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Rural medicine interest groups at McMaster University: a pilot study

Elaine M. Blau, MD, CCFP, FCFP
Department of Family Medicine, McMaster University, Hamilton, Ont.

Pamela Aird, MD, CCFP
Kingston, Ont.

Lisa Dolovich, MD
Department of Family Medicine, McMaster University, Hamilton, Ont., and St Joseph's Healthcare, Hamilton, Ont.

Sheri Burns, BA
St Joseph's Healthcare, Hamilton, Ont.

Maria del Pilar-Chacon, MD
Department of Family Medicine, McMaster University, Hamilton, Ont.

Correspondence to:
Dr. Elaine M. Blau, Department of Family Medicine, McMaster University, McMaster Innovation Park, 175 Longwood Rd. S, Suite 201A-49, Hamilton ON L8P 0A1; fax 905 528-5337; blaue@mcmaster.ca

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Introduction: Although rural medicine interest groups (RMIGs) are prevalent in Canadian medical schools, there is little research on their contribution to rural education, training and careers.
Methods: We explored 2 broad questions by means of an electronic survey to people who were RMIG participants at McMaster University from 2002 to 2007: 1) What are the experiences of undergraduate trainees in an RMIG? 2) What are the features of RMIGs that contribute to an interest in rural medicine? The survey itself contained 35 questions broken down into sections detailing demographics, involvement in RMIGs, RMIG features, core and elective experiences, careers and Canadian Resident Matching Service.
Results: Of the 63 participants who completed the survey, 13 (20.6%) were in postgraduate training and 50 (79.4%) were in undergraduate training. The mean (standard deviation) age of participants was 28.4 (6.5) years and 71.9% percent were female. Respondents indicated that rural placements had the most influence on their choice of specialty and rural interest. Of all the features and activities of the RMIG, rural medicine special events contributed the most to an interest in rural medicine (e.g., "rural medicine days").
Conclusion: At McMaster University, the responses of participants suggested that RMIG participation had more influence on career choice than did the medical school attended. Communities, government organizations, residency programs and others interested in improving access to rural physicians, will note the importance of RMIGs and the importance survey respondents gave to rural medicine special events and rural electives.

Introduction : Bien que les groupes d'intérêt en médecine rurale (GIMR) soient répandus dans les facultés de médecine, on déplore une relative absence de recherches sur leur contribution à l'enseignement, à la formation et aux carrières en milieu rural.
Méthodes : Nous avons exploré deux dimensions générales des GIMR au moyen d'un sondage électronique auprès de personnes de l'Université McMaster qui ont participé à des GIMR entre 2002 et 2007 : 1) Quelles expériences les futurs médecins acquièrent-ils auprès des GIMR? 2) Quelles caractéristiques des GIMR suscitent l'intérêt pour la médecine rurale? Le sondage comportait 35 questions regroupées en sections, soit caractéristiques démographiques, participation à des GIMR, caractéristiques des GIMR, expériences obligatoires et au choix, carrières et Service canadien de jumelage des résidents.
Résultats : Parmi les 63 participants qui ont répondu au sondage, 13 (20,6 %) étaient inscrits en formation supérieure et 50 (79,4 %), au premier cycle. La moyenne d'âge (écart-type) des participants était de 28,4 (6,5) ans et 71,9 % étaient de sexe féminin. Les répondants ont indiqué que c'est leur stage au milieu rural qui a le plus influencé leur choix de spécialité et leur intérêt pour le milieu rural. De toutes les caractéristiques et activités des GIMR, ce sont les événements spéciaux en médecine rurale qui ont le plus contribué à susciter l'intérêt pour ce domaine (p. ex., «journées de médecine rurale»).
Conclusion : À l'Université McMaster, les réponses des participants donnent à penser que la participation aux GIMR a exercé plus d'influence sur les choix de carrière que

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la faculté de médecine fréquentée. Les communautés, organismes gouvernementaux, programmes de résidence et autres qui souhaitent améliorer l'accès à des médecins en milieu rural noteront l'importance des GIMR et l'intérêt des répondants pour les événements spéciaux et les cours au choix en médecine rurale.

