

■ The COVID-19 Pandemic and the Effect on the Premedical Student

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Abstract:

The COVID-19 pandemic has placed significant restrictions on premedical students trying to meet medical school entrance requirements. Has the pandemic served to inspire or deter pre-medical students from pursuing a career as a physician? To find out, we surveyed members of the Pre-medical Division of the American Medical Women's Association (AMWA). Those respondents note that COVID-19 restricted clinical shadowing and research opportunities, delayed medical school applications, limited accessibility to academic resources, and in some cases, severely impacted mental health. Our findings show that premedical students are determined to become physicians and take on the challenge of providing care even under the demanding conditions of a pandemic.

Introduction

Over 50,000 bright, intelligent, students apply to medical each year and ~21,000 matriculate (Association of American Medical College. Matriculating Student Questionnaire: All Schools Summary Report. 2019). The acceptance rate makes the process competitive, agonizing, and extensive. It requires many years of planning, studying, and forgoing social interactions that most other young adults enjoy. Years of dedicated time to complete the rigorous application process can be very demanding in normal times, but add in a pandemic, and the intensity of the stress can seem unsurmountable.

The process has become even more challenging with the ongoing pandemic. The number of medical school applications increases yearly

and shows no sign of declining. As an organization of women physicians and future physicians, recognizing that ~53% of recent medical school applicants are women, the American Medical Women's Association (AMWA) wanted to understand how the pandemic impacted these applicants. The leaders of the premedical division began to hear anecdotes from members facing challenges. Recognizing that applying to medical school while facing the restrictions of a pandemic could have long-lasting effects, we sought to understand how the pandemic was affecting students.

Data

After obtaining IRB approval, members of AMWA's premedical division were prompted to fill out a survey allowing premedical students to report how COVID-19 has impacted their medical

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school application and/or their desire to attend medical school. After a social media outreach through Instagram, newsletter, and email to all 2000 members, 66 responded (Figure 1). Of those, 35 were students who were in the 3rd year of study or beyond. These are the students that we were most concerned about, as they are students who have progressed in their studies and were planning on applying to medical school.

Has COVID-19 affected your ability to meet medical student requirements?
(Ex. Volunteering, Shadowing, Research, Internships, etc.)
(66 responses)

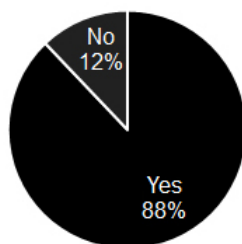


Figure 1. An assessment of COVID-19's impact on participants' abilities to meet medical school requirements.

Clinical Experience

Clinical experience is essential for premedical students to truly understand the rigors of a career as a physician. The pandemic has posed major restrictions and limitations on premedical students as they pursue clinical opportunities. Restrictions imposed have resulted in fewer opportunities for clinical work. Clinical scribe hours have been reduced as a result of physicians shifting to telemedicine, while free clinics and community outreach programs also came to a halt, further limiting volunteering access. While some virtual clinical opportunities have been created, they are limited by reliable internet connection, and cannot take the place of an in-person experience. The American Association of Medical Colleges (AAMC) does not have a specific requirement in terms of the exact hours needed, however, they do express the importance of the clinical experience. According to AAMC's 2019 Matriculating Student Questionnaire about 95% of students had clinical experience (Association of American Medical College. Matriculating Student Questionnaire: All Schools Summary Report. (2019). As premedical students work towards a demanding career like becoming a physician, it's not only important for medical schools to see that students understand what they are choosing, but for the students as well. The path to becoming a physician requires time and dedication as well as sacrificing a large portion of one's life. One student stressed they had, "multiple shadowing opportunities, clinical and volunteer opportunities cancelled or postponed with no definite plans to reschedule." Another student was concerned about applying to medical school with a limited number of

shadowing hours. The student commented, "I have had all my shadowing opportunities cancelled as a result of the pandemic and I am not sure that I will be able to shadow or gain any more clinical experience before I have to apply next cycle." Most students, 87.9%, expressed concerns about not having enough clinical experience on their applications (Figure 1)

Research

Many premedical students engage in research to gain exposure to the lab setting, learn about research methods, and hone skills useful for a life in medicine. Research also provides opportunities for mentorship and the ability to think critically. Research can be an essential component of the medical school application. According to the AAMC's 2019 Matriculating Student Questionnaire, approximately 59% of students participated in laboratory research. This indicates the importance of research to be a competitive applicant. The COVID-19 pandemic, however, resulted in labs becoming restricted to essential personnel, causing undergraduate students to lose the opportunity to participate in research. One student disclosed that they do "not permit undergraduates in the lab" and even her laboratory classes have been "condensed to only 4 in-person labs and the rest online (virtual), in which we sit on a computer for 4 hours talking about what would happen if we did the lab instead of gaining laboratory experience and getting hands-on learning." Another student also lost "a job during Summer 2020 working on an NIH research project." This lack of opportunities has affected their applications, causing 44.2% to delay their application and another 9.3% to change to another healthcare major. None changed to a non-science major.

