

Predictors of sustained rural practice

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Abstract

Introduction: Despite efforts by Canadian medical schools to recruit students who are intent on rural practice, rural communities in Canada still face disparities in their physician workforce. Our study aims to identify the variables which predict those physicians who will not only enter rural practice but will remain in rural practice.

Methods: Between 2002 and 2004, 2070 Canadian 1st-year medical students were invited to participate in an entry survey delineating career choice, attitudes and sociodemographic data. Of these, 1542 were included in a 2013 analysis to assess the influences on early practice in rural family medicine (FM), and a total of 1530 were included in the current analyses to assess influences on both mid-career rural FM practice and rural FM retention. Variables identified by bivariate analyses as being associated with rural family practice were entered into backward stepwise logistic regression analyses to identify their relative predictive strength on choosing and sustaining a career in rural FM.

Results: Of the 1530 physicians included in this study, where 88 (5.8%) physicians were practising in a rural setting in 2013, now 61 (4.0%) were practising rural FM with the remainder practising urban FM ($n = 505$; 33%) or speciality medicine ($n = 964$; 63%). Our study found that an early preference for rural practice, having parents with less formal education, being married or in a common-law relationship at medical school entry, coming from a smaller hometown and expressing a desire for a shorter postgraduate training on entry to medical school were predictive of mid-career rural practice location. We also found that having parents with postgraduate education and placing greater emphasis on medical lifestyle at medical school entry were predictive of a mid-career switch away from a rural practice location to a non-rural practice location.

Conclusion: These characteristics can be considered by medical school leaders to support the recruitment of candidates to, and retention of, physicians in rural communities.

Keywords: Health care, medical school admissions, primary care, rural medicine

Résumé

Introduction: Malgré les efforts déployés par les facultés de médecine canadiennes pour recruter des étudiants désireux d'exercer en milieu rural, les communautés rurales du Canada sont toujours confrontées à des disparités au niveau de leurs effectifs médicaux. Notre étude vise à identifier les variables qui prédisent les médecins qui non seulement entreront dans la pratique rurale, mais y resteront.

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Méthodes: Entre 2002 et 2004, 2 070 étudiants canadiens en première année de médecine ont été invités à participer à un sondage d'entrée décrivant le choix de carrière, les attitudes et les données sociodémographiques. De ce nombre, 1 542 ont été inclus dans une analyse de 2013 visant à évaluer les influences sur la pratique précoce de la médecine familiale rurale (MF), et un total de 1 530 ont été inclus dans les analyses actuelles visant à évaluer les influences sur la pratique de la MF rurale à mi-carrière et sur la rétention de la MF rurale. Les variables identifiées par les analyses bivariées comme étant associées à la pratique de la médecine familiale rurale ont été introduites dans des analyses de régression logistique pas à pas à rebours afin d'identifier leur force prédictive relative au choix et maintien d'une carrière en MF rurale.

Résultats: Sur les 1 530 médecins inclus dans cette étude, alors que 88 (5,8%) médecins exerçaient en milieu rural en 2013, 61 (4,0%) pratiquaient la MF rurale, alors que les autres pratiquaient la MF urbaine ($n = 505$; 33%) ou la médecine spécialisée ($n = 964$; 63%). Notre étude a révélé qu'une préférence précoce pour la pratique rurale, le fait d'avoir des parents moins scolarisés, d'être marié ou de vivre en union libre au moment de l'entrée à l'école de médecine, de venir d'une petite ville natale et d'exprimer le désir d'une formation postdoctorale plus courte au moment de l'entrée à l'école de médecine, étaient des facteurs prédictifs d'une pratique en milieu rural à mi-carrière. Nous avons également constaté que le fait d'avoir des parents ayant suivi une formation postuniversitaire et d'accorder une plus grande importance au mode de vie médical lors de l'entrée à l'école de médecine était un facteur prédictif d'un changement de lieu d'exercice en milieu de carrière, d'un lieu d'exercice rural à un lieu d'exercice non rural.

Conclusion: Ces caractéristiques peuvent être prises en compte par les responsables des facultés de médecine pour soutenir le recrutement de candidats et le maintien des médecins dans les communautés rurales.

