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Perceived preparedness for family practice: Does rural background matter?

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Introduction: Rural background and the ability to adjust to rural practice are strong predictors of recruitment and retention of rural physicians. The degree to which rural background and being prepared for practice interrelate may provide insight into efforts aimed at increasing the supply of rural physicians. The purpose of this study was to examine the association between family medicine graduates' rural or urban background and their self-reported preparedness for practice.
Methods: This was a retrospective, cross-sectional survey of family medicine graduates who completed the 2-year family medicine residency program at the University of Alberta or University of Calgary from 2001 to 2005. Self-rated preparedness was examined on a 4-point Likert scale for 18 elements of clinical family practice, 8 interdisciplinary issues, 10 practice management issues and 8 nonclinical aspects of family practice. Rural background was defined as having been brought up mainly in a rural community (population < 25 000), and urban background was defined as having been brought up mainly in an urban community (population ≥ 25 000).
Results: A significantly greater proportion of rural- than urban-background graduates felt prepared for 3 nonclinical aspects of rural practice: time demands of rural practice (95.0% v. 79.3%, $p = 0.03$), understanding rural culture (92.5% v. 70.2%, $p = 0.005$) and small-community living (92.5% v. 70.2%, $p = 0.003$).
Conclusion: Rural background was associated with physicians feeling prepared for the nonclinical and cultural aspects of rural family practice, which suggests that focused rural exposure facilitates an understanding of rural culture. Urban-background physicians were reportedly less prepared for the nonclinical aspects of rural practice. Increased exposure of urban-background residents to the cultural aspects of rural practice may improve recruitment and retention of rural family physicians.

Introduction : Des origines rurales et la capacité de s'adapter à une pratique en milieu rural sont de solides prédicteurs du recrutement et de la rétention des médecins en milieu rural. Le degré d'interconnexion entre des antécédents ruraux et une préparation à la pratique pourrait appuyer les efforts visant à faire augmenter les effectifs médicaux en milieu rural. Le but de cette étude était d'analyser le lien entre les origines rurales ou urbaines des diplômés en médecine familiale et leur perception de leur degré de préparation à la pratique.
Méthodes : Il s'agit d'un sondage rétrospectif transversal mené auprès de diplômés en médecine familiale qui ont terminé un programme de résidence de 2 ans en médecine familiale à l'Université de l'Alberta ou à l'Université de Calgary entre 2001 et 2005. On a examiné le degré de préparation autoperçu au moyen d'une échelle de Likert en 4 points appliquée à 18 éléments de la pratique en médecine familiale, 8 questions interdisciplinaires, 10 questions de gestion de la pratique et 8 aspects non cliniques de la pratique. Les origines rurales se définissaient par le fait d'avoir été élevé principalement dans une communauté rurale (population < 25 000) et les origines urbaines se définissaient par le fait d'avoir été élevé principalement dans une communauté urbaine (population ≥ 25 000).
Résultats : Une proportion significativement plus grande de diplômés d'origine rurale

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plutôt que d'origine urbaine se sont dit préparés pour 3 aspects non cliniques de la pratique en milieu rural : contraintes de temps associées à la pratique en milieu rural (95 % c. 79,3 %, p = 0,03), compréhension de la mentalité rurale (92,5 % c. 70,2 %, p = 0,005) et vie dans une petite communauté (92,5 % c. 70,2 %, p = 0,003).

Conclusion : On a établi un lien entre les origines rurales et le fait que les médecins se sentent préparés pour les aspects non cliniques et culturels de la pratique de la médecine familiale en milieu rural, ce qui donne à penser qu'une exposition à la ruralité facilite la compréhension de cette mentalité. Les médecins d'origine urbaine étaient, selon les rapports, moins préparés aux aspects non cliniques de la pratique en milieu rural. Exposer davantage les résidents d'origine urbaine aux aspects culturels de la pratique en milieu rural pourrait améliorer le recrutement et la fidélisation des médecins de famille en milieu rural.

INTRODUCTION

The shortage of physicians in rural areas is a widespread problem. An understanding of factors that affect recruitment and retention of family physicians into rural practice is important to rural medicine and rural communities. Rural background[1–6] and the ability to adjust to rural practice[7] are strong predictors of recruitment and retention of rural physicians. Whereas rural background is a key determinant of practice location in a rural area,[1–6] little is known about why physicians with a rural background are more likely to practise in rural areas. Medical students from a rural background appear to have a more positive attitude toward health services in rural areas.[8] Physicians who have family members living in rural areas or a spouse from a rural location,[5,9] or who feel prepared to be a rural community leader[6] are also more likely to practise in a rural location.

