

AAHCI Student Leadership Initiative (ASLI)

Virtual Education in Medicine

Background

As the COVID-19 pandemic continues, it adversely affects and disrupts medical student education. Much in-person teaching has shifted to virtual education, posing significant challenges while also providing an opportunity to transform medical education. In response to the impact of interruptions and challenges the pandemic has placed on medical students and their education, this initiative aims to encourage student leaders to share their experiences with “Virtual Education in Medicine”.

AAHCI, in partnership with the [AAHCI Latin America and the Caribbean \(LAC\) Regional Office host](#), University of São Paulo Medical School ([FMUSP](#)), supported this initiative in the LAC region - the first region to launch the initiative - and invited medical students from member institutions in the LAC region to submit proposals sharing innovative ideas on virtual medical education.

Student candidates were asked to:

- Highlight existing innovative programs that improve access to virtual medical education
- Share proposals for new, innovative programs that improve access to virtual medical education

This *Compendium* is a compilation of all abstracts submitted from participating LAC member institutions:

- Clínica Universidad de La Sabana (Colombia)
- Faculdade de Medicina de Botucatu – Universidade Estadual Paulista (UNESP) (Brazil)
- TecSalud, Tecnológico de Monterrey (Mexico)
- Universidad del Rosario (Colombia)
- University of São Paulo Medical School (FMUSP)

The first four abstracts in the *Compendium* are those selected as finalists by the reviewing committee. The authors provided presentations on their ideas in an ignite-style session held at the 2021 AAHC Global Innovation Forum ([GIF](#)).

The recordings can be viewed [here](#).

Innovations in Virtual Medical Education Latin America & the Caribbean (LAC) Region *Submission ABSTRACTS* 2021

FINALISTS

[*CEDEM Volunteering Project*](#), Bruna Chacon Mikahil, Vinicius Gaby Vieira Rego, and Lucas Albuquerque Chinelatto

[*Frontiers in Global Health*](#), Luis Fernando González González, Fernando Ariel García Terrón, and Luis Fernando Botello Villagrana

[*How COVID-19 Helped Us Discover New Resources in Medical Education*](#), César Alejandro Díaz Ritter and Nicolás Granados Casallas

[*MEDnasNUVENS \(MNN\)'s Optimized Medical Education Model*](#), Gustavo Henrique Pereira Boog, João Vitor Zirolto Lopes, Gustavo Meneses Dantas, Daniel Mendonça Dantas, and João Pedro Borges Jardim

SUBMISSIONS

[*Academic Medical Examination – Civic Engagement*](#), Rafael Berenguer Luna, João Vitor Zirolto Lopes, and Lucas Carrara Ribeiro

[*Dermatology Interest Group*](#), Natalia Nempeque Benítez, María Alejandra Melo Ramírez, Daniela Meléndrez Vásquez, María Gabriela Orozco Lizana, Juan Daniel Orjuela Morales, and Juan Felipe Ochoa Bermúdez

[*Future Surgeons Chapter*](#), Jaime David Lozano Herrera, Juan Pablo Garcia, Laura Natalia Buendia, Marian Másmela, Alejandro Velandia, Alejandro Cartagena, Isabella Velandia, Sara Valderrama, Santiago Arango, and Maria Paula Rodriguez

[*Global Health New Perspectives in Medical Education*](#), Laura Araujo Freitas, and Tarsila Lima Barbosa de Carvalho

[*Leadership-based Virtual Medical Education*](#), Mateo Andrés Diaz Quiroz, and Juan Pablo Ávila Madrigal

[*Ophthalmology Interest Group*](#), Maria Camila Sierra, Maria Alejandra Fonseca, Carlos Humberto Cifuentes, Luisa Peña, Nicolás Doménico Barraquer, and Juliana Reyes

[*Peer Mentoring Program*](#), Isabel A. Escobar, Diego Delgadoo and Esli Nájera



[*Resource Distribution to Assure Digital Inclusion to All Students During the Online Learning Period Due to COVID-19 Pandemic in a Developing Dountry*](#), Saulo Siqueira et al.