Mots-clés: Médecine rurale; admission dans les écoles de médecine; soins primaires; soins de santé

INTRODUCTION

The shortage of physicians in the rural and remote regions of Canada is a well-documented and ongoing challenge.¹ Rural and remote residents face much lower access to healthcare services compared to urban residents, including having a regular medical doctor.² While rural communities are home to 18% of Canada's population, they are served by only 8% of Canadian physicians.³ These communities also face a disproportionately high mortality and morbidity rate compared to urban communities, with the disparity in the physician workforce likely a significant contributing factor.³⁻⁶

By way of their training programmes, Canadian medical schools have an important responsibility in resolving the scarcity of rural physicians. Proposed strategies to address rural physician shortages include accepting applicants from rural communities, reducing financial barriers for rural student applications and their enrolment into medical school, increasing mandatory rural undergraduate and postgraduate clinical exposure, providing adequate rural elective training opportunities, including rural physicians as clinical preceptors, hiring rural faculty members and placing rural physicians on admissions committees.⁷⁻⁹ However, despite

targeted efforts to recruit students intent on rural practice, rural communities in Canada still face disparities in their primary care physician workforce compared to urban communities.⁵

Previous research by the authors found that physicians practising rural family medicine (FM) 5–8 years after graduation were more likely than their non-rural peers to be older, in a relationship on entry to medical school, have completed school in a rural community, report a stronger societal orientation and express a greater desire for a varied scope of practice at medical school admission.¹⁰ These student attributes can aid medical schools in developing targeted engagement activities to recruit students to medical school who are more likely to practise in a rural setting. In addition to the importance of recruiting physicians to rural settings, retention of these recruits is critical with one in seven physicians leaving their rural practice in Canada within 2 years of arriving.¹¹ There is a paucity in data on the characteristics that may promote retention once practitioners enter these rural settings.^{7,9,12} Therefore, an understanding is needed of not only what variables are associated with physicians choosing to practise in rural settings but an understanding of what factors predict them staying or leaving rural practice later into their careers.⁷

Now, 14–17 years since our cohort of physicians graduated from medical school, we aim to determine the career interests, demographics and attitudinal variables present at medical school entry that predict current ‘mid-career’ rural practice. We also aim to identify any variables that predict which rural family physicians leave rural practice mid-career.

METHODS

As previously reported, between 2002 and 2004, we collected the data from students in 15 classes at 8 of 16 Canadian medical schools.¹⁰ While all medical schools were invited to participate, eight schools accepted the invitation and were included in the study. The survey, consisting of 41 items covering career choice, attitudes and sociodemographic data, was voluntarily completed by 1st-year medical students within the first 2 weeks of medical school. While students were encouraged to include their name to enable follow-up, this was not mandatory for participation. In addition, students were informed of their right to withdraw from the study at any time.

In 2013, approximately 10 years after the original medical school entry survey and 5–8 years after the students had graduated, data from the original survey were linked to the same physicians’ current practice location which was then classified as either rural or non-rural.^{13,14} From this dataset, we identified the predictors of early-career rural practice. For the current study, the 2013 dataset was linked to the physicians’ most recent practice locations. Where possible, practice locations were sourced from the 2020 Scott’s Medical Database (<https://www.scottsdirectories.com/canadian-directories/canadian-medical-directory>), a database of Canadian physicians’ areas of practice and geographic distribution. For those physicians who did not appear on the 2020 Scott’s database, searches were made in the 2019, 2018, 2017, 2016 and 2015 databases in that order. This was followed by an internet search to locate any more recent practice locations. Finally, an internet search was conducted for practice locations of any physicians not appearing in the Scott’s database at all over this time frame.

Physicians’ practice locations were then classified as either rural or non-rural using the rural and small town codes, a Canadian definition

of rurality developed by Statistics Canada, that includes locations with a population of <10,000 people.¹⁴ In order to ensure an optimal sample size for analysis, our questionnaire asked applicants if they hailed from a hometown with a population of <50,000 people.

The resulting dataset contained the data from all three time points – entry to medical school, early-career and mid-career – allowing us to identify both predictors of mid-career rural practice and predictors of leaving rural practice mid-career.

Principal components factor analysis was performed to condense the 27 attitudinal career influences from the entry survey into a smaller number of coherent attitudinal factors. Items required a minimum factor loading of 0.45, and factors had to have an eigenvalue >1 to be retained.

Bivariate analyses were used to identify the associations between current rural FM practice and both the attitudinal factors and demographic variables measured at entry to medical school. Variables identified by bivariate analyses as being statistically significantly associated with rural family practice were then entered into backward stepwise logistic regression analyses to identify their relative predictive strength.

