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*Research Article*

# The Brain Drain Potential of Students in the African Health and Nonhealth Sectors

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The departure of health professionals to Europe and North America is placing an intolerable burden on public health systems in many African countries. Various retention, recall, and replacement policies to ameliorate the impact of this brain drain have been suggested, none of which have been particularly successful to date. The key question for the future is whether the brain drain of health sector skills is likely to continue and whether the investment of African countries in training health professionals will continue to be lost through emigration. This paper examines the emigration intentions of trainee health professionals in six Southern African countries. The data was collected by the Southern African Migration Program (SAMP) in a survey of final-year students across the region which included 651 students training for the health professions. The data also allows for the comparison of health sector with other students. The analysis presented in this paper shows very high emigration potential amongst all final-year students. Health sector students do show a slightly higher inclination to leave than those training to work in other sectors. These findings present a considerable challenge for policy makers seeking to encourage students to stay at home and work after graduation.

## 1. Introduction

Studies of working health professionals across the African continent show extremely high levels of interest in emigration and a strong desire to leave, either temporarily or permanently [1–7]. Concerns about the long-term impact of the migration of health professionals from developing countries have recently led to a focus on the next generation, both in Africa [8–14] and elsewhere [15–20]. Many countries invest substantial financial resources in the training of physicians and nurses. Clemens [21] has recently argued that the actual costs of health professional emigration are difficult to quantify and are often exaggerated. However, African governments clearly expect a return on their investment in the form of an increased pool of health human resources. As Chikanda [22, 23] shows in Zimbabwe, however, the training of new health workers has not kept pace with the exodus of qualified and experienced professionals. This is probably inevitable in a country experiencing a massive crisis-driven skills exodus [24]. The more general question is whether trainee health professionals in other developing countries are committed to remaining in their home countries and, if so, for how long. If the answer to the question is negative, then strategies need to be developed to increase the chances of retention after graduation.

The Potential Skills Base Survey (PSBS) of the Southern African Migration Program (SAMP) has previously been used to examine the migration intentions on graduation of final-year students in universities and technical colleges across the SADC region [25–28]. This paper isolates and presents the findings for future health professionals. As well as providing insights into the likely migration behaviour of health professionals in training, the data provides a unique opportunity to compare the attitudes and emigration potential of health and other students. This paper examines whether health sector trainees are different from other students in the likelihood of joining the "brain drain." The answer to this question has important implications for

Table 1: Country of data collection.

| | Health sector | | Other | |
|---|---|---|---|---|
| | *N* | % | *N* | % |
| South Africa | 260 | 40 | 2,010 | 26 |
| Namibia | 22 | 3 | 1,178 | 6 |
| Botswana | 36 | 6 | 1,164 | 5 |
| Zimbabwe | 107 | 16 | 1,093 | 14 |
| Swaziland | 93 | 14 | 1,107 | 15 |
| Lesotho | 133 | 21 | 1,043 | 14 |
| Total | 651 | 100 | 7,595 | 100 |

"taming the brain drain" through retention strategies [29]. In other words, should retention be targeted at health or are there broader and more systemic problems to address?

## 2. Data

The PSBS was conducted in six Southern African countries (Botswana, Lesotho, Namibia, South Africa, Swaziland, and Zimbabwe) in 2003-2004 using the same questionnaire and methodology. The PSBS database contains information on almost 10,000 final-year students in universities and training colleges. The weighted database has over 8,000 students and is proportional to the number of final-year students in the faculties and training institutions selected. That is, for each country and training institution, the number of students was identified by faculty, and their percentage of the total student enrolment was determined. This percentage was used as the target for sampling for that faculty, and students were selected using a systematic random procedure. Weighting was necessary due to oversampling of some faculties. The students filled out a hardcopy questionnaire, and the data was cleaned, coded, and entered at the University of Namibia to create a single regional data set. A total of 651 health sector students were identified (about 8% of the database) in the various countries (Table 1). The analysis for this paper was carried out by comparing health with other students. Each table was evaluated for similarities and differences between health and other students by examining percentages and by generating a chi-square test and a contingency coefficient. For most tables, even with valid chi-square tests, the contingency coefficients were weak (cc = 0.088 or less) indicating very little statistical difference between the two groups. In this paper, contingency coefficients are only given for tables where there was a statistically significant difference.