Academics

From recorded lectures to virtual lab experiments, the pandemic has changed how students learn and prepare for their eventual career as physicians. Learning virtually not only poses challenges to those without secure access to the internet, but many students find it difficult to learn from their homes. To be a competitive medical school applicant, students must showcase a high academic achievement and Medical College Admissions Test (MCAT) scores. However, with the pandemic, one student stated "it was really hard to find the motivation to study at home.... created a lot of doubt in [their] abilities and confidence to pursue medicine." Virtual schooling may take place with a lot of distractions as students move back in with families or have to work in cramped living spaces. In addition, premedical students express that "taking STEM (Science Technology Engineering and Math) classes online (virtual) is very different from in-person." It can be harder to learn the material, access a professor's office hours, ask questions, or even to simply find peers to study the material with. Another student acknowledged that "COVID-19 has

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made [their] already challenging courses feel impossible, as well as ruining the classes [they were] excited to be in.” While virtual learning has taken a toll on how students learn their difficult science courses, some students are also struggling to prepare for their MCAT exam. Others “decided to defer [their] MCAT exam until next year” because of the “uncertainty surrounding test dates and cancellations.” Although most students are not deterred from pursuing medicine, COVID-19 has changed how they absorb their material, prepare for their entrance exams, and has made some students question their abilities and confidence in being a competitive applicant (Figure 2).

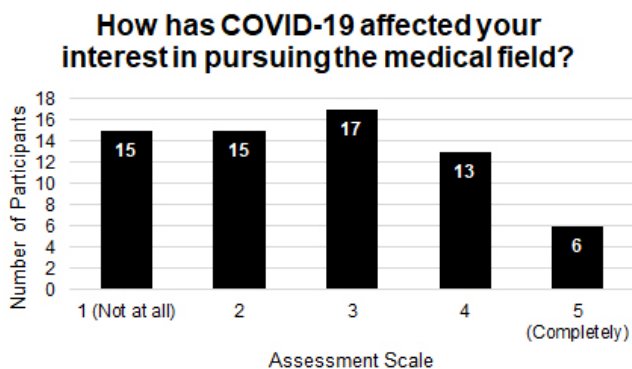


Figure 2. COVID-19's impact on participants' interest in pursuing the medical field.

Personal

The COVID-19 pandemic brought unprecedented circumstances to many. The pandemic not only affected research and academics but the personal lives of students. Many students expressed their inability to learn virtually and the drain that virtual schooling had on their work ethic and motivation. One student expressed that they have “lost momentum in [their] ability to lead and communicate.” In addition to adjusting to virtual school, many students have also had to face personal tragedies and financial hardships. One student divulged that they “have such a loss of motivation. It has made [their] life very difficult, [they] can't handle virtual classes, a pandemic, and losing a family member.” Another revealed that their “MCAT was rescheduled three times. Postponing the exam meant my ability to work full time was postponed as well leading to financial hardship.” They described that the loss of income had a direct effect on their ability to apply to medical school. Students have had to adjust to a new type of schooling, personal tragedies, and financial hardships. These hardships, on top of a lack of opportunities to meet application requirements, has caused some to delay their applications and affected their interest in pursuing a career in the medical field in about 77% of those surveyed.

If it has changed your interest, are you planning on any of the below? Choose all that apply. (43 responses)

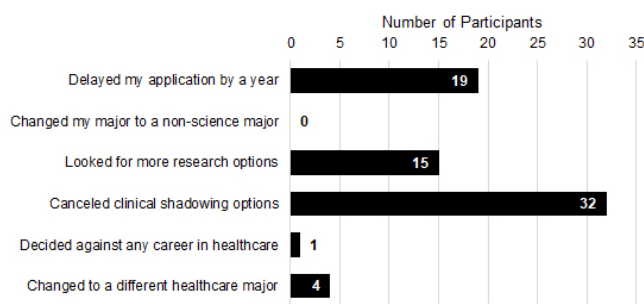


Figure 3. The specific ways COVID-19 impacted participants' medical school applications.

Conclusion

The COVID-19 pandemic has forever changed the healthcare environment. The impact on our future medical students is yet to be felt in its entirety. The pandemic has interrupted the traditional 4-year premedical timeline of undergraduate study. The students in this survey were not deterred from the goal of becoming a physician but have described how the pandemic is impacting their current career path.

The limitations revealed - clinical, research and personal, are but a few of the many that impact the lives of premedical students. Those that may have limited access to physicians as friends or colleagues, like first-generation and underrepresented minority students are at an increased disadvantage. These students have fewer resources and networks to compensate for the lack of the more traditional opportunities. This is also true for students living in areas where they may not have the same accessibility to a hospital or other clinical settings as compared to those living in bigger cities. Historically, people of color have been placed in areas with limited accessibility to the same resources as privileged groups. This places premedical students from these marginalized groups at a significant disadvantage. Coupled with the additional pressure of the pandemic, it creates further barriers for these groups. While this survey represents a small demographic, understanding the struggles that marginalized groups face is also important to consider.

References

Association of American Medical College. Matriculating Student Questionnaire: All Schools Summary Report. (2019). <https://www.aamc.org/system/files/2019-12/2019%20MSQ%20All%20Schools%20Summary%20Report.pdf>