[*The Use of the Low-cost Manikin with “Face-to-Face” Feedback for Virtual Basic Life Support at Medical School: A Pilot Study*](#), Bruna Tiemi Cunha Nisiaymamoto, Paulo Vigga Alves e Silva, Iracema Ioco Kikuchi Umeda, Luiz Fernando Ferraz da Silva, Maria José Carvalho Carmona, and Naomi Kondo Nakagawa

AAHCI Student Leadership Initiative (ASLI): *Abstract*

CEDEM Volunteering Project

University of São Paulo Medical School

AUTHOR(S):



Bruna Chacon Mikahil, *Medical Student*; Vinicius Gaby Vieira Rego, *Medical Student*; Lucas Albuquerque Chinelatto, *Medical Student*; Marina Alves Martins Siqueira, *Advisor*; Milton de Arruda Martins, *Advisor*; Patricia Zen Tempski, *Advisor*

PURPOSE

At the start of the COVID-19 epidemic in Brazil, the Faculty of Medicine of the University of São Paulo suspended its in-person classes and had to transition the first four graduation years to an online environment. At the same time, as one of the main Brazilian assistance and research centers, students were eager to assist health professionals against this public health challenge in any way possible. In order to continue classes and avail students' interest in helping, many volunteer projects were designed. One of them aimed to ease the difficulty of transitioning classroom-based lectures to online learning and involve medical students in health education.

INNOVATION

The Center of Medical Education Development (CEDEM) created a volunteering project that involved 223 medical students and included research projects, assistance to health professionals in the COVID-19 frontline, and a project specifically tailored to students interested in medical education. The latter took place in CEDEM itself and included :

- Aiding teachers in the digitalization of in-person classes and coordinating the virtual lectures from years 1-4 of our medical school, as well as supporting other online activities, such as Problem Based Classes, online evaluations, and group dynamics;
- Creating infographics about COVID-19, study methods, and mental-health to inform students and health professionals from our community during this unprecedented time;

- Co-organizing the “COVID-19 Evidence and Updates for Health Professionals” course through the selection of scientific articles on the topic, formative test-making, and participant's support.

IMPACT

The creation of a volunteering project not only dedicated to assistance enabled students to learn more about medical education while making it possible for teachers to make such an abrupt educational transition in challenging times. In total, 242 activities within our medical curricula were aided by volunteering students in its online version; 24 Infographics were produced and shared on social media; and more than 50,000 participants subscribed to the COVID-19 online course.

As a result of the project, our faculty members have learned a new set of tools needed for online teaching and are now able to incorporate them in classes. This ensures virtual medical education will not be further impaired if classes remain online for the next months. Additionally, many students got involved with medical education and online teaching methods and have even been assigned to Specialization Courses, keen to deepen their knowledge and even pursue an education career.

We believe this volunteering project, which was suggested by students and coordinated by CEDEM, allowed great engagement of students with medical education during the pandemic. To conclude, the students' work in CEDEM enabled virtual education for undergraduates, faculty, and doctors on extension studies to become a feasible reality in our institution during pandemic and non-pandemic times.

AAHCI Student Leadership Initiative (ASLI): *Abstract*

Frontiers in Global Health

TecSalud Tecnológico de Monterrey

AUTHOR(S):

Luis Fernando González González, *Medical Student*; Fernando Ariel García Terrón, *Medical Student*; Luis Fernando Botello Villagrana, *Medical Student*



SUMMARY

The COVID-19 pandemic has been the trigger for major changes in our daily lives; without exception, education has experienced one of the biggest global challenges. Breaking paradigms has been a constant during last year in the education arena. The transition from face-to-face to virtual education has been a major challenge for educational systems. The loss of dynamism and physical interaction between peers has demanded the development of strategies that allow the maintenance and improvement of educational standards.

The Tecnológico de Monterrey, one of the leading universities in Latin America, implemented timely strategies to maintain the quality of education, training students and teachers to face the challenges posed by the COVID-19. As part of this leadership, Tec has supported initiatives that promote innovation and the training of leaders who are capable of proposing solutions to the problems of the new century in a globalized and interdependent world. In mid-2020, as part of the Institute of Global Health Equity founding efforts, the first of its kind in Latin America, we launched a student-led platform called "Frontiers in Global Health". This platform emerged as a student-led movement, bringing together resources from different disciplines to address, foster, and promote global health education and knowledge within Mexico and Latin America. Our mission is to train future generations of students to become agents of social change in the world of ideas in three ways: 1) Providing a space for the generation, dissemination, discussion, and consumption of ideas through the publication of articles related to global health, 2) generating agents of social change in the area of global health that will have a positive impact within their communities, and 3) promoting a sustainable model that will grow according to the interests of students and collaborators.



