

Comparison of Multinational Medical School Students Experiences in the Face of the COVID-19 Pandemic: A Qualitative Analysis

Alexandra C. Skoczek,¹ Patrick W. Ruane,² Cassidy Onley,³ Torhiana Haydel,⁴ Maria Valeria Ortega,⁵ H. Dean Sutphin,⁶ Alexis M. Stoner.⁷

Abstract

Background: In the midst of the COVID-19 pandemic, countries, and governments around the world have implemented different measures and guidelines for the containment and mitigation of the COVID-19 virus. In addition to implemented policies and initiatives, social media and personal beliefs have affected medical students' social, emotional, financial, and academic stability and success both domestically and internationally. **Methods:** This qualitative study, recruited students enrolled in the Global Seminar for Health and Environment elective course in their respective medical schools to complete a weekly, non-graded journaling assignment for 6 weeks. To measure outcomes, open-ended questions were asked to students across four different countries (United States, El Salvador, Dominican Republic, and Honduras) regarding the COVID-19 pandemic including personal beliefs and knowledge, policies and initiatives within their country, global policies and initiatives, and social media presentations. Thematic analysis was then completed using the QCoder package in R Studio. **Results:** A total of 142 assignment submissions were collected and analyzed. International medical students reported more restrictions in their country, a larger mental health impact, and more individuals in their country showing a lack of regard for policies and initiatives. United States medical students were more likely to express a decrease in academic opportunities and academic performances. **Conclusion:** The COVID-19 pandemic continues to affect medical students globally. The pandemic has changed the medical school experience for both international and United States medical students, and affected them not only academically but also mentally, and socially.

Key Words: COVID-19; Medical Student; Mental Health; Academic Performance (Source: MeSH-NLM).

Introduction

As the progression of the COVID-19 pandemic has tested the limitations of the healthcare systems throughout the world, medical students have been challenged to adjust to this new normal. The adjustment of online learning and social limitations have altered the social and mental well-being of the medical student.¹ At the height of the pandemic, there was a concern that students may be missing out on meaningful educational experiences and months of clinical training with unknown effects on their current well-being or professional trajectory.²

Among medical professionals, being a medical student has the highest odds of psychological symptoms of depression and anxiety.³ Medical students are a vulnerable population globally and according to one study, are known to show higher rates of

depression, suicidal ideation, and stigmatization around depression, and are also less likely to seek support.⁴ Medical students are also more susceptible to report depressive symptoms compared to college and university students of similar age from the general population. Even though certain aspects of mental health (e.g., depressive symptoms) improve as students become residents and early career physicians, medical students are predisposed to have depression and other psychological distresses compared to their counterparts at different stages of life.³

Medical students use social media to not only obtain breaking news on the ongoing pandemic, but also cope with and express their emotions.⁵ Social media platforms have played a positive and negative role during the COVID-19 pandemic. From a positive perspective, social media rapidly spreads necessary

¹ MPH, OMS-III. Edward Via College of Osteopathic Medicine – Auburn, Auburn, AL, United States

² OMS-III. Edward Via College of Osteopathic Medicine – Carolinas, Spartanburg, SC, United States

³ OMS-III. Edward Via College of Osteopathic Medicine – Virginias, Blacksburg, VA, United States

⁴ MHA, OMS-III. Edward Via College of Osteopathic Medicine – Louisiana, Monroe, LA, United States

⁵ OMS-III. Edward Via College of Osteopathic Medicine – Louisiana, Monroe, LA, United States

⁶ PhD. Edward Via College of Osteopathic Medicine – Virginias, Blacksburg, VA, United States

⁷ PhD, MPH. Edward Via College of Osteopathic Medicine – Carolinas, Spartanburg, SC, United States

About the Author: Alexandra C. Skoczek is currently a third-year medical student of osteopathic medicine at VCOM-Auburn in Auburn, AL.