Retention of physicians in rural practice is a challenge. Physicians' ability to adjust to rural practice and rural life plays a key role in retention. Primary care physicians who are prepared for living in a rural community tend to stay longer in rural practice.[7] Being prepared for rural life entails not only being prepared for the medical issues that arise in rural practice, but also being prepared for small-town living in the social sense. It is unknown what impact, if any, rural background has on being prepared for practice. To our knowledge, the published literature is lacking in studies examining the association between rural or urban background and preparedness for practice.

Preparedness for practice has many dimensions, including readiness for both clinical and nonclinical aspects of practice. Rural clinical practice differs from urban clinical practice. Although an increasingly broad spectrum of urban-based clinical opportunities exists, in general, urban family physicians tend to provide more office-based practice, whereas those in rural areas provide more in-hospital care.[10,11] Further, more family physicians in rural areas perform procedures than those in urban practice.[12] Nonclinical aspects of practice are also distinct between rural and urban areas. Being prepared for rural practice entails being skilled at dealing with the professional and personal opportunities and challenges of life as a physician in a rural community. Given that "the most intensive 'rural experience' is to have grown up in a rural environment,"[13] intuitively, physicians with a rural background would be expected to be better prepared for the nonclinical aspects of rural practice.

There is no unanimity on the definition of rural location or rural background. Frequently used definitions of rural background have included either having grown up in a rural area, having grown up in a town with a population of less than 10 000, having graduated from a high school located in a town with less than 10 000 residents, being born in a rural area or self-declared rural residence.[14] Despite differences in the definition of rural background, the effect of having a rural background on future rural practice is purported to exist.[15] A sense of rural background has been found to develop at about 5 years of upbringing in a rural area; intent for a rural career is high among people with more than 8 years of rural upbringing.[16]

The purpose of this exploratory study was to examine the association between family medicine graduates' rural or urban background and their self-reported preparedness for the clinical and nonclinical dimensions of medical practice. A positive relation between rural background and preparedness for rural practice would provide additional support for recruiting students from rural areas into medicine, as well as the importance of exposing medical students and residents to rural life in the ongoing effort to recruit family physicians to rural areas.

METHODS

Study design, sample and procedures

This was a retrospective, cross-sectional, self-administered, mailed survey of 377 graduates who completed the family medicine residency training program at the University of Alberta or University of Calgary from 2001 to 2005. Each university conducted the mail-out to its own graduates. Graduates' contact information was obtained from the Alberta Medical Directory of the College of Physicians and Surgeons of Alberta or the 2006 Canadian Medical Directory. The survey package consisted of a study information letter, questionnaire and return postage-paid envelope. Nonresponders were initially mailed a reminder notice and were subsequently contacted up to 5 times by telephone, fax and/or email. Participants were also given the option of completing a Web-based version of the questionnaire. The administration of the survey began Nov. 1, 2006, and responses were accepted until May 31, 2007. The study was approved by the Health Research Ethics Board Health Panel, University of Alberta, and by the Conjoint Health Research Ethics Board, University of Calgary.

Setting

Family medicine residency training at the University of Alberta and University of Calgary is 2 years in duration. Medical degree programs across Canada, including that of the University of Alberta, are typically 4 years in duration; the University of Calgary has an intensive 3-year program. The postgraduate residency programs at the University of Alberta and University of Calgary have similar curricula, and both are fully accredited by The College of Family Physicians of Canada. Both programs include a minimum of 8 weeks of clinical training in rural family medicine. Both programs include elective opportunities that may be undertaken in rural or remote locations.

Questionnaire survey

The overall purpose of the survey was to examine graduates' educational experiences during residency and practice patterns after completion of residency. The survey included questions related to various dimensions of medical education, career history and residency program evaluation, including preparedness for practice. Graduates were asked to indicate the degree to which the program prepared them for 18 elements related to clinical family practice, 8 interdisciplinary practice issues, 10 practice management issues and 8 nonclinical aspects of family practice. Preparedness for practice was self-rated on a 4-point Likert scale (1 = very prepared, 2 = somewhat prepared, 3 = somewhat unprepared, 4 = very unprepared). Preparedness was not explicitly defined, but was rather assessed as respondent perceptions.