INTRODUCTION

It is well recognized that Canadians living in rural communities suffer a lack of regular access to family physicians.[1] Medical students in Canada demonstrate varying levels of interest in family and rural medicine. Methods for stimulating interest in rural medicine at the undergraduate level typically include electives in rural settings, mandatory rural placements, rural job fairs, mentorship with rural residents, and selection processes that note that a rural background is an indicator of future rural career choice.[2–5] A more recent addition to the armamentarium is the rural medicine interest group (RMIG), found in most medical schools in Canada and in other countries such as Australia, where they are termed "rural health clubs."[6] The mandates of these student groups appear to include providing a support network for medical students interested in rural medicine; providing rural educational opportunities outside the regular curriculum; providing mentorship connections with other students, residents and physicians; and overlapping with similar roles of family medicine interest groups (FMIGs).[7]

Although there is some literature available on the success of FMIGs,[7,8] to date, there is little evidence in the literature to support or refute the contributions of RMIGs. It seems intuitive, however, that the existence of these groups is beneficial for rural training and rural communities. The literature seems to both support and refute the importance of early and more prolonged exposure of medical trainees to rural educational experiences.[9,10] Easterbrook and colleagues[9] surveyed all physicians who had graduated from the family medicine program at Queen's University from 1977 to 1991, and found that physicians who had been raised in rural communities were 2.3 times ($p = 0.001$) more likely than those from urban areas to practise in a rural community immediately after graduation. However, the authors found no association between exposure to rural rotations during undergraduate or residency training and the decision to practise in a rural community. Contrary to these findings, Woloschuk and Tarrant[10] found that students (graduates of the family medicine program at the University of Calgary) were more likely to do a rural locum as a result of rural educational experience (regardless of rural background). This study did support Easterbrook and coauthors' results regarding the impact of rural background. Participants in Woloschuk and Tarrant's study were significantly more likely to practise in a rural setting if they grew up in a similar rural community ($p < 0.001$). Regardless, it appears that much of what an RMIG does revolves around sharing and encouraging rural experiences early and throughout undergraduate training.

This pilot study explored whether the presence and activities of an RMIG at the Michael G. DeGroote School of Medicine at McMaster University encouraged rurally streamed residency training for undergraduate medical students from 2002 to 2007. We also explored the types of activities and their relative contributions to rural interest and career choice. In the interest of determining the benefits of RMIGs, the objectives of this study were to determine the extent of RMIG experiences within undergraduate medical training and the features of an RMIG that contributed to interest in rural training. We intended this research to assist with the development of further research into whether the presence of an RMIG increased the recruitment of students to rurally streamed residency training programs.

Study design

This was a descriptive study that employed a self-administered survey. The key questions explored in this study included participants' involvement in RMIGs and/or FMIGs, thoughts about exposure to rural electives, rural educational experiences, rural mentorship and rural specialty rotations. The survey also offered the participant the opportunity to rate the impact of certain experiences and of RMIG involvement on choice of specialty and a future rural career.

Sample

We included in the study all RMIG participants from 2002 to 2007. An RMIG consisted of a group

of undergraduate medical students who added their names to a membership list for such a group at McMaster University. We asked the RMIG president from each of the included years to generate this list. There were no explicit exclusion criteria. Using the lists of student names provided by the RMIG presidents, a research assistant emailed to each student both a study information letter and a link to the survey available via SurveyMonkey. In an effort to increase the response rate, 2 email reminders were sent to students at 2-week intervals and this was followed by a 1-time paper mail-out.

Measurement

We asked participants to complete a survey that had been developed for the purposes of our pilot study. This unvalidated survey included a mix of qualitative and quantitative questions about mentorship, skills acquisition, knowledge acquisition, rural focus in practice, and features of the RMIG that led to success or were deterrents to practising in a rural setting. Respondents answered questions related to the effect RMIG opportunities had on their interest in rural practice using a 9-point Likert scale with response options from 1 (greatly decreased interest) to 9 (greatly increased interest). Respondents answered questions related to the influence of RMIG participation, rural electives and their medical school on choice of specialty using a 7-point Likert scale with response options from 1 (not a factor) to 7 (major factor).

