ORIGINAL ARTICLE

Family +1 enhanced surgical skills: A descriptive study of awareness and opinions

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Abstract

Introduction: Canada's healthcare system faces growing challenges to its sustainability, equity and efficacy, especially in rural areas. The centralisation of specialist services in urban centres is contributing to this. Historically, family physicians with enhanced surgical skills (FPESS) provided a key role in stabilising rural health care. Maintaining this model is contingent on the interest of medical trainees pursuing additional postgraduate training.

Methods: A survey developed by medical students was conducted to assess the awareness, attitudes and interests of and in FPESS by medical students and Family Medicine residents in Western Canada.

Results: We received 477 responses to emailed and social media queries and analysed 373 surveys. One-third of participants reported interest in pursuing careers as Family Physicians with enhanced surgical skills (ESS) (34.0%) despite limited awareness of the programmes, and the majority (87.9%) believed ESS physicians were needed to support rural health care.

Conclusion: Boosting ESS visibility and knowledge during early medical education is crucial for recruiting and sustaining ESS practitioners, which is key to mitigating healthcare disparities.

Keywords: Enhanced surgical skills, family medicine resident, medical education, medical student, rural medicine

Résumé

Introduction: Le système de santé canadien fait face à des défis croissants en matière de viabilité, d'équité et d'efficacité, particulièrement en milieu rural. La centralisation des services spécialisés dans les grands centres urbains contribue à cette réalité. Historiquement, les médecins de famille possédant des compétences chirurgicales avancées ont joué un rôle important dans le maintien de l'offre de soins en région rurale. La pérennité de ce modèle dépend toutefois de l'intérêt des apprenants en médecine à poursuivre une formation postdoctorale supplémentaire dans ce domaine.

Méthodes: Un sondage conçu par des étudiantes et étudiants en médecine a été mené afin d'évaluer, chez les étudiants en médecine et les résidents en médecine familiale de l'Ouest canadien, leur niveau de connaissance du parcours en compétences chirurgicales avancées, leurs perceptions à son égard et leur intérêt envers cette pratique.

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Résultats: Au total, *477* réponses ont été reçues à la suite d'invitations transmises par courriel et sur les médias sociaux, et *373* questionnaires ont été retenus pour l'analyse. Malgré une connaissance limitée des programmes, le tiers des participantes et participants ont indiqué envisager une carrière comme médecins de famille avec compétences chirurgicales avancées (34,0 %). La grande majorité (87,9 %) estimait par ailleurs que ces médecins en compétences chirurgicales avancées sont nécessaires pour soutenir les soins de santé en milieu rural.
Conclusion: Mieux faire connaître les compétences chirurgicales avancées et accroître leur visibilité dès le début de la formation médicale est essentiel pour recruter et maintenir en poste des médecins possédant cette expertise. Il s'agit d'un levier important pour réduire les inégalités d'accès aux soins.

Mots-clés: Médecine rurale, formation médicale, étudiant en médecine, résident en médecine familiale, compétences chirurgicales avancées

INTRODUCTION

Canada's healthcare system is strained due to a confluence of factors, including challenges in recruiting and retaining healthcare professionals, an ageing population, and the legacy impact of the COVID-19 pandemic. In Western Canada, Family Physicians with Enhanced Surgical Skills (FPESS) are a cornerstone of rural surgical programmes and are essential to providing general, obstetrical and gynaecological operative care. A subset of enhanced surgical skills (ESS) physicians, known as obstetrical surgical skills (OSS), perform a narrowed scope of obstetrical procedures. OSS and ESS provide services in rural contexts alongside, or in communities unable to support, specialist surgeons. These surgical providers are most prevalent in Canada's western provinces and territories.[1] However, current data show a decline in ESS-trained physicians in Canada.[2] This is largely due to the historical reliance on internationally trained medical graduates who sustained these programmes; decreased availability of these providers has resulted in the need to rely on locally trained providers.[3,4] In response, the College of Family Physicians of Canada (CFPC) has standardised the ESS curriculum[5] as well as having provided a designation through Certificates of Added Competence in an attempt to attract Canadian medical trainees into these programmes.[6,7] Nonetheless, the training capacity remains limited. Until recently, the single comprehensive ESS training programme in Canada was in Saskatchewan and graduated up to two trainees per year. An additional training seat was recently added at the University of Alberta (UofA).[8] OSS training, which can be done through the University of British Columbia (UBC), the University of Manitoba, and Northern Ontario School of Medicine University, collectively has four graduates per year.[8] Although the limited seats currently available may reflect applicant interest, the dearth of applicants may also reflect a lack of awareness of the practice pathway. Our study set out to understand the awareness of and attitudes towards ESS training by medical students and residents in Western Canada. Our results will lend themselves to determining the appropriate educational resources for future rural health care providers.

