

# A Virtual Wellness and Learning Communities Program for Medical Students during the COVID-19 Pandemic

Carolyn G. Ahlers, MD, Victoria Lawson, BA, Jaclyn Lee, MD, Cooper March, BS, Jacob Schultz, MD, Katherine Anderson, MA, Maya Neeley, MD, Amy E. Fleming, MD, and Brian C. Drolet, MD

**Objectives:** Numerous studies have demonstrated the high risk for burnout and mental illness in medical students. Because of the coronavirus disease 2019 (COVID-19) pandemic, our medical school transitioned to an all-virtual learning environment from March to June 2020, which raised concerns among student leaders and administrators, as reduced interpersonal attachments have known associations with decreased mental health. In an effort to facilitate student well-being during the pandemic, the Virtual Wellness and Learning Communities (VWLC) program was established. VWLC consisted of hour-long events that offered students the opportunity to engage with their peers online.

**Methods:** More than 20 events and workshops were conducted from March to June 2020, including trivia nights, song and guitar performances, sketching, video editing tutorials, chess lessons, yoga, and personal investing tips. An institutional review board–approved survey to assess the efficacy of the VWLC program was sent to medical student participants and nonparticipants.

**Results:** The overall response rate of this study was 43% (53/123). The response rate for students who attended a VWLC event was 51% (33/65), and the response rate for students who did not attend a VWLC event was 34% (20/58). Of all of the respondents, 85% (45/53) reported a decreased sense of connectivity with peers because of the pandemic, and 40% (21/53) reported a decrease in their sense of wellness. After attending a VWLC event, 79% (26/33) reported an increased sense of peer connectivity, 61% (20/33) reported improved wellness, and 55% (18/33) believed that these events should continue postpandemic to supplement in-person programming. Those who did not attend a virtual event stated that the main barriers to attending were unfamiliarity with attendees and screen fatigue.

From the Departments of Pediatrics and Plastic Surgery, Vanderbilt University Medical Center, and the Vanderbilt University School of Medicine, Nashville, Tennessee.

Correspondence to Ms Carolyn G. Ahlers, Vanderbilt University School of Medicine, 1161 21st Avenue S, #D3300, Nashville, TN 37232. E-mail: carolyn.ahlers@gmail.com. To purchase a single copy of this article, visit sma.org/smj. To purchase larger reprint quantities, please contact Reprintsolutions@wolterskluwer.com.

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**Conclusions:** The COVID-19 pandemic has worsened medical student well-being and sense of community. VWLC programming may be an effective strategy for promoting medical student wellness and community while social distancing during the COVID-19 pandemic. To our knowledge, this is the first virtual wellness program for promotion of medical student mental health during the COVID-19 pandemic to be described in the literature.

**Key Words:** COVID-19 pandemic, medical education, mental health, virtual, wellness

Because of the coronavirus disease 2019 (COVID-19) pandemic, Vanderbilt University School of Medicine transitioned to an all-virtual learning environment from March to June 2020. This raised concerns among school administrators and student leaders, as reduced interpersonal attachments are linked to poor physical, emotional, and mental health.<sup>1</sup> The COVID-19 pandemic and social distancing have been associated with stress, anxiety, depressive symptoms, denial, anger, fear, insomnia, and diminished mental health.<sup>2</sup> This is concerning, as medical students are already at high risk for depression, mental illness, and burnout.<sup>3,4</sup> Depression affects nearly one-third of medical students globally,<sup>4</sup> with approximately 11% of medical students experiencing suicidal ideation.<sup>5</sup> Among numerous challenges, the COVID-19 pandemic affected undergraduate medical education through a transition to online classes and the cancellation of clerkships and conferences. These changes may be significantly

## Key Points

- The coronavirus disease 2019 pandemic has had a negative impact on medical students' sense of wellness and connectivity to peers.
- Virtual Wellness and Learning Communities programming may be an effective strategy for promoting medical student wellness and community while social distancing during the coronavirus disease 2019 pandemic.
- Medical schools should consider implementing virtual wellness programming during nonpandemic times to support students rotating at other institutions.

detrimental to medical education.<sup>6</sup> Given that medical students are at high risk for mental illness, the effects of the COVID-19 pandemic on medical education may pose new and significant mental health challenges.

