

Factors influencing generalist intention across medical school years

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Louis introduced major changes in selection processes and curriculum and led the development of the Rural Clinical School, the Centre for Aboriginal Medical and Dental Health and the graduate entry medical course. Assisted establish the UWA Centre for Oral Health.

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Abstract

Factors associated with change in generalist intentions were examined using data from the Medical Schools Outcomes Database (MSOD). Data from the start and end of medical school were linked to educational experiences resulting in a sample of 146 medical students. GP placements in 1st and 2nd year of medical school were associated with shifts away from GP career intentions, while longer GP placements later in the course were associated with a shift towards GP career intentions. Demographic variables had little influence on changes in practice intentions, with the exception that those married at the start of medical school were more likely to shift toward a GP career.

Introduction

The increasing trend towards medical specialist interest has led to a shortfall in the required numbers of generalist practitioners entering the workforce. Across the last decades, the medical workforce has become increasingly specialised, with relatively declining numbers in GP and other generalist workforces, associated with ageing and decreased work hours for this group (1) and aggravated by a fall in interest by new graduates. Recent government planning strategies have aimed to facilitate a return to more generalist career interest to increase GP numbers. Reduced GP supply, with an increasing reliance on their services, leading to stressful working conditions, are likely to reduce attractiveness of such a career path and exacerbate the problem in Australia, despite an encouraging small trend of recent initiatives starting to show increasing GP intentions.

Kassebaum et al (2) reported determinants of generalist career intentions of 1995 medical graduates being older age, female, generalist interest before entering medical school, rural background, altruistic attitudes and family practice experience in the 3rd and 4th year of their medical course. This was against a background of overall decreasing generalist intentions through their medical course.

Specialism evolved rapidly from the 1960s with the exponential expansion of knowledge and technology. Over the same period there has been a change in selection criteria in to medical schools from broad based skills, if

somewhat socially restricted, to academic excellence and then to a combination of academic and aptitude skills. There has also been a shift to increasing feminisation of the student pool and an increased number of bonded places.

The need for generalist practice is seen in general practice, general medicine, general surgery and general paediatrics as well as GPs, some with procedural skills in obstetrics and/or anaesthetics.

The need for a return to an adequate supply of generalists is required with needs in primary care, general hospitals, health services in rural and smaller cities, chronic illness requiring integrated and coordinated care, preventive health care and continuity of care.

Generalists focus on the cognitive and professionalism skills to manage acute, severe, undifferentiated, complex and chronic illness. Their activity is across the whole health system. There is some evidence of reduced costs and lower morbidity (reduced rates of premature death from treatable conditions) with their input (Sweden, Finland and specific health care systems in the U.S.A).

Specialists focus on detailed knowledge and skills in their areas of expertise, technical advances and their activity is usually tertiary hospital based. In the UK, 50% of specialists practice some degree of generalist medicine, in New Zealand 40% and in Australia only 20% do so.

There does appear an imperative to restore the balance of generalists to specialists in Australia.

One way of addressing generalist shortages is to understand the factors associated with increased interest in generalist practice. Although some efforts have been made to assess the factors influencing medical student career choices, the methods used have been insufficient to restore the balance of generalist and specialist practice to address the needs for Australia. Retrospective questionnaires and retrospective longitudinal studies have been used to understand workforce participation (3-5) but these are prone to selection biases and inaccurate recall. Small tracking studies of medical students have been undertaken, generally at one university. The limited scope of these studies makes extrapolation to other universities difficult. These smaller tracking studies also typically sample only one or two cohorts of students making ongoing workforce projections difficult. These studies have been reviewed by Bunker and Shadbolt (6).

The Medical Schools Outcomes Database (MSOD) solves these methodological issues. The MSOD is an ongoing tracking project covering medical students at all medical schools in Australia and New Zealand. It is managed under the auspices of the Medical Deans of Australia and New Zealand. The MSOD tracks students from the start of medical school to their later workforce outcomes. Since its first sampling year in 2005 the MSOD database has quickly grown to the point where it now contains 11,000 students. The MSOD can efficiently build a picture of the characteristics associated with intention to practice as a GP or specialist at entry to medical school because it tracks a new cohort of students every year. The MSOD can also assess longitudinal change during the medical schools years due to its tracking design.

At the policy level, educational initiatives have been an important lever to encourage interest in needed specialties. For example, rural workforce shortages have been addressed by rural scholarships (e.g. John Flynn) and rural education initiatives such as university departments of rural health and rural clinical schools. These significant measures are already demonstrating a positive impact (7).

This report presents a preliminary analysis of the factors associated with changes in intentions to practice as a GP. Both demographic and educational experience variables are examined.

Method

Sample. The current report is a limited sample of 146 medical school students from the 2005 MSOD pilot data. 879 students from 5 medical schools completed the entry questionnaire in 2005 and medical schools data existed for all these students but only 262 respondents completed the Exit Questionnaire, and of this exit group only 146 students could be linked to valid entry questionnaires. It appears a significant number of students completed the exit questionnaire who had not completed the entry questionnaire. These students may have had deferred or repeat years. When the exit questionnaire is administered in future years we can expect higher linkage rates with repeat and deferred students.

The final sample was split into four groups based on entry GP intentions and exit GP intentions: *never a GP*, *always a GP*, *leaving GP*, and *becoming a GP*. The *never a GP* group ($n = 129$) consisted of students who did not intend to be a GP at either entry or exit. The *always a GP* group ($n = 3$) consisted of students who intended to be a GP at both entry and exit. The *leaving GP* ($n = 9$) consisted of students who intended to be a GP at the start of medical school but not at the end. Lastly, the *becoming a GP* group ($n = 5$) consisted of students who did not intend to be a GP at the start of medical school but were intending to be a GP at exit.

