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General practitioner surgery: Anyone interested?

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Introduction: We sought to assess awareness of, exposure to and interest in general practitioner (GP) surgery and enhanced surgical skills (ESS) among family practice residents in British Columbia, Alberta and Saskatchewan.
Methods: We distributed a survey to all family practice residents at 4 universities in BC, Alberta and Saskatchewan. The survey assessed demographic information, awareness of and exposure to GP surgery or ESS during training, and interest in pursuing formal ESS training.
Results: We received 174 responses (27.2% response rate). Numerous respondents were unaware of GP surgery (9.9% ± 4.5%) and ESS (17.9% ± 5.7%). Awareness was higher among respondents from rural hometowns (GP surgery and ESS awareness 100% and 94.1%, respectively), and with prior exposure to GP surgery (GP surgery and ESS awareness 96.9% and 95.4%, respectively). A minority (38.2%) had been exposed to GP surgery, with exposure higher in respondents from rural training sites and in their second postgraduate year (72.5% and 47.4%, respectively). A quarter (25.1%) of respondents were considering ESS training. Factors encouraging training included increased procedures, challenging medicine and impact on patient outcomes. The importance of ESS training opportunities and service was rated highly.
Conclusion: Many respondents were unaware of ESS as a career option. Exposure to GP surgery during training was associated with increased awareness. Furthermore, exposure fostered interest in this important field. These results may be helpful in the development of formal ESS training programs and in curricula for family practice residency programs.

Introduction : Nous avons cherché à savoir dans quelle mesure les résidents en médecine familiale de la Colombie-Britannique, de l'Alberta et de la Saskatchewan avaient entendu parler de la chirurgie pratiquée par des omnipraticiens (OP) et des techniques chirurgicales avancées (TCA), l'expérience qu'ils pouvaient en avoir eus au cours de leur formation et leur intérêt à cet égard.
Méthodes : Nous avons distribué un questionnaire à tous les résidents en médecine familiale de 4 universités de la Colombie-Britannique, de l'Alberta et de la Saskatchewan. Le sondage visait à recueillir des données démographiques et à évaluer la connaissance de la chirurgie pratiquée par des OP ou des TCA, l'expérience dans ce domaine au cours de la formation et l'intérêt pour une formation structurée en TCA.
Résultats : Nous avons reçu 174 réponses (taux de réponse de 27,2 %). De nombreux répondants n'avaient jamais entendu parler de chirurgie pratiquée par des OP (9,9 % ± 4,5 %) et de TCA (17,9 % ± 5,7 %). Les répondants issus de villes rurales étaient plus nombreux à être renseignés à ce sujet (chirurgie pratiquée par des OP, 100 %; TCA, 95,4 %), de même que ceux qui en avaient fait l'une expérience au cours de leur formation (chirurgie pratiquée par des OP et connaissance des TCA, 96,9 % et 95,4 % respectivement). Une minorité de répondants (38,2 %) avaient fait l'expérience de la chirurgie pratiquée par des OP; parmi ceux-ci, les répondants des sites de formation en milieu rural et ceux en deuxième année de formation postdoctorale étaient plus susceptibles d'en avoir fait l'expérience (72,5 % et 47,4 % respectivement). Le quart (25,1 %) des répondants songeaient à suivre une formation en TCA. Parmi les facteurs incitatifs, mentionnons le nombre plus élevé d'interventions, les défis qu'offre ce domaine de la médecine et l'impact sur les résultats des patients. Les répondants ont jugé très important d'avoir des occasions de suivre une formation en TCA et des possibilités de pratiquer dans ce domaine.

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Conclusion : De nombreux répondants ignoraient que les TCA pouvaient être un choix de carrière. L'expérience de la chirurgie générale pratiquée par des omnipraticiens a été associée à une sensibilisation accrue. De plus, cette expérience a favorisé l'intérêt pour cet important domaine. Ces résultats pourraient être utiles à l'élaboration de programmes de formation structurés en TCA et de cours dans les programmes de résidence en médecine familiale.

