

## WE NEED TO KNOW: A CALL FOR INTERDISCIPLINARY EDUCATION ON COVID-19

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**Abstract:** COVID-19 disrupted numerous disciplines which led to widespread misinformation on the virus. Thirteen students from across the USA designed a web-based conference, or “webinar,” to minimize the misinformation among student populations. Professionals presented the current and possible future impacts of COVID-19 in their respective fields. Pre- and post-conference surveys were administered to the attendees to gauge the impact of the conference. Survey results demonstrated increased knowledge and a lower degree of feeling overwhelmed by COVID-19 information overall, indicating a niche use for webinars during the COVID-19 pandemic and beyond.

**Key words:** COVID-19, education, social work.

### Introduction & Literature Review

The 2019 novel coronavirus (COVID-19) is quickly changing the way we live our day-to-day lives. While the pandemic has impacted everyone, one cannot ignore the physiologic consequences of the lockdown. In particular, older adults constitute a vulnerable population that tends to be more severely impacted by social distancing, isolation, and quarantine (1). Ongoing research brings to light an array of symptomatology in older COVID-19 patients including frailty syndrome and symptoms of loneliness such as depression, cognitive dysfunction, and disability (2, 3). Prolonged periods of rest and immobility result in cachexia and sarcopenia (4) and, in older adults, the chronic inflammation and susceptibility to frailty leave them at a higher risk for developing these symptoms. Additionally, social isolation puts older adults at a greater risk of developing depression and anxiety (5).

As research uncovers the various impacts of this pandemic, there is a need to provide up-to-date, interdisciplinary information to the general public and healthcare professionals in a way that is safe and efficient. One such solution is a webinar, which can help lift the veil of uncertainty and misinformation by providing reliable facts (6,7). Webinars can shape the way professionals practice medicine - a value that is more important now than ever before (8,9). With their remote nature and ease of access, webinars serve as an essential tool for education and healthcare promotion during a pandemic.

### Methods

Thirteen students from seven universities, recruited through the Geriatric Workforce Enhancement Programs nationwide, comprised the planning committee for COVID: Decoded. The committee met via Zoom for nine weeks, selected seven topics, and explored experts in each field as potential speakers. Table 1

represents the selected topics and speakers.

The advertising committee collaborated with a graphic designer to create a flyer disseminated through email and social media platforms. The targeted audience included students in undergraduate and graduate programs across the nation from a wide variety of fields. The committee emphasized the interdisciplinary aspect of the webinar as a key component to illustrate how COVID-19 has affected and continues to impact all social determinants of health.

The conference utilized Zoom’s Webinar feature, under Saint Louis University’s license, which allowed up to 1,000 participants. The conference occurred from 10 am to 5 pm CST. The keynote speaker was allotted 35 minutes to speak, with all subsequent speakers assigned 20 minutes. Each speaker had a 10 minute Q&A following their presentation, followed by 10 minutes of flexible time. At lunch, the committee presented a student-made personal protective equipment (PPE) educational video. The conference concluded with a full-panel Q&A, in which all participant questions were submitted through Zoom’s Q&A feature and moderated by members of the committee throughout the day. An assigned timekeeper monitored the clock.

The committee attached pre-conference surveys (PrCS) as part of the conference registration. Post-conference surveys were distributed via email and were optional. Respondents were matched by email address to analyze pre- and post-conference variables. The variables analyzed included feeling overwhelmed by COVID-19, the perceived bias of the conference, confidence discussing COVID-19 with friends and family, and the six of the seven topics individually addressed by each presenter. These variables were compared using paired sample t-tests with 95% confidence intervals on SAS→ Studio 9.4.

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**Table 1**  
 List of conference topics and corresponding speakers

<b>Topic</b>	<b>Speaker</b>
Keynote Speaker	Michael Dobbs, MD, MHCM Neurology, University of Texas at Rio Grande Valley School of Medicine
Research Background & Microbiology	John Thomas, PhD Medicine, University of Texas at Rio Grande Valley
Treatments & Vaccine Development	Yen Dang, MD Pharmacy, University of Maryland Eastern Shore
Economics	Kathryn Edwards, PhD Economics, RAND Corporation
Gerontology	John Morley, MB, BCh Medicine, Saint Louis University
Social Work	Shannon Cooper-Sadlo, PhD, MSW, LCSW Social Work, Saint Louis University
Education	Rebekah Gee, MD, MPH Medicine & Public Health, Louisiana State University Health
Mental Health	Valerie Rivera, LCSW, CCTP Clinical Social Work, University of Texas at Rio Grande Valley School of Medicine