METHODS

Survey development and administration

This survey was developed by medical students from the UBC, University of Calgary (UofC), UofA and University of Saskatchewan (UofS), along with guidance from faculty mentors and experts in rural health. It was administered before the recent addition of the single ESS training seat at the UofA. Questions were based on existing knowledge and research in a Canadian context[9] as well as the lived experience of those providing instruction in medical education programmes.

The survey was divided into six sections: demographics, awareness and experiences of ESS/OSS, interest in ESS/OSS and attitudes towards ESS. Questions with predefined and open-ended response options were included. The study design was influenced by Bacenas *et al.*'s prior work,[9] and refined through feedback and pilot testing before its administration. The survey was administered using the Qualtrics survey platform and was open from March 2022 to September 2022.

Study population and analysis

Medical students and family medicine residents from the UofA, UBC, UofC and UofS were recruited with multiple requests to participate through institutional email distribution and posts on social media. Inclusion criteria included undergraduate medical students of all years, and Canadian Medical Graduates in a Family Practice Residency in any year of training at the UofA, UBC, UofC and UofS. Exclusion criteria included those not training at the above institutions, as well as International Medical Graduates, due to possible exposure to Enhanced Surgical Skill providers in a different medical context.

Descriptive statistics were performed for all quantitative items included in the survey, as well as an analysis of interprovincial differences and variations by socio-demographic factors.

An inductive approach was used to thematically analyse open-ended text responses, including exposure to ESS, factors that might encourage or discourage ESS pursuit and strategies to encourage ESS pursuit.

Two medical student team members with experience in qualitative analysis independently coded responses through an iterative process to generate themes. The independent codebooks were consolidated and then applied to the larger dataset to ensure accuracy.

The study was approved by the Research Ethics Boards at all sites.

RESULTS

There were 447 responses to the survey. After removing 46 participants who did not complete all data fields and 28 participants who were ineligible to take part in the study (20 international graduates; 4 who replied to the question 'What stage in your medical training are you at?' with 'Other'; and 4 who were training in locations outside of BC, AB and SK), the final sample size for analysis was 373. Of the participants included in the analysis, 131 (35.1%) indicated they were in preclerkship, 167 (44.8%) in clerkship and 75 (20.1%) in residency. The invitation was sent to approximately 3258 medical students and residents in the three provinces; the 373 responses translated into a response rate of 11.4%. Table 1 includes sociodemographic characteristics of the respondents.

Awareness of enhanced surgical skills and obstetrical surgical skills

When asked about the extent of their knowledge of ESS, 60.3% indicated they knew 'a little', while 19.3% reported they had not previously heard of ESS [Table 2]. Twenty point four percent reported they knew 'quite a bit' about ESS. When asked what procedures respondents believed ESS-trained physicians performed, the most commonly reported were cesarean section, vasectomy and upper gastrointestinal endoscopy. Thirty point eight percent of trainees indicated that they were unsure of what procedures were within the scope of ESS practice. The majority (67.3%) reported a lack of ESS-related content in their curriculum, yet 62.8% felt they had adequate information to consider ESS as a career.

Fifty-six point three percent of participants indicated that they knew 'a little' about OSS before taking the survey, and 29.0% reported that they had not heard of the programme.