This project aims to integrate the academic community and society around today's challenges. Seeking to be the reference platform in Latin America, “Frontiers in Global Health” plans to be a community of convergence where students’ knowledge, experiences, and perspectives are shared across multidisciplinary teams to address the pressing challenges of today's global health. The lines of action include the integration of a student academic journals, events and webinars, educational programs, podcasts, and a news/reports section.

As this initiative is in its pilot phase with great results, we seek to measure its impact through the number of publications and number of visits to our website, as well as attendance at the various events, webinars, and podcasts under development. We seek to achieve a reach within the first year within the Tecnológico de Monterrey and to extend it to the rest of the academic institutions in Mexico and Latin America in the coming years.

As we approach the challenges of the 21st century, we realize that students like us should start forming communities to exchange experiences and knowledge in multidisciplinary ways. Further, we believe that every generation has the responsibility to do its best to leave a better world to the unborn. With these sentiments in mind, we are starting the “Frontiers in Global Health Platform” to connect, share, and organize the thousands of students in Latin America to fight and act together for a better and healthier world.



AAHCI Student Leadership Initiative (ASLI): *Abstract*

How COVID-19 Helped us Discover New Resources in Medical Education

Universidad de la Sabana

AUTHOR(S):

César Alejandro Díaz Ritter, *Medical Student*; Nicolás Granados Casallas *Medical Student*



SUMMARY

A characteristic of humans is the ability to adapt to the environment in which they live. It's no exception in these times, where everyone had to adapt to life inside their homes, transferring all their daily activity to their privacy.

The COVID-19 pandemic has been a challenge that has affected us in all aspects of our lives, including our academic training and life plans. Medical education has been one of the most affected due to its practical nature, where learning is lived through experience in the workplace. At the beginning of the crisis, we lived as student leaders within our institution, with moments of real uncertainty and anxiety. Living a situation like no other in 100 years is a challenge that would test our worth. We can fall short with the words to explain everything that we had to do in the moment of crisis, where all the actors involved implored explanations, certainties and clarity about what was going to happen.

Today retrospectively, and even in a pandemic, we can be assured that the true innovation was the change in thinking, managing to go from a state of crisis and total uncertainty to thinking and building what would be the best way to continue. Our lives could not be paralyzed for two years, without knowing when the pandemic will end; and it is thanks to the change in thinking that we seek to implement throughout the educational community that the introduction of technologies was introduced to teach classes and put into practice. Interaction with patients through telemedicine is one example. Thanks to the ideas of dozens of people who bet on continuity, who believed in everyone's capacities to adapt without diminishing the quality of the education that was transmitted, we could continue.

At Universidad de La Sabana, we experienced this challenge unexpectedly, but it allowed us to find new alternatives to teaching and also generate teamwork between students and academic authorities. The transition to a virtual component took place in just days, allowing the immediate continuity of the 100 percent of academic activities. We find in technology not only an extra tool but a first in academic training, using applications as iHuman. And together with the teachers, multiple tools were exploited. As it was possible to have attendance at the campus, the importance of simulation was observed as the main component in the acquisition of new skills, which even required the expansion of the simulated hospital.

In conclusion, the crisis presented by the Covid 19 pandemic has allowed us to develop new tools and innovative techniques which will not only have a short-term impact during the crisis but also allow us to understand that there are situations that can be much better through virtuality. We learned from mistakes; new initiatives such as “Interest groups” were created; time could be used in a better way; we learned from ourselves and what we are capable of doing. Most importantly, we are learning.