To address the issue of rural FM physician retention, physicians practising rural FM at the time of our 2013 study, who currently remained in rural practice, were compared with those who had been practising rural FM in our 2013 study but had since left rural practice. Bivariate analyses were again used to identify differences in attitudinal and the demographic variables measured at entry to medical school between the two physician groups. Variables identified by bivariate analyses as being statistically significantly associated with rural family practice retention were entered into backward stepwise logistic regression analyses to identify their relative predictive strength.

All statistical analyses were performed in IBM SPSS, version 22 (IBM Corp. Released 2023. IBM SPSS Statistics for Windows, Version 29.0.1.0 Armonk, NY: IBM Corp). This project was approved by the Behavioural Ethics Research Board at the University of British Columbia (H21-00825).

RESULTS

While 2070 Canadian students were invited to

participate in our entry survey, a total of 1542 of these were included in the 2013 analyses to assess early practice in rural FM, and 1530 were included in the current analyses to assess mid-career rural FM practice and retention. The loss of subjects to follow-up was primarily due to incomplete data [Figure 1].

Of the 1530 physicians included in this study, 61 (4.0%) were practising rural FM with the remainder practising urban FM ($n = 505$; 33%) or speciality medicine ($n = 964$; 63%).

Factor analysis of the 27 attitudinal items on entry to medical school yielded 7 overarching factors, with only one attitudinal item, a desire for short postgraduate training, not falling within the factors and therefore included as a separate item in analyses [Table 1].

Bivariate analyses showed 8 of the demographic and attitudinal variables and factors from entry to medical school differed according to whether or not a physician was practising rural FM mid-career [Table 2].

The eight variables found to be associated with mid-career rural FM practice were then entered into a binary logistic regression analysis to determine their respective importance, with the resulting model presented in Table 3. When entry career interests were included in the regression

analysis, the predictors of sustained rural FM practice were an early interest in rural FM, having less educated parents and being married or in a committed relationship on entry to medical school. With entry career interests excluded from the model, predictors of sustained rural FM practice expanded to include being married or in a committed relationship and having less educated parents, plus growing up in a small town and desiring a shorter postgraduate training at medical school entry.

At medical school entry, 181 (11.8%) of our sample of $n = 1530$ named rural FM as their top career choice on entry to medical school with 88 (5.8%) practising FM in a rural location at the time of our 2013 study; by the current study, this had dropped to 61 (4.0%). While 40 physicians in the current study had left rural FM since the 2013 study, this was partially offset by 13 physicians moving to rural FM from urban FM practice.

Bivariate analyses were used to identify the associations between the demographic variables and attitudinal factors at entry to medical school and whether or not a physician switched or stayed with rural FM between the 2013 study and the current study [Table 4].