Analysis

We generated descriptive analyses, including means and standard deviations (SDs) for continuous data and proportions for categorical data, using SPSS version 15.0 (SPSS Inc.). Two research team members independently reviewed qualitative data gathered from the open-ended survey responses. Categories of responses were identified and then collated according to the themes derived. Illustrative quotes have been included below.

This study was approved by the Research Ethics Board at McMaster University.

RESULTS

Participants

Of the 147 RMIG participants from 2002 to 2007, 67 people responded (45.6% response rate) to our study request. Three of the respondents were excluded from the study after they submitted incomplete surveys.

The mean (SD) age of included respondents was 28.3 (6.4) years and 71.9% were female. All respondents confirmed participation in an RMIG and 75.0% also participated in other interest groups available at McMaster University, including FMIGs. Of those who had finished medical school at the time of the study (n = 14), 10 of these were matched to a rural residency program in family medicine (defined as > 6 months of residency spent in rural placements). Complete demographic results are displayed in Table 1.

Effect of RMIGs on rural practice and career

The majority of participants found their experience in an RMIG to be beneficial (70.3%) or greatly beneficial (20.3%). However, participants indicated that rural electives and core rotations had the most influence on their interest in rural medicine and choice of specialty (mean [SD] rating of 7.2 [1.2] and 6.0 [1.2], respectively, on a 9-point Likert scale), as compared with influence of the university/medical school or RMIG.

Rural practice activities

Participants in the RMIG at McMaster University were offered a number of rural practice activities including a lecture series, clinical skills workshops, formal mentoring, presentations and special events (e.g., "rural medicine days"). Qualitative feedback obtained on the surveys indicated that residents enjoyed these opportunities. However, when asked quantitatively about the effect the opportunities may

Table 1. Characteristics of 64 rural medicine interest group participants who completed the survey

Characteristic	No. (%) of participants*
Mean age (SD)	28.3 (6.4)
Female sex	46 (71.9)
Currently in a postgraduate residency program	14 (21.9)
Family medicine — first choice in the CaRMS match†	10 (71.4)
Matched to a rural‡ residency program†	10 (71.4)
Grew up/spent most of childhood in a community with a population of < 10 000	19 (29.7)

CaRMS = Canadian Resident Matching Service; SD = standard deviation.
*Unless otherwise indicated.
†Only applicable to those currently in residency program (n = 13).
‡Defined as > 6 mo of residency spent in rural placements.

have had on their interest in rural practice, respondents indicated most activities had little effect on their interest level with the exception of the clinical skills workshops and rural medicine special events. The latter term was defined in the survey (e.g., orientation to community, rural medicine day, rural medicine week). Figure 1 shows the quantitative results related to the effect of each rural practice activity on participants' interest in rural practice.

Most students really enjoyed the rural medicine days organized by McMaster University's RMIG. Bus transportation to a rural community was arranged and the students connected with local physicians, practised procedures, toured a hospital and ended the day with a community event or dinner. They indicated that the experience was very informative and provided first-hand exposure to rural practice and lifestyle. As one respondent said, "The rural clinical skills days were a great way to get out and 'experience' medicine in a rural community and to chat with rural physicians about their career." These rural medicine days gave residents the opportunity to speak with rural physicians about what a career in rural medicine is really like: "Talking to and working with family docs who were practising rural medicine with a broad scope of practice was very helpful in deciding to do a rural family medicine residency program." The opportunity to speak with other learners (residents) currently working in a rural medicine setting was also appreciated: "Being able to speak with residents or staff who are working in a rural community to get a 'real' perspective on life as a rural family doc."

Other RMIG activities respondents found to be useful included special events (social and educational), skills workshops (e.g., casting, suturing and injections), and more opportunities to practise procedures (in rural v. urban centres): "Practical hands-on experience at workshops and an emphasis on a wide scope of practice were very appealing to me."