Table 2 provides a basic comparative profile of the final-year students in the survey. The health sector has significantly more women than men (64% compared to 51%) reflecting the greater concentration of women in nursing/midwifery, dental surgery, and radiography (Table 3). Men tend to be more concentrated in medicine and pharmacy. Three quarters of the health sector students are black and only 15% are white (compared with 84% and 11% in the nonhealth sector). This represents a major shift from the colonial and apartheid periods when most black students were denied the opportunity to acquire a professional degree.

In this study, 56% of the students in the health sector were from large or small urban areas and 44% were from rural areas (compared to 48% and 52% of other students). This provides an opportunity to compare students of rural and urban origins in both groups. Finally, a variety of health sector fields were represented in the sample, with the two largest groups planning careers in nursing/midwifery (39%) and medicine (17%).

Table 2: Demographic profile of student respondents.

| | Health sector students (%) | Other students (%) |
|---|---|---|
| Sex | | |
| Male | 36 | 49 |
| Female | 64 | 51 |
| Race | | |
| Black | 75 | 84 |
| White | 15 | 11 |
| Other | 10 | 5 |
| Location of home | | |
| Rural communal area | 30 | 41 |
| Commercial farming area | 14 | 11 |
| Small town | 20 | 19 |
| Large town/city | 36 | 29 |
| *N* | 649 | 7,583 |

Table 3: Intended health profession by sex.

| Profession | Male (%) | Female (%) | Total (%) |
|---|---|---|---|
| Nursing/midwifery | 30 | 43 | 39 |
| Medicine | 30 | 10 | 17 |
| Dental surgery | 3 | 11 | 8 |
| Radiography | 6 | 9 | 8 |
| Pharmacy | 12 | 5 | 8 |
| Occupational therapy | 5 | 8 | 7 |
| Public health | 3 | 3 | 3 |
| Biomedical technology | 2 | 4 | 3 |
| Physiotherapy | 3 | 2 | 2 |
| Homeopathy | 1 | 3 | 2 |
| Health administration | 2 | 0 | 1 |
| Medical laboratory | 2 | 1 | 1 |
| Prosthodontics | 1 | <1 | 1 |
| Biomedicine | 0 | <1 | <1 |
| Total | 100 | 100 | 100 |
| *N* | 413 | 235 | 648 |

Valid chi-square test and cc = 0.331.

## 3. Attitudes towards the Future

Previous studies of health and other professionals in Southern Africa have revealed deep pessimism about general and

Table 4: Levels of satisfaction and expectations about economic conditions.

| | Health students (%) | Other students (%) |
|---|---|---|
| Current personal economic condition | | |
| Very satisfied/satisfied | 13 | 17 |
| Current general economic conditions in country | | |
| Very satisfied/satisfied | 9 | 17 |
| Personal economic condition in 5 years | | |
| Better/much better | 67 | 73 |
| General economic conditions in country in 5 years | | |
| Better/much better | 28 | 42 |
| *N* | 629 | 7,422 |

personal economic conditions now and in the future [1, 7]. Satisfaction levels with personal economic conditions were very low (only 13% satisfied) (Table 4), which is perhaps not that surprising given the straitened financial circumstances of most students. However, two-thirds expected their personal circumstances to be much better five years after graduation. This also means that one-third expected that they would be no better off than when they were students. Health sector students were more negative about general economic conditions in their home country. Only 9% were satisfied with current conditions, and only 28% felt that they would be any better five years hence. Health sector students were more negative about current and future personal and general economic conditions than nonhealth sector students: for example, 42% of nonhealth sector students expected economic conditions to have improved in five years' time, compared to 28% of health sector students.

