

Impact of the COVID-19 Pandemic on Medical School Aspirants: A Narrative Review

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ABSTRACT Applying to medical schools in North America is a highly competitive and complex process which requires years of preparation. With the widespread implementation of lockdowns and restrictions to curb the spread of COVID-19, medical school aspirants faced additional hardships applying to medical schools in North America during the pandemic. This review examines the impacts of the COVID-19 pandemic on North American medical school aspirants based on literature published before July 2021. Medical school applicants in North America faced disruption to elements of the medical school application, including the Medical College Admission Test (MCAT), non-academic activities, and the diminished ability for physical interaction and attendance of classes. Multiple aspects of the medical school application process have been drastically impacted and augmented by an increase in financial stress, with a ripple effect on mental health in the student population. These effects are being addressed by eliminating MCAT rescheduling and cancellation costs, offering virtual volunteering opportunities, holistically evaluating medical school applicants, and raising awareness about mental health services.

INTRODUCTION

Medical school aspirants, commonly known as pre-medical students, are enrolled in an undergraduate program with hopes of pursuing medical school education (Adams O'Connell & Gupta, 2006). In North America, the pursuit of medical school education requires the acquisition of strong grades, top MCAT scores, and ongoing engagement with extracurricular activities (Lin et al., 2013). Additionally, North American medical schools have their own unique eligibility requirements for admission.

The impacts of COVID-19 on this student population, and subsequently medical school entrance, are likely to be long-ranging and bear the need for detailed analysis. This narrative review examines the impact of the COVID-19 pandemic on medical school aspirants, specifically the effect on undergraduate training, exam preparation, extracurricular activities, financial hardships, and mental health. It aims to evoke awareness and initiate discussion for this population, which will potentially help drive policy changes.

LITERATURE REVIEW

Impact on Undergraduate Training

Efforts to curb the spread of COVID-19 included the switch of nearly all post-secondary institutions in North America to remote learning (Ortiz, 2020). This unprecedented change required instructors to modify their course content, along with some lectures and laboratories being suspended. Zoom, a collaborative video conferencing service, has been primarily used by many institutions and instructors to convey the lecture content and course material to the students (Serhan, 2020). The features of Zoom, such as a virtual white board with annotation capability, breakout rooms, polls, chats, and recording for future reference, allow online learning to be interactive. To examine the American students' perception of Zoom, Sehran (2020) conducted a qualitative study through a survey. Despite the advent of such a collaborative tool making remote learning convenient, he concluded that students were dissatisfied with their online learning experience amid this pandemic. Students faced greater number of distractions, a lower quality of interaction with others, poor education quality, and technical difficulties. His study showed that students preferred a traditional learning environment that involved face-to-face interaction with the instructor and felt an overall negative impact on their learning. His findings are in concordance with another study that demonstrated similar findings of undergraduate students favoring a traditional learning platform rather than online (Roy et al., 2020). This dissatisfaction in remote learning has been shown to negatively affect learners – medical school aspirants in this context – as they need a strong foundation of learning in their undergraduate courses to excel on the MCAT exam, and hence gain acceptance into medical school. It is important to consider that medical school aspirants are also undergraduate students being impacted by online learning. As such, the findings of these studies (Sehran, 2020; Roy et al., 2020) can be applied to them as well.

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The closure of in-person laboratory courses, which are arguably central components of applied learning, impacted pre-medical undergraduate students (Vasiliadou, 2020). Many faculties require laboratory courses for students to learn different techniques and the crucial skills needed for their future endeavours in academia, along with fulfilling their graduation requirements. The MCAT exam also tests the individual's knowledge on laboratory techniques, for which some medical school aspirants prepare by taking laboratory courses (Steed & Kadavakollu, 2019). In addition, medical schools in the United States have science prerequisites, making both Canadian and American students take science courses prior to applying to American medical schools, which include laboratory classes. To compensate, post-secondary institutions introduced virtual laboratory courses, so that undergraduate students could progress towards a fulfilling education with minimal disruptions. These, however, cannot fully emulate physical experiments and ensure the same level of learning which were previously attained in a physical laboratory, putting undergraduate medical school aspirants at a great disadvantage.

Furthermore, an online poll determined that 49% of undergraduate students felt that the pandemic negatively impacted their ability to complete their bachelor's degree (Jagannathan, 2020). Crowdsourcing data collection by Statistics Canada (2020) (Doreleyers & Knighton, 2020) with students enrolled in a post-secondary institution showed that approximately 26% had some of their courses delayed, or even cancelled, because of the pandemic. The data depicted that 41% of individuals in programs related to health-care fields faced one of the highest disruptions in their education (Doreleyers & Knighton, 2020).

