

## Career plans of final-year medical students in South Africa

Elma de Vries, James Irlam, Ian Couper, Saul Kornik, and members of the Collaboration for Health Equity through Education and Research (CHEER)

**To the Editor:** Among the challenges facing South African human health resources is the maldistribution of doctors across all levels of care in the public and private sectors in rural and urban areas.<sup>1</sup>

There is strong international evidence that students of rural origin, and those who intend to practise rural medicine, are more likely to practise in rural settings after graduation.<sup>2</sup> The purpose of this study was to survey final-year medical students about their career plans and the influences on those plans, to ascertain implications for the future training of doctors in South Africa.

### Methods

Final-year students at all 8 South African medical schools were asked to complete anonymous self-administered questionnaires during 2007 and 2008. Their geographical origin was defined as where they reportedly grew up.

### Results

Questionnaires were completed by 876 (67%) of the 1 306 students surveyed. Sixty per cent were women, the mean age was 24.7 years (SD 3.3 years), and 92% ( $N=797$ ) were South African citizens. Of the 846 respondents who indicated their place of origin, 50% had grown up in a city, 30% in small towns, and 20% in rural areas.

The majority (84%) planned to remain in the medical field as a career. Forty-one per cent (47% women v. 33% men;  $p<0.0001$ ) of 849 respondents were not inclined to work overtime during most of their careers. Ten per cent planned to work part-time only, and a third (34% women v. 28% men;  $p=0.1$ ) planned to take a few years' break (excluding maternity leave) from their careers.

More than half (55%) of the 743 students of South African nationality planned to work abroad, either for a year or two (73%) or more (20%). The remaining 7% intended to relocate permanently. Between 47% (of 876 students) and 59% (of 700

who responded to the question) planned to work for a time in rural areas after specialising. Twice as many planned to work for most of their careers in the private rather than the public sector (28 - 41% v. 14 - 19%;  $p<0.0001$ ).

Those of rural or small-town origin ( $N=350$ ) were less likely than those of city origin ( $N=376$ ) to want to work abroad ( $p<0.001$ ), were more likely to want to work in rural areas ( $p<0.0001$ ), and were less likely to want to spend most of their career in the private sector ( $p<0.05$ ). Among respondents planning to work abroad, those of non-urban origin were more likely to work there short-term than those of urban origin ( $p<0.001$ ).

Although only 47% of respondents had made a definite career choice, 93% nevertheless indicated their first choice of specialty. Internal medicine (including sub-specialties) was the leading choice overall (22%) and among women (21%). Surgery (including sub-specialties) was second overall (20%), the top choice of men, and the second-ranked choice of women (26% v. 16%;  $p<0.001$ ). Paediatrics was the third-placed choice overall (12%). It was significantly more popular among women than men (16% v. 6%;  $p<0.001$ ), as was obstetrics and gynaecology (11% v. 6%;  $p<0.05$ ).

The top three influences on specialty choices were 'Plans to have a family' (62%), 'Acceptable hours of practice' (55%), and 'Intellectual challenge' (45%). Other important influences were 'Opportunities for health promotion and prevention' (37%), 'Working with new technology' (36%), and 'Continuity of patient contact' (35%). Women rated all of the above more highly than men, with the exception of 'Working with new technology' (significantly more men), and 'Intellectual challenge' (no difference).

The top-ranked influences on where to work were 'Crime and safety issues' (68%), 'Opportunities for children' (57%), and 'Opportunities for partner or spouse' (56%). All of these were rated highly by significantly more women than men ( $p<0.05$ ) (Table I).

### Discussion

Gender appears to influence work plans and choices about specialty and future work location among final-year South African medical students. Women were less likely to want to work overtime, although these intentions may well change once the financial benefits become apparent. Internationally, women generally have lower levels of workforce participation across their careers than men,<sup>3</sup> but women in this study were not more likely to want to take a break from their careers than men.

Consistent with other studies,<sup>4</sup> women favoured certain specialties, such as paediatrics and obstetrics and gynaecology, whereas men favoured surgery and orthopaedics. A trend of increasing admissions of women to medical schools implies

Mitchell's Plain District Hospital and School of Public Health and Family Medicine, University of Cape Town

Elma de Vries, MB ChB, MFamMed

Primary Health Care Directorate, University of Cape Town

James Irlam, BSc, BSc (Med)(Hons), MPhil (Epidemiol)

Division of Rural Health, University of the Witwatersrand, Johannesburg

Ian Couper, BA, MB BCH, MFamMed, FCFP (SA)

Africa Health Placements (AHP), Johannesburg

Saul Kornik, BBusSc (Hons), BCom (Hons), MCom, CA (SA), CFA

Corresponding author: E de Vries (elmadv@cybersmart.co.za)