To give added nuance to their general perceptions, the students were asked about their future expectations of a variety of specific economic and social conditions. On almost every one of the sixteen indicators, over two-thirds of health sector students felt that conditions would get worse or much worse in the future. Confidence levels were particularly low about the HIV and AIDS epidemic (91% expected the situation to get worse/much worse) (Table 5), the cost of living (84%), taxation (84%), personal and family safety (81%), and their ability to find a suitable job (80%). Although health sector students were consistently more negative on every one of the 16 indicators, the differences with other students were not statistically significant. In other words, the survey showed a pervasive pessimism about the future of their home country.

## 4. Student Attitudes towards Emigration

Negative attitudes towards the future translate into considerable interest in emigration. In this paper, the term "emigration" is used to refer to any student who leaves their country of training to live in another country, either inside or outside the SADC region. The survey found that 54% of health sector students and 46% of other students said they had given the matter a great deal of consideration. Roughly equal proportions had given it some consideration (35% and 36%). Only 11% of health sector students said they had given the matter no thought, compared to 18% of other students (Table 6).

Thinking about leaving is a weak measure of actual emigration potential. A stronger measure is self-assessment of the likelihood of leaving (particularly within specified time frames). Here, the numbers are lower but do increase over time. Fewer health sector than other students said it was likely that they would leave their country within six months of graduation (35% versus 41%). However, the proportion of health sector students who said it was likely or very likely that they would leave two years after graduation increased to 65% of health students and 58% of other students. Thinking five years hence, the relative proportions had narrowed to only 3% (at 65% and 62%, respectively). In other words, nearly two-thirds of both health sector and other students said they were likely to have emigrated five years after graduation.

The strongest measure of migration potential is if a student has taken active steps to initiate the process of leaving through, for example, applying for the right to work in another country (work permits, permanent residence status, and citizenship). Here, the numbers fall again but are still significant (Table 6). At the time of the interview, around 20% of both health and other students had already applied for work permits in another country. And proportionally more nonhealth sector students had applied for permanent residence and citizenship in another country. In sum, around 40% of both groups of students had taken concrete steps to emigrate after graduation.

Health sector students from rural backgrounds are thought to be less interested in emigration than students from urban backgrounds. Dambisya [9], for example, found that in the case of medical students at the University of Transkei (whose homes are primarily rural), perceptions of the future were very positive, and only 8% said they would leave after graduation. de Vries and Reid [30] argue that medical students from rural backgrounds are significantly more likely to practice in rural areas once qualified. Some have even suggested that medical schools adopt preferential admission policies that favour students from rural areas [31]. The survey showed that urban origin students have certainly given more thought to leaving their home country than rural origin students (Table 7). Fifty seven percent of health sector urban students have given emigration a great deal of thought compared with 48% of rural students. In addition, 15% of rural students have given it no thought at all, compared with only 9% of urban students. However, the same percentage of urban and rural students (35%) thought it likely or very likely that they would leave within six months of graduation. Projecting further into the future, urban students are marginally more likely to leave than rural students but the difference is not significant (66% and 64% at the five-year mark). Urban and rural students have put virtually the same amount of effort into acquiring the documentation that indicates a firm intention to leave after

Table 5: Student expectations about the future.

| | Health sector students (%) | Other students (%) | % Difference between health sector and other students |
|---|---|---|---|
| Get worse or much worse* | | | |
| HIV and AIDS situation | 86 | 79 | +7 |
| Cost of living | 74 | 64 | +10 |
| Level of taxation | 66 | 59 | +7 |
| Personal safety | 63 | 52 | +11 |
| Family's safety | 62 | 51 | +11 |
| Ability to find a desirable job | 60 | 62 | −2 |
| Availability of quality affordable products | 60 | 46 | +14 |
| Upkeep of public amenities | 59 | 46 | +13 |
| Ability to find suitable house | 56 | 49 | +7 |
| Job security | 42 | 43 | −1 |
| Children's future | 58 | 44 | +14 |
| Customer service | 50 | 37 | +13 |
| Ability to find medical services | 49 | 42 | +7 |
| Prospects for professional advancement | 38 | 45 | +7 |
| Ability to find good schools | 48 | 37 | +11 |
| Income levels | 46 | 35 | +11 |
| *N* | 609 | 7,124 | |

* Two responses from five-point Likert scale reported.