INTRODUCTION

Delivery of surgical services in rural Canada has inherent challenges. Up to 30% of Canada's population resides in rural areas (defined by Statistics Canada as communities outside of urban areas with a population < 10 000), whereas only 2.5% of specialists practise in these rural environments.[1–3] Small communities distributed widely over Canada's complex geography make patient transfer difficult. To address these challenges in access to surgical care, a selected spectrum of emergent and elective surgeries are performed by general practitioner (GP) surgeons in hospitals serving rural communities.[4,5]

The historical and current contribution of GP surgeons in Canada is substantial, especially in the western provinces and territories. In the mid-1990s a Canadian survey found GP surgeons providing surgical services in 80% of rural hospitals in British Columbia, Alberta and the northern territories.[5] At that time 27% (15/56) of these hospitals relied completely on GP surgeons for provision of surgical services. The scope of practice within GP surgery has varied, ranging from cesarean deliveries exclusively to a wide spectrum of procedures across multiple surgical specialties. A 2008 study by Humber and Frecker documented the 15 most common procedures performed by GP surgeons in BC (Fig. 1).[6]

Decline of rural surgery

Centralization of health care over the past few decades has resulted in the closure of many rural surgical sites and, subsequently, obstetric services in these communities. In 2000, many rural communities in western Canada relied exclusively on GP surgery to maintain local surgical services; 20 out of 54 of these sites were in BC.[7] By 2007, 25% of these GP surgery programs were closed, leaving only 15 communities in rural BC with these vital surgical services.[4] Retirement of GP surgeons, lack of formal training and credentialing, and challenges with portability of privileges have likely contributed to this decline.[6,8]

Patients in these rural communities, now lacking GP surgery services, must travel to access basic surgical care that was previously available closer to home. Effects of these closures extend to adjacent communities within the GP surgery catchment area that also depended on these services. This is particularly unfortunate given a growing body of literature demonstrating that patients from rural communities value health care in familiar environments, and can experience serious financial and social stress as a consequence of medical travel.[9] Furthermore, safety profiles within the spectrum of surgical procedures performed by GP surgeons compare favourably with those performed by specialists in larger centres, even though their independent volume may be lower.[10–15]

Training in GP surgery

Alongside evolving medical education has come a change in terminology with the term enhanced surgical skills (ESS), now being adopted to replace GP surgery.[16] In this study, GP surgery and ESS describe the same skill set, with the term ESS reserved for current and future references to the field.

In 2013/14, the only active program in Canada for formal ESS training is administered through the University of Saskatchewan. To meet increasing demands on a fragile system, initiatives are underway to create additional formal ESS programs, especially in western Canada, where GP surgery has such historical roots.[17] It is unclear what level of interest exists for such programs among family practice residents, and to what degree they are even aware of ESS.

This study aimed to assess awareness of, exposure to and interest in GP surgery and ESS among trainees in family practice residency programs in BC, Alberta and Saskatchewan. Attitudes toward this field of practice are explored. An improved understanding of these factors will help to guide the creation and maintenance of ESS programs for family practitioners in Canada.

METHODS

Study population

We sent an anonymous, Web-based survey by listserv to all family practice residents at the University of British Columbia, University of Alberta, University of Calgary and University of Saskatchewan. The study population included all first- and second-year family practice residents at these universities who consented to complete the online survey. There were no exclusion criteria. A copy of the survey is available on request.

The Human Research Ethics Board at the University of British Columbia, research committees at the University of Alberta and University of Calgary, and the program director at the University of Saskatchewan approved this study.

Survey and validation

The survey was divided into 3 sections: demographic information, awareness of and exposure to GP surgery or ESS during training, and interest in pursuing formal ESS training. For this study, exposure to GP surgery was defined as having spent at least 1 week in medical training with a GP surgeon. Question formats included multiple choice, continuous measures using a sliding scale and free text. To assess respondents' awareness of the scope of practice within GP surgery, participants were given an extensive list of procedures and asked to select those that they believed are or should be performed by GP surgeons. This list ranged from common procedures well established within the scope of GP surgery and others less commonly performed or more heavily debated. Internal and external input to optimize survey quality (i.e., clarity, length, comprehensiveness) was received from ESS physicians, family physicians, family practice residents outside the study area and nonphysician volunteers before commencement of the study. A total of 19 people gave internal and external input to optimize survey quality. This led to subsequent amendments of survey content and wording. No similar survey could be found in the literature for reference.