**Results**

The pre-conference survey was completed by 250 individuals, representing graduate students (34%), professional degree-seeking students (31.7%), or undergraduate students (24.5%) from 43 different universities across every region of the United States and seven additional countries. The PrCS data indicated that prior to the webinar, over half (53.1%) of registrants agreed with the statement: “I feel overwhelmed when thinking about COVID-19.” When responding to the statement “I feel confident discussing COVID-19 with friends and family”, over one-third (35.3%) selected either neutral, disagree, or strongly disagree. Additionally, more than 2 in 3 registrants (69.9%) agreed with the statement, “I think there is a lot of information about COVID-19 and it is difficult to know whom to trust.” The survey asked individuals to evaluate their knowledge on COVID-19’s impact on various topics using a 5-point Likert scale. These results are shown in Figure 1 and only include those individuals who also responded to the post-conference survey (PoCS) for comparison. Of the 250 PrCS responders, 57 completed the PoCS yielding a response rate of 22.8% and represented a similar demographic of students: graduate students (31.6%), professional degree-seeking students (38.6%), and undergraduate students (15.8%). Nearly three-quarters of the 57 individuals (73.6%) felt neutral or overwhelmed by COVID-19 before the conference, but half of these individuals then disagreed or strongly disagreed with feeling overwhelmed by COVID-19 afterward (Figure 1). Nearly all (98.2%) felt confident to some degree discussing

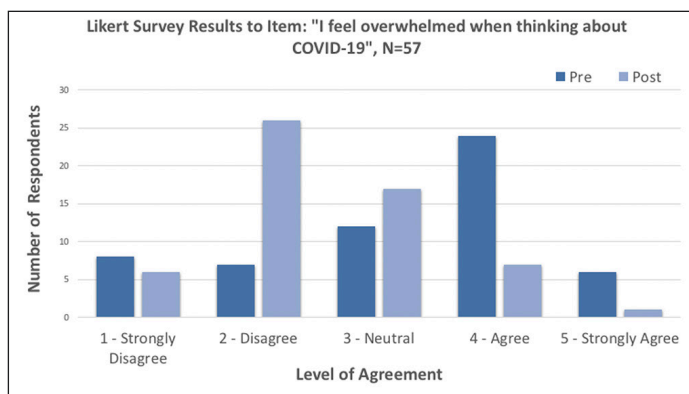
COVID-19 with friends and family following conference attendance, a 60% increase from PrCS data. The conference was felt to be a trusted source of information, as 54 participants (94.7%) did not feel there was an obvious bias or political agenda present in the presentations. As seen in Figure 2, the mean Likert score of all six topics increased with statistical significance following participation in the conference ( $p < 0.0005$ ). Lastly, all respondents (100%) would recommend either part (31.6%) or the entire conference (68.4%) to a friend or colleague.

**Discussion**

Based on the conference registration survey data, it is evident that there is a need for interdisciplinary education on COVID-19. The majority of our registrants felt overwhelmed when thinking about COVID-19 and felt it was difficult to know who to trust for valid information. The analysis of this data found a statistically significant increase in knowledge across the six topics that were discussed in the webinar. Of the registrants who completed both surveys, there was a 50% reduction in the number of individuals who felt overwhelmed when thinking about COVID-19. These results indicate that clear and unbiased information increased confidence in discussing the virus and decreased feelings of being overwhelmed when thinking about COVID-19.

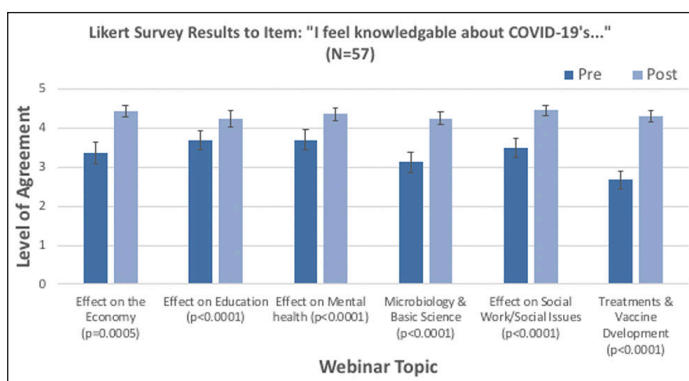
**Figure 1**

Figure 1 shows the results of the Likert survey item, “I feel overwhelmed when thinking about COVID-19.” Shown is a comparison between before and after having participated in the webinar. A paired sample t-test was conducted, showing a mean decrease of 0.77 following webinar participation (0.44-1.01 95% confidence interval,  $p < 0.0001$ )



**Figure 2**

Figure 2 shows the results of the Likert survey item, “I feel knowledgeable about COVID-19’s...” Shown is a comparison between before and after having participated in the webinar. The Level of Agreement uses the same Likert scale noted in Figure 1. Paired sample t-tests were conducted for each topic, and the 95% confidence intervals are shown with accompanying p-values for each respective test



Utilizing an online webinar medium (i.e. Zoom) and advertising on numerous social media platforms led to successful recruitment and advertising efforts. COVID: Decoded reached students across the nation and international cities as it was accessible for participants in different time zones and provided flexibility in joining via telephone or computer.

The conference encountered minimal technical difficulties, which can be attributed to specific areas in planning and execution. For example, speakers had an opportunity to participate in a practice session to gain comfort with Zoom’s features. Attendee user functions were restricted to minimize distractions. In addition, designating roles within the planning

committee, such as Q&A moderators, technical support, and timekeepers, ensured a smooth transition throughout the entire conference. Suggestions that were provided by respondents included increasing time for speakers and Q&A sessions and limiting presentation duration to allow for more in-depth discussion. It is important to note that the analysis of collected data was limited due to a post-conference survey response rate of 22.8% and the erroneous omission of gerontology in both surveys.

