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A multi-university study of which factors medical students consider when deciding to attend a rural clinical school in Australia

LM Krahe[1], AR McColl[1], JF Pallant[2], CE Cunningham[2], DE DeWitt[2]

[1]*The University of New South Wales, Rural Clinical School, Port Macquarie Campus, Port Macquarie, New South Wales, Australia*

[2]*The University of Melbourne, School of Rural Health, Shepparton, Victoria, Australia*

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Krahe LM, McColl AR, Pallant JF, Cunningham CE, DeWitt DE

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ABSTRACT

Introduction: As in many developed nations, there is a shortage in the rural medical workforce in Australia. Research indicates that a strong relationship exists between rural educational exposure and an increased interest in pursuing a rural career or selecting a rural internship. Accordingly, in 2000 the Australian Commonwealth Government established the Rural Clinical Schools (RCS) program. Under this program, 25% of parent medical schools' Commonwealth Supported Place (CSP) medical students must spend at least 1 year of their clinical medical education in a rural setting. Research indicates that positive experiences are of vital importance in determining future rural practice. Arguably, if students are conscripted to a RCS, they may view their overall experience negatively. Thus, the development and sustainability of an adequate future rural medical workforce depends on medical schools understanding and fostering the factors that encourage voluntary student recruitment to the RCSs. The aim of the present study was to determine which factors Australian medical students consider in their decision to attend RCSs.

Methods: This study employed survey research. The questionnaire, which used a 6 point Likert scale, addressed factors influencing students' decision to attend an RCS, including whether these factors were viewed as positive or negative. Open-ended questions provided students with an opportunity to make comments about their decision-making. The setting was the RCSs of six

participating Australian universities. The participants were medical students enrolled at one of six Australian universities in 2006 (*n*=166) who had completed their RCS term; 125 students responded (75% response rate).

Results: At least three-quarters of the respondents considered the following when deciding whether to attend an RCS: patient access, academic reputation, their friends, the availability of subsidized accommodation provided by the clinical school, extra-curricular activities, social opportunities and transport costs. The majority of students considered the following as positive considerations: 'patient access', 'academic reputation', and 'subsidized accommodation'. However, for other students these same factors were negative considerations.

Conclusion: Students consider both clinical and non-clinical factors in their decision to attend an RCS. The primary positive factor in the present study was patient access with 97% students (*n*=119) considering this to be important, and 84% students (*n*=81) stating that this was a positive factor in their decision-making. The other major factors, friends and academic reputation, appear equally considered. However, they differed in the degree to which they were regarded as a positive or negative consideration. Identifying and promoting positive factors is essential if the future rural medical workforce is to be enhanced. This study supports the importance of RCSs not being over-crowded and, thus, maintaining patient access, and also the importance of institutions having sufficient resources to support an excellent academic reputation. Interestingly, and perhaps somewhat contrary to expectations, students of metropolitan origin appear to be increasingly attracted to RCSs. Although numerous studies show that rural origin is a strong predictor of rural medical workforce membership, urban students who attend an RCS and have a positive experience may also be open to future rural practice.

Key words: Australia, medical education, rural clinical school, undergraduate.

Introduction

The Australian medical workforce, like that of many developed nations, has a distinct urban bias[1]. Consequently, the rural medical workforce is both undersupplied[2] and mal-distributed[3,4]. The Australian Medical Workforce Advisory Committee (AMWAC) has projected that by 2012 rural and remote areas could experience a shortfall of 1182 doctors[5]. Given that the Rural Doctors Association of Australia has reported that less than 5% of medical graduates have taken up rural practice in the last 15 years[6], such shortfalls are not unexpected.

To redress this imbalance and inequity the Australian Commonwealth Government has established the Rural Clinical Schools (RCS) program[7]. Initially 9 medical schools were funded by the Commonwealth Department of Health and Ageing in 2000 to provide students with medical education and clinical training in a rural environment[8]. The establishment of the RCS program was based on research findings indicating that a strong relationship exists between rural educational exposure and an increased interest in pursuing a rural career or selecting a rural internship[4,9,10]. Currently the program involves 16 universities managing 17 RCSs throughout Australia, with each RCS consisting of multiple campus locations.

It is mandatory for all Australian medical students to undertake a minimum 4 week rural residential placement. However, short rotations are not as effective as longer term rotations in encouraging students to become part of the rural medical workforce[11]. Arguably this is because it takes time to appreciate the rural lifestyle, connect with the local community and its residents, and to feel an emotional attachment to rural living[11,12]. The RCSs are mandated to provide 25% of their parent medical schools' Commonwealth supported medical students with 1 year of their clinical medical education in a rural setting[13]. By 2006 there were 379 medical students enrolled across the 14 RCS programs[8].