AAHCI Student Leadership Initiative (ASLI): *Abstract*

MEDnasNUVENS (MNN)'s Optimized Medical Education Model
University of São Paulo Medical School



AUTHOR(S):

Gustavo Henrique Pereira Boog, *Medical Student*; João Vitor Ziroldo Lopes, *Medical Student*; Gustavo Meneses Dantas, *Medical Student*; Daniel Mendonça Dantas, *Medical Student*; João Pedro Borges Jardim, *Medical Student*;

Clarice Rosa Olivo, *Supervision*; Patrícia Zen Tempski, *Supervision*

CHALLENGE

The COVID-19 pandemic impacted different aspects of medical education, and social distancing strategies to contain virus spread compelled universities to transition their lectures and activities to online learning. Moreover, distance impaired the development of relationships between students and their classmates and teachers. This situation potentialized a more passive and vertical learning, due to excessive hours watching the screen and a lack of practical application opportunities of the learned contents. Furthermore, the privation of social interaction between students led to a more individualized approach of study and reduced the possibilities of one helping another, potentially increasing a noncooperation culture and harming student's mental health.

INNOVATION TO ADDRESS CHALLENGE

In these circumstances, the leadership of the student entity MEDnasNUVENS (MNN) from the University of São Paulo Medical School (FMUSP) strove to mitigate the educational challenges imposed by the pandemic. This innovative project was born in 2019, aiming to offer more opportunities for students to assume the protagonism of their own educational process by active and collaborative learning methodologies. Considering the remote learning context, MNN's leadership did much to optimize education: encouraged medical students to produce voluntarily study materials (such as short videos, texts, tables, diagrams, and schematic figures); capacitated the volunteers for better use of digital educational instruments and creational tools; and organized the contents in a virtual, accessible and free platform for all FMUSP academics. This allowed a low-cost production of learning materials made by and for students, thus enhancing the learning experience. Also, having a centralized and open space to share content with classmates helped construct the perception of a cooperative education - instead of an individualized one - raising values such as partnership, generosity, and commitment.

RESULTS/OUTCOMES

During the pandemic, MNN expanded its activity by offering different strategies to cope with online learning. Considering that teaching others is one of the best strategies of learning, this methodology was very effective. Being a volunteer challenged students to develop skills such as communication, creativity, and teamwork. In addition, sharing experiences with their colleagues through material creation connected them. Even for students who only participated by accessing the platform, there were advantages because the short and concise materials were useful and pertinent for medical learning. Until now, MNN produced nearly 479 study materials (253 videos - 4826 minutes; 134 texts - 2322 pages; 92 others) and enrolled more than 80 volunteer students and 350 viewers in the project. Another relevant impact is the improvement in the student's mental health, that occurred mainly due to the promotion of their autonomy and to the sense of cooperation from MNN's creational activities. In the long-term, we expect to contribute to FMUSP educational culture, highlighting the active learning methodologies and prizing the student's potential for knowledge construction. Also, regardless of virtual or in-person teaching space, we aim to see an optimized medical education model where the sense of individualism and noncooperation will be replaced by the values of creativity and collaboration.

AAHCI Student Leadership Initiative (ASLI): *Abstract*

Academic Medical Examination – Civic Engagement

University of São Paulo Medical School

AUTHOR(S):

Rafael Berenguer Luna, *Medical Student*; João Vitor Zirolto Lopes, *Medical Student*; Lucas Carrara Ribeiro, *Medical Student*; Isabela Judith Martins Benseñor, *Medical Assistant*

SUMMARY

The COVID-19 pandemic impacted deeply medical formation: quarantine measures to contain virus spread led medical universities to transition lectures and practical activities to online learning. Even though practical classes are less frequent in the first year of medical school (e.g., visits to hospital facilities and primary healthcare centers; training in Basic Life Support and simple clinical skills), students can participate in extracurricular activities to learn more about medical practice. With online learning, most of those activities focused on patient interaction were cancelled, reducing first-year students' opportunities to acquire experience in clinical reasoning and communication skills.

In this context, the Academic Medical Extension (AME) of University of São Paulo Medical School offers primary care to needy areas in the City of São Paulo while giving medical students the opportunity to learn and practice semiology. Typically, second-year students conducted weekly lectures for incomers focused on clinical interview and physical examination. Furthermore, first to fourth-year volunteers performed medical appointments on Saturdays in community centers, with doctor's supervision.