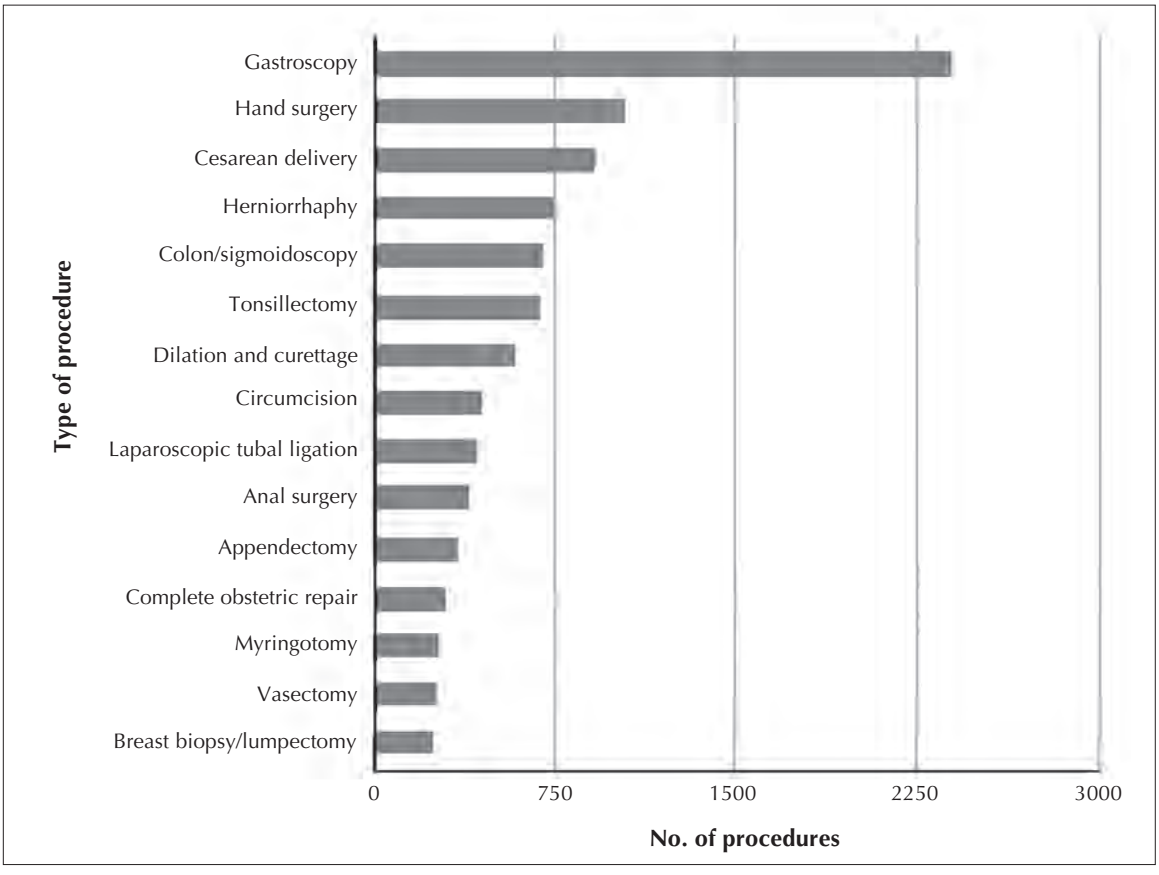


Fig. 1. Top 15 emergency and elective procedures performed by general practitioner surgeons in British Columbia. Adapted, with permission, from Humber and Frecker.[6]

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Statistical analysis

We used frequency tables and χ^2 tests of independence for categorical data, and descriptive statistics (mean, median, standard deviation, confidence intervals) and 1-way analysis of variance for quantitative data. We constructed multiple-response frequency tables for "procedure list" data. Analysis was carried out with SPSS software, version 21. Because this was a descriptive study, power calculations were not required. We considered hypothesis test results statistically significant at the $p \leq 0.05$ significance level.