When asked what features of the RMIG may have deterred respondents from rurally streamed training, there were few responses. Barriers to participation in RMIG activities included difficulties accessing and organizing rural placements, inability of undergraduate program administration to find northern rural preceptors, inadequate funding to attend rural electives, and popularity of the hands-on workshops meant that spaces were limited; also, one respondent found that some of the lecturers were not particularly interesting. Despite these barriers or frustrations, no respondent indicated that the experience had deterred them from rurally streamed training.

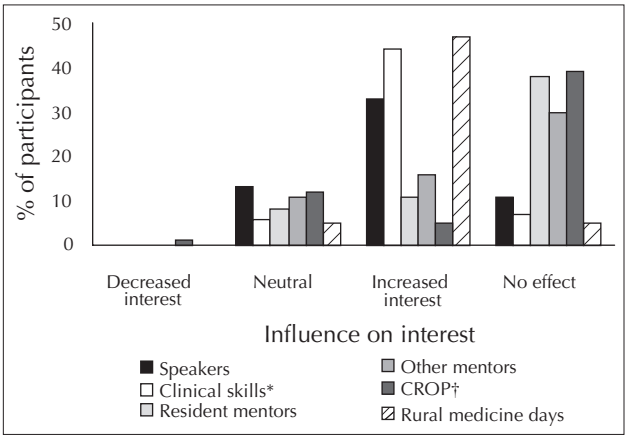


Fig. 1. Influence of rural medicine interest group activities on participants' interest in rural practice.
***Clinical skills: hands-on workshops offered at the university and organized by the rural medicine interest group.**
†CROP = Canadian Residency Outreach Program. Residents placed in rural communities show a prepared PowerPoint presentation to local high school students.

Benefits of informal mentorship relationships

Respondents found their formal and informal relationships with rural mentors to be very beneficial. The most significant benefit derived from these relationships was that residents saw their mentors as role models. Mentors were seen as dedicated and inspiring. Respondents stated that their mentor significantly influenced their decision to pursue a career in rural medicine. As explained by one participant,

> The rural family doc who supervised me during a 6-month/1 day per week elective was instrumental in making me consider rural family medicine as a career. He had a wide scope of practice that included primary care clinics, emergency room shifts, surgical assist, obstetrics, managing inpatients and making home visits. This experience was a pretty close reflection of my idea of "real medicine" and I really enjoyed it.

Residents enjoyed the experience of working with preceptors on a one-on-one basis (seen as a key advantage in rural medicine because of the small community practice) as well as spending time with rural preceptors outside of the practice (in a more social setting): "Almost all of my clerkship core rotations and all of my elective rotations were in small community/rural locations. As a result I was able to work one-on-one with the preceptors, all of whom were very familiar with rural-streamed training." In many cases, mentors were seen as resources for the residents (e.g., helping with residency applications, giving advice about future electives and helping to prepare for CaRMS).

One respondent found that there were not enough opportunities to mentor with rural physicians.

Decision to choose an elective in a rural location

Qualitative responses indicated various reasons for choosing rural medicine electives. Many made their decision based on their desire to have a career in rural medicine, and some were unsure of their career path and wanted to see what rural medicine was like. Some respondents chose rural medicine placements to be closer to their families or based on peer advice.

Many respondents felt a rural medicine setting would provide more opportunity for hands-on involvement, one-on-one mentorship, diverse medicine, increased responsibility, more learning opportunities (fewer learners around) and more involvement in direct patient care. As one respondent noted, "I wanted to actually do things during my clerkship (i.e. suture, participate in surgery, deliver babies), rather than simply observe as is too often the case in the tertiary care centre." Respondents also enjoyed the atmosphere of a small community and rural setting (e.g., small town, friendly people, less stressful) and felt rural medicine electives presented a great opportunity to practise outside of the traditional academic environment.