Interest in enhanced surgical skills and obstetrical surgical skills

One in three (34.0%, 30.6%) participants expressed interest in pursuing ESS and OSS, respectively, and an additional third (34.3%, 29.2% respectively) were uncertain [Table 3]. Interest was highest in ESS and OSS in participants in clerkship (47.3%, 43.7%, respectively), followed by preclerkship (30.5%, 22.9%, respectively) and residency (10.7%, 14.7% respectively). The proportion of respondents unsure about interest in ESS and OSS, respectively, was highest in preclerkship (42%, 38.2%), followed by clerkship (31.7%, 23.4%) and residency (26.7%, 26.7%). Participants were asked to select factors that would encourage them to pursue ESS and OSS, the most common being the ability to do more procedures (73.5%), the ability to improve patient outcomes (64.3%) and confidence in ESS/OSS abilities (57.4%). A lack of knowledge about the programme (37.5%), concern about the limited scope of practice (27.9%) and competitiveness of the programme (25.5%) were the most frequently reported factors preventing students from pursuing ESS, while a lack of knowledge (30.8%) and concern for lack of support from specialists (23.9%) were the most reported for OSS. Amongst respondents interested in pursuing

Table 1: Characteristics of respondents

	n (%)
What is your current age?	
24 or under	125 (34.1)
25–29	177 (48.2)
30–34	49 (13.4)
35+	16 (4.4)
Missing	7
My current gender identity is best described as*	
Man (cisgender and transgender)	105 (28.2)
Woman (cisgender and transgender)	255 (68.4)
Another gender identity (including non-binary, Gender nonconforming, Genderqueer and two-spirit)	15 (3.5)
Prefer not to answer	1 (0.3)
Which of the following identities best describes you?*	
Indigenous to Canada: First Nations, Métis or Inuk (Inuit)	10 (2.7)
Indigenous to another region or country	6 (1.6)
Black, African, Afro-Caribbean	18 (4.7)
Asian	113 (30.3)
Hispanic/Latinx	9 (2.4)
Middle Eastern	19 (5.1)
White	257 (68.9)
Other	8 (2.2)
What stage in your medical training are you at?	
Pre-clerkship	131 (35.1)
Clerkship	167 (44.8)
Residency	75 (20.1)
Were you raised in an urban or rural community (population <10,000 and more than 1 h from a major urban centre)?	
Rural	109 (29.4)
Urban	259 (69.8)
Not sure	3 (0.8)
Have you lived in a rural community (population <10,000 and more than 1 h from a major urban centre)?	
Yes	181 (48.5)
No	192 (51.5)

Programme and stage of training	Number of completed surveys	Proportion of respondents (%)
UBC medical students	103	27.6
UBC residents	26	7.0
UofA medical students	61	16.4
UofA residents	26	7.0
UofC medical students	53	14.2
UofC residents	8	2.1
UofS medical students	81	21.7
UofS residents	15	4.0

*This is a 'select all that apply' question, so percentages may not add up to 100. UBC: University of British Columbia, UofA: University of Alberta, UofC: University of Calgary, UofS: University of Saskatchewan

ESS and OSS, the most common choice of location for training and practising was British Columbia.

Interest in ESS and OSS was highest amongst the 14 trainees who identified as LGBTQ+ (85.7% 71.4%, respectively), followed by cis women (35.2%, 36%) and cis men (25.5%, 12.7%). Interest in ESS and OSS was lower amongst trainees aged 30 or older: of respondents between the ages of 30 and 34, 32.7% and 28.6% were interested in a career in ESS and OSS, respectively, compared to 41.6% and 39.2% of those aged 24 or younger. More respondents with a rural upbringing had an interest