The survey included a question on rural background that asked, "Prior to your 18th birthday, what type of community did you live in?" The response options were as follows: small rural community (< 10 000 population), medium rural community (10 000–24 999 population), urban community (25 000–49 999 population), regional community (50 000–200 000 population) and metropolitan centre (> 200 000 population). Respondents were asked to indicate the length of time they lived in each of the community types.

Data analysis

The length of time lived in a community before respondents' 18th birthday was used to categorize graduates into 2 groups: rural or urban background. The number of years lived in rural areas was calculated as the sum of the number of years lived in small or medium rural communities. Similarly, the number of years lived in urban areas was calculated as the sum of the number of years lived in urban, regional or metropolitan communities. A graduate was defined as having a rural background (i.e., brought up mainly in rural community with a population of < 25 000) if the number of rural years were greater than the number of urban years. Similarly, if the number of urban years was greater than the number of rural years, the graduate was classified as having an urban background (i.e., brought up mainly in an urban community with a population of ≥ 25 000). Graduates who spent an equal number of years in rural and urban areas were excluded from the analysis. Also excluded were respondents for whom a classification of urban or rural background could not be determined owing to missing data. Preparedness for practice was categorized as prepared (somewhat or very prepared) or unprepared (somewhat or very unprepared).

We analyzed study data descriptively using SPSS 17 for Windows. The χ^2, Fisher exact and Student t tests were employed, as appropriate. We estimated effect size using phi (0.10 = small, 0.30 = medium, 0.50 = large). We used an α level of 0.05 to test for statistical significance.

RESULTS

The survey response rate was 64.2% (242/377). A total of 171 (70.7%) respondents provided sufficient data on the length of time that they had lived in a community before their 18th birthday for them to be classified as having a rural or urban background. As such, 40 (23.4%) were classified as having a rural background and 131 (76.6%) as having an urban background. The mean age of the 171 graduates was 34.2 years, 56.1% were female and 78.9% were married (Table 1). There was no significant difference between respondents of rural or urban background in age, sex, marital status or years since completion of the residency program. Rural-background graduates had spent a mean of 16.1 (median 18) years in a rural community, and urban-background graduates had spent a mean of 16.9 (median 18) years in an urban community. Although 30.0% of rural- and 17.2% of urban-background graduates were practising in a rural location at the time of the survey, the association between practice location and rural or urban background did not reach statistical significance.

Preparedness for clinical practice

One statistically significant difference was observed between rural- and urban-background graduates in preparedness for clinical practice: more graduates from a rural (60%) than urban (39.5%) background felt prepared for practice management (p = 0.02, phi = 0.18). Most graduates (range 75%–100%) felt prepared for the vast majority of elements related to clinical family practice (Fig. 1). Graduates felt less prepared for family practice research and practice quality improvement.

Preparedness for interdisciplinary issues

Respondents' reported preparedness for elements of interdisciplinary issues was relatively high, except for preparedness for health care reform. A significantly greater proportion of graduates from a rural (60.0%) than urban (39.7%) background felt prepared for dealing with issues related to health care reform (p = 0.02, phi = 0.17; Fig. 2).

Preparedness for practice management

Reported preparedness for issues related to practice management overall was quite low, except for clinical records. Significantly more rural- than urban-background graduates felt prepared for issues related to establishing a practice (55.0% v. 35.9%, p = 0.03, phi = 0.17), and financial management and business records (40.0% v. 18.9%, p = 0.006, phi = 0.21; Fig. 3).

Preparedness for nonclinical aspects of rural practice

Although reported preparedness for nonclinical aspects of rural practice varied, a significantly higher proportion of rural- than urban-background gradu-

