondents are exposed to international opportunities for conferences as well as more exposure to different systems and expanding their networks. There is also the issue of broadening horizons, which is a broader experience that adds to a person's overall expertise in a field. These are some of the comments on this:

"Now if someone comes back having been overseas this is enormously useful because you know this whole thing of expanded horizons, expanded experiences, you really want those things to come into the country" [20: 14].

"… if I look at my immediate academic environment at my colleagues, many of them have spent all their lives in South Africa, they've never left. And they have this very insular perspective…so it's often difficult to convince people that there are different ways of doing things; that there are probably better ways of doing things that they should consider" [65: 8].

The reasons for departure from South Africa confirm media concerns about crime and violence, the downturn in the economy, and perceptions of falling standards in the public

education and health sectors (Rogerson & Rogerson, 2002: 86). Issues of crime and the South African political situation were two of the issues which concerned the South African interviewees and which played a role in their decision to move abroad:

> *"I wasn't happy with our crime situation"* [47: 7]
>
> *"So I think that may still play a role in my sub-consciousness in going to a more developed nation. But what made that consciousness re-appear was the crime situation in ZA. During my internship my family was broken into by some mobs, and all of them had AK47's pointing at them it was horrendous"* [23: 4].

As with many of the South African interviewees, issues pertaining to their work conditions – long hours, insufficient remuneration, *"I wasn't happy with the remuneration"* [47: 6] and no concern for the employee – came to the fore quite often and as one interviewee commented "*it wasn't unusual for your out-patients to start at eight in the morning and still be carrying on in casualty at eight o'clock at night"* [41: 6].

Issues of crime and long working hours were not the only issues that influenced South African interviewee's decision to relocate. As one interviewee indicated the lack of job opportunities prompted them to apply for work elsewhere: *"I worked here for a year, but there was a moratorium on new appointments and there was a gap in my career and that's what prompted me to apply"* [66: 1]. Another interviewee was frustrated with the system within they worked, *"I was very frustrated in the system that I was working in"* [54: 1] and felt that this was reason for a change in their work circumstances

2.2.3. Enabling Factors

Issues pertaining to the social, economic and work conditions of the health professionals were not the only factors which influenced their decision to migrate. Certain enabling factors such as: ease of registration with the General Medical Council influenced professionals' decisions, as one respondent indicated, *" it was just the easiest option in terms of; I didn't have to do an exam at the time with the General Medical Council, it was easy to get a job and the pay was very good"* [47: 4].

Colonial cultural ties, including language, were a core influence shaping the early international flows of health professionals according to Rogerson & Crush (2007: 2), and those ties still seem to influence South African interviewees' choice of "receiving" country. As one interviewee noted, "*I suppose we tend to choose the UK because of the language I suppose, that's the main reason and the medical system here is much the same as it is there"* [52: 9].

For some of the South African interviewees the fact that they had dual citizenship, which lessened any legal issues which may have arisen, influenced their decision to relocate to the UK:

> *I've got dual citizenship, so even though I've lived in South Africa for most of my life, I've got a British passport because I happen to have been born in the UK. So I thought the UK seemed like a sensible place just to go, in terms of all the paper work and moving there.* [63: 2]

It has been thought that professional contacts within a receiving country, in this case England, influence an individual's decision to relocate. In this study there were varied responses in terms of whether interviewees used the professional contacts they had (if they had) and how they influenced them in their decision-making process. As one interviewee commented, they utilised their professional contacts to their benefit:

> *Whereas in Cambridge, OK, they came to trust in me but I got strong recommendations from my boss, my, when I was a technician and my supervisor, my current supervisor supported my application very strongly so it did help a lot to know people* [39: 13].

Certain interviewees were more strategic in their choice of country due to their fields of interest. In the case of one South African interviewee England is "*also one of the hubs of the pharmaceutical industry*" [58: 5] and because they wished to pursue pharmaceutical medicine it was the best place for them to relocate to.