Correspondence:

Alexis M. Stoner

Address: 2265 Kraft Dr SW, Blacksburg, VA 24060, United States

Email: astoner@carolinas.vcom.edu

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Student Editors: Duha Shellah &

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information to identify symptoms, share treatment plans/algorithms, and employ control measures from other countries, and adapt these measures with available resources.⁶ Yet, from a negative perspective, the dissemination of information has also been linked to anxiety and depression.⁷ As previously reported, social media has a significant correlation on spreading panic about COVID-19 amongst medical students, negatively impact their psychological health.⁵

The impact on psychological health is not just seen in the United States, but also globally. In previous pandemics, such as the 2003 SARS-CoV outbreak in Taiwan, it was reported that international medical professionals had negative effects on their wellbeing, including post-traumatic stress disorder (PTSD).^{4,8} The effects of post-traumatic stress disorder (PTSD) primarily occurred due to the social distancing and isolation.⁸ At present, international nations such as the Dominican Republic, Honduras, and El Salvador continue to have an disproportionate impact on social well-being due to differences in policy and resources.⁹ Latin America regularly faces widespread health problems due to overcrowding, limited sanitation, food insecurity and poor nutrition, and unpredictable environmental conditions that affect citizens with lower socioeconomic status.^{9,10} Underfunded state-run hospitals are, in most cases, the only source of medical care available to these populations.¹⁰

This study sought to assess medical student's perspectives on domestic and global response and messaging, attitudes on how they have been personally affected, and insights on their personal understanding of the virus in the face of the COVID-19 pandemic and determine if differences exist between countries. Due to differences in global response and media portrayal, international medical students in countries such as El Salvador, Honduras, and the Dominican Republic will be impacted differently with regards to COVID-19 policy strictness, social and mental health, financial and academic stability, and overall attitude towards the pandemic than the United States medical students.

Methods

A qualitative phenomenological study on the COVID-19 pandemic was conducted using open-ended question responses from medical students from the United States and international medical schools to evaluate global impacts on medical education.

Setting and Participants

Over a 6-week period in the beginning of 2021, medical students enrolled in the Global Seminar for Health and Environment course at their respective medical schools were encouraged to complete a weekly writing assignment on their perspective on the COVID-19 pandemic. Participants attended one of the four Edward Via College of Osteopathic Medicine (VCOM) campuses in the United States, or one of three medical schools located in Central America and the Caribbean. VCOM campuses included VCOM-Virginia, VCOM-Carolinas, VCOM-Auburn, and VCOM-Louisiana. International medical schools included El Instituto Tecnológico de

Santo Domingo (INTEC), Universidad Tecnológica Centroamericana (UNITEC), and Universidad Evangélica de El Salvador (UEES), located in the Dominican Republic, Honduras, and El Salvador respectively. Medical students were assigned an ID number to access the assignment questions and submit responses through the Qualtrics platform.¹¹ Researchers were never made aware of the participants ID numbers so that the study would remain confidential, anonymous, and voluntary. This study was reviewed and approved by the Edward Via College of Osteopathic Institutional Review Board (IRB # 2020-013)

Open-Ending Question Design

Open-ended questions were developed by the Global Seminar for Health and Environment course administration to analyze multiple aspects of the participants, lives regarding COVID-19. The goal of the questions was to provide the students with a platform to express multiple different perspectives on their beliefs and knowledge, perspectives on interventions and prevention methods within their country and internationally, and the impact social media had on the pandemic. The complete list of open-ended questions is available as Supplementary Material 1. The questions had been used in 2020 in the Global Seminar for Health and Environment course and modified as needed for clarity. A panel of experts including a retired CDC infectious disease physician with 8 years of experience in Central America, US physicians, and international physicians provided "Content Validity" instrument items to match research objectives. In addition to the open-ended question responses, demographic information was collected, including country of residency and year in medical school.

Study Outcomes and Analysis

Responses from students were analyzed by members of the research team to identify recurring themes in four different categories: personal beliefs and knowledge, policies and initiatives, international policies and initiatives, and social media presentations. Open-ended question responses and themes were then coded and compared to ensure consistency between theme usage. Qualitative analysis was completed using R and QCoder software and packages.¹²⁻¹³ The number of times that a theme was expressed was divided by the number of total responses to determine the percentage of times a given theme was expressed. Data was then exported from QCoder and the number of times each theme was expressed, stratified by country, was compared.