Promotion of well-being as a strategy to combat burnout and promote patient care has been described extensively in the literature. Mental well-being has been associated with enhanced empathy among residents,<sup>7</sup> and wellness-promotion strategies have been associated with increased well-being.<sup>8</sup> Physician well-being is important, as sequelae of burnout affect not only the individual but also patient care, relationships with colleagues, professionalism, and the viability of hospital systems.<sup>9–13</sup> Physician wellness is vital to the delivery of high-quality health care,<sup>14</sup> as it is estimated that burnout costs the United States approximately \$4.6 billion dollars each year.<sup>15</sup>

Cognitive, behavioral, and mindfulness interventions have been associated with decreased anxiety in physicians and medical students, while interpersonal communication has been associated with decreased burnout.<sup>16</sup> A framework for promoting medical student well-being was implemented at this medical school in 2005, incorporating three core principles of wellness: mentoring and advising, student leadership, and personal growth.<sup>17</sup> In an effort to promote medical student well-being, community, and mental health during the COVID-19 pandemic, the Virtual Wellness and Learning Communities (VWLC) program was established. This program was student-run (student leadership), consisted of a variety of sessions promoting skill development and socialization (personal growth), and provided an opportunity for first- and second-year medical students to meet and be mentored by more senior students (mentoring and advising). In this way, the VWLC programming incorporated all three core tenets of the wellness program at this medical school.<sup>17</sup>

## Methods

The VWLC program consisted of hour-long virtual events that offered students the opportunity to engage with their peers online through conversations, game nights, or self-led workshops to share interests. More than 20 events were conducted from March to June 2020, including trivia nights, song and guitar performances, sketching, video editing tutorials, chess lessons, yoga, and personal investing tips. A variety of topics were included in the VWLC programming to account for student preference and variance in learning styles.<sup>18</sup>

An institutional review board–approved survey to assess VWLC program efficacy was created and administered using REDCap. The survey was piloted in a group of eight medical students to assess survey validity. The survey was distributed from May to June 2020, approximately 3 months after both remote learning and VWLC programming commenced. The survey was sent to all medical students (65) who attended a VWLC event, and 58 medical students who did not attend a VWLC event. There are approximately 90 students per class at this medical school. Students who attended a VWLC event were matched to a student from the same year in medical school

who did not attend a VWLC event. These matches were randomly assigned within the class year in an effort to limit bias. Student leaders on the wellness committee in the 2019–2020 or 2020–2021 academic year were excluded from the study. In the survey, medical students were asked how the pandemic and the VWLC programming affected their sense of connectivity to peers, as interpersonal connection has been shown to prevent physician burn-out<sup>16</sup> and is a key component of the wellness program at this medical school.<sup>17</sup> In addition, medical students were asked how the pandemic and VWLC programming affected their sense of wellness. Wellness is operationally defined at this medical school as the incorporation of intellectual wellness, environmental wellness, emotional and spiritual wellness, interpersonal wellness, and physical wellness.<sup>17</sup> This structure of wellness was adapted from the “Six Dimensions of Wellness” of the National Wellness Institute.<sup>19</sup> Statistical analysis was completed with an independent-samples *t* test. This study was approved by the university’s institutional review board.

## Results

Twenty-four percent of the student body at this medical school attended a VWLC event from March to June 2020 (65/270). The overall response rate of this survey was 43% (53/123). The response rate for students who attended a VWLC event was 51% (33/65), and the response rate for students who did not attend a VWLC event was 34% (20/58). First-year medical students made up 25% (13/53) of responses, second-year medical students provided 38% of responses (20/53), and third-year medical students gave 32% (17/53) of responses. One student in the 2020 graduating class, one student taking an extra year within the curriculum to pursue an advanced degree, and one student in the Medical Scientist Training Program completed the survey. Students who attended a VWLC event attended significantly more prepandemic wellness and learning communities events than students who did not attend a VWLC event (12.1 events vs 5.4 events, respectively, *P* < 0.001). Students who attended a VWLC event attended an average of six virtual events from March to June 2020.