Table 6: Student emigration potential.

| | Health sector students (%) | Other students (%) |
|---|---|---|
| Consideration given to emigration | | |
| A great deal | 54 | 46 |
| Some | 35 | 36 |
| None at all | 11 | 18 |
| Likelihood of emigration (likely/very likely)* | | |
| Six months after graduation | 35 | 41 |
| Two years after graduation | 65 | 58 |
| Five years after graduation | 65 | 62 |
| Applied or applying for documentation | | |
| Work permit | 21 | 20 |
| Permanent residence | 10 | 11 |
| Citizenship | 11 | 12 |
| *N* | 609 | 7,124 |

* Two responses from five-point Likert scale reported.

graduation. What the survey shows then is that emigration potential does not have a strong relationship with rural or urban background. Admitting more rural origin students may help to solve the problem of rural shortages of health personnel, but it is unlikely to have any impact on the brain drain.

To what extent do students see emigration as a move to "greener pastures"? The survey asked each one to identify both a preferred emigration destination and a most likely destination (their MLD). The preferred destinations for both sets of students were developed countries (mentioned by 71% of health sector and 65% of other students), followed by other countries in the Southern African region (22% and 27%) (Table 8). Various factors (including the immigration policies of destination countries) ensure that there is a discrepancy between preference and likelihood. Thus, greater numbers of students in both groups felt that they were more likely to end up within Southern Africa (28% of health and 32% of nonhealth sector students). Also of interest is that more students had Europe as a most likely destination than a preferred destination, while the opposite was true for Australia and New Zealand (i.e., more students would prefer to go there than thought they actually would). The proportion of students who see themselves working elsewhere in Africa is extremely small.

The students were then asked to compare conditions in their home country with their impression of social and economic conditions in their most likely destination (MLD). In the case of those identifying a destination within Southern Africa, comparisons are likely to be based on first-hand knowledge of alternative conditions. The comparison is more likely to be notional or aspirational for those contemplating an overseas destination. Certainly students tend to rate overseas destinations more favourably than destinations within the region (Table 9). On every single measure, MLDs in Africa rated comparatively less favourably than MLDs outside it. Some of these differences were very large: for example, with respect to personal and family safety and job security. However, all were statistically significant. It cannot be inferred from this that student impressions of overseas

Table 7: Health sector student emigration potential by area of origin.

| | Urban origin (%) | Rural origin (%) |
|---|---|---|
| Consideration given to emigration | | |
| A great deal | 57 | 48 |
| Some | 34 | 37 |
| None at all | 9 | 15 |
| Likelihood of emigration (% likely/very likely) | | |
| Six months after graduation | 35 | 35 |
| Two years after graduation | 69 | 60 |
| Five years after graduation | 66 | 64 |
| Applied for documentation | | |
| Work permit | 7 | 6 |
| Permanent residence | 3 | 2 |
| Citizenship | 3 | 1 |
| *N* | 358 | 280 |

Table 8: Preferred and most likely destinations.

| | Health sector students (%) | Other students (%) |
|---|---|---|
| Preferred destination | | |
| Europe | 31 | 30 |
| North America | 24 | 23 |
| Southern Africa | 22 | 27 |
| Australia/New Zealand | 16 | 12 |
| Asia | 6 | 5 |
| Elsewhere in Africa | 1 | 3 |
| Most likely destination | | |
| Europe | 35 | 32 |
| Southern Africa | 28 | 32 |
| North America | 21 | 22 |
| Australia/New Zealand | 13 | 9 |
| Asia | 2 | 3 |
| Elsewhere in Africa | 1 | 1 |
| *N* | 609 | 7,124 |

destinations were purely notional. If conditions overseas were being romanticized, we would not expect a third or more to say that conditions at home were better nor would we expect to see such variation in the measures. While the students may not have first-hand knowledge of their MLDs, many (especially in South Africa) have relatives, friends, and acquaintances who have preceded them.