Results

A total of 142 submissions were collected and analyzed from 76 participants. This included 19 submissions from INTEC, 30 submissions from UEES, 18 submissions from UNITEC, 28 submissions from VCOM Auburn, 18 submissions from VCOM Carolinas, 17 submissions from VCOM Louisiana, and 12 submissions from VCOM Virginia. The 67 submissions from INTEC, UEES, and UNITEC were considered international submissions, and the 75 submissions from VCOM Auburn, VCOM Carolinas, VCOM Louisiana, and VCOM Virginia were considered

as the United States submissions. Not all submissions contained answers to all the questions asked, making the total number of responses dependent on the question.

Table 1. Themes and Responses Corresponding to Personal Beliefs and Knowledge of COVID-19.

Theme	Country (% of responses)	Examples
Decrease in Academic Opportunities and Performance	International (14.5%)	"In a personal level it affected me since I was finishing my internship at the beginning of the pandemic when precautions were taken to prevent covid 19 infections, I could observe a remarkable decrease of patients in the hospital, decreasing the opportunity to learn and provide medical care."
	United States (20%)	"It has effected my medical school experience significantly as we had online classes for months and months."
Personal or Family Economic Impact	International (7.3%)	"My dad is a pilot who lost his job during the pandemic, even tho Im in last year of medical school, doing my social service, since my unviersity is private Im still paying so its been a difficult time."
	United States (6.7%)	"My father became unemployed. My sister's husband became unemployed. It was a very difficult time for my family."
Mental Health Impact	International (27.3%)	"My anxiety and panic have risen to such levels that it is hard for me to tolerate casual touch and proximity. I dont remeber the last time I hugged a friend."
	United States (1.7%)	"The COVID pandemic has increased my already heightened stressed induced by medical school studies."
Understanding of COVID19, Policies, and Preventative Methods	International (45.5%)	"The novel coronavirus 2019 has caused the worldwide pandemic of coronavirus disease 2019 (COVID-19). COVID-19 was initially identified as a cluster of pneumonia cases during late December 2019 in China and rapidly spread worldwide. The definite modes of SARS-CoV-2 transmission are not yet completely known; however, health officials suggest that it could primarily spread through droplets when an infected person coughs or sneezes, and by direct contact with infected individuals. Unfortunately, no drugs or vaccines have been officially approved for the treatment of COVID-19. Maintaining personal hygiene is an essential practice to protect against any type of respiratory illness, including COVID-19. Hand washing and social/physical distancing are effective measures to prevent transmission between individuals. Other major mitigating measures include isolation and quarantine, particularly of individuals with symptoms or confirmed COVID-19 cases."
	United States (43.3%)	"A novel virus typically presenting as fever/chills, dry cough, SOB, body aches, loss of taste or smell. Spread easily through respiratory droplets. Unknown about the long term side effects of being infected with COVID19."

Both internationally and in the United States, COVID-19 has had a large impact on medical students, with, their perspectives distinct in personal beliefs (Table 1), policies in their country (Table 2), policies in other countries (Table 3), and social media (Table 4). International medical students believed that their country's COVID-19 response contained more restrictions than the global response, with the theme being expressed in 16.4% of international responses compared to 1.3% of US responses. This was enforced by the US medical students' views that the United States had fewer COVID-19 restrictions.

Table 2. Themes and Responses Corresponding to Policies and Initiatives of COVID-19.