During the pandemic, 85% of respondents in both the VWLC group (28/33) and the non-attende group (17/20) reported a decreased sense of connectivity with their peers (Table 1). Forty-two percent of students in the VWLC group (14/33) reported a decline in their wellness during the pandemic, and 35% of

**Table 1. Effect of pandemic on sense of connectivity to peers**

Sense of connectivity to peers	Decreased	No change	Increased
All students, % (n)	85 (45/53)	8 (4/53)	8 (4/53)
Attended virtual event, % (n)	85 (28/33)	6 (2/33)	9 (3/33)
Did not attend virtual event, % (n)	85 (17/20)	10 (2/20)	5 (1/20)

those in the nonattender group (7/20) reported the same decrease (Table 2).

After attending a VWLC event, 79% (26/33) of students reported an increased sense of peer connectivity, and 61% (20/33) reported an improved sense of well-being (Table 3). Of those who attended a virtual event, 55% (18/33) believed that these events should continue postpandemic. When asked how likely students were to attend another virtual event in the future, 73% (24/33) reported “very likely.”

Students wrote that the virtual events were helpful for creating a community during the pandemic. Students wrote, “It’s important to create spaces to let everyone know the communities that we build in med[ical] school still exist, even if they have less of a presence in our lives”; “I felt more connected to my peers and calm[er] about my own situation and changes in my own life”; and “I liked connecting with peers whom I haven’t seen in my clerkship or college sessions. It was nice to tune in for a break and see people laugh/enjoy something together.” Another student commented, “I loved all the events that I participated in and I wish I had done more! I appreciate everyone’s enthusiasm and flexibility and desire to connect with each other. I think at first I was skeptical, but these sessions were really beneficial in helping me stay connected to my classmates.” When asked what challenges were associated with the VWLC programming, participants reported internet/technology issues and difficulty establishing a natural flow of conversation, given the virtual platform.

Of those who did not attend a virtual event, when asked how attending a virtual event may have affected their sense of connectivity to peers, 60% (12/20) stated there would be no change, whereas 30% (6/20) reported that attending would have increased their sense of connectivity to peers. When asked how a virtual event would have affected their sense of wellness, 80% (16/20) reported that there would be no change, and 15% (3/20) reported that attending would have increased their sense of well-being. Interestingly, despite not attending a virtual event, 60% (12/20) of students reported that these events should continue postpandemic. When asked what the main barriers were to attendance, respondents described screen fatigue and unfamiliarity with attendees.

## Discussion

Several studies have described the detrimental effect of the pandemic on the mental health of medical professionals and trainees,<sup>20–22</sup> including medical students.<sup>23</sup> This is concerning, as medical students are already at high risk for depression, burnout, and suicidal ideation without a pandemic or social distancing

**Table 2. Effect of pandemic on sense of wellness**

Sense of wellness	Decreased	No change	Increased
All students, % (n)	40 (21/53)	51 (27/35)	9 (5/53)
Attended virtual event, % (n)	42 (14/33)	45 (15/33)	12 (4/33)
Did not attend virtual event, % (n)	35 (7/20)	60 (12/20)	5 (1/20)

**Table 3. Effect of virtual wellness and learning communities programming on sense of connectivity to peers and wellness**

	Decreased	No change	Increased
Sense of connectivity			
After attendance at virtual event, % (n)	0 (0/33)	21 (7/33)	79 (26/33)
Sense of wellness			
After attendance at virtual event, % (n)	0 (0/33)	39 (13/33)	61 (20/33)

requirements.<sup>3–5</sup> Studies have shown that social support from family, friends, fellow medical students, and medical schools can facilitate mental health resiliency among medical students.<sup>24</sup> Resiliency can play a protective role against the stress incurred during workplace training in medical clerkships.<sup>25</sup> It is our hope that this VWLC program may facilitate greater resilience of medical students through a framework of social support.