Compared to physicians who continued practising rural FM, those who had switched

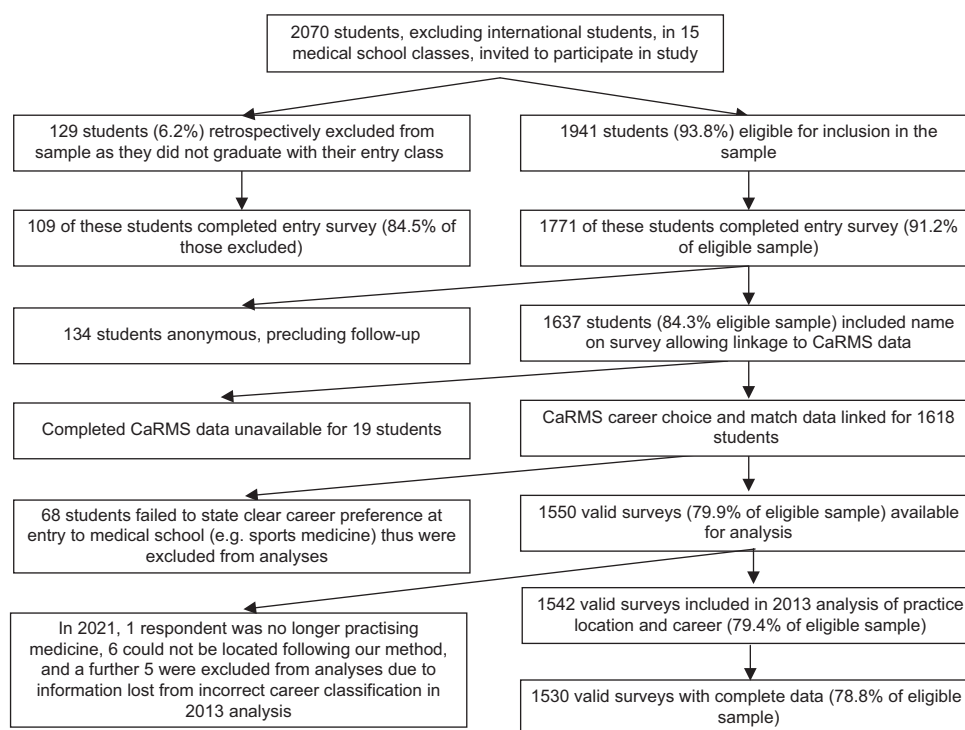


Figure 1: Recruitment and follow-up of cohort.

Table 1: Factors derived from analysis of underlying attitudinal variables on entry to medical school				
	Loading ^a	Mean (SD)	Eigen value ^b	Cronbach's alpha ^c
Factor 1 – medical lifestyle				
X: Flexibility outside of medicine	0.802	3.65 (1.11)	3.19	0.83
V: Acceptable hours of practice	0.784	3.41 (1.25)		
W: Flexibility inside of medicine	0.756	3.85 (1.02)		
N: Acceptable on-call schedule	0.737	3.34 (1.21)		
Y: Keeping options open	0.679	3.58 (1.08)		
Factor 2 – societal orientation				
U: Health promotion important	0.693	3.64 (1.17)	2.77	0.74
L: Long term relationship with patients	0.679	3.31 (1.22)		
F: Focus on patients in the community	0.669	3.33 (1.22)		
S: Social commitment	0.640	3.29 (1.26)		
D: Interesting patient population	0.544	4.27 (0.87)		
H: Focus on non-urgent care	0.500	2.67 (1.14)		
Factor 3 – prestige				
K: High income potential	0.759	2.16 (1.17)	2.65	0.74
J: Adequate income to eliminate debt	0.713	2.14 (1.31)		
M: Status among colleagues	0.693	1.92 (1.05)		
T: Stable/secure future	0.633	1.79 (1.10)		
O: Less uncertainty	0.454	2.15 (1.08)		
Factor 4 – hospital orientation				
G: Focus on urgent care	0.756	2.95 (1.25)	2.31	0.69
E: Focus on in-hospital care	0.722	2.89 (1.28)		
I: Results of interventions immediately available	0.680	3.09 (1.23)		
P: Prefer medical problems to social problems	0.514	2.54 (1.36)		
Factor 5 – scope of practice				
A: Wide variety of patient problems	0.817	3.61 (1.86)	1.75	–0.50 ^d
B: Narrow variety of patient problems	–0.703	2.74 (1.27)		
Factor 6 – role model				
Z: Meaningful past experience with physician	0.854	2.96 (1.45)	1.72	0.58 ^d
Q: Emulate a physician	0.845	2.51 (1.42)		
Factor 7 – skills and interests				
C: Good fit with skills	0.622	2.18 (1.30)	1.39	0.20 ^d
R: Research interests	0.476	2.38 (1.38)		

^aLoading represents the correlation between the item and overall factor, ^bEigen value measure the variance of the factor, ^cCronbach's alpha measures internal consistency of test scores with a 'high' alpha indicating an underlying construct, ^dOnly two component items in this factor thus r value given as $r=\alpha$ under these conditions. SD: Standard deviation

practice away from rural FM since the 2013 study were significantly more likely to have postgraduate educated parents and to have considered medical lifestyle more important on entry to medical school. No association was found between an entry career interest in rural FM and a physician staying in or switching from rural FM ($\chi^2 = 3.197$, $df = 2$, $P = 0.202$).

When the two variables found to be associated with switching from rural FM practice were entered into a binary logistic regression analysis to ascertain their respective importance, both remained highly significant [Table 5]. Compared to their peers who stayed in rural FM practice, physicians who switched away from rural FM

placed a higher value on medical lifestyle and were more likely to have parents with a postgraduate education [Table 6].