Theme	Country (% of responses)	Examples
Need better healthcare	International (5.6%)	"The health budget to cover the pandemic was used in the purchase of mobile hospitals, which were to be installed since July 2020, and which have not yet been established. The number of mechanical respirators needed for the number of people affected by the virus does not even cover 20% of the population. We were also affected by two hurricanes, IOTA and ETA, which caused many people to lose their homes, forcing them to crowd into shelters, increasing overcrowding and the spread of the virus, creating another high wave of mortality. if i could change anything, i would start with giving priority to the health of the population over the other things that are happening in the country, just as there was a budget for the voting campaigns, that money could have been well used in the purchase of vaccines or medicines for serious patients."
	United States (12.3%)	"I dont think the process of distribution was that great. We needed to be more effective with distribution. In my home town four months went by and they were still vaccinating elderly and priority workers. I think this could have been done in a more timely manner"
Need better initiatives and policies	International (42.6%)	"A would change a lot of this my country is not doing his best in prevention in covid they have been in responsables. They are not doing interventions in College in partys in beaches in hoteles "
	United States (52.6%)	"When the US decided to implement the lockdown, it was already too late. In addition, the US failed with the testing kits early on in the process. We did not have enough testing kits and the process was flawed in many ways. The presidential administration also discouraged the use of masks which further led to the spread."
Individuals show a lack of regard	International (44.4%)	"People have stopped the fear of covid and do not respect the measures"
	United States (17.5%)	"My frustration that the COVID pandemic has gotten so bad is with the people who refused to be smart and take simple steps for the good of others even if it was a minor inconvenience to them."
Good healthcare	International (11.1%)	"Although we are a third world country, compared to the others we have advanced a lot with the vaccines. I wouldn't change anything."
	United States (26.3%)	"I think the vaccine is becoming more widely accepted and more available. Most people I know are able to receive the vaccine with no issue if they want one. It is available now in common pharmacies."
Good initiatives and policies	International (26.3%)	"There is many preventions that my country is taking, such as disinfecting our shoes, taking our temperature, the use of alcohol gel and the mask is mandatory, as well all public places are just with the 50% of people allowed. Personally I think it's a great plan that our government have applied because there is every area are cover."
	United States (38.6%)	"I am from New Orleans and I feel the city did pretty well when it came to preventive measures. The city canceled Mardi Gras and all other events. This led to a major fall in the tourists economy but at least the public health was given a priority."

United States medical students had a higher number of responses with the theme "more restrictions internationally", which was present in 28% of the responses. An international student's

response with the theme “less restrictions internationally” is as follows:

“There are many variations of the preventions countries might have, but I think that there are many restrictions such as mask obligations that should be applied, as well as imposing a mandatory quarantine to people that have been exposed to the virus in the past days.”

Table 3. Themes and Responses Corresponding to International Policies and Initiatives of COVID-19.

Theme	Country (% of responses)	Examples
Good Response Internationally	International (45.3%)	"I believe that everyone attempted to mitigate the pandemic as best they could, they just failed to calculate the potential length of it and hence ended up spending way more resources than necessary or wasted certain resources thinking the pandemic would be much shorter."
	United States (42.4%)	"South Korea did the best job when it came to testing its public. They implemented testing via a drive thru which was very effective and quick. Africa as a whole did very well as it had checkpoints set up at various points in the city to check people's temperature. India did very well in the beginning to control the virus. A family friend told me that the police were giving citations to anyone that was not wearing a mask."
Poor Response Internationally	International (18.9%)	"In the case of Italy, in my opinion the government didn't took enough precautions and didn't close the borders when they had time and human resources to do so, just for the sake of keeping the countries economy, so, that wrong decision in my point of view took a lot of lives not just from civils but from doctors that had to exceed their energies to fulfill their duty to save as many lives as possible or help those in need."
	United States (16.9%)	"I know the vaccine is hard to receive in other countries, especially third world countries. I've also read and heard from relatives in a third world country that they had to pay in order to receive the vaccine. To me that does not seem right because this is a pandemic. " "With what respects other countries is that most have taken more biosecurity measures on their own to protect their citizens, from what I can say about their information is that they have been able to obtain better results in the case of European countries as Americans, among others who enjoy a good economic as well as social situation, etc., compared to other third world countries"
More Restrictions Internationally	International (7.5%)	"I know some countries in Europe took stricter precautions at the beginning of the pandemic, as well as some countries in Asia (like China). For example, I have a ton of family in Italy and the precautions that they took were significantly more regulated than here in the US."
	United States (28.8%)	"There's is many variations of the preventions countries might have, but I think there is many things such as mask obligation that should be applied, as well to put an obligated quarantine to people that has been expose in the past days. "
Less Restrictions Internationally	International (17%)	"I have friends in different countries where there are nearly no restrictions at all."
	United States (1.7%)	