Table 1. Characteristics of respondents by rural or urban background

Characteristic	No. (%) of respondents		
	Rural, n = 40	Urban, n = 131	Total, n = 171
Sex			
Male	16 (40.0)	59 (45.0)	75 (43.9)
Female	24 (60.0)	72 (55.0)	96 (56.1)
Age, yr			
25–29	4 (10.0)	13 (9.9)	17 (9.9)
30–34	24 (60.0)	74 (56.5)	98 (57.3)
35–39	7 (17.5)	19 (14.5)	26 (15.2)
40–44	2 (5.0)	14 (10.7)	16 (9.4)
45–49	1 (2.5)	7 (5.3)	8 (4.7)
≥ 50	1 (2.5)	1 (0.8)	2 (1.2)
Not recorded	1 (2.5)	3 (2.3)	4 (2.3)
Marital status			
Single, no children	5 (12.5)	30 (22.9)	35 (20.5)
Married or common law, no children	13 (32.5)	29 (22.1)	42 (24.6)
Married with children	22 (55.0)	71 (54.2)	93 (54.4)
Not recorded	0 (0.0)	1 (0.8)	1 (0.6)

ates felt prepared for 3 nonclinical aspects of rural practice: time demands of rural practice (95.0% v. 79.3%, $p = 0.02$, phi = 0.18), understanding rural culture (92.5% v. 70.2%, $p = 0.004$, phi = 0.22) and small-community living (92.5% v. 70.2%, $p = 0.004$, phi = 0.22; Fig. 4). There were no statistically significant differences in being prepared to be a community leader, handling a "fishbowl" lifestyle and choosing a suitable community. Subanalysis of responses from urban-background graduates revealed that a significantly greater proportion of those who did a rural family medicine rotation ($n = 109$) versus those who did not do a rural rotation ($n = 15$) during residency felt prepared for the time demands of rural practice (83.0% v. 53.3%, $p = 0.02$), understanding rural culture (74.3% v. 40.0%, $p = 0.01$) and small-community living (74.3% v. 40.0%, $p = 0.01$).

Preparedness and practice location

Overall analysis of reported preparedness by practice location revealed that a significantly greater proportion of respondents who were in rural practice, compared with those who were in urban practice, felt prepared for rural practice ($p = 0.001$) and for small-community living ($p = 0.02$).

DISCUSSION

The new knowledge gleaned from this study is that the rural background of family medicine graduates is associated with self-reported preparedness for the nonclinical aspects of rural family practice, particularly the time demands of rural practice, understanding rural culture and small-community living.