3. Comparing two "worlds"

It was felt that instead of a narrow focus on "fields", a broader holistic view of the health professionals' general work environment was to be examined. Especially considering that the majority of the respondents are in academic environments. They are "scientists" who must compete internationally and as such need visibility, exposure and the skills to excel within their fields. Many of the respondents found the South African context too restrictive to do so.

3.1. Quality of life

When comparing quality of life between SA and England, the following interviewee acknowledges it would be better in SA. The interviewee admits they have a simpler life in UK and are satisfied with it. Their SA counterparts would have pools and servants which they do not have the luxury of. So their relocation was linked with something other than financial gain. As the interviewee commented:

> *Material sense I think I've had a, a less, erm, easy time of it because living as a junior doctor in the South of England and raising a family and what-have-you, erm, it's a much tougher call that it would have been in South Africa where white medically qualified people have a, I think a higher standard of living than the average doctor in this country but that didn't particularly bother me. In South Africa, people tended to have servants, large houses, swimming pools, erm, and what-have-you so in this country, small house, no servants, no swimming pool, all domestic work done yourself so, erm, you know, my contemporaries in South Africa wouldn't know how to operate a vacuum cleaner or a washing machine or, erm, wouldn't ever clean the lavatories and the baths with, erm, things, and I do all that* [30: 23].

3.2. Working conditions and human resources

In terms of the facilities and working conditions within the English context one South African interviewee comments, *"the facilities are brilliant"* and "*I was amazed by what was available and what one could do, which I wasn't able to do while I was doing my PhD here"* [52: 21]. Another respondent acknowledged that they needed to work longer hours, but this was balanced by the fact that "*there were better resources, better funded, and there were more opportunities to do research"* [66: 22].

With regards to the research environment in England, one South African interviewee "*found the access to literature very easy and wonderful there"* [46: 22]. The availability of research funding, resources and research workers, in the English research environment is more abundant as the following research quotation illustrates:

> *There's more funding, there's more resources to do studies, there's much more research workers. For example, if you want a post doctoral scientist with post doctoral experience it's hard to find one here [in SA]* [48: 20].
>
> *There's a hell of a lot more research funding [in UK], we have very little research funding here, resource limitations here, skills limitations here [in SA]* [48: 21].

According to the following interviewee there is also a great need for South African post doctoral scientists. This issue relates to a comment made by another interviewee with regards to scientific training, where the interviewee acknowledges that their South African education was good at a clinical level, but not a scientific level:

> *It was really...my education in South Africa was very good at the clinical level, but it was poor as a scientific training. And that was really rectified by having the American life sciences degree* [31: 18].

Further highlighting issues within the South African research environment, one interviewee indicated the following:

> *Although we have a, really excellent research institutes and also just research projects within South Africa, you are to some extent fairly isolated, you do have opportunities to go to international conferences and to interact with other people but they're very minimal* [35: 11].

So not only is there a need for South African scientists to attain greater visibility, to bring them out of "isolation", but research costs need to be lowered, as is illustrated by the same interviewee below:

> *Yes, yes because this is the other thing I mean research is, an expensive exercise and in South Africa it's, it's particularly expensive because it's also got a lot of duty as always and taxes and you know so anything that's imported it's quite expensive so you also have to be very, very planned about what you're doing because you need to order things and everything takes oh, 2 or 3 weeks on average because it will most likely come from either the US or here (UK). So here you know you can order an enzyme today and know you'll have it tomorrow, that's completely unheard of, almost completely unheard of at least in South Africa* [35: 16].

Another interviewee felt there was less of a concern about the "bottom line" within the UK research environment as compared to South Africa:

> *And then if you look at the quality of research, not that I'm saying South Africa doesn't have excellent scientists but simply because of the funding they can't really perform the research that they would be capable of. I mean if I just look at the budget that I spent on my first month here on consumables, its more than I spent in my entire 4 years in South Africa so that's also obviously great for my career and experience I think like that.* [26: 14].

> *But there's not many people in the nano-materials field so the only links you are looking to establish really when you go to conferences is, is in case there is someone from Europe, outside South Africa who is there and they, who might be doing the same thing as you doing and erm they might be you know knowledge transfer between the two of you and kind of, you might establish a collaboration.* [37: 26].