Comparing health sector students with other students, it is clear that the former tend to view their MLD more favourably than the latter. On every indicator, health sector students rated their MLD more highly than other students. The greatest comparative differences were with respect to family and personal safety, incomes, and taxation (Table 10). Income levels rated the highest (at 92% of students), followed by upkeep of public amenities (82%), prospects for professional advancement (76%), availability of quality affordable products (75%), and medical services (73%). Although nonhealth sector students were not as positive about their MLD as health sector students, the majority also rated their MLD higher than their home country on all of the indicators. When we compared the "much better" responses for the two sets of students, we found that the differences were consistently larger for all indices which suggests that a significant minority of health sector students have very strong feelings about the superiority of their MLD.

The students were next asked to identify the most important reason why they would emigrate after graduation (Table 11). Job and income prospects loom large in the thinking of both sets of students. However, the prospect of higher remuneration outside the country is clearly more important for health sector than other students. This is probably not surprising given the large salary differentials in the health professions. Nonhealth sector students are relatively more concerned about issues such as finding the right job and the prospects for professional advancement. Unlike practicing health professionals, students seem much less concerned about safety and security issues as a reason for emigrating [7]. This is probably because they have not yet been directly exposed to the well-documented workplace hazards for health professionals, particularly in government facilities. Steinman [32] found that 34% of public sector health workers and 24% of all workers in South Africa were "very worried" about high levels of workplace violence. Seventy percent of public sector and 51% of private sector health personnel had experienced at least one incident of workplace violence in their career. In the previous year, 52% of all workers said they had been subject to verbal abuse, 23% to racial harassment, 24% to bullying, and 5% to sexual harassment. In May 2008, the Association of Surgeons of South Africa (ASSA) took the extraordinary step of officially requesting government action on violence against medical staff in state hospitals [33]. Health students do seem more concerned about safety and security than

Table 9: Comparison between home country and most likely destination (MLD) by location.

| | MLD in Africa (%) | MLD outside Africa (%) | Difference between students with MLD inside and outside Africa (%) |
|---|---|---|---|
| Better/much better in MLD* | | | |
| Level of income | 79 | 88 | +9 |
| Quality upkeep of public amenities | 66 | 80 | +14 |
| Prospects for professional advancement | 64 | 76 | +12 |
| Availability of quality affordable products | 71 | 76 | +5 |
| Ability to find medical services | 63 | 73 | +10 |
| Customer service | 62 | 72 | +10 |
| Good school for children | 57 | 69 | +12 |
| Children's future | 46 | 58 | +12 |
| Personal safety | 36 | 63 | +27 |
| Ability to find desirable job | 57 | 63 | +6 |
| A fair level of taxation | 47 | 56 | +9 |
| Family's safety | 35 | 62 | +27 |
| Cost of living | 54 | 56 | +2 |
| Job security | 38 | 63 | +25 |
| *N* | 2,327 | 6,465 | |

*Two responses from five-point Likert scale reported.

Table 10: Comparison between home country and most likely destination (MLD) by sector.

| | Health sector students (%) | Other students (%) | Difference between health sector and other students (%) |
|---|---|---|---|
| Better/much better in MLD* | | | |
| Level of income | 92 | 83 | +9 |
| Quality upkeep of public amenities | 82 | 74 | +8 |
| Prospects for professional advancement | 76 | 71 | +5 |
| Availability of quality affordable products | 75 | 74 | +1 |
| Ability to find medical services | 73 | 69 | +4 |
| Customer service | 73 | 68 | +5 |
| Ability to find a good school for children | 68 | 64 | +4 |
| Children's future | 65 | 52 | +13 |
| Personal safety | 63 | 53 | +10 |
| Ability to find desirable job | 62 | 60 | +2 |
| A fair level of taxation | 61 | 52 | +9 |
| Ability to find a desirable house | 61 | 55 | +6 |
| Family's safety | 61 | 52 | +9 |
| Cost of living | 59 | 54 | +5 |
| Job security | 58 | 57 | +1 |

*Two responses from five-point Likert scale reported.

nonhealth students, which might suggest that they have some idea about what is in store for them.

