



Original Research

Changing Attitudes Toward Specialty Choice and the CaRMS Residency Match During COVID-19: A Cross-sectional Pilot Study of Canadian Medical Students

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ABSTRACT

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The Canadian residency match process has been dramatically restructured due to COVID-19. The impact of these changes on specialty choice and access to career-development opportunities among Canadian medical students remains largely unknown. The objective of this study was to assess whether students' strategy and level of confidence entering the Canadian residency match have changed as a result of the pandemic. A 28-item online survey was distributed to Canadian medical students from the classes of 2021-2024, as well as the class of 2020 graduates planning to enter the 2021 CaRMS (Canadian Resident Matching Service) match. The survey was developed based on existing literature and included questions on demographics, access to educational opportunities, and personal strategies for matching. Descriptive statistics, t-tests, and Spearman's correlations were used to analyze the data. Eleven percent of respondents reported a change in specialty preference due to COVID-19. Forty-three percent of respondents reported changing their strategy for the CaRMS match. Respondents interested in a surgical specialty were more likely to report a change in their match strategy ($p = .0150$), including applying to more programs ($p = .0012$) and exploring other specialties ($p = .0118$). Clerks were also more likely to report a change in their matching strategy ($p = .0195$) and specialty choice ($p = .0194$) compared to pre-clerks. Medical students felt that COVID-19 negatively impacted their ability to access scholarly opportunities and confidence regarding the match, which may have long-term implications for trainee well-being, residency match logistics, and long-term physician resource planning.

Background

COVID-19 catalyzed an unprecedented paradigm shift in medical education, most notably due to disruptions in curriculum delivery and educational activities [1]. These changes have occurred both within and across institutional boundaries that govern national medical education. Canadian medical trainees are also witnessing a complete restructuring of the residency match process. Medical schools across the country halted clinical experiences for a variable period of four months, the Canadian Residency Matching Service (CaRMS) match timeline was delayed by a roughly equivalent period, and the Association of Faculties of Medicine of Canada (AFMC) cancelled visiting electives for the 2020-2021 academic year with delays and cancellations for the 2021-2022 cohort as well. Many critical components of the match process—such as reference letter eligibility, interview format, access to research opportunities, and exposure to program sites—were significantly altered due to the pandemic [2, 3-4].

There is a paucity of literature regarding the effects of the pandemic on Canadian medical students' specialty choices and strategy entering the match process [5]. We conducted a pilot study to explore the early perspectives and experiences of Canadian medical students regarding their training, personal and professional development, and preparation for the CaRMS match during this unprecedented global pandemic. Our hope is that these findings will help to contextualize the shifting attitudes of medical students for key stakeholders in Canadian medical education and physician resource planning.

Methods

A 28-item online survey was developed in consultation with medical education experts and based on current literature on medical students' experiences with the training and match process. Questions included information on demographics, specialty preferences, access to career-development activities, and preparation strategies for the CaRMS match. The survey was hosted on the Qualtrics platform (Qualtrics XM, SAP, UT, USA). Medical students from the classes of 2020-2024 were invited to participate. Junior medical students (i.e., classes of 2023 and 2024) were classified as 'pre-clerkship' students, and senior medical students (i.e., classes of 2020, 2021, and 2022) were classified as 'clerkship' students.

Demographic variables were documented as categorical data in frequency and percent. Basic statistics, including unpaired samples t-tests and non-parametric Spearman's correlations, were used to evaluate relationships between measured variables; p values < .05 were considered statistically significant. The survey was conducted in accordance with the Declaration of Helsinki, and data analysis only included responses from participants who consented to the use of their data for research purposes. This study received full REB approval.