RESULTS

The survey was sent to 212 residents at the University of British Columbia, 161 residents at the University of Alberta, 186 residents at the University of Calgary and 79 residents at the University of Saskatchewan. We received 174 responses (response rate 27.2%). However, the sample size was sufficiently large to give margins of error of no more than 7.5% at the 95% confidence level. Because not all questions were answered in every survey, frequency distributions for each demographic characteristic were summarized with percentages based on the number of valid responses. Because the number of missing responses was low, the valid percentage was not meaningfully different from the percentage based on the overall denominator. Almost all of the respondents were either aged 20–30 years (114/174, 65.5%) or 30–40 years (50/174, 28.7%). A total of 112/173 (64.7%) respondents were women and 57/173 (32.9%) were men, and most were married or in a common-law relationship (105/174, 60.3%). Most respondents (139/173, 80.3%) were from nonrural hometowns and almost 20% (34/173, 19.7%) were from rural hometowns (rural defined by a population < 10 000). Of the participants, 75.3% (125/166) were training at urban residency sites, and 24.7% (41/166) were at rural sites. The response rate was slightly greater in the group training at rural residency sites (41/129, 31.8% v. 125/509, 24.6%). More participants were in their first postgraduate year than in their second year (95/173, 54.9% v. 78/173, 45.1%), with response rates of 29.8% (95/319) and 24.5% (78/319), respectively.

Awareness of GP surgery and ESS

About 10% of respondents were completely unaware of GP surgery (9.9% ± 4.5%), and even more respondents were unaware of the modern term ESS (17.9% ± 5.7%). Respondents from rural hometowns were significantly more aware of GP surgery and ESS than those from nonrural hometowns (GP surgery 100% v. 87.6%, respectively; $p = 0.03$; and ESS 94.1% v. 79.0%, respectively; $p = 0.04$). Respondents with prior exposure to GP surgery had significantly greater awareness of the role of GP surgeons than those without exposure. This difference was observed for awareness of GP surgery (96.9% v. 85.4%, respectively; $p = 0.02$) and ESS (95.4% v. 74.0%, respectively; $p = 0.001$). Although the university where respondents were completing their family practice residency was not related to awareness of GP surgery, 100% of respondents from the University of Saskatchewan were aware of ESS, which was significantly more than at other universities, where awareness ranged from 64.3% to 84.0% ($p = 0.01$). Respondents completing their family practice residency at a rural site had a greater awareness than their urban counterparts of both GP surgery (97.6% v. 87.8%) and ESS (90.0% v. 79.2%), although this difference was not statistically significant ($p = 0.07$). Interest in and awareness of ESS was related closely to exposure to the field during medical school and residency. One respondent commented that the field is "not promoted enough early on as a career option within family medicine," and another wrote, "there just isn't enough exposure."

Respondents' awareness of the scope of practice of GP surgeons varied (Fig. 2). For example, whereas 92.4% believed that GP surgeons perform cesarean deliveries, only 16.2% thought that GP surgeons perform bladder repairs after a bladder injury complication with cesarean delivery. In addition, 35.5% and 43.0% responded that laparotomies are and should be within the scope of a GP surgeon.

Exposure to GP surgery and ESS

A minority of respondents (38.2 ± 7.3%) had been exposed to GP surgery during training. In contrast, nearly three-quarters of participants from rural residency sites had trained with a GP surgeon, compared with one-quarter of those at urban sites (72.5% v. 26.8%; $p < 0.001$). Respondents in their second postgraduate year were more likely to have had exposure to GP surgery compared with those in their first postgraduate year (47.4% v. 31.2%; $p = 0.03$).

Of respondents with exposure to GP surgery, 29.9% had this experience only during medical school, 28.4% only during residency, and 31.3% in both medical school and residency. The remainder of respondents with experience in GP surgery had this exposure outside of formal medical training.

Most participants (68.4%) did not feel that their exposure to GP surgery during medical training was adequate. Urban residents were more likely than rural residents to describe their exposure as inadequate (78.9% v. 42.5%; $p < 0.001$). Services provided by GP surgeons and the importance of training opportunities in ESS were recognized. Respondents with prior ESS exposure and completing their residency at rural sites valued these opportunities more highly (Table 1). This positive opinion was also reflected in several comments: "GP obstetrics was my biggest exposure — great practitioners, crucial for rural communities," "GPs with enhanced surgical skills play a critical role to provide surgical care in rural areas in this country" and "I think GP surgeons are extremely important in rural areas. ... There should be more training programs."