Table 2: Awareness of Enhanced surgical skills and obstetrical surgical skills		
Survey question and response options	ESS, *n* (%)	OSS, *n* (%)
Did you know what ESS/OSS are, prior to taking this survey?		
Yes, I know quite a bit about ESS/OSS	76 (20.4)	55 (14.7)
Yes, I know a little about ESS/OSS	225 (60.3)	210 (56.3)
No, I have not heard about ESS/OSS	72 (19.3)	108 (29.0)
How did you learn about ESS/OSS?		
Curriculum	100 (26.8)	87 (23.3)
Placement	57 (15.3)	59 (15.8)
Extracurricular (school interest group, elective shadowing experiences, etc.)	129 (34.6)	119 (31.9)
Other	60 (16.1)	45 (12.1)
Do you know the number of seats your province offers for ESS training?		
Yes	68 (22.7)	
No	219 (73.0)	
Not applicable, my province does not offer ESS/OSS training	13 (4.3)	
Please indicate your agreement with the following statement: There was enough information about ESS in the curriculum for me to make an informed decision about whether I want to pursue ESS as part of my medical career		
Strongly disagree	6 (5.0)	
Disagree	39 (32.2)	
Agree	71 (58.7)	
Strongly agree	5 (4.1)	
Which of the following procedures do those trained in ESS perform to the extent of your knowledge?		
Caesarean section	164 (44.0)	
Vasectomy	149 (39.9)	
Upper GI endoscopy	147 (39.4)	
D and Cs (miscarriage/incomplete abortion)	135 (36.2)	
Colonoscopy	126 (33.8)	
Neonatal circumcision	122 (32.7)	
I am unsure of the procedures an ESS trained physician can perform	115 (30.8)	
Umbilical Hernia repair	109 (29.2)	
Carpal tunnel release	100 (26.8)	
Repair 4th degree perineal tear	95 (25.5)	
Tonsillectomy	68 (18.2)	
Post-partum tubal ligation	61 (16.4)	
Endometrial ablation	48 (12.9)	
Laparoscopic management of ectopic pregnancy	41 (11.0)	
Open management of ectopic pregnancy	36 (9.7)	
Hydrocelectomy	30 (8.0)	
Eschars	13 (3.5)	

ESS: Enhanced surgical skills, OSS: Obstetrical surgical skills, GI: Gastrointestinal

in ESS (58.7%) and OSS (56.0%) compared to those who grew up in urban areas (23.6% and 19.7%, respectively).

Factors influencing personal perceptions of enhanced surgical skill

Respondents were asked to rate the extent to which certain factors influenced their perceptions of ESS (large influence, small influence or no influence). The most influential factors were personal experience in medical school (34.0%), personal experience shadowing an ESS provider (30.1%) and medical interest groups (30.6%). Almost half of the respondents indicated that the undergraduate medical curriculum (47.2%) and residency curriculum (48.9%) did not influence their perceptions about ESS [Figure 1].