DISCUSSION

The aims of this study were to develop a model predicting mid-career rural FM practice and to develop a model predicting a mid-career switch away from rural FM practice by physicians previously working in a rural setting using variables that could be easily measured on entry to medical school. Such models may aid medical school administrators wanting to ensure an adequate supply of medical students intending

Table 2: Demographic and attitudinal differences between mid-career physicians practising rural family medicine and all other physicians

	Rural FM (n=61)	All other medicine (n=1469)	P
Demographic variables			
Age (mean years)	25.9	23.9	<0.001
Gender (% female)	54.1	57.9	0.560
Relationship status (% single)	47.5	71.9	<0.001
Hometown population (% <50,000)	39.3	20.7	<0.001
Family/friends in FM (%)	23.0	20.4	0.622
Family/friends in any field of medicine (%)	36.1	39.1	0.637
Parental education (% postgraduate educated)	23.0	45.7	<0.001
Attitudinal factors ^a			
Factor 1 – medical lifestyle	3.54	3.57	0.818
Factor 2 – societal orientation	3.60	3.41	0.060
Factor 3 – prestige	1.83	2.04	0.040
Factor 4 – hospital orientation	2.61	2.88	0.024
Factor 5 – varied scope of practice	3.89	3.41	<0.001
Factor 6 – role model	2.79	2.73	0.748
Factor 7 – skills and interests	2.09	2.29	0.066
Item AA – short postgraduate training	2.41	1.90	0.003

FM: Family medicine

Table 3: Multivariable logistic regression analysis of factors found to be significantly associated with enduring mid-career rural family medicine practice (compared to all other fields of medicine)

	n (%) or mean (SD) of those practising rural FM	Crude OR (95% CI)	Adjusted OR ^b (95% CI) including entry career choice	Adjusted OR ^c (95% CI) excluding entry career choice
Rural FM career interest on entry to medical school				
Not considered	11 (1.5)	1.0*	1.0*	
1 st choice	21 (11.6)	8.47 (4.00–17.92)	3.40 (1.38–8.42)	-
Considered but not 1 st choice	29 (4.6)	3.13 (1.55–6.31)	2.48 (1.20–5.10)	-
Relationship status				
Single	29 (2.7)	1.0*	1.0*	1.0*
Married or equivalent	32 (7.2)	2.82 (1.69–4.72)	1.79 (1.01–3.15)	1.69 (1.07–3.32)
Hometown population				
>50,000	37 (3.1)	1.0*	1.0*	1.0*
<50,000	24 (7.3)	2.49 (1.47–4.22)	1.49 (0.83–2.67)	1.86 (1.07–3.23)
Parental education				
Postgraduate studies	14 (2.0)	1.0*	1.0*	1.0*
Undergraduate or lower	47 (5.6)	2.83 (1.55–5.19)	2.18 (1.17–4.07)	2.24 (1.20–4.17)
Item AA - Item AA – short postgraduate training ^a	2.4 (1.3)	1.40 (1.16–1.69)	1.21 (0.97–1.50)	1.24 (1.00–1.53)

*Reference category. ^aFor continuous variables - each unit increase on Likert Scale is associated by the stated increase in the OR. ^bIn 70.5% of cases, the model correctly classified whether or not a physician was practising rural FM mid-career (specificity=70.6%, sensitivity=67.2%). ^cIn 70.5% of cases, the model correctly classified whether or not a physician was practising rural FM mid-career (specificity=70.9%, sensitivity=63.3%). OR: Odds ratio, CI: Confidence interval, FM: Family medicine, SD: Standard deviation

to not only enter rural FM but to be practising rurally at mid-career.

To develop a predictive model for mid-career rural practice, we used logistic regression with a dependent variable of 'mid-career practice in rural FM' versus 'a mid-career practice in some other field of medicine'. The latter group included

both specialists and urban family physicians, thus it was inevitable some differences between urban and rural family physicians would be obscured.

We found that a stated preference for rural practice, being married or in a common-law relationship on entry to medical school and having

parents with less formal education were predictive of current mid-career rural practice location. The strongest of these predictors was an early interest in rural FM with those who named it as their first-choice career being more than three times as likely to be practising rural FM mid-career than those who had never considered rural FM as an option. These findings are different to the findings from a previous study carried out with this same cohort analysed in their early career,

where those with a first-choice interest in rural FM at medical school entry were 10 times more likely to be practising rural FM than those who had not considered it.¹⁰ While still important, the influence of interest in rural FM at medical school entry wanes over these physician's practice lives in a rural setting. This fall in the predictive power of an interest in rural FM at medical school entry may be due a decline in the predictive value of this variable or to a relative increase in importance of other factors not collected in the original study at medical school entry and thus not accounted for in our model.