Interest in ESS

Table 2 presents the career-related determinants of respondents' interest in pursuing ESS training, in rank order from highest to lowest scores. The most encouraging factors were given the highest scores with a maximum of 5.

In response to a binary yes-or-no survey question, one-quarter of respondents stated that they were considering ESS training (25.1% ± 6.4%). Those considering training were significantly more likely to be from rural residency sites than urban locations (37.5% v. 21.7%; $p = 0.05$). On a 100-point scale, with zero representing no interest at all and 100 representing a career goal, respondents were asked to rate their interest in ESS limited to obstetrics skills, and ESS with a broader, multidisciplinary spectrum

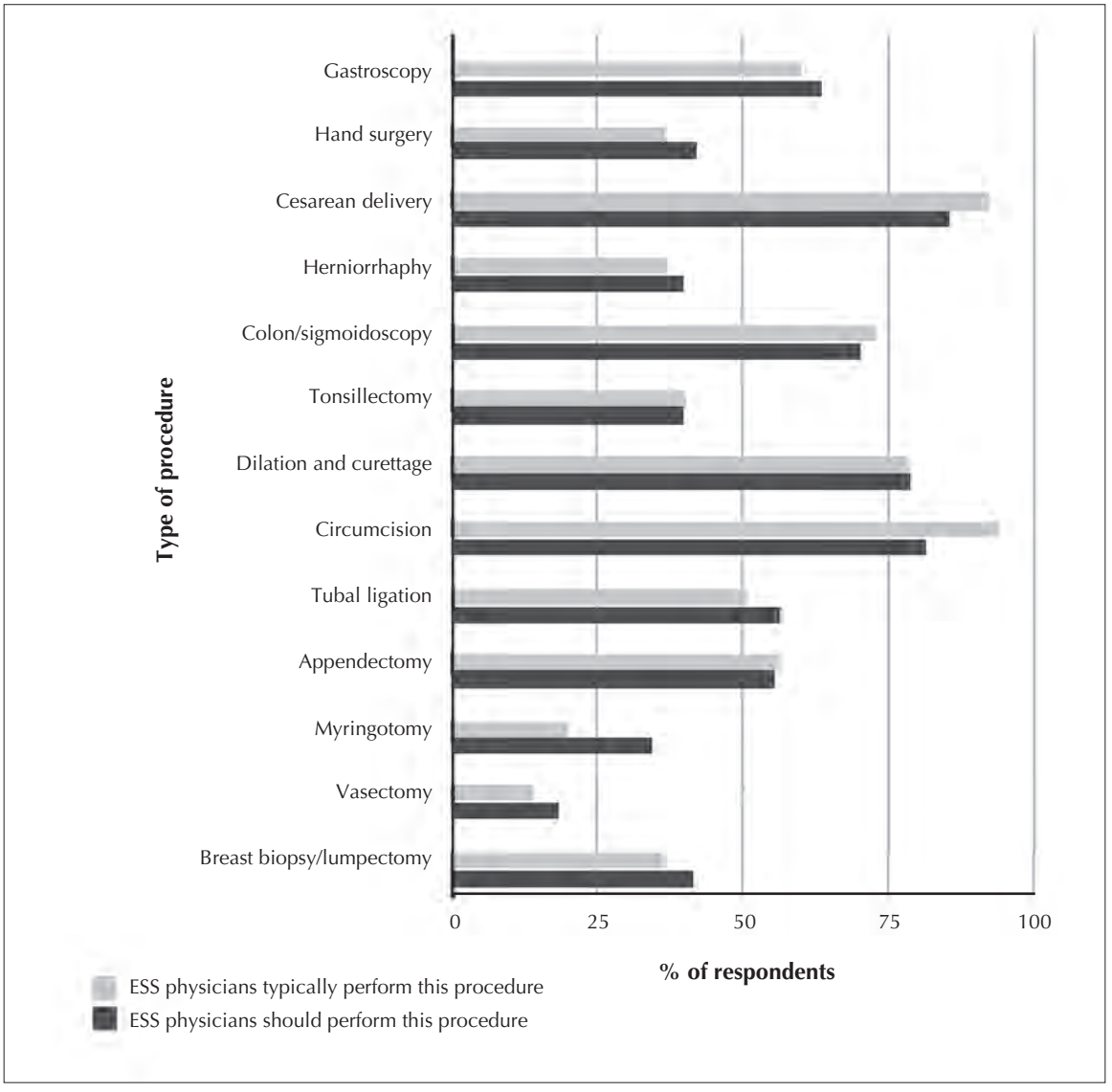


Fig. 2. Respondent beliefs about the top procedures currently performed by general practitioners with enhanced surgical skills (ESS).