**Table I. Ranking of influences on work location by gender**

| Influences on work location                       | Women |    | Men |    | Total* |    |
|---------------------------------------------------|-------|----|-----|----|--------|----|
|                                                   | N     | %  | N   | %  | N      | %  |
| <sup>†</sup> Crime and safety issues              | 352   | 73 | 180 | 61 | 545    | 68 |
| <sup>†</sup> Opportunities for children           | 309   | 64 | 145 | 47 | 463    | 57 |
| <sup>†</sup> Opportunities for partner/spouse     | 297   | 61 | 149 | 49 | 454    | 56 |
| Opportunities for own continuing education        | 251   | 52 | 150 | 51 | 408    | 51 |
| <sup>†</sup> Access to social and family networks | 259   | 54 | 128 | 44 | 394    | 50 |
| Sense of professional independence                | 246   | 51 | 144 | 48 | 401    | 50 |
| Using a wide range of skills                      | 219   | 46 | 137 | 47 | 365    | 46 |
| Availability of specialists                       | 217   | 45 | 119 | 40 | 345    | 43 |
| Sense of being needed/making a difference         | 206   | 43 | 114 | 39 | 330    | 41 |
| Adventure/recreational opportunities              | 201   | 42 | 112 | 38 | 319    | 40 |
| <sup>†</sup> Providing continuity of care         | 175   | 36 | 93  | 28 | 266    | 33 |
| Community belonging                               | 89    | 19 | 67  | 23 | 163    | 21 |
| Rural lifestyle                                   | 43    | 9  | 35  | 12 | 81     | 10 |

\*Total includes respondents of unknown gender.

<sup>†</sup>Denotes significant differences by gender ( $p < 0.05$ ).

that more women are entering traditionally male-dominated specialties. The need to train more doctors overall may be exacerbated by an increasing trend among male doctors of taking a break from their careers and seeking more acceptable hours of practice.<sup>5</sup>

Although more than half (55%) of the South African nationals planned to work abroad, most (73%) planned only short-term work there. It is encouraging that the proportion planning to relocate permanently (7%) was considerably lower than among those considering emigration (54%) among UCT medical students in 1991.<sup>6</sup>

Geographical origin appeared to influence future career plans, too. Students who grew up in rural areas or small towns were less likely than those of city origin to plan to work abroad, and more likely to work in rural areas after specialising. They were also less likely to plan to spend most of their careers in the private sector. Selecting and training more students of rural origin may therefore tend to correct the future maldistribution of doctors in rural versus urban areas, and to improve retention in the South African public health sector.

Although current evidence of the effectiveness of incentives and support towards reducing the urban-rural mismatch is moderate to weak,<sup>2</sup> addressing the factors that influence choices about future work location should contribute to promoting rural practice. Such factors include continuing professional development, educational and recreational opportunities for doctors' families, and lifestyle and personal safety in rural areas.

The high proportion of respondents with plans to specialise, and the low popularity of family medicine (9%) and public health (2%) as specialties, implies that greater incentives are needed for graduating generalist physicians and public health practitioners towards meeting national needs.

To conclude, our study suggests that selection policies favouring students from rural areas in particular should have a positive effect on the recruitment and retention of doctors in rural public service in South Africa.

We thank the following members of the Collaboration for Health Equity through Education and Research (CHEER) for assistance with data collection: Professor Steve Reid (University of KwaZulu-Natal); Professor Ian Couper (University of the Witwatersrand); Professor HOFFIE Conradie (Stellenbosch University); Dr Honey Mabuza (University of Limpopo); Professor Jimmy Chandia (Walter Sisulu University); Professor Jannie Hugo (University of Pretoria); Professor Pieter Nel (University of the Free State); and Ms Claudia Naidu (CHEER intern, Primary Health Care Directorate, University of Cape Town) for assisting with preparation of the manuscript.

**Conflict of interest.** Saul Kornik works for Africa Health Placements, Johannesburg, which contributed R15 000 towards the research funding.

## References

- Coovadia H, Jewkes R, Barron P, Sanders D, McIntyre D. The health and health system of South Africa: historical roots of current public health challenges. *Lancet* 2009; 374(9692): 817-834.
- Wilson NW, Couper ID, De Vries E, Reid S, Fish T, Marais BJ. A critical review of interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas. *Rural and Remote Health* 2009; 9(2): 1060-1081.
- McKinstry B. Are there too many female medical graduates? *BMJ* 2008; 336: 748-749.
- Redman S, Saltman D, Straton J, Young B, Paul C. Determinants of career choices among women and men medical students and interns. *Med Educ* 1994; 28(5): 361-371.
- Sanfey HA, Saalwachter-Schulman AR, Nyhof-Young JM, Eidelson B, Mann BD. Influences on medical student career choice: gender or generation? *Arch Surg* 2006; 141(11): 1086-1094.
- Wynchank DR, Granier SK. Opinions of medical students at the University of Cape Town on emigration, conscription and compulsory community service. *S Afr Med J* 1991; 79(9): 532-535.

Accepted 29 October 2009.