Health scientists need greater international visibility within the developing country context. If they are not able to network with other scientists in their field, or collaborate with them on a more regular basis, they go in search of opportunities where these interactions are facilitated. One respondent expressed a desire to return to South Africa and had been looking for work in the field of biochemistry but has been unsuccessful in finding any work; another indicated that there were no opportunities in nano-material research:

> *When it comes to nano-particles, erm, like nano-materials per say it, there are not very many people who are doing the main stream research of nano-materials in, in South Africa cause it's, it's a relatively new thing* [37: 25].

These are only 2 fields in which respondents felt the South African context was not a viable option within which they could pursue their research. One respondent, who had returned to South Africa, emphasized the importance of their mobility because it helped with the establishment of social & professional networks, which they referred to:

> *And that was quite important, because I'm working a field where I don't know anybody in South Africa who is working in the same area. So I often, refer back to my old colleagues, and contacts* [66: 24].

A third field that one respondent highlighted, by noting that *"there's nothing happening here; there is no research here in this area, it is virtually non-existent"* [53: 12], was that of endocrinology.

It was felt that there is a need for a more conducive research environment & culture within South African hospitals as one respondent puts it:

> *The one difficultly I think I should mention, is the lack of a clinical-research culture if you want to call it that, in the teaching hospitals. In the whole hospital set up, it's not conducive, it's almost seen as a kind of imposition on the normal routine, clinical work* [52: 54].

According to another respondent it was felt that that health research was not an acknowledged career path within the South African health system, as the respondent

notes… *"I think the difference there is that research is a much more acknowledged career path"* [58: 15]. There is also a need for greater research skills training with health research, as one respondent notes the skills they require… *"(I was) definitely under skilled in research, understanding how the research environment works, how do you write a research proposal, how the ethics work, all those kinds of things"* [58: 18].

3.3. Remuneration

Many of the respondents were not only frustrated with the long working hours and the conditions under which they were required to work, but also the remuneration. As the quotations to follow illustrate:

> *"I wasn't happy with the remuneration"* [47: 6].
>
> *"…and definitely money as well. Not that the money pulled me at first but it is good money compared to what we earn in SA…"* [51: 3].

This highlights an important issue for the South African government, in that there is a need for improved remuneration within the health system. Careful planning is required for the improved financing of the human resources for health, to sustain an adequate supply of health workers and stimulate greater productivity and more effective health care (Glassman et al., 2008: 693). If institutional and demand factors are ignored in an attempt to retain health workers by simply increasing wages, government planners may be faced with unintended consequences. The results might be that competition with private employment opportunities cause private wages to rise, eroding the expected retention effect and having little effect on productivity unless the wage increases are related to performance (Glassman et al., 2008: 694). Therefore careful analysis and strategic planning is required to address health professional remuneration.

4. Future mobility

The question of whether an interviewee would or is considering future mobility/returning to South Africa was posed. For those interviewees presently still residing within the UK pervasive issues such as the crime situation and the magnitude of the HIV/AIDS pandemic were major concerns. As the following quotation illustrates:

> *"And I think as far as crime it's really a big concern. And for me as a scientist the approach to the whole HIV AIDS problem is really disturbing because I think it says a lot about not just well, there's a lot of political issues that too, but I think there are a lot of scientific ones too and I think it says a lot about how scientists are viewed by the powers that be so, it is a concern and I honestly I would say the chances are, are much greater we'll end up spending the rest of our lives here or somewhere in Europe"* [27: 18].

The interviewees currently in the UK were more likely to consider future mobility once their contracts or studies had been completed, where Australia and New Zealand were mentioned by some as destinations of choice.

> *Australia attracts us because the living environment is similar to ZA, the setting is spacious, weather, the people are rude and open so we would enjoy that* [23: 16].

The feelings of the health professionals who had returned to South Africa were mixed with regards to whether they would relocate again. As one respondent said… "*I was hoping that I'd wanted to settle here but, I just feel in terms of my career and the remuneration it's not going to be worth it"* [47: 24]. Whereas another respondent indicated… *"I want to settle and, you know, I don't want to uproot again* [49: 29]. Respondents were not completely averse to relocating once again, but as someone said… "*it would have to be something incredibly attractive to make me move again"* [65: 16].