Table 1. Factors relating to interest in enhanced surgical skills training (obstetrics only and broad-spectrum practice) and perspectives about the importance of enhanced surgical skills among family practice residents in western Canada

Variable	Mean score ± SD			
	Interest in ESS (obstetrics only)*	Interest in ESS (full spectrum)*	Importance of ESS training in western Canada†	Importance of ESS service in western Canada†
All respondents	36.7 ± 33.1	31.5 ± 31.1	68.6 ± 28.8	80.1 ± 22.4
Hometown population				
< 10 000	41.5 ± 30.4	39.7 ± 32.0	76.4 ± 25.5	87.5 ± 21.1‡
≥ 10 000	35.3 ± 33.4	29.7 ± 30.8	66.5 ± 29.5	78.1 ± 22.4‡
Residency site				
Urban	31.6 ± 33.0‡	26.5 ± 29.6‡	64.6 ± 30.0‡	77.5 ± 23.5‡
Rural	51.3 ± 30.1‡	46.7 ± 31.6‡	82.1 ± 21.1‡	89.6 ± 13.8‡
Previous training with GP surgeon				
Yes	49.3 ± 31.7‡	41.1 ± 32.3‡	80.3 ± 22.0‡	90.3 ± 13.3‡
No	28.8 ± 31.7‡	25.6 ± 28.9‡	61.4 ± 30.2‡	73.9 ± 24.5‡

ESS = enhanced surgical skills; GP = general practitioner; SD = standard deviation.
*Respondents were asked to rank interest on a scale of 0 to 100, with 0 meaning "no interest" and 100 meaning "very interested; a career goal."
†Respondents were asked to rank importance on a scale of 0 to 100, with 0 meaning "not important" and 100 meaning "very important."
‡$p \leq 0.05$.

Table 2. Ranking of factors affecting interest in pursuing enhanced surgical skills training*

Rank	Factor	Mean score ± SD
1	Increased procedures	4.13 ± 0.80
2	Increased scope of practice	3.99 ± 0.84
3	Impact on patient outcomes	3.94 ± 0.85
4	Challenging/acute medicine	3.85 ± 0.89
5	Provision of surgical services to community	3.83 ± 0.92
6	Remuneration	3.50 ± 0.73
7	Portability of skill set	3.49 ± 1.02
8	Previous experience with a GP surgeon	3.49 ± 0.77
9	Working in a rural and remote community	3.47 ± 1.14
10	CME opportunities	3.28 ± 0.77
11	Support from specialists	3.25 ± 0.99
12	Adequacy of training	3.22 ± 0.90
13	Level of confidence in scope of practice	3.12 ± 1.09
14	Ease of licensing	3.08 ± 0.95
15	Current training opportunities available	3.05 ± 0.91
16	Length of training required	2.98 ± 0.90
17	Opportunities for research	2.64 ± 0.98
18	Medicolegal implications	2.62 ± 1.00
19	Call schedule	2.47 ± 1.05

CME = continuing medical education; GP = general practitioner; SD = standard deviation.
*Variables rated on a 5-point scale: 1 = strongly discourage, 2 = discourage, 3 = neutral, 4 = encourage and 5 = strongly encourage.

of surgical procedures. Interest in the former was significantly higher than the broader spectrum ESS (mean score 36.7 v. 31.5, $p = 0.02$). Interest in ESS (both obstetrics only and the broader spectrum) was significantly impacted by type of residency site (urban v. rural) and exposure to GP surgery during training (Table 1).