Impact on the MCAT Exam and Preparation

The MCAT is an important metric that medical school admissions use to evaluate an applicant (Association of American Medical Colleges, 2020a). This standardized test is developed and administrated by the Association of American Medical Colleges (AAMC), with the purpose of helping the medical school's admission committee determine if the applicant is academically prepared and capable of succeeding in medical school. Medical school aspirants spend, on average, 264 hours studying for this exam (Wynn, 2020). A survey by AAMC (2020a) reported that 56% of these students use the Khan Academy MCAT collection to prepare, while 41% (Association of American Medical Colleges, 2020a) take university courses or a paid preparatory course to prepare for the exam (Association of American Medical Colleges, 2020a). The COVID-19 pandemic impacted the quality of MCAT preparation for medical school aspirants, as paid prep courses adopted an online learning format rather than teaching in person. Despite it, some students still took the online prep course with goals of doing well on the MCAT (Prep101, 2021).

The COVID-19 pandemic led AAMC to adopt changes to the MCAT exam (Association of American Medical Colleges, 2020a). Considering the severity of this pandemic, public health officials implemented various measures to reduce the spread of COVID-19 in the context of the MCAT. This resulted in AAMC cancelling all MCAT testing dates for the months of March and April, and resuming on May 29, 2020 (O'Connell, Kemp, & Alam, 2020). Individuals planning on taking the MCAT exam were requested to reschedule (Marr, Wooten & Sandhu, 2020). The AAMC waived rescheduling and cancellation fees to provide individuals with the flexibility of making changes to their MCAT schedule as needed. In order to accommodate the many cancellations, the AAMC added several more dates throughout the summer months; on each day, the MCAT exam was provided three times. In addition, the AAMC introduced a shortened version of the MCAT exam of 5 hours and 45 minutes, rather than the regular 7 hours and 30 minutes (Association of American Medical Colleges, 2020a). While the content in the shortened version of the MCAT exam remained the same, the results were reported within 14 days rather than the regular 30 days, with attempts to prevent further delay of medical school applications (Dowd, McKenney, & Elkbuli, 2021).

The shortened version of the MCAT exam was to be taken in person, at testing centers within the individual's state or province, which placed the individual, their families, and the employees at a greater risk of contracting the virus (Marr et al., 2020). This led to many students making the difficult choice of taking the MCAT exam and incurring the risk, in order to complete their application process. Otherwise, they would have been deemed ineligible to apply to most medical schools. For those individuals who did take the MCAT exam, they reported that not all testing centers implemented ideal COVID-19 screening protocols. A survey as stated by Marr et al. (2020) mentioned that 58.2% of the individuals that took the COVID-19 MCAT exam reported no screening at testing centers, thereby increasing the risk of individuals contracting this virus.

The shortened MCAT exam consisted of fewer breaks and no tutorial for the test-takers (Marr et al., 2020). Individuals were not given preparation material that was modified to reflect the shortened version of the MCAT, therefore putting these individuals at a disadvantage compared to the individuals that took the exam prior to the pandemic. Although the AAMC provided flexibility by adding multiple test dates and times, the increased stress and anxiety, greater financial burden, and a higher risk of contracting the virus, in addition to the drastic change to remote learning and overall disruption to the process, carried a significant – yet unmeasured – impact on both the MCAT preparation and the exam score. In 2021, the MCAT exam will take the regular 7.5 hours with results provided in 30-35 days (Association of American Medical Colleges, 2021). The AAMC only offers full-length exams that simulate the actual test day conditions of 7.5 hours, rather than the COVID-19 exam of 5.5 hours.

Impact on Extracurricular Activities

Along with academic assessment, medical schools also evaluate the strength of the application based on their passion for medicine as demonstrated through extracurricular activities (Marcus, 2020). These broadly encompass community service, volunteer work, research experience, and employment endeavours. Extracurricular opportunities are not only important for the medical school application process, but they also help students determine whether medicine as a career is a good fit.

Most medical school aspirants volunteer at a hospital, a care home, a research lab, or other places that offer hands-on experience to gain exposure to the medical field (Bhatt & Bhatt, 2020). The COVID-19 pandemic resulted in the cancellation of many potential or planned extracurricular opportunities, along with the suspension of current positions, as these required in-person contact with front line staff and/or patients, including critically-vulnerable populations (Bhatt & Bhatt, 2020). As a result, numerous aspirants were faced with potentially career-altering challenges. Since this student population straddles multiple disciplines and undergraduate programs, due to medical schools actively seeking diverse undergraduate experience in their candidates, robust data on the impact on this student population is difficult to compile.