5. Conclusion

It was clear from the interviews that no respondent had one specific reason for their decision to "migrate" from their home country. A variety of factors contributed to the decision making process. External factors such as crime, the lack of infrastructure or remuneration played there part in varying degrees. Personal motivators such as training opportunities, greater international visibility and the need for better financial security, also came to the fore. It is with all these different facets in mind that sustainable alternatives to the South African migration situation need to be found.

The solution to the South African health professional migration situation is of a complex nature. For attempts to restrict flows may result in some unpalatable consequences. Most obviously, denying would-be migrants the right to migrate on the basis of the anticipated impacts of their departure may be discriminatory and compromise human rights. Limits on migration from developing countries may be seen as a new form of "compassionate racism" in which the developed world restricts the opportunities of developing country's nationals (Sriskandarajah, 2005: 2-3).

There are also practical reasons why attempts to restrict mobility may simply not work. Many migrants may find ways around recruitment bans, perhaps applying directly to employers rather than going through recruiters who are unwilling to enlist them. Some may seek to move, but just not declare that they have certain qualifications – resulting in a brain waste that helps no one (Sriskandarajah, 2005: 3). Health professionals may also just leave the profession entirely for a different sector, which also has far reaching consequences.

It should also be realized that as scientists, health professionals will most certainly be attracted to environments which will add value to their scientific career, knowledge and expertise. Therefore it is of importance to create scientific environments that are conducive to quality health care and research, rather than it is to restrict mobility.

Tampering with mobility will not even start to address the structural problems, and this is what the South African government should acknowledge. For within the South African health care and research setting, health professionals are required to function within sub-standard conditions. To encourage the retention of health workers, the South African government and policy makers need to use incentives and address the reasons for migration such as: low salaries, inadequate resources, long hours and heavy workloads, threats of infection and violence, and the lack of career development (Mills et al., 2008: 687). The responses in the paper above, only reiterate what Mills et al. (2008), put forward in their paper, in terms of what health professionals need within their working and scientific environment.

South Africa also needs to learn from the lessons of the group of newly-industrialized countries, including Korea, Singapore and India that have been successful in retaining their health professionals or encouraging them to return. In these countries, "domestic innovation and research and development programmes have been a common denominator", in their success and is something that needs to be encouraged within the South African context. These examples underscore the finding that "when real opportunity exists within the context of coherent internal policies and investment in science and technology, returning to the home country becomes an attractive option for emigrants." Policies of return have been most effective in economies that are experiencing a period of high growth and expansion of innovation in medical systems (Rogerson, 2007: 13).

The South African government also needs to appreciate that an agreement will never be reached on the relative success of new policy instruments as long as it is unclear what constitutes success in terms of migration. If migration success is to be defined as halting or significantly slowing out-migration from poorer countries, then it is clear that such policies will not succeed, for individuals have the right to make migration decisions based on their own personal needs. New policy efforts need to recognize the right to emigrate and its inevitability, and the aim should rather be to mobilise source and destination countries to work together to improve health outcomes in poor countries and sustainably increase health worker production to meet global needs (Robinson & Clark, 2008: 691). This is currently in the process of occurring in the case of South Africa and the UK; however, bilateral agreements and institutional twinning programmes are only the starting points in stemming the out-migration of health professionals.

Policies focusing on increased collaboration between UK & South African academic hospitals through initiatives such as: fellowships, internships and exchanges, need to be encouraged. For these initiatives to thrive they need to be formalized both at the government and institutional level. Benefiting countries could also make amends through supporting repatriation of professionals who have left the sending country, training initiatives, the building and staffing of new health schools, and support for the development of retention frameworks (Mills et al., 2008: 688).

Simply improving remuneration or changing the kinds of hours that health professionals are required to work, will not render the problem solved. The retention of South African health professionals needs to be addressed in a holistic fashion, acknowledging all the influences which contribute to health professionals' decisions to leave.

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