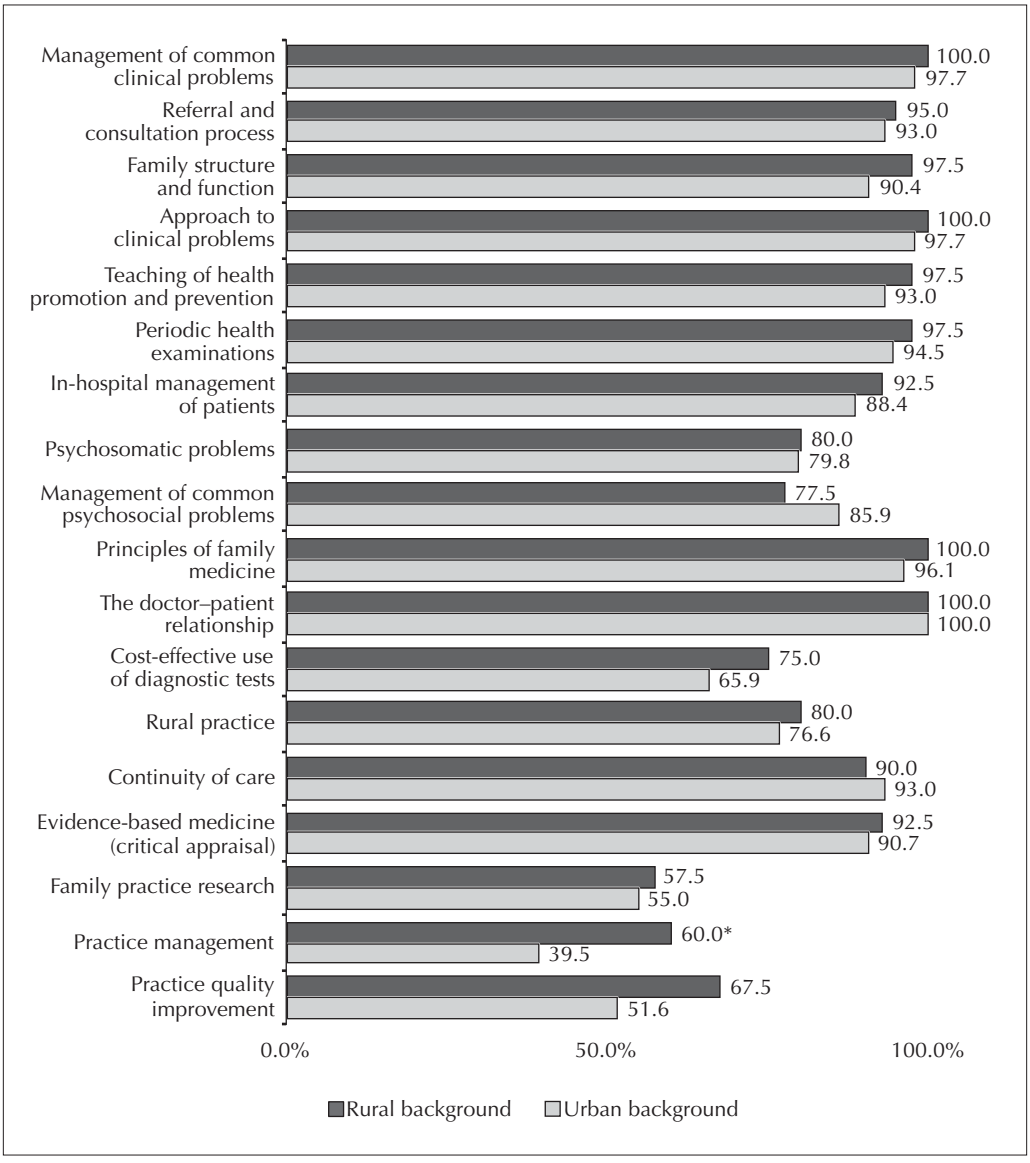


Fig. 1. Percentage of respondents who reported preparedness for 18 elements related to clinical family practice, by rural and urban background. *$p < 0.05$.

These 3 elements have been previously labelled as dimensions of "rural culture."[6] Intuitively, people of rural background would be expected to have a better understanding of rural culture and small-community living, because the lived rural experience should facilitate the acculturation and assimilation of rural life. All the rural-background graduates in our study lived 10 or more years in a rural area and, consistent with the findings of Somers and colleagues,[16] would be expected to have developed a sense of rural background.

The study findings also showed that graduates with an urban background felt less prepared for the nonclinical and cultural aspects of rural practice. This is not surprising given their lack of or limited exposure to rural life. Comparison of preparedness for practice between urban-background graduates who did and did not do a rural family medicine rotation during residency showed that rural training may have a positive influence on graduates with an urban background in helping them understand rural culture, small-community living and the time demands of rural practice. Although the analysis was limited by the small sample of those who did not do a rural rotation (n = 15), the findings are consistent with those of a US study that found that physicians who did rural rotations felt better prepared for both rural practice and small-town living.[7]

It is unclear why a significantly higher proportion of rural-background graduates felt prepared for issues related to establishing and managing a practice, financial management and business records, and health care reform. We postulate that graduates who have lived in a rural community may be more connected to the issues affecting the community at all levels, including health care reform, and thus feel more prepared to deal with these issues. Similarly, rural-background graduates may have always assumed that practising in a rural area would mean they would need to be directly involved in the business aspects of establishing and managing a practice, and thus have sought opportunities that would provide them with such skills. Moreover, medical students from rural areas appear to be more economically disadvantaged than their urban colleagues, with a higher debt load and increased financial anxiety.[17] Therefore, graduates with a rural background may be more likely to work during

