Factors affecting career preferences of medical students at the College of Medicine, Malawi

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Background. The shortage of doctors in all specialties in Malawi is particularly severe in rural areas. Contributory factors are the low number of students graduating each year, migration of doctors, and the preference of new graduates for practising in urban areas. Attempts to increase the output from Malawi's only medical school are insufficient to meet the country's healthcare needs.

Methods. We studied the factors influencing career choices of medical undergraduates of the College of Medicine in Blantyre, Malawi, who were surveyed by means of a self-administered questionnaire (*N*=205) and individual interviews (*N*=17).

Results. Most respondents (89.4%) indicated that they intend to specialise abroad, predominantly to study in 'better institutions' and to get the 'experience' of a different country; 87.0% indicated that they intend to live in Malawi long-term. Although, in general, the rural lifestyle was unattractive to medical students, respondents from rural areas and small towns, and whose parents were 'non-professionals', were more likely to intend working in rural areas and small towns, and to settle in Malawi, than students from urban and professional families.

Conclusions. The College of Medicine should consider increasing its intake of students with lower socio-economic backgrounds and from rural areas/small towns to increase the number of doctors working in rural areas and settling in Malawi. However, the Ministry of Health may need a multipronged approach to reduce the mismatch between doctors' career expectations and the country's healthcare needs.

S Afr Med J 2012;102:257-259.

Malawi has poor health indicators: the prevalence of infectious diseases is high, e.g. HIV prevalence in the productive age group (15 - 49 years) is 11%;[1] life expectancy at birth is 54.6 years.[2] With a gross domestic product (GDP) per capita of $US902, Malawi is one of the lowest-income countries in the world, and the budgetary allocation for health is limited to 5.9% of GDP.[2] There are only 236 doctors in Malawi, of whom about 48% are non-Malawians (unpublished data). There is only one physician per 50 000 of the population, across all specialties.[3]

In 2000, 59% of Malawian doctors were working in 1 of the 9 major destination countries: UK, USA, France, Australia, Canada, Portugal, Belgium, Spain and South Africa.[4] This 'brain drain' of personnel resources from low-income countries such as Malawi to wealthier countries is considered to have occurred once a professional is not in the employ of the home or source country.[5] This phenomenon worsens the already depleted healthcare resources in poor countries, and widens the gap in health inequities worldwide.[6] The cost to these countries is not only in terms of unmet needs but also lost investment, and was estimated to be between $433 493 and $46 million for one doctor over a 30-year period.[7]

The College of Medicine in Blantyre, established in 1991, is the only medical school in Malawi. Between 1991 and 2000, 35% of its 169 graduates had obtained or were undergoing specialty training abroad. Of these, 63.3% were in the USA or the UK, 16.7% in South Africa, 8% in Kenya, 5% in Taiwan and 3.3% in Uganda.[8]

Given Malawi's shortage of medical doctors, and especially in rural areas, there is a need to understand student characteristics and priorities that predict their commitment to staying in Malawi and their intention of working in rural areas. Therefore, our research questions were: (*i*) at what locations do medical students at the College of Medicine prefer to work as doctors, and (*ii*) what factors may affect their long-term retention in their home country?

Methods

We designed a cross-sectional descriptive study to answer the two research questions, using a self-administered questionnaire survey and individual interviews. The research was conducted in June 2010 at the College of Medicine or at Queen Elizabeth Central Hospital (Queen's).

The self-administered questionnaire was designed with previous surveys used as guidelines.[9,10] The questions focused on choice of location of practice as doctors and factors influencing the choice. The questionnaire was piloted and validated with 10 volunteer medical students. The recruitment of volunteers was facilitated by the students' union representatives. As the changes were only typographical, these 10 questionnaires were included in the final analysis. The study population was the 294 medical students at the College of Medicine in Malawi. The questionnaires were distributed to students at the end of lectures at the College of Medicine or at Queen's, accompanied by an oral explanation of the nature of the research; any student questions were answered. As the leadership of the students' union was mainly fourth-year students, some questionnaires were given to the union president to distribute and collect. A set of questionnaires was distributed and collected by a consultant at Queen's. The respondents were those who chose to complete the questionnaire.