At times, in order to meet Commonwealth mandates, medical schools have conscripted students to RCS programs[13]. There are, however, reasons for caution in using this method of RCS recruitment. In one study, whether students planned to become part of the rural workforce was related to whether their attendance at rurally located training had been voluntary or compulsory; voluntary attendance was positively related while compulsory allocation was negatively related to students' decision to practice in a rural location[14]. Other studies have found that having a positive experience is of vital importance in determining future rural practice[11,15,16]. It is certainly arguable that unwelcome conscription may negatively taint rural training experiences.

While universities have various schemes to augment the numbers of students who attend their RCS, it is important to the development and sustainability of an adequate future rural medical workforce that medical schools are able to identify and foster the factors that encourage voluntary student recruitment to the RCSs. Finally, other countries are also building rural medical campuses and rural medical schools in order to address rural workforce shortages. The aim of this study is to determine which factors medical students consider in their decision to attend RCSs.

Method

In 2006, each of the 13 Australian universities managing RCSs were asked to participate in the survey and 6 agreed. These were the Universities of New South Wales, Melbourne, Tasmania, Adelaide, Sydney and the Australian National University. Students who had completed their RCS term were surveyed (n=166) and 125 responded, a response rate of 75%.

The FRAME Questionnaire 'Rural Clinical School Evaluation 2006' was developed as an evaluation tool to determine baseline data about students studying in an RCS[17]. Questions identified background characteristics including age, gender, marital status, dependents, ethnicity, admission and entry into medical school, rural background and education. Using a 6 point Likert scale, students were asked to indicate their level of agreement with 14 items concerning factors they considered in their decision to attend RCSs. These included family needs, academic reputation, patient access, transportation and accommodation. Students were also able to provide open-ended comments about their decision-making. Ethics approval for the study was obtained from each of the participating universities.

All data were pooled. The software SPSS v15 (SPSS Inc; Chicago, IL, USA; www.spss.com) was used to generate descriptive analyses and to identify factors used in the decision to attend the RCS. Qualitative analysis of responses to open-ended questions was performed where appropriate.

Results

Respondents (Table 1) ranged in age from 21 to 43 years (M=24.5 years, SD=3.89), with 9 students aged 30 years or older. Approximately two-thirds of the sample was female (n=77, 62%). The majority of students were born in Australia (n=101, 83%), with 58 (47%) considering themselves to be from a rural background. There were 21 students (17%) born outside Australia who had lived in the country for an average of 19 years (M=18.63, SD=6.63). English was the second language of 15 (12%) students. The majority were single (n=109, 87%) with the remaining 16 (13%) married or in a de facto relationship. Of the 125 participants, only 6 students (5%) had children under 16 years. Sixty-nine (55%) students held at least one scholarship.

Factors influencing the decision to attend an RCS were measured by 14 six-point Likert Scale questions. Students indicated their level of agreement (1=disagree strongly, 2=disagree moderately, 3=disagree slightly, 4=agree slightly, 5=agree moderately, 6=agree strongly) and responses were collapsed into 'disagree' (1–3) and 'agree' (4–6) for clarity. Whether each factor was a positive or negative consideration in choosing to attend an RCS was also recorded (Table 2).

Table 1: Participants by medical school attended in 2006

Medical School	Participants *n* (%)
University of New South Wales	50 (40)
University of Melbourne	28 (22)
University of Tasmania	16 (13)
University of Adelaide	12 (10)
University of Sydney	10 (8)
Australian National University	9 (7)
Total	125 (100)