The challenge of a self-declared metric of interest in future rural practice at medical school entry is that it can be easily fabricated by medical school applicants if they presume it to be of value to an admission committee. In this study, students had already gained admission to medical school, so it is likely their interest in rural FM was truly

Table 4: Changes in practice type and location of our sample between 2012 and 2020

Career in 2012 and 2020	n (%)
Stayed with rural FM	48 (3.1)
Switched from rural FM	40 (2.6)
Switched to rural FM	13 (0.8)
Other	1429 (93.5)
Total	1530 (100.0)

FM: Family medicine

Table 5: Demographic associations with switching or staying in rural family medicine

	Stay with rural FM (n=48)	Switch from rural FM (n=40)	P
Demographic variables			
Age (mean years)	26.0	26.2	0.919
Gender (% female)	47.9	55.0	0.508
Relationship status (% single)	45.8	57.5	0.276
Hometown population (% <50,000)	39.6	45.0	0.608
Family/friends in FM (%)	20.8	20.0	0.923
Family/friends in any field of medicine (%)	33.3	37.5	0.684
Parental education (% postgraduate educated)	22.9	45.0	0.028
Attitudinal factors and items			
Factor 1 – medical lifestyle	3.41	3.87	0.006
Factor 2 – societal orientation	3.62	3.76	0.376
Factor 3 – prestige	1.81	1.87	0.765
Factor 4 – hospital orientation	2.67	2.49	0.317
Factor 5 – varied scope of practice	3.92	3.92	0.879
Factor 6 – role model	2.77	2.98	0.436
Factor 7 – skills and interests	2.22	1.96	0.163
Item AA – short postgraduate training	2.42	2.02	0.099

FM: Family medicine

Table 6: Associations with switching or staying in rural family medicine practice between 2012 and 2020

	n (%) or mean (SD) of those switching from rural FM	Crude OR (95% CI)	Adjusted OR ^b (95% CI)
Parental education			
Undergraduate or less	22 (37.3)	1.0*	1.0*
Postgraduate studies	18 (62.4)	2.75 (1.10–6.89)	2.74 (1.05–7.13)
Factor 1 – medical lifestyle ^a	3.9 (0.8)	2.24 (1.22–4.12)	2.21 (1.20–4.08)

*Reference category, ^aFor continuous variables-each unit increase (on Likert Scale) is associated by the stated increase in the OR, ^bIn 68.2% of cases, the model correctly classified whether or not a rural FM physician would switch from rural practice mid-career (specificity=70.8%, sensitivity=65.0%). FM: Family medicine, SD: Standard deviation, OR: Odd ratio, CI: Confidence interval

representative of their desires. However, such declarations before admission could be expected to be gamed by students. Still, assessing a medical school applicant's interest in rural practice may be an important means to support future rural practice of mid-career practitioners. In addition, it likely remains important to explore other variables that we did not access, both demographic and attitudinal, that are predictive of interest in rural practice at the time of admissions to medical school.

When regression analysis was repeated with early career preferences removed from the model, predictors of mid-career rural FM expanded to include not only having parents with less formal education and being married or in a common-law relationship on entry to medical school but also coming from a smaller hometown and expressing a desire for shorter postgraduate training on entry to medical school.

It is unclear why lower parental education was the strongest of these predictors. Research suggests a significant association between parental education beyond a baccalaureate degree and their offspring's enrolment in professional or doctorate programmes.¹⁵⁻¹⁷ While it would be expected that higher parental education would be associated with a child's higher education (i.e. a degree in medicine), it is not clear why lower parental education differentiates urban family practice from rural family practice. Given the relationship between higher postgraduate education and living in urban settings, family physicians with postgraduate educated parents are likely predisposed to select urban locations.¹⁸ It is speculation, but rural family physicians who grew up with lower educated parents may simply prioritise the attributes of rural life (i.e. more family time, closeness to extended family and community belonging).¹⁹⁻²²