Association between knowledge and career plans

Trainees who knew quite a bit about enhanced

Table 3: Interest in enhanced surgical skills and obstetrical surgical skills

Survey question and response options	*n* (%)	Survey question and response options	*n* (%)
Are you interested in pursuing a career in ESS?		Are you interested in pursuing a career in OSS?	
Yes	127 (34.0)	Yes	114 (30.6)
No	118 (31.6)	No	150 (40.2)
Unsure	128 (34.3)	Unsure	109 (29.2)
Where would you ideally do your ESS training?		Where would you ideally do your OSS training?	
UofS - Prince Albert	17 (13.4)	UBC	46 (40.4)
I would ideally do my training in British Columbia if there was a training programme available	67 (52.8)	University of Manitoba	3 (2.6)
I would ideally do my training in Alberta if there was a training programme available	27 (21.3)	Northern Ontario School of Medicine	2 (1.8)
I would ideally do my training in Manitoba if there was a training programme available	0	I would ideally do my training in Alberta if there was a training programme available	38 (33.3)
I don't care where I would do my training, as long as I have a seat in the programme	15 (11.8)	Saskatchewan if there was a training programme available	12 (10.5)
N/A not interested in ESS	1 (0.8)	I don't care where I would do my training, as long as I have a seat in the programme	13 (11.4)
Where would you like to practice ESS? Select all that apply		Where would you like to practice OSS? Select all that apply	
British Columbia	93 (24.9)	British Columbia	71 (19.0)
Alberta	58 (15.5)	Alberta	54 (14.5)
Saskatchewan	36 (9.7)	Saskatchewan	28 (7.5)
Manitoba	7 (1.9)	Manitoba	9 (2.4)
Territories	15 (4.0)	Territories	13 (3.5)
Other provinces	20 (5.4)	Other provinces	13 (3.5)
Below is a list of factors that physicians consider when deciding about their career options. Please select all items that might encourage you to pursue training in ESS		Below is a list of factors that physicians consider when deciding about their career options. Please select all items that might encourage you to pursue training in OSS	
Ability to do more procedures	274 (73.5)	Ability to do more procedures	238 (63.8)
Ability to improve patient outcomes	240 (64.3)	Ability to improve patient outcomes	227 (60.9)
Confidence in ESS abilities	214 (57.4)	Confidence in OSS abilities	180 (48.3)
More autonomy	213 (57.1)	More autonomy	178 (47.7)
Increased pay	211 (56.6)	Increased pay	177 (47.5)
Work-life balance	208 (55.8)	Work-life balance	138 (37.0)
Working in rural and/or remote communities	177 (47.5)	Working in rural and/or remote communities	168 (45.0)
Length of training required (i.e. 1 year)	174 (46.6)	Length of training required (i.e. 6 months)	122 (32.7)
Ease of licensing	76 (20.4)	Ease of licensing	69 (18.5)
Are the following preventing you from pursuing ESS? Please select all that apply		Are the following preventing you from pursuing OSS? Please select all that apply	
Did not know/lack of knowledge about the programme	140 (37.5)	Did not know / lack of knowledge about the programme	115 (30.8)
Concerns about lack of support from specialists	113 (30.3)	Concerns about lack of support from specialists	89 (23.9)
Rural community size will not support full scope of skills	104 (27.9)	Rural community size will not support full scope of skills	77 (20.6)
The competitiveness of the programme	95 (25.5)	The competitiveness of the programme	72 (19.3)
Work-life balance	77 (20.6)	Work-life balance	84 (22.5)
Medicolegal implications	52 (13.9)	Medicolegal implications	59 (15.8)
Training programme is too far away	50 (13.4)	Training programme is too far away	37 (9.9)
Applied to the ESS programme but did not get a seat in the training programme	32 (8.6)	Applied to the OSS programme but did not get a seat in the training programme	33 (8.8)
Training programme is not long enough (i.e. 1 year)	21 (5.6)	Training programme is not long enough (i.e. 6 months)	30 (8.0)
Training programme is too long (i.e. 1 year)	16 (4.3)	Training programme is too long (i.e. 6 months)	8 (2.1)

ESS: Enhanced surgical skills, OSS: Obstetrical surgical skills, N/A: Not available, UBC: University of British Columbia, UofS: University of Saskatchewan

skills practice were more likely to want to pursue these career options, although the majority of respondents interested in ESS and OSS knew only a little about either [Figure 2]. Knowing a little did not appear to relate to career plans.

Qualitative results

The thematic analysis of the open-text responses resulted in six themes: Exposure to Enhanced Skills, Attitudes towards Enhanced Skills, Factors Encouraging ESS, Barriers to Pursuing ESS, Incentives to Pursue ESS and Need for ESS.

Mechanisms of how respondents learned about ESS included through the curriculum, extra-curricular events, word-of-mouth, personal exploration and meeting or working with an ESS physician. Most of the participants described very limited or no exposure to enhanced skills.

Participants identified hearing both positive and negative opinions from others regarding enhanced skills. Positive descriptions included the reward of ESS practice, being valuable to one's community, professional satisfaction through practising with an expanded scope, and being able to perform low-acuity surgery with a decreased training length. As one participant noted, 'Rural and remote communities are so often underserved, and having physicians who can step into these additional roles is so valuable, and the physicians I've spoken to who do this work have all described it as very rewarding'. Negative opinions included the level of competition to be accepted into a training programme with limited training