Seventeen students were then interviewed (semi-structured interviews); the questions were based on the results of the questionnaire study. These were audio-recorded and transcribed.

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We intended to interview about 20 students comprising different year groups and genders, but stopped at 17 as it was considered that enough information had been obtained and the themes were being repeated. Before each interview, the participant was presented with a participant information sheet and consent form. The number of interviews divided into year groups were: first year – 5, second year – 3, third year – 2, fourth year – 2, and fifth year – 5. We interviewed 10 male and 7 female students.

The data from the questionnaires were analysed using the statistics software SPSS, using descriptive statistics. The digital recordings of the interviews were analysed by identifying themes addressed by the students. The comments under each theme were counted and grouped together, and some were selected for presentation in the report. Ethics approval for the study was obtained from the College of Medicine Research and Ethics Committee (COMREC).

Results

There were 208 responses to the questionnaire survey; 3 had incomplete consent forms and were excluded, leaving a total of 205 useable questionnaires. The response rate was 69.7% (205/294).

Demographics

The response rate for each year of study was: first year – 88.1% (74/84), second year – 85.4% (41/48), third year – 42.4% (28/66), fourth year – 39.0% (16/41) and fifth year – 81.8% (45/55). Unfortunately, the resitting final-year students were inaccessible as they were involved in examinations. Of the respondents, 40.5% were female, 16.1% were 25 years or older, 86.3% were Malawian and 29.0% originated from a small town or a rural area. International students were from Zimbabwe, Lesotho, Ireland and Zambia. In total, 59.0% of respondents had a mother and 67.1% a father engaged in a professional field (e.g. doctor, nurse, accountant and teacher). Both parents were professionals in 50.3% of respondents, and neither was a professional in 20.9% of respondents.

Location preferences

The majority of students intended to specialise abroad (88.2% of the Malawians and 96.4% of international students). Many reasons were cited: study in better institutions and have a better education – 10; experience a different country – 7; have more opportunities – 5; have different clinical experiences – 4; lack of specialist programmes in Malawi – 4; have more prestige – 4; access to better technology – 4; and to access scholarships – 3.

Of the Malawian respondents, 87.0% (141/173) indicated that they intend to live long-term in Malawi, while 82.1% (23/28) of international students intend to live abroad. As reported in the interviews, for some students, 'long-term' meant 10 - 15 years. A greater percentage of Malawian respondents from small towns and rural areas (46/49 – 93.9%) indicated they intend to live long-term in Malawi than those from cities (94/111 – 84.7%). Of students with both parents working as professionals, 31.5% intended to live abroad compared with 10% of those with neither parent a professional.

Most respondents intended to work in a city (143/200=71.5%), followed by a small town (48/200=24.0%) and a rural area (9/200=4.5%). (The total number of respondents was 205 but only 200 of them responded to this particular question.) If the categories of 'small town' and 'rural' are grouped together, 27 (48.2%) of those from small towns/rural areas intend to work in small towns/rural areas. Reasons from the interviews include: They can empathise and they have a desire to help the community – 8; they are comfortable with those settings – 8; they have knowledge of the problems and needs – 5; city life can be difficult – 3; one is closer to family – 2; there is a sense of community – 2; they have a sense of responsibility – 2; and it is different in fifth year – 1.

Regarding the last comment, further analysis found that, although 48.2% of those from small towns/rural areas intended to work in small towns/rural areas, this intention was marked in the first (56%) and second (66.7%) years, and diminished in the third (25.0%), fourth (0.0%) and fifth years (22.9%).