Respondents ranked importance of availability of ESS training and ESS services to rural Canadians. On a 100-point scale, the mean value placed on importance of ESS training opportunities was 68.6 (95% CI 64.2–73.0) and the mean value for importance of the service provided by family physicians with ESS was 80.1 (95% CI 76.6–83.6). Factors having an impact on these scores included town of origin (rural v. nonrural), residency site (rural v. urban) and exposure to GP surgery during training (Table 1). The recognized crisis in rural surgery and the lack of training opportunities was confusing to potential learners. One respondent commented, "there is little information provided on the availability of this option for GPs and it is difficult to know where to look."

Finally, one respondent noted the potential negative impact of faculty members in larger centres: "I very much would like to explore surgical skills. It is hard to do this when you are only exposed to specialists that tell you that you can't do these procedures safely. ... It would be really nice and motivating to spend more time with GP surgeons." Another respondent echoed concerns regarding urban training: "I never saw anything but the complications sent in to major centres."

DISCUSSION

The need for formal programs in Canada for standardized ESS training is apparent. Ongoing attrition of small surgical programs compounds barriers in access to health care for Canada's rural population. As efforts are currently afoot to develop ESS training, it is important to consider the background, training pathways and perspectives of potential recruits. These include family practice residents who will be at the core of Canada's future rural health care.

Although most respondents were aware of GP surgery, a notable number of respondents were unaware that this career option exists within their field. Even more respondents were unfamiliar with ESS, likely reflecting the relative infancy of this terminology. Not surprisingly, awareness of this latter term was greater at the University of Saskatchewan, which houses the country's only active ESS training program.

Awareness of GP surgeons' scope of practice was limited. There is discordance between the documented scope of GP surgery presented by Humber and Frecker[6] (Fig. 1) and our respondent's perceptions (Fig. 2). Also of interest is the high proportion of respondents who thought laparotomies are, or should be, performed by GP surgeons. This is an uncommon procedure within the realm of GP surgery. Such perspectives may result from low exposure to GP surgery during training with limited awareness of the scope of practice. Alternatively, some respondents may truly believe laparotomies ought to be within the scope of ESS.

Of importance, for most procedures outlined, the proportion of respondents who believed that GP surgeons should perform a given procedure was greater than the proportion of those who believed that GP surgeons do perform that procedure (Fig. 2). This pattern may indicate that the participating family practice residents believe GP surgeons should be doing more surgical procedures and expanding their scope of practice.

Awareness and interest in ESS were closely related to exposure to the field during medical school and residency. This suggests that the career path residents ultimately choose is influenced not only by community of origin, but also by clinical experiences during training. This underscores the importance of ESS training opportunities in medical curricula, particularly for urban residents who felt they were lacking. Respondents specifically expressed that ESS was not promoted enough as a career option and that there was not enough exposure during their medical training. The data reflects this, with only 38.2% of respondents being exposed to GP surgery or ESS in their training to date. If the exposure occurred, 28.4% of respondents did not have their first experience until their family practice residency, and 16.2% were not exposed to this role in their profession until their final year of residency. Earlier exposure may inspire medical trainees toward a career in ESS that they otherwise would not have considered.

The potential impact of faculty members in larger centres should be considered. Urban specialists who imply that GP surgeons are unsafe may have a negative impact on trainees who wish to pursue ESS. Furthermore, urban respondents felt that they saw a misrepresentation of GP surgery cases, being exposed only to those patients who had complications requiring transfer to larger centres. These respondents expressed interest in training in smaller hospitals with GP surgeons.

The surprisingly large percentage (25.1%) of respondents reporting interest in pursuing ESS

training was encouraging. Interest was particularly strong among respondents with prior exposure to GP surgery, and among those at rural residency sites. Although the mean scores ranged from 31 to 36 on a 100-point scale, the largest standard deviations for interest in these groups exceeded 80 (Table 1). This wide range of interest likely reflects the demographic diversity of the survey participants. Respondents were particularly encouraged to pursue ESS by the acquisition of technical skills it offers and the opportunity to address a social need (Table 2).

The acknowledged crisis in rural surgery and demonstrated interest in ESS training contrasts sharply with the paucity of training opportunities currently available. This is confusing for potential trainees who may feel that there is little information readily available on ESS opportunities.