## 5. Views on Government Retention Policies

The retention of current and future health professionals has become a major concern of African governments [34–36]. Various policies have been mooted for new graduates including improved working conditions, bonding, compulsory national service, and appealing to destination countries not to hire health professionals from the region. In this study, the students were asked whether they felt certain policy measures were justified and what impact they would have on the propensity of students to migrate after graduation (Table 12). In general, students are not in favour of government interference in their right to live and work where they choose. Less than a third feel that government would be justified in adopting a whole range of mooted retention strategies. The only exception is that around 60% of the students feel that national service for those who have

Table 11: Most important reason for going to the most likely destination.

| | Health sector students (%) | Other students (%) |
|---|---|---|
| Most important reason | | |
| Your level of income | 30 | 22 |
| Cost of living | 19 | 20 |
| Ability to find the job I want | 14 | 21 |
| Prospects for professional advancement | 7 | 11 |
| Your personal safety | 7 | 4 |
| Your family's safety | 6 | 5 |
| Ability to find a good school for your children | 4 | 2 |
| The security of your job | 2 | 3 |
| HIV/AIDS situation | 3 | 4 |
| The future of your children | 2 | 2 |
| A level of fair taxation | 1 | 2 |
| Ability to find a house you want to live in | 1 | <1 |
| Quality upkeep of public amenities (e.g., parks, beaches, toilets, etc.) | 1 | <1 |
| Ability to find medical services for family and children | <1 | 1 |
| Availability of quality affordable products | <1 | 1 |
| Customer service | 0 | <1 |

received government bursaries would be justifiable. There is a distinction between health and other students on most measures, with fewer of the former feeling that government retention mechanisms are justifiable. On the other hand, slightly more medical students (60% versus 57%) agreed that postgraduation national service for those students receiving government funding was justifiable.

The next question is whether government measures to discourage emigration would have a counterproductive effect and actually make it more likely. Around a third of both groups of students agreed that such measures would encourage emigration, with medical students more likely to think this would happen (37% versus 31%). Not all students agreed that government should avoid coercive measures: for example, 24% of health and 30% of other students felt that if their governments wanted to stop emigration, they should simply prohibit people from leaving. Similar numbers said that government should try to dissuade emigration by discouraging other countries from hiring their professionals. This has certainly been a preferred strategy of the South African government, though it has met with very little success.

The majority of both groups of students agreed that the best strategies for governments to adopt were noncoercive incentives. For example, over 80% of students felt that government's best way to retain professionals would be to encourage general economic development in the home country.

Return migration is increasingly advocated as a strategy to counter the brain drain from Africa [37–40]. However, there are few examples of the large-scale return of professionals to Africa. A recent study of health professional immigrants in Canada from SADC countries found extremely low interest in permanent return [41]. Both medical and nonmedical students surveyed in this study thought that encouraging return migration was a viable strategy for their governments to deal with the impacts of the brain drain (60% of both).

## 6. Discussion of Results

Several major findings emerge from this analysis of the attitudes of final year students in Southern Africa. First, levels of dissatisfaction with economic and social conditions were extremely high amongst both health and nonhealth students. Profound dissatisfaction with current circumstances was compounded by a bleak view of the future. Less than a third of health students felt that the economic conditions in their country would have improved five years after they graduated. Across a broad range of social and economic indicators, well over 60% felt that things would only get worse. Over 80% were convinced that the HIV and AIDS situation would deteriorate, as would the cost of living, taxation levels, and personal and family safety. At the same time, two-thirds felt that their personal economic circumstances would improve in the future. This apparent contradiction may, of course, be because their baseline was their current student status. On the other hand, it is probable that many were also thinking ahead to a time after they had left. In other words, while conditions and opportunities at home would continue to deteriorate, their personal circumstances would be better because they would be living and working elsewhere.

With regard to current circumstances and views about the future, students in the health sector were more negative than the rest of the student body but not markedly so. The current paper shows that students training for the health professions took a more negative view than their peers but in very few cases were the differences statistically significant. Health sector students, by virtue of their training, might have higher expectations than everyone else. Or it could be that the well-documented problems of the health sector lead students to anticipate the worst. Or again, the general "culture of emigration" in the health sector might prompt health sector students to take a slightly more critical view of conditions at home.