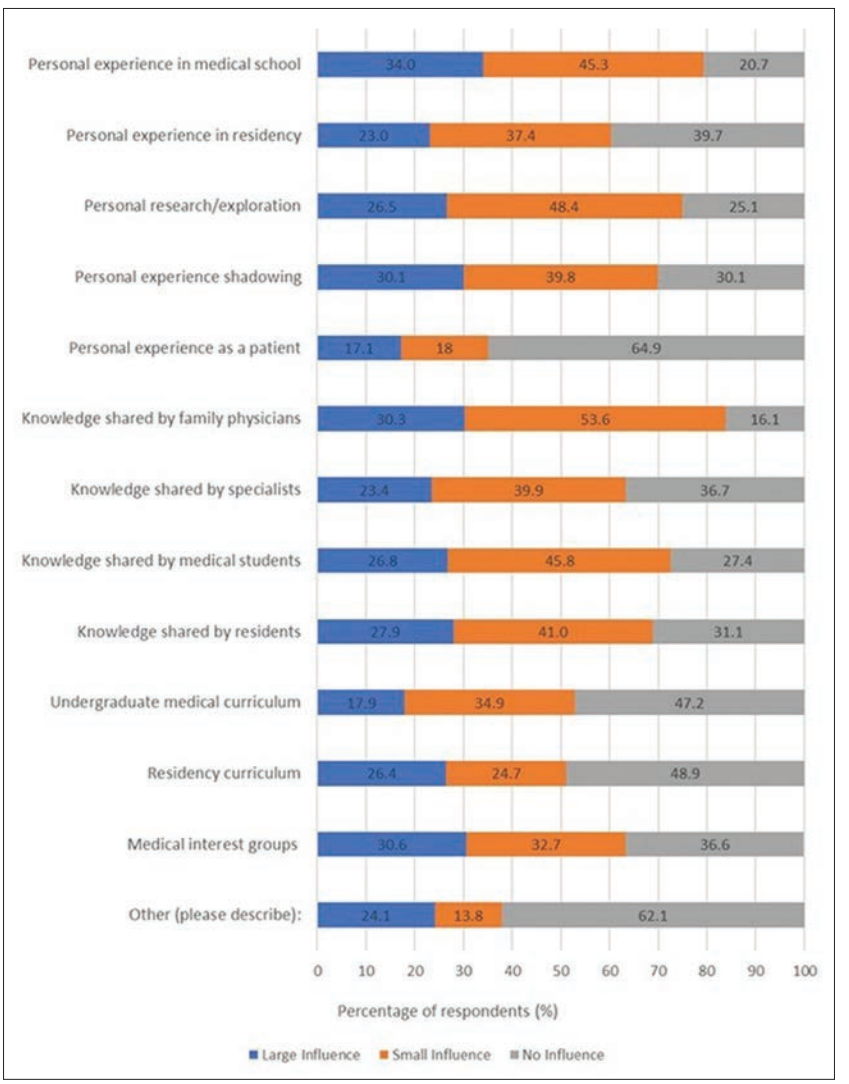

Figure 1: Factors influencing personal perceptions of enhanced surgical skills.

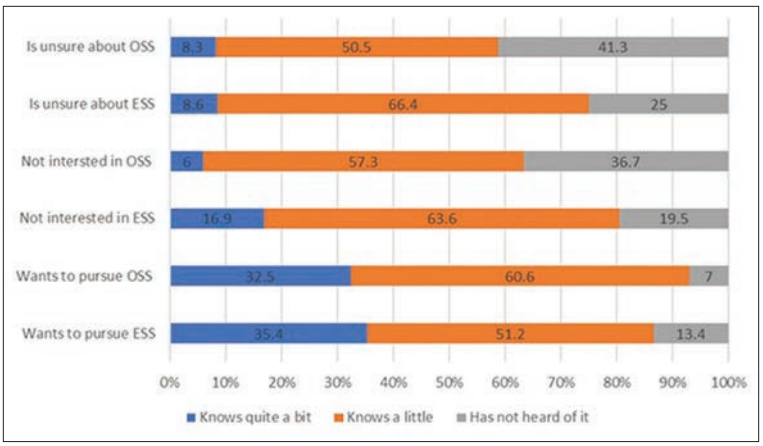

Figure 2: Association between knowledge of enhanced surgical skills and obstetrical surgical skill and career plans.

seats, being limited to rural practice and having insufficient patient volume to maintain skills. Participants also reported hearing comments on the perceived inadequacy of ESS training, mostly due to the reduced training time when compared to specialist training, which was believed to potentially affect patient safety.