Results

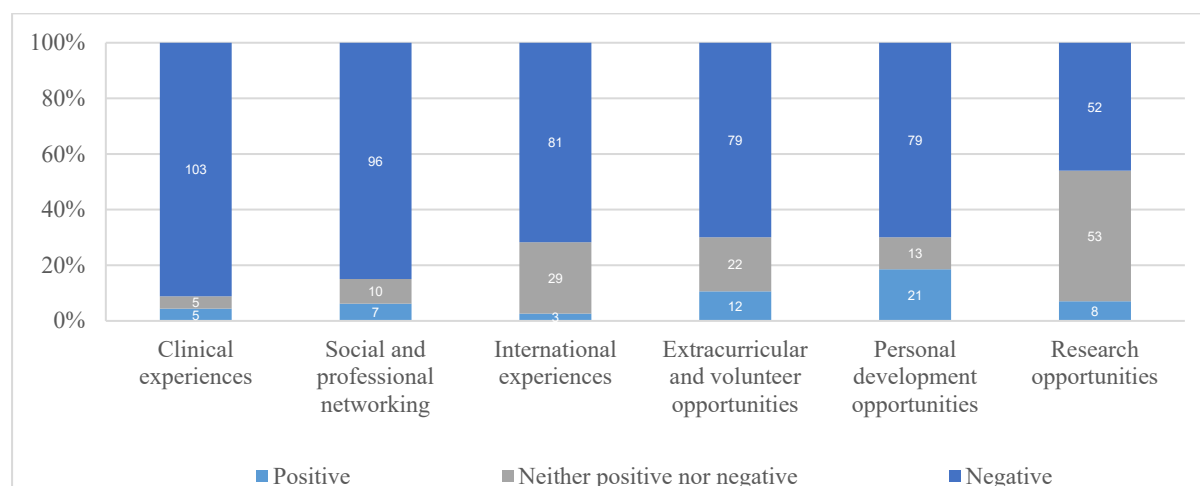
We included responses from 112 participants (69.6% women, 29.5% men, 0.9% non-binary or genderqueer) from the classes of 2020-2024, with the greatest representation (27.7%) from the class of 2024. The most commonly desired specialty choices were family medicine (25.4%), internal medicine (15.4%), and emergency medicine (16.1%). Demographic characteristics are listed in [Table 1](#).

Table 1. Demographic characteristics of study participants

	Participants, n (%)
Gender	
Women	78 (69.6)
Men	33 (29.5)
Non-binary or genderqueer	1 (0.8)
Graduation year	
2020	3 (2.7)
2021	29 (25.9)
2022	24 (21.4)
2023	25 (22.3)
2024	31 (27.6)
Pre-medical education	
High school	2 (1.8)
Undergraduate	60 (53.6)
Master's	29 (25.9)
PhD	1 (0.9)
Postdoctoral	1 (0.9)
Professional	11 (9.8)
Other	8 (7.1)

Over half (52.7%) of respondents felt that COVID-19 had a negative impact on their academic and career-building opportunities (Figure 1). The top three domains which respondents felt were most negatively impacted by COVID-19 were access to clinical experiences (92.0%), social and professional networking (85.7%), and international experiences (72.3%). Access to research opportunities was the least negatively impacted (46.4%) and also had the highest number of responses indicating neither positive nor negative impact (47.3%).

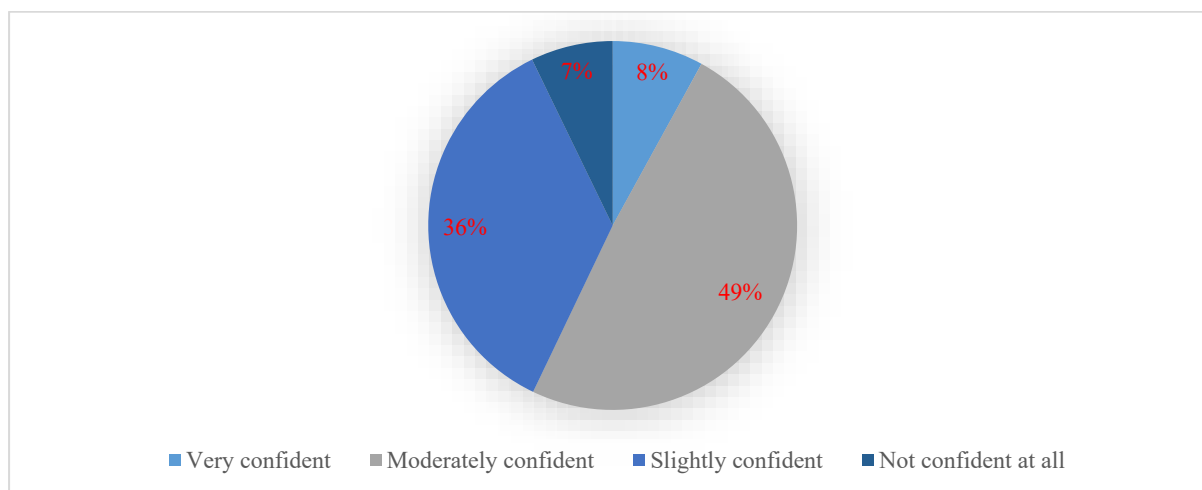
Figure 1. Impact of COVID-19 on access to opportunities related to career development (n=112).



Over two-thirds (65.2%) of respondents reported that their speciality choices changed due to COVID-19 and 25.0% of respondents reported that they will be altering their match strategy. With respect to confidence entering the CaRMS match, 8% of respondents were very confident, 49% of respondents were moderately confident, 36% of respondents were slightly confident, and 7% of respondents were not confident at all (Figure 2). Those who were interested in a surgical speciality were more likely to report a change in their match strategy ($p = .0150$), including applying to more programs ($p = .0012$) and exploring other specialties ($p = .0118$). In addition, students interested in surgical subspecialties were more likely to find that COVID-19

had hindered their ability to pursue extracurricular activities ($p = 0.0345$) and opportunities for personal development, such as hobbies outside of medicine ($p = .0082$).