A higher proportion of respondents with neither parent being professional than those with both parents being professional intended to work in a small town/rural area (43.8% v. 18.7%). Could this be due to their origin, i.e. those with non-professional parents tend to originate in small towns/rural areas? When we selected respondents from rural areas/small towns and divided them into 2 groups, 27.3% (3/11) of those with professional parents, and 69.2% (9/13) with non-professional parents, intended to work in small towns/rural areas. When we selected respondents from the city and divided them into two groups, 16.7% (11/66) of those with professional parents, and 25.0% (4/16) with non-professional parents, had the intention of working in a rural area. Therefore, having neither parent as professional is independent of small town/rural origin in small town/rural intent.

Unpopularity of a rural lifestyle

Exploring factors that influence choice of location, the most unpopular factor in general was a 'rural lifestyle'. Some of the reasons investigated through interviews for the relative lack of importance given to a rural lifestyle include: it is difficult or uncomfortable – 8; it is backward – 5; lack of social and family networks – 4; poor accessibility of services and facilities – 4; more fun and interesting in urban areas – 4; financially is not as good – 3; change from original lifestyle – 2; and concern regarding children and schools – 2.

Discussion

We found that most respondents intended to specialise abroad predominantly to study in 'better institutions' and get the 'experience' of a different country, but to live in Malawi in the long term. Although the rural lifestyle in general was unattractive to medical students, the respondents from rural areas/small towns, and whose parents were non-professionals, were more likely to intend working in rural areas/small towns and to settle in Malawi than students from urban and professional families.

The trend of Malawian medical students intending to live in Malawi in the long term is encouraging, even though long-term can mean 10 - 15 years before coming to fruition. As students from low socio-economic backgrounds and rural/small town backgrounds were more likely to choose Malawi as their long-term residence, selecting an increased number of potential students from this group may favour retention of qualified doctors. However, this presents challenges as students must meet the entry requirements and, as urban and rural schools may differ in quality, many with the capacity and inclination may find these requirements difficult. The entry of financially disadvantaged students into medical schools may be hindered by affordability of fees and also family concerns that they should work to assist their family rather than pursue higher education.

Students from rural areas and small towns also preferred to work in rural areas/small towns, which is similar to observations from South Africa,[9, 11] Canada[12] and Australia.[13] However, in this study, this relationship tended to diminish in the clinical years of study. The rural lifestyle was not considered attractive and seemed unpopular among medical students; this reflects the fact that the problem of staffing rural healthcare facilities cannot be rectified solely by

educational means, but requires a broad approach, including socio-economic reforms.

A low percentage (11.8%) of Malawian students intend to specialise in Malawi. This is of concern, given the newly established postgraduate programmes with more in the pipeline. However, this trend may change as these programmes become more established. The College of Medicine must continually improve and provide a range of disciplines in its postgraduate programmes.

In conclusion: Although factors are multifaceted and complex in directing doctors to rural areas in middle- and low-income countries, strategies are usually not comprehensive and often address only a single factor or a limited number of factors.[14] Wilson *et al.*[15] reviewed the interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas, including studies from the USA, Canada, South Africa and Australia. The World Health Organization has also 'drawn up a comprehensive set of strategies to help countries encourage health workers to live and work in remote and rural areas'.[16] Effective interventions from the literature[17] include specially recruiting and admitting medical school applicants from rural backgrounds who intend to practise family medicine in rural and underserved areas, and giving them more financial aid than other students. Our findings support these suggestions.

Limitations of the study

Although we studied a single institution in Malawi, which limits the generalisability of findings, it provides a baseline for further studies. The response rate for the questionnaire is acceptable, although capturing the whole student population would have been better. The cross-sectional design might have limited the scope of this study. Ideally, to answer the selected research questions, a cohort of students should have been followed up from the first year to their postgraduate training. The cost and practicability implications and the effect of drop-out on a small number of participants in a long duration study would challenge such an approach.

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Accepted 13 September 2011.