Nevertheless, new extracurricular opportunities arose (Bhatt & Bhatt, 2020). Virtual volunteering became a way for medical school aspirants to give back to the community in a safe manner. For instance, some aspirants started online tutoring while others volunteered as translators (Moon, 2020). While virtual volunteering is a rewarding opportunity to give back to the community, it does not substitute the in-person volunteering experience that allows for exposure to the medical field in a more direct manner (Bhatt & Bhatt, 2020).

Many medical school aspirants utilize the summer break to take part in extracurricular activities (Marcus, 2020). However, the COVID-19 pandemic significantly disrupted these plans. A survey mentioned by Marcus (2020) reported that for 52.4% of students, COVID-19 resulted in cancellation of their extracurricular positions in the summer. Extracurricular activities were altered to adapt to the new normal for 35.7%.

The medical school admission committees do acknowledge these challenges, and therefore decided to evaluate applicants holistically (Kowarski, 2020). A survey by Kaplan reported that 93% of medical school admissions committee are understanding and therefore flexible with the application process, allowing students to explain the impact of the pandemic on their lives

(Czajkowski, 2020). Alongside, medical schools are looking for applicants that have stepped up and made a difference in their community during this difficult time (Moon, 2020). The admissions dean of medical schools discussed adjusting expectations by evaluating records of extracurricular activities performed throughout the student's overall journey, as opposed to the COVID-19 year(s) in isolation (Murphy, 2020).

Impact on Mental Health, COVID-19 Infection Risk and Financial Health

Mental health is a prominent issue among medical school aspirants as they face tremendous levels of stress, anxiety, and uncertainty of gaining admission into medical school (Espinal, 2020). Studies have shown that prior to COVID-19, undergraduate medical school aspirants faced higher levels of burnout (Sahu, 2020) and depression (Fang et al., 2010) as compared to non-medical school undergraduate aspirants. Although the pandemic resulted in a greater impact on mental health for population at large, including that of undergraduate students, it is likely that the mental health of medical school aspirants may have been affected more compared to non-medical school aspirants (Fang et al., 2010). This is because medical school aspirants have still taken on a heavy workload both academically and non-academically, in their desire to gain admission into medical school (Espinal, 2020). Furthermore, medical school aspirants are known to be well-accomplished in terms of having high marks, strong MCAT scores, along with unique extracurriculars, and therefore often compare themselves to other medical school aspirants. During this pandemic, individuals – including medical school aspirants – lost their jobs and faced financial hardships, and with the increase in cost of undergraduate tuition at some universities, this contributed to detriments in mental health (The Canadian Press, 2020).

Current medical students are looking into the option of collaboration within the culture of prospective medical students, with aims of having a positive impact on the mental health of these aspirants (Espinal, 2020). Their idea of collaboration refers to increased group work in courses, as this is a longitudinal aspect of the medical career. While medical students tend to be part of tighter-knit programs with extensive well-being resources, medical school aspirants may not have access to these processes provided by post-secondary institutions, hence there is an acute need to create awareness and encourage this student subpopulation to seek help. The use of social media and networking is prominent among medical school aspirants (Kind & Evans, 2015), allowing them to reach out to other like-minded students and create an online prospective medical society.

Measures Being Considered or Adopted, Aimed at the Medical School Aspirant Population

This pandemic changed the outlook of life and affected medical school aspirants. Medical schools adopted a holistic file review, which includes the applicants' opportunity to explain their life situations and the impact of them on their journey, such as the discussion of COVID-19 (Espinal, 2020). Virtual interviews were conducted, providing medical school interviewees with more safety against the virus and greater accessibility. Some healthcare professionals believe that the pandemic has laid bare both the uncertainty and unpredictability of the medical field (Herzog, 2020; Liu, 2020) and the importance of training aspirants to embrace the unknown. This, however, must reliably mirror actionable endeavours to reach out to those who will become eventual medical school candidates.

CONCLUSIONS

Medical school aspirants carry out efforts on multiple levels to accomplish admission into medical school. This involves a high level of academic achievement, accompanied by exceptional MCAT exam results and extensive extracurricular activities, often ranging over the course of multiple years. The COVID-19 pandemic has affected students at all levels and of all interests. In the context of medical school aspirants, this is exemplified by the changes in the MCAT exam and timeline, extracurricular activities, and mental health. Efforts to address some of the impacts involve waiving the rescheduling and cancellation fees of the MCAT exams, introducing virtual volunteering opportunities, evaluating

medical school applicants holistically, and increasing awareness about mental health resources. These students carry a significant burden of stress and the COVID-19 pandemic carries great propensity for a long-ranging impact – lasting possibly years – as it disrupts processes and career aspirations. This is a student population that may also take on a greater risk to personal safety during the COVID-19 pandemic in order to accomplish their career goals, and hence require additional supports.

Conflicts of interest

The author declares no conflicts of interest.

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