Future practice location and satisfaction with rural medical education

Survey of medical students

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ABSTRACT

OBJECTIVE To explore the desired future practice location of a cohort of medical students with strong rural representation and to inquire whether they were satisfied with their medical experiences in rural primary care settings.

DESIGN Survey questionnaire.

SETTING The College of Medicine at the University of Saskatchewan in Saskatoon.

PARTICIPANTS One hundred twenty-two medical students.

MAIN OUTCOME MEASURES Demographic information, plans for future practice, and opinions on rural medical experiences in primary care settings.

RESULTS Although students from both rural and non-rural backgrounds were highly satisfied with mandatory and voluntary rural experiences and considered them valuable for their medical education, fewer than 10% of the 122 students desired to work in centres with less than 10 000 population. Only 2 students hoped to practise in such locations. Most students interested in family practice were interested in urban practice, and most students from rural areas were not interested in rural practice.

CONCLUSION Both rural and non-rural students were highly satisfied with their medical education in rural primary care settings, but this did not mean either group wanted to practise in rural settings. Demographic profiling of students (to ascertain whether they have rural origins) and assessing satisfaction with rural medical education give only partial information on who might choose to practise family medicine in rural areas.

EDITOR'S KEY POINTS

- Previous studies have indicated that recruiting medical students from rural backgrounds increases the chances of their returning to rural areas to practise. This study from Saskatchewan examines this conclusion.
- Most medical students in the University of Saskatchewan's College of Medicine rated their rural experiences very highly.
- Although 33% of students came from towns with populations of less than 10 000, less than 10% wished to return to smaller centres.
- Although a higher percentage of rural students than of students from larger communities planned to return to rural settings, most rural students (73%) wanted to practise in urban environments.

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The long-standing shortage of physicians in rural areas has put great pressure on Canadian medical schools to allow adequate exposure to medical practice in settings other than tertiary care. To influence trends in choice of future practice location, both demographic profiling of medical students and changes in medical curriculums have been proposed.[1-7]

Current data suggest that difficulty in recruiting family physicians to rural areas stems, at least in part, from the fact that medical students are overwhelmingly from urban backgrounds.[1-4,8] Medical students raised in rural areas are more likely both to respond favourably to rural educational experiences and to engage later in rural medical practice.[1,8-11] Some have concluded that a plausible solution to the shortage of physicians in rural areas would be to increase the enrolment of rural students in medical schools.

Such studies focus on individuals rather than settings because the proportion of students from rural areas in any one study is usually small. Our study included a substantial number of medical students from rural areas; more than half of the respondents were from communities of fewer than 50 000 people, and a third were from communities of fewer than 10 000 people.

This study aimed to determine whether students were satisfied with their rural medical education experiences, which are often mandatory during medical training in Canada. It also looked at the desired future practice location of students from both rural and urban backgrounds who were exposed to the same training opportunities and experiences. Finally, this study is unique in that it sought to understand how satisfaction with rural medical educational experiences during undergraduate training related to goals for future practice location.

METHODS

During the past 7 years, students from rural Saskatchewan have comprised, on average, a quarter of the classes entering the College of Medicine. All students in the College of Medicine at the University of Saskatchewan are Canadian citizens, and each year, approximately 55 of the 60 entering students are from the province of Saskatchewan.

Admission criteria are based on an academic average (75%) and an interview score (25%), and students must have received a passing score on the Medical College Admissions Test. Although rural medicine topics might be discussed during interviews, no special provision is made for rural applicants. The cohort of undergraduate students in this study represents a typical student body at the College of Medicine.

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All students (N=228) enrolled in the 2003-2004 academic year were invited to participate in the study. The questionnaire was modeled on 2 questionnaires used to survey students at the University of Saskatchewan during the previous 4 years on their opinions of rural practice. The questionnaire was not pilot-tested before distribution. I designed the survey in consultation with a social psychologist and a statistician.