However, medical students internationally and in the United States did believe that their countries generally had good healthcare and good initiatives and policies. 11.1% of international responses and 26.3% of United States responses

mentioned the theme “good healthcare” regarding their own countries, while 26.3% of international responses and 38.6% of United States responses mentioned the theme “good initiatives and policies”. Respondents primarily mentioned preventative measure messaging and vaccine distribution.

Table 4. Themes and Responses Corresponding to Social Media Presentation of COVID-19.

Theme	Country (% of responses)	Examples
Informative Information	International (27.8%)	"Thanks to the social networks, I have been able to be informed about the development of the modern laboratory vaccine, also including that they published advances on how patients with this contagious disease were being treated."
	United States (16.9%)	"Currently most people are posting to spread awareness about availability of COVID vaccine, or that they got the vaccine. I think it is a good way to communicate to large audiences that the vaccine is safe and helps people see that if their friends are getting the vaccine, they should too."
Mental Health Impact	International (22.2%)	"I think national news outlets have remained true to the facts, so it does get very overwhelming at times. I've had to consciously limit my exposure to the informations shared through these platforms in order to preserve my mental health. Nowadays, I feel like I'm used to it. It's everything and I see and everything I hear. "
	United States (8.5%)	"I personally became very overwhelmed by the death tolls being released everyday on social media, for a period of time I had to step back from social media because it was very sad."
Misinformation	International (25.9%)	"Social media I think it's not 100% accurate, there is a lot of fake news and people trying to convince you with many fake ideas of covid. My grandma for example she always send me many "news" saying wrong things of covid, and this is a common problem in my country because people read and think is always true, and it affects by making people more scared or not interested in covid when is actually a really important disease nowadays."
	United States (30.5%)	"The media construes statistics and blows things way out of proportion in spite of what is actually reality. "
Positive Messaging on COVID-19 Prevention	International (46.3%)	"Salvadorian media has presented COVID-19 with the utmost alert, so people keep following the social distances and biosafety precautions to avoid any sort of exposition to the virus; "
	United States (25.4%)	"I have seen a lot of people posting vaccine photos and encouraging others to get vaccinated as there is still a lot of skepticism there."
Spread of Negative Information and Fear	International (13%)	"In my country there have been many information and news headlines that have been made in order to alarm the population and that is something that has bothered me a lot. An example of this was the vaccination day that the media published images where it was seen that vaccinated people were suffering when they really were not. I feel that there has been a lot of morbid on the part of the mass media with this subject."
	United States (1.7%)	"The news has created a fear of COVID that is completely out of proportion to what it should be."

United States medical students were more likely to express a decrease in the number of academic opportunities and academic performances. The theme “decrease in academic opportunities and performance” was present in 15 of 75 United States

responses (20%) compared to 9 of 67 international responses (13.4%). Only 1 of 75 United States responses mentioned a positive experience of academic opportunity and performance. A United States response containing the theme "decrease in academic opportunities and performance" stated:

"I have had to adjust to a new way of doing school, mainly online, as well as coming to terms with the fact that I am not getting to experience many of the social aspects of medical school that I was looking forward to."

International students were more likely to express views on negative mental health impacts due to their personal beliefs (27.3%) and social media influence (22.2%). The United States responses showed less of a mental health impact due to personal beliefs (1.7%) and social media (8.5%), and expressed stronger negative views on how COVID-19 was handled, with 40 of 75 US responses (53.3%) reporting the theme "need better initiatives and policies". The theme "mental health impact" included responses such as: "My anxiety and panic have risen to such levels that it is hard for me to tolerate casual touch and proximity. I don't remember the last time I hugged a friend."