Factors deemed supportive of ESS included its capacity to address community need, enhance the scope of practice and the attendant increase in clinical confidence, and having positive training experiences with ESS providers. Barriers to pursuing ESS included a general lack of information on ESS within the curriculum, a limited number of training sites and seats, negative perceptions of ESS practice by specialists, increased clinical risk, disruption to lifestyle, extra funding needed to pursue training, concerns about licensing and privileging and being unable to practise in urban settings. As one respondent noted, 'I have heard it can be hard to get privileges to practise the ESS scope, and that specialists are not always supportive. This intimidates me, even though I see the real value and need for rural surgical competency'.

Incentives suggested by respondents to increase interest in ESS included improved access to information on ESS, increased ESS training programme sites and seats, increasing ESS exposure through the curriculum and extra-curricular activities, and financial incentives such as increased compensation during residency and while in practice. There was a high level of agreement on the importance of ESS due to unmet specialist needs in rural communities and as a safety net to support local maternity care through local access to caesarean section.

DISCUSSION

To the best of our knowledge, this is the first study on enhanced surgical skills that solicited input from students and residents in all three Western Canadian provinces. Results suggest that these medical trainees have an interest in ESS as a career, despite having limited knowledge regarding the scope and training options available. However, there was a considerable number of participants who were unaware of ESS or OSS before the survey, which indicates the need for additional exposure through undergraduate and postgraduate training.

Overall, 1 in 5 participants (19.3%) were unaware of ESS, which is similar to the proportion Bacenas *et al.* reported (17.9%) in their study of family medicine residents in BC, Alberta and Saskatchewan.[9] This enduring lack of awareness points to the opportunity to better communicate the advantages of the practice pathway, built on the growing evidence that reflects the safe and quality care provided.[10-13] Early exposure to training pathways plays a significant role in shaping the career choices of medical students.[14]

Even more respondents were not aware of OSS (29.0%). The lack of awareness of mechanisms available to support local access to cesarean section in low-volume settings is concerning in a climate marked by the pan-Canadian attrition of rural maternity services and the concomitant adverse outcomes that are correlated with travel to facilities that provide maternity care.[10,15] As the sustainability of maternity services is enhanced by local access to cesarean section, this knowledge gap is essential to address.

Interest in ESS and OSS was highest amongst those in clerkship, which may be due to having exposure to surgical specialities at this stage, while these trainees are still in the process of solidifying their career plans. Uncertainty regarding interest in ESS and OSS was highest amongst those in preclerkship and generally decreased as the stage of training progressed. Notably, although only one-third of respondents indicated that they had the opportunity to learn about ESS, nearly two-thirds (62.8%) felt there was enough information in the curriculum to make an informed decision on ESS as a career. While respondents who knew quite a bit about enhanced skills practice were more likely to be interested in pursuing these career options, the majority interested in ESS and OSS only knew a little about either. We hypothesise that due to the medical training structure in Canada, trainees are forced to make decisions regarding their careers early and with limited information.

We observed an interesting gender bias in interest in OSS, with nearly three times more interested in those identifying as cis-women (36.0%) than cis-men (12.7%). This aligns more closely with the difference observed in obstetrician/gynaecologist residents, where 85% are female.[16] A very high proportion of participants identifying as LGBTQ2+ expressed interest in ESS (85.7%) and OSS (71.4%). Surgical subspecialties, notably general surgery, are perceived as the least welcoming for LGBTQ2+ trainees, leading to heightened reluctance among these students to pursue careers within these fields.[17] We hypothesise that ESS may be regarded as a more welcoming training and career environment, perhaps due to its kinship with family medicine. Alternatively, LGBTQ2+ trainees may be more interested in rural medicine, which may contribute to the high proportion in this study expressing interest in ESS and OSS. The rural interest of LQBTQ2+ trainees has not been explored to our knowledge.