## Conclusion

There is a wealth of information surrounding the current COVID-19 pandemic, however, the response to this pandemic is attenuated by the misinformation and conflicting information spreading through various avenues, particularly on social media. While this is not uncommon during global pandemics, the lack of reliable information undermines public health efforts to follow good health and hygiene practices, which puts everyone at risk, particularly the vulnerable populations, including the geriatric population. Hence, the committee deemed it crucial to organize an interdisciplinary virtual conference to tackle the challenge of providing extensive, up-to-date information surrounding COVID-19.

By addressing common coronavirus myths and elaborating on its impact on different spheres of society, the hope was to alleviate fears, increase authentic information about the pandemic from experts, and promote proper use of PPE to prevent the spread of the virus amongst the general population, which protects our vulnerable and immunocompromised groups. Our data analysis concluded that the webinar increased the level of comfort in confronting issues surrounding the ongoing pandemic by creating awareness about the virus attributes, PPE, economic impacts, and the widespread social pressures due to distancing from loved ones. COVID: Decoded was able to accomplish this by providing a platform for participants to learn and engage with a trusted source.

Furthermore, COVID:Decoded’s online nature facilitated its widespread reach across national and international audiences. In the future, should a webinar be utilized to disperse COVID-19 related information, it is recommended that the presentation be limited as an overview to allot more time for Q&A to foster dialogue between participants and invited speakers. The increased interaction can allow for the topics most unclear to participants to be further explained.

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analysis and publication of the retrospectively obtained and anonymized data for this non-interventional study.

### References

1. Berg-Weger M, Morley JE. Editorial: Loneliness and Social Isolation in Older Adults during the COVID-19 Pandemic: Implications for Gerontological Social Work. *J Nutr Health Aging*. 2020;24(5):456-458. doi:10.1007/s12603-020-1366-8
2. Abbatecola AM, Antonelli-Incalzi R. Editorial: COVID-19 Spiraling of Frailty in Older Italian Patients. *The Journal of Nutrition, Health & Aging*. 2020 ;24(5):453-455. doi:10.1007/s12603-020-1357-9
3. Morley JE, Vellas B. Editorial: COVID-19 and Older Adults. *J Nutr Health Aging*. 2020;24(4):364-365. doi:10.1007/s12603-020-1349-9
4. Gualtieri P, Falcone C, Romano L, et al. Body composition findings by computed tomography in SARS-CoV-2 patients: Increased risk of muscle wasting in obesity. *Int J Mol Sci*. 2020;21(13):4670. doi:10.3390/ijms21134670
5. Santini ZI, Jose PE, York Cornwell E, et al. Social disconnectedness, perceived isolation, and symptoms of depression and anxiety among older Americans (NSHAP): a longitudinal mediation analysis. *Lancet Public Health*. 2020;5(1):e62-e70. doi:10.1016/S2468-2667(19)30230-0
6. Chua AZ, Lo DY, Ho WH, et al. The effectiveness of a shared conference experience in improving undergraduate medical and nursing students' attitudes towards inter-professional education in an Asian country: a before and after study. *BMC Med Educ*. 2015;15(1):233. doi:10.1186/s12909-015-0509-9
7. Bottanelli F, Cadot B, Campelo F, et al. Science during lockdown - from virtual seminars to sustainable online communities. *J Cell Sci*. 2020;133(15):jcs249607. Published 2020 Aug 14. doi:10.1242/jcs.249607
8. Sedhom R, Barile D. Can webinar-based education improve geriatrics training in internal medicine residency programs? *Am J Med Qual*. 2016;31(6):606. doi:10.1177/1062860616653183
9. Shah S, Diwan S, Kohan L, et al. The technological impact of COVID-19 on the future of education and health care delivery. *Pain Physician*. 2020;23(4S):S367-S380. <https://www.ncbi.nlm.nih.gov/pubmed/32942794>
18. Chang K V , Hsu T H , Wu W T , et al. Is sarcopenia associated with depression? A systematic review and meta-analysis of observational studies[J]. *Age & Agng*,2017(0):1-9.
19. Kitzman D W , Nicklas B J , Kraus W E , et al. Skeletal muscle abnormalities and exercise intolerance in older patients with heart failure and preserved ejection fraction[J]. *Am J Physiol Heart Circ Physiol*, 2014, 306(9):H1364-H1370.
20. Yin J , Lu X , Qian Z , et al. New insights into the pathogenesis and treatment of sarcopenia in chronic heart failure[J]. *Theranostics*, 2019, 9(14):4019-4029.
21. CHEN LK,LEE WJ,PENG LN, et al. Recent advances in sarcopenia research in Asia:2016 update from the Asian Working Group for Sarcopenia[J]*J AM Med Dir Assoc*,2016,17(8)767e1-767e7.
22. Yang Guangzhao, Wang Yu. Chronic obstructive pulmonary disease and sarcopenia in the elderly[J]. *Practical Geriatrics*, 2020, v.34(03):7-9