Surveys were distributed before, during, and after classes to first-, second-, and third-year students. Surveys were distributed only once and were completed at the time of distribution. Fourth-year students received surveys via e-mail from the College secretary because most fourth-year students were out of town on elective study blocks. Responses generated by fourth-year students were returned via e-mail to the College office. Responses of students in their first year of medical studies, who had not yet had an opportunity to participate in rural medical education, were excluded from some parts of the final analysis. Students were informed of the results of the survey during a presentation at a local conference to which they were invited free of charge whether or not they had chosen to participate in the survey.

I have used the commonly accepted definition of rural meaning less than 10 000 population in a centre throughout.[1] Communities in which respondents were raised or spent most of their time are considered "home communities" in this study. Rural medical training included a mandatory 2-week experience following first-year studies, and included a paid, non-mandatory 4- to 10-week externship following completion of second year and a mandatory 4-week rural family medicine rotation during clerkship (during either third or fourth year) for upper-year students.

Approval for this study was obtained from the University of Saskatchewan's Behavioral Ethics Board. Nonparametric evaluation was achieved through chi-square analysis. Level of significance was set at $P<.05$.

RESULTS

Response rate was 54% (122/228). Seven surveys were incomplete or not answered clearly by respondents on the variables of interest (eg, both yes and no were checked off). These data were excluded from the final analysis. It is unlikely that respondents differed significantly from nonrespondents on the variables of interest. Most nonrespondents were in the fourth-year class (**Table 1**) and likely did not respond owing to method of delivery (e-mail vs paper copy in class) rather than owing to particular attitudes toward rural medical education and practice.

The modal age range in this study was 22 to 24 years (range 19 to >35 years). Mean number of years of post-secondary education before entry into medical school was 3.58 years.

Table 1. Survey respondents

YEAR	NUMBER OF RESPONDENTS (N = 115)
Class of 2004	4
Class of 2005	27
Class of 2006	48
Class of 2007	36

More than 90% of all respondents in second through fourth year said that their experiences in rural medical education either met or exceeded their expectations: 81% said these experiences were above average (either good, very good, or excellent), and 83% thought the rural experiences were a valuable part of their medical education. Despite their experiences in rural medicine in Saskatchewan, only 8% of respondents indicated they would like to work in rural settings in the province identical or similar to the ones in which they had been educated. A further 40% remained undecided about their ideal work setting.

Although 33.3% of students surveyed were from rural locations (17.5% from locations with fewer than 1000 people and 15.8% from locations with between 1000 and 10 000 people), fewer than 10% (n = 14) of all surveyed students expressed an interest in working in rural settings. Only 1.7% (n = 2) expressed a desire to work in communities of fewer than 1000 inhabitants (**Table 2**). A contingency chi-square analysis was performed on the relationship between size of home community and size of desired future practice location (chi-square statistic = 10.76, *df* 1, *P* = .001). Students from rural areas were more likely to be interested in practising in rural areas, but among all students from rural areas, most (n = 29, 73%) desired urban practice locations.

Many students expressed an interest in family medicine as a career; only 18.9% of respondents said they would not consider a family medicine residency (44.3% said they were currently considering a family medicine residency, and 36.1% remained undecided). When size of desired future practice location was analyzed in the context of students who were interested in family medicine residency programs, there was a statistically significant relationship between interest in family medicine and interest in rural practice (chi-square statistic = 10.76, *df* 1, *P* = .001). Only one student interested in rural practice was not interested in pursuing family medicine. Most students interested in urban practice were interested in specialization.

The most common reasons for students from rural areas to not want to return to their home communities to practise were a desire to move to one of the two largest cities in the province (populations 197 000 and 178 000) and a desire to work in a city outside the province. About 17% of participants said that the medical curriculum at the University of Saskatchewan, which has up to 16 weeks of programs for rural placements, did not allow *enough* time for rural medical experiences. Nonetheless, very few students (n = 6) said they would prefer to work in rural settings but could not owing to lack of facilities, resources, or need for the desired skills.

Post-hoc analysis of the 2 students who would choose to work in communities of fewer than 1000 inhabitants found that 1 student was from a location of that size. The other student was from a community of 50 001 to 250 000 people. Both were certain of their choice of family medicine residency, and both indicated a desire to pursue this residency in Saskatchewan. Neither student was currently receiving a return-in-service bursary as an incentive to pursue rural practice.