Understanding of COVID-19 and its policies was a major theme reported for both international and United States medical students with the theme "Understanding of COVID-19, Policies, and Preventative Methods" as seen in 45.5% of international responses and 43.3% of United States responses.

Medical students internationally were more likely to believe that social media was informative with 27.8% of responses containing the theme "informative information" while 25.9% of responses contained the theme "misinformation". The opposite was seen in the United States with 16.9% of students believing that social media was informative and 30.5% of students believing that social media spread misinformation. International students were also more likely to report positive messaging on COVID-19 (46.3%) than United States medical students (25.45%). An example of an international student's response containing the theme "informative information" is as follows:

"Thanks to the social networks, I have been able to be informed about the development of the modern laboratory vaccine, including the published advances on how patients with this contagious disease were being treated."

Discussion

The pandemic of COVID-19 has affected medical students' social, emotional, and academic stability and success both domestically and internationally since it began in 2019. The psychological well-being of the medical student is also based on their perception of COVID-19. The results of this study suggest this perception is influenced by restrictions, restriction changes, social media, and personal beliefs.

Mental health was seen to be a common theme among medical students, both from the international schools and the United

States, with over 1 out of 4 of the participants reporting the experience of increasing stress and anxiety during the pandemic. As previously mentioned, medical students are an already vulnerable population with one of the highest rates of depression, burnout, and suicidal ideations.⁴ This supports the notion that the current pandemic is only worsening an already widespread condition among students. Moreover, students from the international schools reported a much higher effect on their mental health than United States students. In a recent meta-analysis, the pooled prevalence of depression and anxiety among medical students internationally and domestically negatively increased with the progress of the pandemic.¹⁴ The study concluded a prevalence of depression and anxiety, which was 37.9%-33.7% higher than that of the general population and healthcare workers.¹⁴ Supporting our hypothesis, these meta-analysis findings indicated that international students who perceived higher levels of pandemic-related stress may have had a negative impact on their academic performance in medical school.¹⁵ However, even though mental health was a common theme, it was only listed in 27.3% of the responses of the international students and 1.7% of the responses of the United States students. Future studies exploring how the different medical students contributed to the medical care in their countries during the pandemic could further elucidate the difference in mental health.

The stress of having their medical education negatively impacted by the pandemic only added to the overall impact as over 1 out of 3 of the participants reported concerns of delayed graduation, decrease in academic opportunities and performance as well as inability to interact with patients in the clinical setting, and inability to go on rotations. As reported in the current literature, sudden change impacted the traditional training of medical students, with limited access to clinical internships.¹⁶⁻¹⁷ These findings support previous results where students expressed their desire to return to rotations, despite the pandemic, in order to assist as healthcare staff and move forward with their education.¹⁸

When asked about their perspectives on the national and international COVID-19 interventions, there were contrasting responses between the United States and international medical students. International medical students, generally, reported more restrictions in their country, which was supported by the United States medical students claiming that there were more restrictions internationally. This finding also confirms our hypothesis and current literature, that perceived social support is a protective factor and influences the mental health status of the medical student.¹⁵ It is worth noting that United States medical students had political critiques of how COVID was handled at the beginning of the pandemic, which was not seen in the international responses. As reported, the government plays an important role in reducing mental health disparities with efficient intervention and appropriate policy changes.¹⁴ This may have influenced the United States medical students' personal beliefs at the peak of the pandemic. Since the responses critiquing the political reactions were vague accurate prevalence of the themes were unable to be calculated.

Both international and US responses considered that there were “good responses internationally”, 45.3% and 42.4% respectively. These findings could be attributed partially to the fact that, international participants considered that first world countries have better access to medical care, better quality of care, technology, etc. allowing a better response as compared to their own countries.¹⁹ They also mentioned that there was a better enforcement of the regulations by the police and that there was better technology to allow citizens to continue with their daily lives while ensuring social distance and lockdown.