Table 2: Factors influencing the decision to attend a Rural Clinical School

I considered the following factors in deciding whether to attend RCS …	Response *n* (%)				
	Agree	Disagree	Positive	Negative	N/A
Patient access	119 (97)	3 (3)	84 (85)	8 (8)	7 (7)
Academic reputation	107 (89)	13 (11)	63 (68)	18 (19)	12 (13)
My friends	107 (88)	14 (12)	38 (41)	41 (43)	14 (15)
Subsidised accommodation provided by RCS	90 (86)	15 (14)	65 (67)	9 (9)	23 (24)
Extracurricular activities	99 (82)	22 (18)	45 (50)	34 (38)	11 (12)
Social opportunities	98 (80)	24 (20)	31 (34)	47 (51)	14 (15)
Transport costs	83 (75)	27 (25)	47 (51)	28 (30)	17 (19)
Other family members	54 (72)	21 (28)	23 (25)	21 (23)	48 (52)
Spouse/partner's needs	38 (67)	19 (33)	15 (15)	20 (20)	65 (65)
Availability of P/T work	65 (63)	39 (37)	23 (25)	34 (37)	34 (37)
No need to rent/pay for on-campus residence	55 (63)	32 (37)	31 (35)	16 (18)	41 (47)
Support from other scholarship	39 (48)	42 (52)	23 (26)	8 (9)	57 (65)
Cultural/religious needs	43 (48)	47 (52)	16 (18)	21 (24)	50 (58)
Children's needs	9 (37)	15 (63)	4 (4)	3 (3)	93 (93)

N/A, Not applicable; P/T, part time; RCS, Rural Clinical School.

The key factor in choosing an RCS was 'patient access', with 97% (*n*=119) of students considering this important. In the decision-making process, 84% (*n*=81) indicated this factor had a positive influence on their selection. This suggests that students perceive RCSs as offering enhanced patient access. Another item featuring highly was 'academic reputation', with 89% (*n*=107) rating this as important and 68% (*n*=63) indicating this had a positive influence on their decision to choose an RCS.

Students were asked to provide comments on selecting the RCS option and 28 provided one or more comments. Of these, 10 (36%) said they believed the RCS would be a positive learning experience with comments about better student–doctor ratios, more 'hands on', smaller class sizes and better teaching. Comments included:

> *…the small numbers of students allow you to get more exposure to the doctors and more hands on experience as opposed to larger medical [clinical] schools.*

> *[I] chose the RCS based on reputation for small class size and close contact with senior clinicians.*

Interestingly, four of the students who provided written comments and were planning to work in a rural setting, wanted the RCS option to help establish ties and develop an understanding of rural practice; however two, who were also planning to work in a rural setting, reported that they would have preferred to complete their training in metropolitan medical schools. One student wrote:

> *I selected the RCS as an option due to my wanting to do rural medicine [general practice] in the future.*

Another said:

> *Having come from a rural background I felt I was just getting my feet in the city when I was sent back to my hometown to study which I had just spent 18 years living in... and, I would have preferred to get some experience in the city, rather than going to the country where I know I am going to end up anyway.*

Further, seven students commented on the availability of social opportunities in their decision to attend an RCS, with three indicating this was a positive factor, and four indicating this was a negative factor. Students wrote:

> *…excited to try something new, meet new people, see a new area in Australia.*
>
> *...wanted a change/opportunity for new experiences and to challenge myself – having only ever lived in an urban environment.*

Some students were concerned about distance and being away from their family:

> *I was isolated from my family as it would take me 4-5 hours to travel home.*

However, another noted:

> *It was fantastic as I was able to return to the place where I grew up, and have family support.*

Six students believed that accommodation would be more affordable or easier at the RCS:

> *I had no qualms in coming rural as it meant cheaper rent and a nicer lifestyle.*
>
> *...no rent was a positive factor.*

Another eight students viewed a rural lifestyle as having a positive influence on their decision to attend an RCS. Some students stated they preferred the country lifestyle with statements such as:

> *I can't breathe in the city, I love the country too much!*
>
> *Nice area, close to national parks, something different.*

Discussion

When students consider whether or not they will attend a RCS, it is apparent from this study that both clinical and non-clinical factors are taken into account. The primary factor considered in the present study was patient access. Other major factors, friends and academic reputation, appear equally considered. However, factors differed in the degree to which they were judged positive or negative.

Patient access was identified as a positive consideration by the majority of students in this study, and certainly numerous studies concur that better patient access is an RCS drawcard[10,13,16,18]. In this context, patient access refers to the ability to interact with the local patient population in a more direct manner than is possible for the urban student. The rural medical student is part of a small healthcare team, often involving only staff specialist and medical student. In contrast, the urban-based teaching team tends to be larger,

composed of staff specialist, registrars of various levels and an increased number of medical students. Thus, the urban medical student tends to play a lesser role in patient–doctor interaction. Anecdotally, because rural areas are less saturated with medical practitioners and students, patients are reportedly more accepting of, and welcoming toward, the presence of medical students.