Despite the general similarities between health and nonhealth students, there are specific issues on which health students might tend to take a more negative view. For example, their greater knowledge about the HIV and AIDS epidemic as well as the possibility of greater workplace violence could make them more pessimistic than other students. Certainly more health students feel that both the epidemic and safety and security will deteriorate in the years to come. On the other hand, few in either group cite these factors as primary reasons for emigration though health students are a little more likely than nonhealth students to see these as reasons for leaving.

Table 12: Student attitudes towards government retention policies.

| | Health sector students (%) | Other students (%) |
|---|---|---|
| Government is completely justified or justified to | | |
| Require citizens to complete national/public service before enrolling at institutions of higher learning | 31 | 42 |
| Require citizens who have received government bursaries for education to complete some form of national service | 60 | 57 |
| Require citizens to work in the country for several years after completion of their education | 32 | 43 |
| Require citizens to pay taxes on all income earned outside of country | 25 | 35 |
| Require citizens to pay a larger share of their income in taxes | 25 | 28 |
| Require citizens to serve in the armed forces in cases of national emergency | 29 | 32 |
| Limit the amount of money you may send out of the country | 24 | 37 |
| Migration will be much more likely/more likely if government | | |
| Makes it more difficult to emigrate | 37 | 31 |
| Requires new graduates to do one-year national service in their area of expertise | 38 | 38 |
| Allows people to hold only one passport | 30 | 31 |
| Increases the fees for emigration | 26 | 27 |
| To stop emigration, government should do the following | | |
| Encourage economic development | 89 | 85 |
| Encourage the return of qualified professionals | 60 | 60 |
| Discourage other countries from employing emigrants | 24 | 30 |
| Prohibit it | 24 | 30 |
| *N* | 609 | 7,124 |

Given the very high levels of dissatisfaction about the present and future among health sector students, it is unsurprising that there is a great deal of interest in emigration as a response. Only one in ten health sector students had not given it some consideration as an option after graduation and as many as two-thirds felt it likely that they would emigrate within five years. Nonhealth students showed slightly less overall interest in emigration although more said it was likely they would emigrate within six months of graduation. The primary reason for this is undoubtedly the compulsory postgraduation community service demanded of new South African physicians by the government.

The majority of both sets of students viewed their intended destinations more favourably than their home country. However, health students tended to have the rosier picture of conditions abroad. On every economic and social measure used in the study, health students rated their most likely destination more favourably than their nonhealth sector counterparts. This difference is partly grounded in the reality and knowledge that health professionals who emigrate generally do extremely well financially in their countries of destination. However, these favourable perceptions extended beyond economic factors to include issues such as safety and security, children's future, and public amenities.

Most writing on the brain drain holds the west accountable for "poaching" African health sector skills [2, 7]. In this context, it is of interest where African students themselves would like to work. Are they, in other words, "ripe for picking" by recruiters in the west? The simple answer is yes. The preferred destinations for health sector students in this study are, indeed, countries in the west (mentioned by 71%). The proportion of students who identified the west as their most likely destination is only marginally lower (at 69%). This suggests that health sector students are extremely confident that they have the skills that the west wants. And indeed, 68% thought that it would be easy to get a job in their field in their MLD (compared with only 49% of other students).

The biggest difference between preference and likelihood is in the Southern African region itself with 22% expressing a preference for working in another SADC country and 28% identifying a Southern African country as their MLD. In other words, the potential for continued South-South migration (primarily to South Africa) is relatively high (and even higher for nonhealth students). However, potential movement from Southern Africa to elsewhere in the continent is very low, even lower than to Asia. If these students are any guide, health sector migration flows will continue to be from poorer- to better-resourced health systems.

## 7. Conclusion

This paper set out to answer two basic questions about the brain drain from Africa. First, is the brain drain likely to continue in the future? And second, is the health sector likely to experience greater losses than other sectors? The answer to the first question is strongly affirmative. The answer to the second is more equivocal. While the emigration potential of final-year health students is extraordinarily high (and higher than for other students), the differences are generally

not statistically significant. Across the data set as a whole, there is a pattern of differentiation between health and other final-year students. However, these differences generally did not prove to be statistically significant. The health students are more negative about social and economic conditions at home, more pessimistic about the future, display greater interest in emigration, paint a rosier picture of conditions outside the country, and are likely to leave in greater numbers in time. However, it is clear that dissatisfaction levels are very high amongst nonhealth students as well, and there is ample justification for being particularly concerned about the future emigration of all new professionals. There is a definite tendency amongst the majority of both groups of students to see their longer-term future as lying outside their home country.