These four categories were compared to a number of demographic and educational variables by means of chi-square tests of independence. The demographic variables examined were gender, age, marital status, number of children, citizenship, entry scheme, scholarship type and rural background. The educational variables examined were the number of GP placements in each year of medical school, and the length of GP placements.

Results

Most of the demographic variables were not significantly associated with the four categories of general practice intention. The non-significant variables were: gender ($\chi^2(3) = 5.44, p = .14$), age ($F(3,142) = 0.86, p = .47$), number of dependent children ($\chi^2(3) = 2.70, p = .44$), citizenship status ($\chi^2(3) = 2.73, p = .44$), entry scheme ($\chi^2(15) = 16.75, p = .33$), scholarship type ($\chi^2(3) = 5.65, p = .13$) and rural background ($\chi^2(3) = 3.09, p = .38$).

However, marital status at the start of medical school was associated with general practice intentions ($\chi^2(3) = 12.83, p = .005$), as shown in Table 1. Those married at the start of medical school are more likely to move towards GP intentions.

Table 1 GP specialisation intentions and marital status

	Never a GP	Always a GP	Becoming a GP	Leaving GP	Total
Single	115 (90.6%)	3 (100%)	2 (40%)	8 (88.9%)	128 (88.9%)
Married / living with partner	12 (9.4%)	0 (0%)	3 (60%)	1 (11.1%)	16 (11.1%)
Total	127*	3	5	9	144

* 2 missing

GP placements in the first ($\chi^2(3) = 9.27, p = .03$) and second year of medical school ($\chi^2(3) = 9.27, p = .03$) were associated with shifts away from GP intentions (leaving GP), the results being identical across the years. The impact of GP placements in the first two years are shown in Table 2.

Table 2 GP intentions and 1st and 2nd year GP placements

	Never a GP	Always a GP	Becoming a GP	Leaving GP	Total
Had no GP placement	114 (88.4%)	3 (100%)	5 (100%)	5 (55.6%)	127 (87%)
Had a GP placement	15 (11.6%)	0 (0%)	0 (0%)	4 (44.4%)	19 (13%)
Total	129	3	5	9	146

Longer GP placements (as defined by total length of time spent in GP placements in the later years of the course) were associated with a marginally significant shift towards general practice intentions ($\chi^2(3) = 5.65, p = .058$) as shown in Table 3.

Table 3 GP intentions and length of GP placements in later years.

	Never a GP	Always a GP	Becoming a GP	Leaving GP	Total
0 hours	95 (74.2%)	3 (100%)	3 (60%)	4 (44.4%)	105 (72.4%)
51 hours	15 (11.7%)	0 (0%)	0 (0%)	4 (44.4%)	19 (13.1%)
80 hours	18 (14.1%)	0 (0%)	2 (40%)	1 (11.1%)	21 (14.5%)
Total	128*	3	5	9	145

* 1 missing

Discussion

There were three major findings from the present analysis. First, being married at the start of medical school is associated with shifts towards general practice intentions. Second, early GP placements as currently structured have been associated with a shift away from GP intentions. Third, longer GP placements later in the course show a trend towards GP intentions.

Given the relatively small numbers in the leaving GP and becoming a GP group, it might be argued that these results may be either due to chance or when non significant due to lack of power. However, two of the results confirm previous reports so that these results may have reasonable generalisability—ie. previous reports that married medical students are more likely to become GPs and that longer GP placements lead to greater likelihood of becoming a GP, although this latter may be confounded by cause/effect. It is likely that those who are married are able to make a commitment to GP as there is less tension with the uncertainty of the impact of the choice with a future partner.

The negative impact of early GP placements is a new observation. The current data found that GP placements in the first two years of medical school were associated with decreased GP intentions, although the preliminary nature of this finding does warrant confirmation. Most early GP placements are purely observing and often repetitive which, associated with limited time to teach, may not allow the rewarding aspects of the consultations to be experienced.

Apart from these factors influencing interest in generalist medical practice, others that may contribute include selection criteria in to medical schools, location of the medical school, meaningfulness of the experience related to the level in training, impact of role models and subsequent prevocational experiences, career expos and career paths.

Barriers to the practice of general medicine may include image (recognition and remuneration), risk perception (legal liability), difficulty maintaining continuing professional development for personal development and board registration, lack of opportunities in current models of training.

Further analyses will be conducted in these areas. An analysis of the factors associated with GP intentions at entry to medical school will be conducted with larger numbers and new cohorts. The higher numbers of students available in later years will make such an analysis stable and reliable. Other longitudinal analyses will follow up the impact of these factors on GP intentions and will look at the impact of the quality of the GP experience during the medical course.

The current analysis of factors associated with change has been used previously to examine rural career intention change (7) and the MSOD will allow for analysis of other general and specialty career intentions along the same lines. Future analyses will aim to confirm these observations with larger cohorts to better understand GP and generalism intentions, and further studies with the current and future cohorts will aim to further document factors leading to interest in generalist and specialist career intentions.

A solution to the low interest in generalist medical practice will clearly require a whole of health care and education system approach. Medical schools will need to upgrade generalist academic themes and health services will need to develop and resource appropriate career paths. Those influences identified which impact on generalist practice choice should be addressed to maximise a positive experience for students. The complementary roles of generalism and specialism should be acknowledged and the balance restored. As John Ryle is reported to have said: Subdivision in to specialisms has been good for technique but bad for the soul of medicine.

Recommendation

Medical schools will need to upgrade generalist academic themes and health services will need to develop and resource appropriate career paths.

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