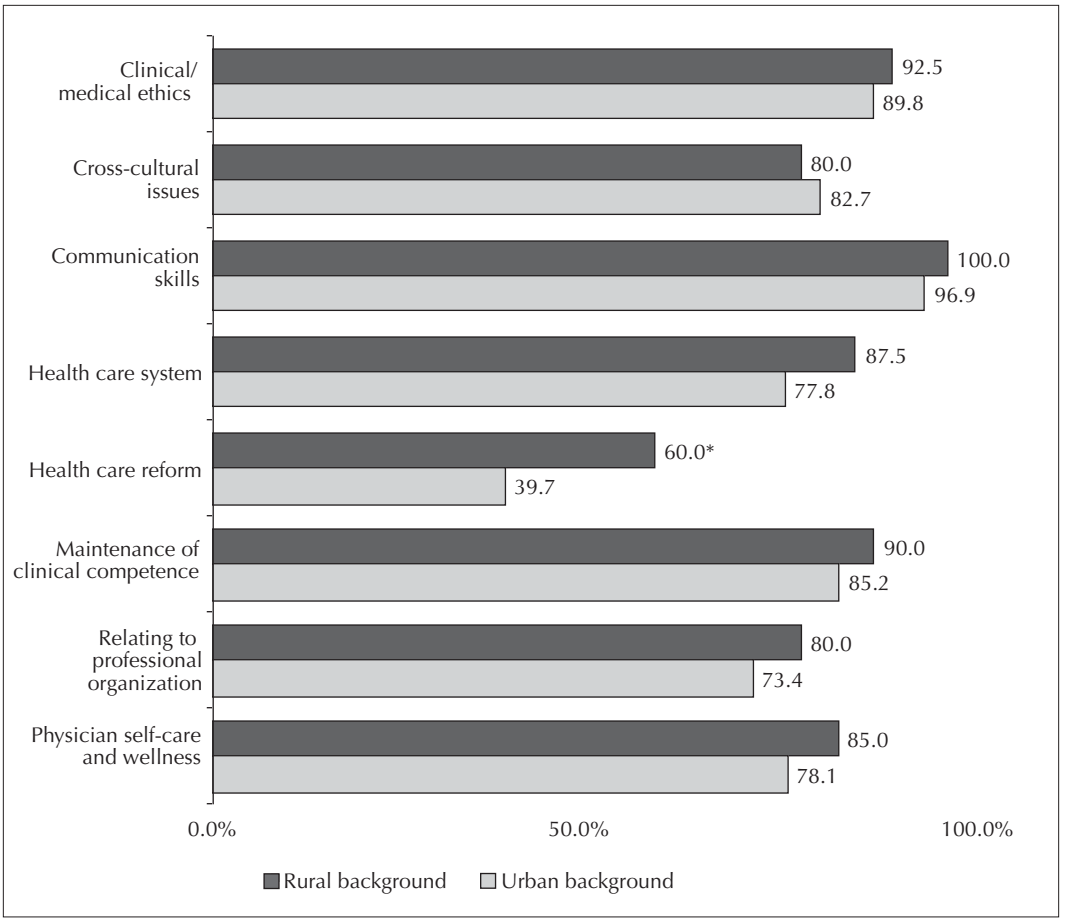


Fig. 2. Percentage of respondents who reported preparedness for 8 elements related to interdisciplinary practice. *p < 0.05.

high school and undergraduate years, and thus develop a heightened awareness of financial and business issues. It is also possible that graduates from rural areas possess character traits or political perspectives that differ from graduates from urban areas that might account for a unique understanding of practice management or health care reform.

Our study reveals that family medicine graduates tend to have an overall positive view of the quality of their residency training; the vast majority felt somewhat or very prepared for most elements of family practice, irrespective of rural or urban background. This high level of perceived preparedness is reassuring for residency programs that strive to duly prepare family physicians for practice and speaks to the outstanding quality of the postgraduate educational experience. These results are consistent with the self-reported high levels of preparedness of family practice residents in the United States.[18,19]

Preparedness for rural family practice is likely influenced by a combination of factors, including rural background and medical training experiences. The finding that rural-background residents, in general, and urban-background graduates who did rotations in rural family medicine, in particular, appear to be better prepared for the nonclinical aspects of rural practice has implications for family medicine residency training. Efforts aimed at ensuring that residents, particularly those with an urban background, receive focused exposure to the nonclinical aspects of rural practice may serve to increase their comfort with rural medicine. According to Henry and colleagues,[2] "interns with non-rural residency backgrounds seemed to need positive perceptions of country lifestyle in order to advance upon their developing positive dispositions about rural medicine." Rural preceptors should strategically involve urban-background residents in activities that would increase their awareness of issues related to rural lifestyle (e.g., cultural and recreational opportunities, housing, schools, professional and social networks and community leadership).

Future investigation of whether preparedness for nonclinical aspects of practice can be engendered is worthy of study. That is, is there a perceived difference in preparedness for nonclinical aspects of rural practice by urban-background residents who have varying amounts of rural training?