DISCUSSION

This study demonstrates that students' desire to work in rural communities, including the same rural communities in which they were raised, is extremely small. This is in spite of most students' high ratings and satisfaction with their educational experiences in rural communities. Although it was found, as previously reported in the literature, that students who prefer to work in rural areas are more often from rural than from urban backgrounds,[4,8,12] it is important here that neither group demonstrated a strong interest in rural medical practice even if they were interested in family practice. Most students interested in family practice were interested in urban practice, and most students from rural areas were not

Table 2. Size of desired future practice location and size of home community

	POPULATION OF DESIRED FUTURE PRACTICE LOCATION					
POPULATION OF HOME COMMUNITY	<1000	1000–10 000	10 001–50 000	50 001– 250 000	>250 000	UNDECIDED
<1000	1	7	5	7	1	0
1000–10 000	0	3	5	5	6	0
10 001–50 000	0	1	5	7	3	1
50 001–250 000	1	0	5	23	9	0
>250 000	0	1	1	6	10	1
No response	0	0	0	1	0	0

interested in rural practice. This is consistent with findings that most physicians in rural areas actually have urban backgrounds.[13] The results of this survey imply that increasing the enrolment of rural students is, by itself, at best an incomplete solution to recruitment problems.

This study is unusual in that the cohort of students surveyed had strong rural representation, including a substantial proportion (17.5%) of respondents from communities of fewer than 1000 people and one third (33.3%) of respondents from rural areas in general. Similar studies that have attempted to look at students and rural practice have not had such a large representation of rural students studying at one urban medical school. It is important to emphasize that this institution has no special admission criteria for rural students. Students from rural areas are admitted based on merit and not expectations of practice specialty or location.

People from rural areas have been found to represent less than half as many students in medical school as one might expect given the rural population in Canada.[14] Canadians living in predominantly rural regions have a shorter life expectancy; higher rates of disability; and higher rates of accidents, poisoning, and violence.[15] As a result, recruiting physicians to rural areas remains a highly politicized endeavour with small, isolated communities having the most difficulty attracting and retaining health care professionals.[5,15]

Current literature suggests that the problem with recruitment could be alleviated by increasing the exposure of students from rural areas to rural medical practice.[8,10,12] It is also thought that rural students will rate their rural experiences more favourably and have stronger ties to rural communities.[1,11] This study demonstrates that students from both urban and rural backgrounds rate their rural medical experiences very highly and find them important to their education, whether or not they hope to pursue careers in rural medicine. Therefore, the value of rural medical education is not only to recruit and retain rural physicians, but also to educate and introduce rural practice to urban-raised students who have no immediate goal of "going rural."

Often, recruiting physicians to one country precipitates and exacerbates shortages in countries that have even greater physician shortages,[16] leaving the poorest nations with the real consequences of Canadian medical students' decreased interest in general practice. This issue needs further attention as physicians currently working in rural areas retire or move to larger centres.[5]

Limitations

Limitations of this study include a lack of pilot-testing of the questionnaire on a smaller group of students before it was distributed to the entire group. Also, the response rate, although acceptable for a population of this type, was not consistent among years of training. I assumed that students in their final year of medical school were "surveyed out" and did not participate for this reason rather than for other reasons related to their views on rural medicine.

Although this study has a large number of students from rural areas as participants, the responses represent findings in a single institution. Whether its results can be generalized to densely urban medical schools and whether students try to act upon their goals are not yet proven. Nonetheless, this study demonstrates that understanding the attitudes of medical students from both rural and urban settings at the beginning of their training is highly useful in developing recruitment strategies early on. It might even be that exposure during their education could modify career decisions.[1,7,10]

Conclusion

Both rural and non-rural students reported being highly satisfied with undergraduate medical education in rural settings. At the University of Saskatchewan, high levels of satisfaction among students raised in either rural or urban settings did not equate to a desire to practise in rural areas.

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Competing interests

None declared

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