This particular RCS characteristic was not initially apparent to early students; a situation echoed in the UK where rural clinical placements are relatively new[19]. Reminiscent of the initial Australian experience[13], UK students report they *expect* rural placements will provide a narrow range of patient contact[19]. Experience shows however that RCSs are able to provide 'excellent access to a willing population'[20]. As student numbers increase in Australia, RCSs should protect and maintain this critically valuable characteristic. Such 'access and enthusiasm'[20] may be lost without careful planning[20], particularly if student numbers are allowed to increase past saturation point[21]. Students remain in constant 'cyber-connection'[22] and the impact of other students' experiences, recommendations and testimonials regarding RCS attendance should not be undervalued. These have been identified as having a substantial influence on students' decision to attend an RCS[10]. In short, if decreased patient access impinges on clinical learning, students will quickly take that into account.

The importance attributed to the academic reputation of RCSs by the participants of the present study is not surprising. Most students are achievement oriented[22] and would not consider attending an RCS unless they could attain results at least equivalent to those achieved by metropolitan-based students[22]. Although the development of an academic record of excellence takes time[20], it would appear that for many Australian RCSs, this time has passed[23]. In one study, over 80% of medical students reported they expected the RCS would provide 'broader and better clinical and academic learning opportunities'[22] than those received by their city counterparts. The RCS students achieve equivalent, if not better, academic results than their city counterparts[10,24]. While academic reputation was a positive consideration for 68% of those who considered this in their decision to attend an RCS, 32% of students were not convinced about academic performance. While the achievement of high academic standards appears an imperative for RCSs, it is notable that these results have been achieved despite shortages of traditional academic teaching clinicians[23].

While other studies have identified that family and partners play a significant role in the decision to attend an RCS[25], the present study found these factors were considered eighth and ninth, respectively, in a hierarchy of 14 factors. This ranking may be a by-product of the respondents' relationship profiles (87% were single) and age profile (M=24.5 years, SD=3.89). However, as some medical schools offer both undergraduate and graduate degrees, RCSs should be aware of the influence that family and partner/spouse can have in the relocation decision-making process, particularly in relation to graduate students. Already more mature, these students may have strong family and financial ties to their metropolitan location[20]. Importantly, if medical students decide *not* to attend an RCS, their decision appears more often related to non-clinical/social factors rather than clinical or academic factors[13]; therefore, partner/spouse attitudes toward a rural location should not be underestimated. Further, a partner's rural background has been shown to have an odds ratio of 3.0 when predicting the likelihood of a medical graduate taking up practice in a rural and remote location[4].

In the present study, 88% of students considered their friends when deciding whether to attend an RCS. Interestingly, even though for 43% of respondents 'friends' was a negative consideration, these students still decided to attend an RCS. This too may be indicative of the relationship and age profile of the respondents. Thus, the influence of family and partner/spouse (for those affected) appears quite formidable and much stronger than that of friends. Arguably, therefore, if medical schools were to provide their students with detailed information[25] regarding rural relocation very early in their degree structure[20], such relocation may be realistically considered by more students, particularly those with a family/spouse/partner.

Although rural origin is reportedly one of the most significant predictors of rural practice uptake[4,15,16], the findings of the current study indicate that not all students from a rural background, even those with the intention of ultimately taking up a rural practice, wish to undertake rural clinical training. For one student in the present study this was because s/he believed s/he would 'end up' in a rural location 'anyway'; for another, urban living was a welcome change after 18 years in a rural area. These findings indicate that medical schools should remain mindful of such scenarios, particularly if student conscription becomes necessary. Indeed, given that those with a rural background are approximately twice as likely to work as rural doctors, compared with their urban counterparts[4], perhaps it is open-minded urban students that medical schools should instead strive to recruit to their RCSs. After all, urban-background medical graduates in a Canadian study reported that, 'exposure to rural practice during medical school or residency was the most important factor in their decision to practice rural medicine'[26].

Conclusion

Students consider both clinical and non-clinical factors in their decision to attend an RCS[13,18,25]. Having identified these factors, it is critical to the enlargement and sustainability of a future rural medical workforce that these factors be further developed, protected and improved upon by RCSs. Of note is that the deliberate rural streaming of rural-origin students may be counter-productive to the ultimate workforce mission of the RCS, if rural-origin students wish to train in a metropolitan environment. Moreover, assuming that there is enough 'experience' and capacity for rural-origin students, further research should focus on outcomes related to urban-origin students who might be recruited to an RCS experience. After all, having identified what attracts medical students to consider an RCS - *if you build it they will come* - the entire 25% of students trained at RCSs will not stay rural. Thus we must go further in order to solve the workforce crisis. Of arguably greater importance, is recruiting and encouraging urban-origin students to a future rural medical workforce, as indications are that, at least for some *if they experience it, they will come back*.

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