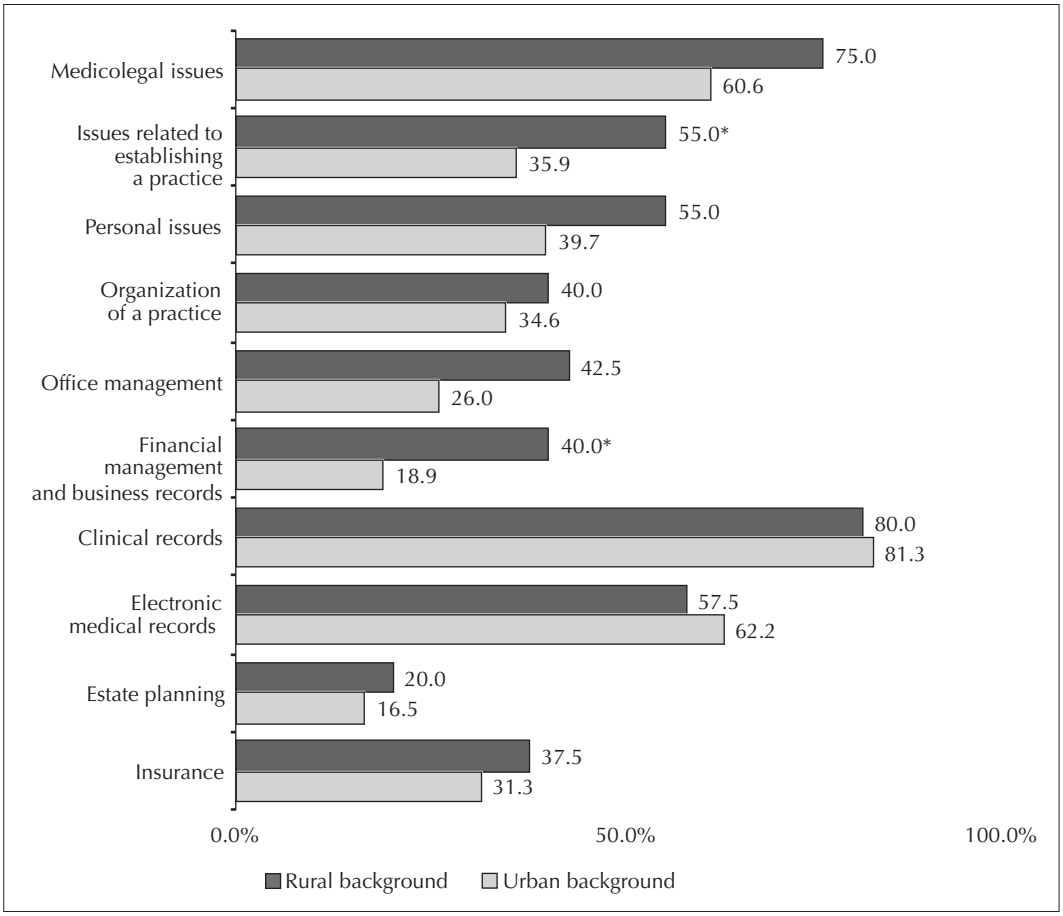


Fig. 3. Percentage of respondents who reported preparedness for 10 elements of practice management.
***p* < 0.05.**

Strengths and limitations

A strength of this study is the respectable response rate (64.2%), which provides a statistically representative sample; that is, there is a 99% degree of confidence that the responses of the 242 participants are representative of the population of graduates who were surveyed, within a 5% error level. The results, however, should be interpreted within the limitations of the study. The cross-sectional, retrospective nature of the survey provides only a snapshot in time. The wording of some questions assumed a general understanding by respondents. For example, "time demands (call, work hours) of rural practice" assumed that the time demands are higher in rural than urban practice. "Fishbowl lifestyle" was assumed to mean that one's actions are visible to and are being scrutinized to some degree by the community. Although we cannot be absolutely certain that all respondents interpreted the questions in this way, the results are based on the assumption that this interpretation was generally the norm. As such, the degree of insensitive measure bias is unknown. The time since completion of residency training varied between 1 and 6 years for the 2001–2005 graduates; thus, recall bias may influence perceptions of preparedness for practice. The study assessed only self-reported perceptions of preparedness and not externally observed or objectively assessed preparedness. Given that the questionnaire did not explicitly define preparedness for practice, respondents may have interpreted being prepared or unprepared differently. Perceptions of preparedness may also be influenced by the challenges at hand; that is, those who may have had few practice challenges may have felt prepared, thereby overestimating their actual preparedness, whereas those who have had numerous challenges may have felt overwhelmed and unprepared, thereby underestimating their level of preparedness. The overall self-assessed high levels of preparedness may also reflect a socially desirable response, thus overestimating the true level of preparedness. We were also unable to discern the confounding effect of certain factors, such as practice location or educational training, on preparedness, that is, to what degree preparedness is influenced by educational experiences within the program, versus other factors external to the program, such as rural background, life experience and personal self-efficacy. The number of graduates with a mainly rural background is relatively small; thus, a larger study with more rural-background respondents is recommended.