Our survey results demonstrate that the pandemic has had a negative impact on medical students’ sense of wellness and connectivity to peers. This is not surprising, given that the pandemic has had a profound impact on medical education and society as a whole, including the transition to virtual learning, cancellation of conferences, unexpected economic challenges, and a prevailing sense of stress and uncertainty.

In an effort to promote wellness and community during the pandemic, the VWLC program was created. We found that most attendees reported an increased sense of well-being and connectivity to peers after attending a VWLC event. In addition, a majority of students who attended an event believed that they should continue postpandemic. This shows that virtual wellness programming may be effective for improving medical student wellness and connectivity to peers throughout the COVID-19 pandemic or a future event requiring similar social distancing. Although peer mentoring programming for medical students via social media has been described,<sup>26</sup> this is the first report of a virtual wellness program during the COVID-19 pandemic.

This study was not without limitations. The major limitation of this study was the low response rate of 43% (53/123). Although 51% (33/65) of students who attended a VWLC event completed the survey, only 34% (20/58) of students who did not attend a VWLC event completed it. Students with mental illness may have been less likely to complete the survey, causing non-response bias. Methods of improving the response rate according to the literature are advance financial incentives, sending at least three reminders, prenotifying potential participants, and using different survey modalities.<sup>27</sup> In this study, we sent multiple reminders and prenotified students who attended the VWLC events. In retrospect, providing a financial incentive and using different survey modalities may have increased our response rate. Because this is the first study of a virtual wellness program in the literature, however, we believe that our results and conclusions are still a valuable addition to the medical education

literature. Future studies should evaluate which interventions are the most effective for promoting wellness of medical students during periods of social distancing.

Another limitation of this survey is the fact that it only provides information on medical student mental health at one point in time. Following the trend of the mental health of medical students during the pandemic would have provided meaningful information on the impact of social distancing and a pandemic on a high-risk group of students.

Another challenge associated with this study is bias. For example, there may have been an underreporting of mental health challenges during the pandemic, as medical students are often reluctant to seek help and treatment for mental health concerns.<sup>24</sup> In addition, as students who attended VWLC events were more likely to have attended pre-pandemic wellness events (12.1 events vs 5.4 events, respectively,  $P < 0.001$ ), it is possible that VWLC participants, as compared with nonparticipants, were more likely to perceive positive value from attending the VWLC programming.

In total, 65 students attended a VWLC event, accounting for approximately 24% of the student body. Given that only 25% of this medical school's students attended the virtual events, the generalizability of these results should be measured and efforts to improve attendance should be valued. Our survey results demonstrated that some factors may have limited certain students from attending a VWLC event, including screen fatigue and unfamiliarity with attendees. This could lead to selection bias in both attendance and appraisal of the value of these events. Screen fatigue as a barrier to attendance could be addressed by providing variety in the platform of virtual events, such as intermittent audio-only telephone events. Unfamiliarity with attendees could be addressed by senior students involved in VWLC programming reaching out to their first- and second-year mentees to encourage attendance. Involvement of special interest groups should also be emphasized and would likely attract students of all different backgrounds and interests. To implement a virtual wellness program at another medical school, we recommend cost-free access to a virtual conferencing platform, student volunteers who are willing to share interests/hobbies with peers, and a culture that values regular community events. Outside of the cost of a virtual conferencing platform, this VWLC programming is cost-free, and therefore, accessible to medical schools with a larger student body or fewer resources. As mentioned above, we recommend the involvement of special interest groups and student leaders in the planning and implementation of these events to attract learners of all backgrounds. We also believe that virtual wellness programming should be incorporated into medical school curricula during nonpandemic times as it may serve as a way to support medical students who are participating in "away rotations" at other institutions or to help welcome incoming medical students before they matriculate. Further study of the potential applications of virtual wellness programming may be beneficial in promoting medical student wellness, community, and mental health both within and beyond the context of a pandemic.

## Conclusions

It is likely that the need for social distancing and virtual education may continue throughout the foreseeable future because of the COVID-19 pandemic. VWLC programming may be an effective strategy to promote medical student wellness and community during periods of social isolation. Medical schools should consider implementing virtual wellness and learning community programming into their mental health and wellness curricula to promote community and wellness during the COVID-19 pandemic.

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