Confusion may also stem from the diverse training pathways to GP surgery in Canada. Although many trained domestically, a large number of Canada's GP surgeons are international medical graduates.[8] Due to the inconsistent availability of formal Canadian curricula, many GP surgeons have trained through self-directed programs based on personal initiative. The lack of formal training and absence of certification in Canada has caused challenges with credentialing and portability of skills.[8] Not surprisingly, respondents ranked "ease of licensing" and "current training opportunities" near the bottom of the list of factors encouraging them to pursue ESS training (Table 2), which may be interpreted as a top reason why some choose not to pursue ESS.

The importance of training opportunities in ESS and the services provided by GP surgeons were recognized. Those at rural sites and with prior exposure to GP surgery valued these more highly, emphasizing the benefit of rural exposure during training (Table 1). The positive opinion that many held regarding GP surgery was also reflected in several respondent comments that physicians with ESS training play a critical role in rural communities.

Limitations

The lower-than-expected response rate may have been related to the timing of the survey, which coincided with the College of Family Physicians of Canada's examination, and was reflected in a lower response rate for the residents in their second (final) postgraduate year. The timing at the end of the residency year, however, permitted a more accurate reflection of exposure and perspectives gained from the entire 2-year residency because respondents had nearly completed their first and second years. Response rates for multiple demographic categories (e.g., age, sex, marital status and hometown size) could not be calculated because of provincial privacy and personal information laws that precluded administrative departments of participating universities from releasing these data. Comparison of this demographic data was therefore not possible. With the low response rate likely attributable to survey timing, the risk of nonresponse bias is low.

Although we considered a potential nonresponse bias due to a higher response from family practice residents from rural communities or in rural programs, this does not appear to be the case. For example, more than 80% of respondents were from hometowns with a population greater than 10 000, which is similar to Canada's population demographics (> 70% of Canadians reside in nonrural communities). In addition, more than 75% of participants were from urban residency sites, which approximates the underlying residency statistics of 80% urban programs and 20% rural. We suspect the skewed male:female ratio may reflect the recent trend toward a higher proportion of female family practice residents. However, this cannot be confirmed because privacy laws prevented acquisition of the necessary demographics to test the theory.

The 25% of respondents who expressed interest in ESS training was unexpected. There is a limited role for potential nonresponse bias in this documented level of interest, as discussed above. This interest does not coincide with the number of positions available for ESS training in Canada, nor the number of yearly applications the sole formal ESS program receives (Dr. Aimee Seguin, University of Saskatchewan, Saskatoon, Sask.: personal communication, 2014). A number of factors may contribute to this discrepancy. Unlike most other residency programs in the country, such as the Canadian College of Family Physicians — Emergency Medicine (CCFP[EM]) program, applications for ESS are currently made informally or directly to each institution, rather than through the national Canadian Resident Matching Service (CaRMS). Absence of this formal posting may decrease awareness of program existence and content, and decrease confidence in program quality. Information about the ESS program is available only on individual university websites, and this material can be sparse or difficult to locate.

Finally, the interest level seen in ESS training does not necessarily imply commitment to pursuing

this training, nor to a career in rural and remote communities. However, such strong support of ESS from future family physicians is a critical finding. Reasons for the difference between interest in ESS and actual rates of program application were beyond the scope of our study. This remains an important topic for future study.

Although valuable in obtaining perspectives of one potential user group of ESS training programs (family practice residents from the 4 participating universities in western Canada), this study was not exhaustive. Future studies may focus on perspectives of other potential ESS trainees including medical students, current family physicians in Canada, other family practice residents in Canada and international medical graduates. Obtaining the perspectives of specialists who play significant teaching and mentoring roles for ESS trainees would also provide valuable input. This study is an important step in optimizing the opportunity for potential trainees and educators to have input into a formal ESS training program.

CONCLUSION

General practitioner surgery and ESS play an important role for providing rural surgical care in western Canada. Given that it is a career option for family practice residents, a notable proportion were unaware of the concept of ESS. Residents from rural hometowns and those who had exposure to GP surgery or ESS during training were significantly more aware of these concepts. Furthermore, exposure to GP surgery and training at a rural residency site both appeared to foster interest in this field. When one considers the need for more rural family physicians and the protection of rural surgical services, the importance of increasing ESS training opportunities becomes apparent. Future research with additional stakeholder groups will assist ongoing efforts in improving surgical care for rural Canadians.

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