Figure 2. Confidence of respondents entering the CaRMS residency match (n = 112)



Among clerks, poor access to out-of-province clinical opportunities was more likely to be associated with changes in specialty choice ($p = 2.25e-8$), matching strategies ($p = 3.82e-4$), and diminished confidence ($p = .002$) with the CaRMS match. Clerks were also more likely to report a change in their match strategy ($p = .0195$) and specialty choice ($p = .0194$) compared to pre-clerks. As well, clerks were more likely to report that COVID-19 had an impact on accessing research projects ($p = .0294$), extracurricular activities ($p < .0001$), and global health opportunities ($.0029$) compared to pre-clerks. Respondents who felt that COVID-19 had a negative impact on their ability to match reported low confidence entering the match ($p = .001$), higher likelihood in changing their specialty preference ($p = 0.032$), and the need to alter their strategies to facilitate a successful match.

Discussion

Our study suggests numerous implications of COVID-19 on Canadian medical students' preparation for the CaRMS match secondary to reduced access to clinical, scholarly, and social experiences. First, we found that access to both professional and extracurricular opportunities were negatively impacted by COVID-19. A United Kingdom study by Choi et al. similarly found that senior medical students felt their confidence and preparedness to transition from a student to a physician role was negatively impacted by the cancellation of student assistantships, written examinations, and OSCEs. The greatest impact came from cancellation of student assistantships, which would be equivalent to a clerkship rotation in Canada [5]. Choi et al.'s findings align with ours as we found that clerks were more impacted than pre-clerks with respect to changes in specialty choice, confidence entering the match, and access to career-development opportunities. Clerks, in particular, are facing the brunt of changes to specialty choice and approach to the residency match since COVID-19-related delays and shortening of clerkship rotations, cancellation of visiting electives, and uncertainty regarding the match have primarily affected clerkship cohorts.

In addition, students who reported a decreased level of self-confidence with their ability to match were more likely to indicate a shift in their specialty preference and matching strategy.

This sentiment was also echoed by American medical students as Byrnes et al. showed that 20.2% of students felt the pandemic affected their specialty choice, primarily due to the inability to explore specialties of interest and bolster their residency application [6]. Decreased clinical exposure as a result of delays and cancellations may affect the confidence in one's specialty interest, developing a successful application for that specialty, and eventually incurring a successful match outcome. As a result, learners may be inclined to switch their specialty choice and matching strategy.

Byrnes et al. also demonstrated that the overwhelming majority of third-year respondents were concerned about reference letters (81%) and away rotations (73.8%), which are the Canadian equivalent of a visiting elective [6]. Many students rely on visiting electives for exposure to a specialty and program, as well as an opportunity to acquire reference letters which are a heavily weighted metric in the residency match evaluation process [7]. The cancellation of visiting electives for the classes of 2021 and 2022, defined in our study as clerks, changes many components of the match preparation process and may lead to a decreased sense of confidence as these cohorts learn to navigate uncharted waters. Indeed, 65.2% of respondents in our study reported that their specialty choice changed due to COVID-19—this figure may eventually manifest as a dramatic shift in residency match statistics in the short term and health human resource planning in the long term. Further studies are needed to elucidate the direction in which Canadian medical students' specialty choice may be changing and how this may match logistics as well as physician supply and distribution.

Finally, our study also observed that students consistently reported low confidence and high uncertainty related to their future career prospects. Reduced access to social and professional networking emerged as one potential reason, and rightfully so, as networking paves the way for access to career-development opportunities that help students become more involved with their specialty choice of interest [5]. A Canadian study examining the impact of COVID-19 on medical students found that 45% of clerks experienced increased stress during the pandemic and were more concerned with the impact of the pandemic on their career than contracting COVID-19 while on rotations [8]. This is an important finding as it characterizes key elements of professional identity acquisition—in other words, what it means to be a medical student and future physician—as well as trainee wellness under the current framework of Canadian medical education [9]. Future studies should aim to assess the long-term impact of COVID-19-related changes to trainee wellness.

These findings corroborate that medical students' specialty choice and strategies regarding the CaRMS residency match are changing in unprecedented ways. Undoubtedly, these changes will have downstream effects on our future physician workforce composition and the cultural ethos of many generations of future physicians. We hope our findings will serve to inform stakeholders in adopting an evidence-informed approach to match logistics and can also provide early insight on the effects of COVID-19 on physician resource planning for years to come.

Declarations

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Disclosure Statement

No potential conflict of interest was reported by the authors.

Ethics Approval

Not applicable.

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