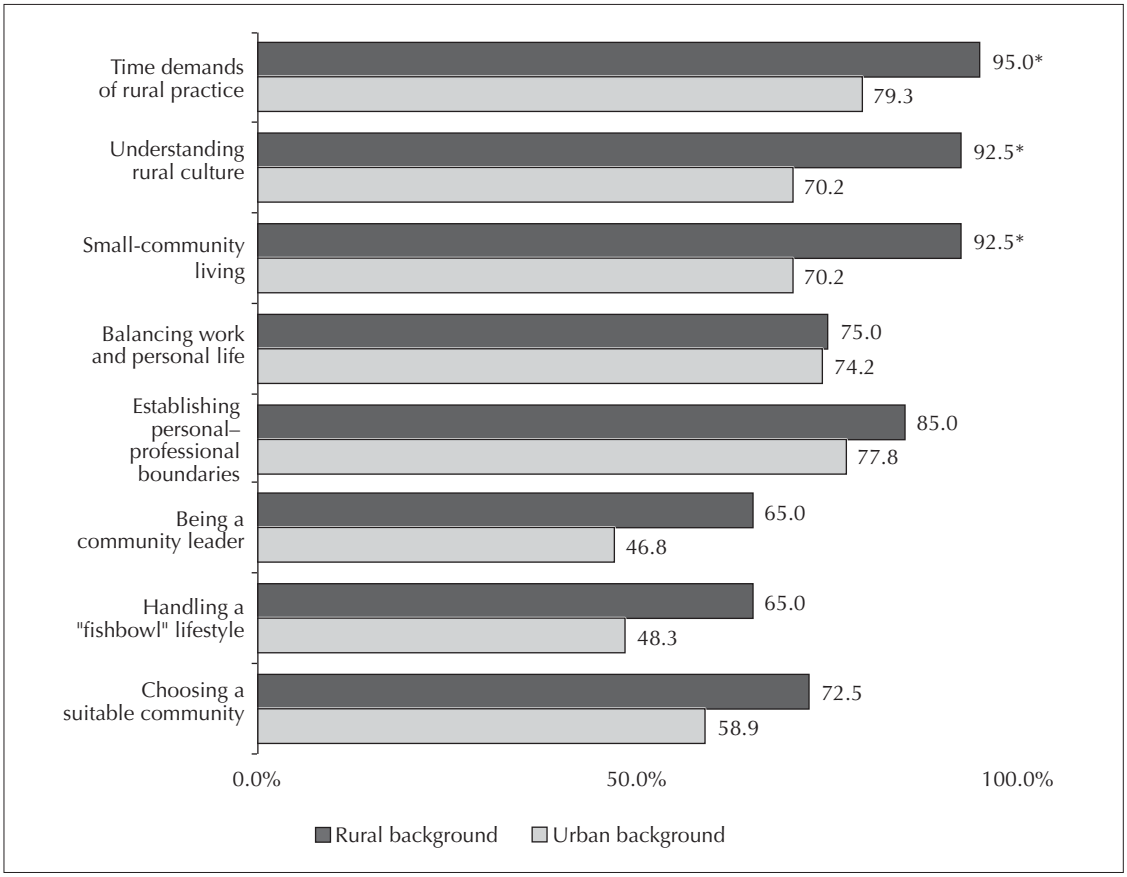


Fig. 4. Percentage of respondents who reported preparedness for 8 nonclinical aspects of rural practice. *$p < 0.05$.

CONCLUSION

This study provides new evidence that rural background is associated with perceived preparedness for the nonclinical aspects of rural family practice, specifically the time demands of rural practice, understanding rural culture and small-community living. Rural background is also associated with perceived preparedness in the areas of health care reform, issues related to establishing and managing a practice, and financial management and business records. Urban-background graduates felt just as prepared for the clinical aspects of practice, but felt less prepared for the cultural aspects of rural family practice. Efforts directed at increasing exposure of residents, particularly those with an urban background, to the nonclinical aspects of rural practice, including rural culture and small-community living, may increase their comfort with rural practice and improve recruitment and retention of rural physicians.

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Competing interests: None declared.

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