How involvement with an RMIG assisted with setting up a rural core rotation or rural elective

Qualitative responses indicated that when setting up a rural rotation or elective, participants found their involvement with the RMIG was an excellent resource for rural contacts. A binder was developed by the RMIG that contained rural contact information across Canada. Respondents also felt attending the rural medicine days (e.g., "Fergus Day," a day spent in the community with local physicians learning hands-on skills, touring the locale and having a meal together) was a great help, as was attending the annual Rural and Remote Conference of the Society of Rural Physicians of Canada, and lectures (excellent opportunity to network and talk to other residents and preceptors). Some students found they received the peer support and advice they needed from their involvement with RMIGs.

DISCUSSION

This study demonstrates that student-led special-interest groups, such as RMIGs, represent a useful means of encouraging interest in rurally streamed training. Consideration needs to be given to ensure mentorship, educational and practical activities that would encourage and maintain rural interest in medical trainees. Finding that at least some of our participants were frustrated by a lack of ability to access rural educational opportunities leads us to believe that more work needs to be done in this area. A strong connection between the rural family medicine program, government funding agencies and the undergraduate electives office, as well as improved funding and support, might mitigate these challenges (which could also frustrate those rural physicians who are willing to share their experiences with eager learners).

This study provides evidence to support investing the time and energy required to maintain rural interest groups, and provides information that can help improve the quality of delivery of education and networking through the RMIGs. As well, the information generated from this study can assist medical schools, organizations and governments in making decisions about resource allocation for RMIGs within medical schools. An example of support for these student-led groups would be administrative support, which could include the following: maintaining lists of communities willing to host rural medicine days and information pertaining to these events, maintaining lists of contacts for rural electives, facilitating communication between students in RMIGs, and connecting RMIGs with other student interest groups to prevent redundancy of workshops and events. This support would reduce the administrative load on medical students and improve their ability to find appropriate rural experiences, particularly in the early months of medical school when there is so much to which they must acclimatize.

This study's participants cited rural electives as an important influence on their interest in rural careers, and this seems to suggest there is benefit in financially supporting these experiences, a common practice seen in many, if not all, provinces in Canada. Current funding models, however, fund electives starting at 1 month in duration, but given that medical students have varying amounts of elective time, and that these experiences seem to be influential in eventual interest in rural practice, funding organizations may wish to consider funding rotations 2 weeks or more in length, where programs allow such rotations.

The scope of this study did not allow exploration of interest in training for future practice of a specialty

in rural settings. Given the advancing age of Ontario and Canada's rural specialists,[11] it would be important to look further at this issue as well as the capacity of RMIGs to promote and explore interest in rural specialty medicine.

Limitations of the study

This pilot study had a number of limitations. We sampled only from the RMIG participants at one university. Therefore, our findings are based on ex periences centred within one program. We received completed surveys from less than one-half (45.6%) of the eligible RMIG participants; this could represent a biased sample of respondents who found the RMIG useful. We do not have any data regarding nonresponders. Students may attend RMIG sessions but be formally registered in an FMIG, and so, although they have participated in RMIG activities, they may not identify themselves as members of the RMIG. Sampling only RMIG participants meant we were unable to generate a control group; we are therefore unable to draw inferences about RMIG participation and residency choice. It is also worth noting that one-third of our respondents (29.6%) grew up in rural communities. As previously cited,[9,10] studies have found rural background to be positively associated with future practice in rural settings. Therefore, our findings may not be totally attributable to participation in RMIG activities. Also, the results are based on respondents' subjective perceptions which may or may not always reflect the actual activities they undertook during their training or their pattern of eventual practice.

CONCLUSION

Given the prevalence of elective opportunities lasting less than 1 month in the undergraduate program at McMaster University and given the importance of rural electives in our findings, thought should be given to finding better funding and support for electives of less than 1 month duration. Commitment to a broad and general education of our medical students must include a commitment to provide opportunities for rural experiences, such as rural medicine days, to all interested students. Also, administrative support for RMIGs should be a consideration for each medical school, if this is not already available. Further study is needed to fully explore the impact of RMIGs on medical students' training, education and careers.

Competing interests: None declared.

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