When entry career preference was excluded from the model, the physician's hometown population was also found to be important in predicting mid-career rural FM practice, with those from smaller communities more likely to be practising rural FM at mid-career than those from larger communities. In our previous study, we found that students from a smaller community were 2.4 times more likely to practise in a rural community. This influence was seen to wane over time with being from a smaller community

having a smaller influence on rural practice at mid-career (1.9 times). Rural origin may be a marker for an individual appreciating the benefits of future rural life and may include the benefits of belonging to a smaller community and the subsequent lifestyle decisions of wanting to live, work and engage outside of work with like-minded individuals in a similar environment in which they were raised.¹⁹⁻²⁴ Another possible reason is the personal fulfilment of serving communities that had raised them. Finally, given ageing parents and the demands of childrearing where physicians' children may draw on their parents for their own childcare needs or their need to provide care to ageing parents, it is possible that family physicians are choosing to live near their rural-dwelling parents. It has been shown that for adults with at least one living parent or adult child, the majority had their nearest parent or adult child within 30 miles.^{25,26} It is unclear what may account for the decrease in predictive effect of rural upbringing in mid-career; however, possibilities include variables outside the scope of our study, children of the rural physician growing and moving away from the community for school, work, etc., career and educational opportunities and predictable work schedules offered in urban compared to rural settings.

We found the students who were married or in a common-law relationship at medical school entry were 1.7–1.8 times more likely to be practising in a rural location at midcareer depending on whether or not entry career preference was included in the model. This association was similar to that shown in the previous study (1.7 times) for family physicians practising in a rural setting in their early careers.¹⁰ Prior research has identified the physician partner as an important influence in a physician's consideration of practising in a rural setting.²⁷ While we found this association in early and mid-career, we did not access the physician's partner origin at medical school entry nor did we assess their partner's current vocational or non-vocational practice and interests.

Our logistic regression model excluding medical school entering career preference found that valuing short postgraduate training on entry to medical school is predictive of rural family practice mid-career. This may relate to those who are rurally inclined seeing themselves as problem solvers who are comfortable with uncertainty and wish to start practising without the benefit of

longer, or potentially greater certainty, provided by other postgraduate training programmes.²⁸

To develop a predictive model for a mid-career switch away from rural FM to non-rural FM, we used logistic regression with a dependent variable of 'switched from rural FM to non-rural FM between 2013 and 2020' versus 'remained in rural FM from 2013 to 2020'. We found that having parents with postgraduate education and placing higher importance of medical lifestyle on entry to medical school were predictive of a mid-career switch away from a rural family practice location. As we stated regarding predictors of mid-career rural practice compared to all other physicians, it is not clear why lower parental education differentiates family physicians staying in rural practice from those leaving rural family practice for a more urban practice setting. Given the relationship between higher postgraduate education and living in urban settings, family physicians with postgraduate educated parents may be predisposed to select urban locations.¹⁸

We found that physicians who switched away from rural FM placed a higher value on medical lifestyle than those who stayed practising rurally. This finding is at variance with our assumption that rural family physicians who grew up with lower educated parents may simply prioritise the attributes of rural life. This discrepancy may be due to the items contained in the lifestyle factor (flexibility outside of medicine, acceptable hours of practice, flexibility inside of medicine, acceptable on call schedule, keeping options open) do not completely capture the positive attributes of rural life.

Our study results may inform strategies to help address the rural FM shortage in Canada. We would suggest that while the academic and extracurricular merit of candidates should continue to be adjudicated, other characteristics such as candidate hometown or parental education level are important items for consideration at admissions if medical schools are to fulfil their social accountability mandate of increasing the number of rural physicians for Canada. The relationship status of a candidate cannot be utilised in admissions given that this is a protected attribute under the Canadian Human Rights Act and as such it remains crucial that the use of any demographic characteristic does not contravene this Act.²⁹ These small numbers of

findings do show that there is an enduring 'rural type' that is able to sustain a rural practice at least until mid-career. We call on others to build on our results to continue seeking ways to admit those students that will serve the healthcare needs of rural Canadians – now and into the future.

CONCLUSION

Our study is the first of its kind to demonstrate trends in the characteristics associated with practising rural FM mid-career. Our study has determined that rural interest at medical school entry is still important in predicting mid-career rural FM practice. Hometown population has become less important in predicting practice mid-career, whereas pre-medical school relationship status has become more important. Lower parental education has also been found to be an important predictor for mid-career practice. These characteristics and their trends from early career to mid-career rural FM practice may be used by medical school leaders to identify and support the candidates that will help address the ongoing critical need for physicians in rural communities.

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