Limitations

All responses were obtained in English. However, 55.9% of the participants were native Spanish-speakers, with English being their second language. For this reason, the data obtained was limited to our participants’ English proficiency levels. Limited responses in each week also reduced the accuracy of the study. The international students participating in this study were all of similar cultural backgrounds. A multicentered study with participants from backgrounds in Europe, Asia, and Africa could be of future interest.

Conclusion:

COVID-19 continues to impact the globe, not only through health impacts but also through its impacts on individuals social, emotional, and educational lives. COVID-19, as seen in the responses, affect the mental health and educational opportunities of medical students. These have a direct impact on a medical student’s ability to successfully practice medicine, not only in their clinical education, but also as future residents and attending physicians. Further research would evaluate the long-term implications of COVID-19’s impact on medical students and its effects on physicians and patient care. Regardless, it must be acknowledged that the medical school experience has changed for both international and the United States medical students and affected them not only academically but mentally, and socially.

Summary – Accelerating Translation

Title: Comparison of Multinational Medical School Students Experiences in the Face of the COVID-19 Pandemic: A Qualitative Analysis

Background: The COVID-19 pandemic has presented unique challenges for countries and governments are the world requiring them to implement

different laws, policies, and guidelines to minimize the spread of the virus. The ever-changing landscape of the pandemic required these laws, policies, and guidelines to frequently be revised and new policies and guidelines added. Medical students around the world have been affected by these policies and guidelines as well as their own personal beliefs about the pandemic, and the social media portrayal of the pandemic.

Aim: This study sought to assess medical student’s perspectives on how the COVID-19 pandemic was handled within their own country and internationally, with regards to the different policies and guidelines. In addition, it aimed to analyze medical students’ attitudes and understanding on the pandemic, and how they have personally been affected in their social and academic lives. Lastly this study also determined how these views differ between countries.

Methodology: Students who were enrolled in the Global Seminar for Health and Environment elective course in their respective medical school were recruited to participate in the study. Participating students were enrolled in medical schools across four different countries (United States, El Salvador, Dominican Republic, and Honduras). For 6 consecutive weeks, students completed a non-graded journaling assignment by answering open ended questions about their personal beliefs and knowledge of the COVID-19 pandemic, COVID-19 policies and guidelines in their country, COVID-19 policies and guidelines in other countries, and social media presentations of the COVID-19 pandemic. The responses were then analyzed by researchers through the identification of common themes. These themes were then compared across medical schools.

Results: A total of 142 assignment submissions were collected and analyzed. Medical students who attended an international medical school (El Salvador, Dominican Republic, and Honduras) reported more governmental policies and restrictions in their countries, a larger mental health impact, and more individuals within their country showing a lack of regard for the policies and restrictions set by the government. Medical students in the United States were more likely to express a decrease in academic opportunities and academic performance. Compared to United States medical students, international students believed that social media with informative and helpful. Both international and United States medical students reported that they felt as if they had a good understanding of the COVID-19 pandemic.

Conclusion: The COVID-19 pandemic continues to affect medical students globally. The pandemic has changed the medical school experience for both international and United States medical students and affected them not only academically, but mentally, and socially.

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Author Contributions

Conceptualization: HDS, AMS. Data Curation: ACS, PWR. Formal Analysis: ACS, PWR, CO, TH, MVO. Funding Acquisition: HDS, AMS. Investigation: ACS, PWR, HDS, AMS. Methodology: HDS, AMS. Project Administration: ACS, PWR. Resources: ACS, PWR, CO, TH, MVO. Software: ACS. Supervision: HDS, AMS. Validation and Visualization: ACS, PWR. Writing – Original Draft Preparation and Writing – Review & Editing: ACS, PWR, AMS.

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Supplementary Material

Open ended journal questions:

1. What are your personal beliefs and knowledge of the novel coronavirus and COVID-19? How has it affected you at a personal level?
2. What is your perspective on the interventions and prevention initiatives that have been taken in your country, region, and city? What would you change, if any?
3. What is your perspective for the interventions and prevention initiatives of other countries or regions? What knowledge or information have you received about them?
4. How has social media and news outlets presented the novel coronavirus/COVID-19 in your country, region, city? How has that affected you?