Interest in ESS and OSS was greater in younger respondents, which may be due to older medical trainees being more likely to have families and less willing or able to undertake additional training. This aligns with previous research demonstrating that medical students who are younger and single are more likely to be interested in a surgical specialty.[18,19] Not surprisingly, a greater proportion of participants who identified as growing up in a rural area were interested in ESS (58.7%) and OSS (56.0%) compared to those raised in an urban area (23.6% and 19.7%, respectively), which aligns with literature that supports a rural background predicting rural practice intentions.[20-22] Rural individuals may have been exposed to enhanced skills while living in a rural community or simply understand through lived experience the challenges of rural practice. Furthermore, being unable to practise in an urban setting was identified as a barrier to pursuing ESS by participants in the qualitative data.

Although the largest barrier to pursuing ESS and OSS identified by participants was a lack of knowledge of the programme, a perceived lack of support from specialists was another factor dissuading the pursuit of enhanced skills. This was similarly reported by Bacenas *et al*.[9] and points to the importance of interprofessional networks of support in determining sustainable practice.[23]

Universities, as public institutions, have a mandate to serve the population, which includes addressing health disparities such as those experienced by rural Canadians. This includes providing rural populations with reasonable access to surgical care without financial and logistical barriers due to travel, where possible. To achieve the vision of reduced health disparities and health equity for rural populations, provinces, healthcare systems and universities need to invest in exposing learners to ESS throughout their medical training so that they may view it as a viable career option. Medical trainees in this survey resoundingly indicated that they are interested in ESS, and this work supports the need for more seats, training programmes and healthcare system work to stabilise rural surgical programmes.

Future research is needed to investigate the awareness and attitudes of other potential ESS candidates such as practising family physicians, international graduates and residents from other provinces. Insights from specialists collaborating with ESS, healthcare administrators and policymakers overseeing these programmes, are critical to identify obstacles and support mechanisms for ESS in rural healthcare.

Our research found that medical students in British Columbia, Alberta and Saskatchewan

are interested in ESS and OSS as a career pathway. It builds on the work of Bacenas *et al*.[9] by demonstrating continued interest in ESS from family medicine residents. Since the Bacenas *et al.* article was published in 2015,[9] however, several changes to the ESS training programme have been made. Notably, ESS has been designated as a Category One Enhanced Skills programme by the CFPC, which recognises the additional scope of practice in a particular area with a Certificate of Added Competence.[6] In addition, since 2021, the ESS application process has gone through the Canadian Residency Matching Service, which has increased the visibility of the programme.[8] Finally, the addition of a single ESS training seat in Alberta in 2025[8] occurred after our survey was distributed.

Limitations

Despite survey distribution multiple times with social media recruitment, the 11.4% response rate raises the potential for nonresponse bias, with possibly higher participation from those interested in ESS, mirroring findings from Bacenas *et al*.[9] The cross-sectional design of the study prevented us from understanding causality; it's unclear if interest in ESS results from curriculum exposure or preexisting career inclinations. With its regional focus and low response rate, the results are not readily generalised at a national level. Finally, expressing interest in ESS does not necessarily predict actual career pursuit.

CONCLUSION

Our study casts light on prevailing perceptions and interests regarding ESS programmes amongst medical trainees in British Columbia, Alberta and Saskatchewan. The reported level of interest of participants indicates an existing demand for more structured and expansive training opportunities for ESS in Western Canada. The factors most influential on trainees' perception of ESS were personal experiences in medical school and shadowing an ESS provider, as well as medical interest groups, while nearly half of the respondents indicated that the undergraduate medical and residency curriculum did not influence their perceptions of ESS. A general lack of ESS awareness and limited educational exposures emphasises the pressing need for curriculum enhancements. The difficult task of addressing the lack of surgical access in rural and remote settings through surgical task sharing with non-Royal College trained surgical providers requires meaningful engagement by leaders in the surgical specialties. Overcoming the barriers identified in our study, and supporting the safety and sustainability of an ESS/OSS practice model necessitates trusting relationships between surgeons and family physicians embedded within strong care networks.

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