Emigration was very clearly on the minds of students as they contemplated life after graduation. Satisfaction levels with economic and social conditions at home were very low, and most felt that they would only get worse. They not only think a great deal about leaving, the majority believe it is likely that they will actually do so. Previous studies using the PSBS database show that this is true for every country in Southern Africa in which the survey was implemented [25–27]. The findings of this study provide scant comfort to African governments struggling to deliver health services in a region of widespread poverty, food insecurity, and the devastating epidemics of HIV and TB. This study suggests that the region's trainee health professionals intend to capitalise on their training and leave for a better life and prospects elsewhere. Recruiting more students from rural areas will not deal with the magnitude of the problem. None of the commonly proposed retention measures have a great deal of resonance with students. Some will actually increase the chances of departure. The uncomfortable reality is that the only thing likely to keep new professionals at home is the absence of job opportunities elsewhere and that, in turn, would require countries in the north and those within Southern Africa to sacrifice their own self-interest and stop hiring professionals from the region.

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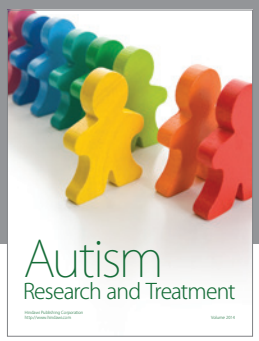

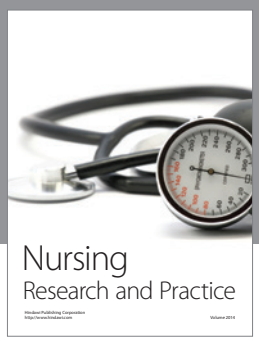

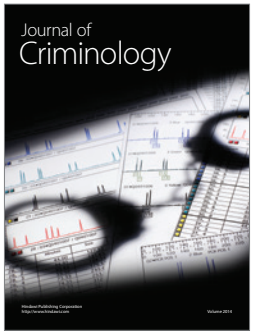

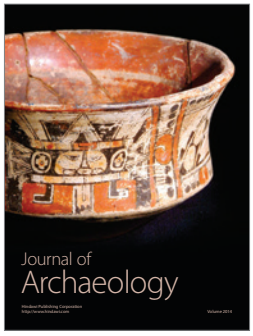

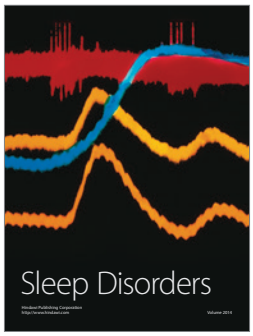

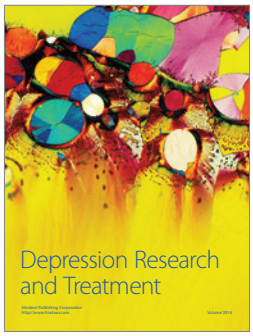

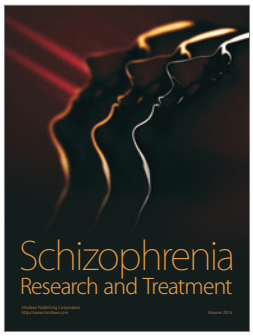

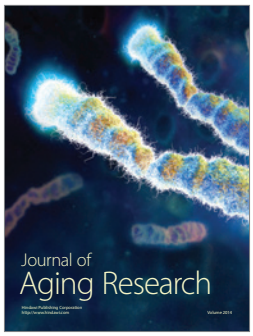

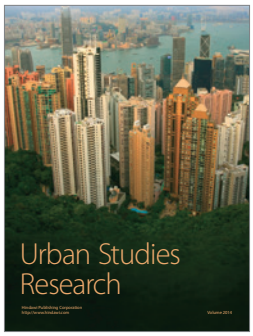


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