Due to the impossibility of face-to-face classes, AME organizers created lectures focused on interaction, socialization, and better apprenticeship: students were divided into small online groups, enabling better contact between them and a warmer atmosphere. Before each class, 10 minutes were dedicated to talk about their difficulties during the social distancing period, offering support and enhancing the social bounds between the students. Classes were given through web meetings; and in each one interactive activities were promoted, such as role playing for anamnesis' practice. Also, specific moments were included to promote students' reasoning via guiding questions, providing a more active learning. In addition, each class had a clinical case about the theme in discussion, and gamification platforms were used (e.g., question-and-answer apps), creating

a more ludic and friendly environment. Another aspect that contributed to the success of the project were lectures that are not usually addressed by the traditional curriculum, despite their importance during medical practice (e.g., health of LGBTQ+ people and domestic violence).

The major short-term impacts of these interventions were evidenced by a better performance of students during online classes. The identification with class conductors and the preference for themes related to the medical routine led to a greater satisfaction with the project. In addition, these actions contributed to students' self-esteem and well-being, since online meetings acted as moments of relaxation, providing an environment of mutual care between students. In the long term, we found out that the teaching dynamics focused on students' demands proved to be a more efficient teaching method that is also complementary to the practical activities and purposes developed by AME. The success of the methodology was evidenced by the increased number of participants: compared to 2019, in 2020 the number of students that achieved the minimal frequency in the classes increased 158 percent. Likewise, the number of coordinators for 2021 increased 75 percent. This growth rate made it possible to open a new health center, enhancing the project's impact in healthcare assistance and medical formation during the pandemic.

AAHCI Student Leadership Initiative (ASLI): *Abstract*

Dermatology Interest Group

Universidad del Rosario

AUTHOR(S):

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SUMMARY

This year, the world has faced a tremendous change. The actual pandemic has challenged the way we used to live, communicate, work, interact, and even the way we study. There has been an indubitable impact on education, not only limiting live encounters, but following the need to explore new tools to continue our journey in our formation as physicians. As time during confinement went by, our curiosity toward new opportunities in clinical knowledge arose, and we had the privilege to find other fellow students with the same interest and passion for dermatology. This allowed us to establish the first dermatology interest group in Colombia, supported by our institution, Universidad del Rosario, and specialists in this area. At that point, we had created a group led by six medical students, and conformed by 110 active participants, which allowed us to explore different education and learning methods, showing us that education can be done in a remote way through various resources, and discovering that remote access is a productive, creative, and fun way to study and learn. We noticed that general medicine programs around the world include basic dermatology education, thus we find this is a very broad knowledge area that cuts across all medical specialties. Consequently, we saw the need to include an institutional tool that would allow the students not only to deepen in this subject and begin to create a path in dermatology as a speciality, but also, to complement the formation as a holistic physician.

This project has permitted us to face this problem in an innovative way, working through different modules that face diverse aspects relevant in dermatology such as academics, investigation, social impact, and clinical practice. For instance, during this year, we have used tools such as social media with our Instagram page and our YouTube channel (@dermig_ur and Dermig Ur, respectively). The use of remote platforms such as Zoom, Meets, and Teams allowed us to share academic information and also useful content for non medical public interested in skin care and frequent skin pathologies. Indeed, we have created spaces for: seminars directed by members of the group, academic posts on social media, participated on virtual

courses about the use of scientific databases, Instagram Lives, photo and journal clubs, among others. This has allowed us to have a great reach, not only at an institutional level, but also a national and international level, spreading knowledge of public interest related to this area. Through this initiative, we have evidenced a positive impact in our medical community, not only in the growth of our knowledge and communication skills, but also in the construction of a working network among students, doctors, and institutions willing to work hand-in-hand and learn together and from each other. In the long term, we aspire to impact the investigation about dermatology in Colombia and empower doctors in training to be better and full of useful and integrated knowledge.

AAHCI Student Leadership Initiative (ASLI): *Abstract*

Future Surgeons Chapter

Universidad del Rosario

AUTHOR(S):

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SUMMARY

URSIG (Universidad del Rosario Surgery Interest Group) is a student initiative based in Bogota, Colombia. This group was born after six medical students identified that the approach to surgical specialties started quite late in our program and the deepening into surgical topics was not satisfying enough. For that reason, we created this group receiving over 200 applications, and divided it into three inter-collaborative subgroups: Investigation, Academy, and Experience. Students could participate in whichever subgroup they preferred, regardless of their academic semester. Investigation was designed to promote clinical investigation, with support from our affiliated hospitals, from exceedingly early on the career; online classes with teachers from our school, collective participation in online courses on biostatistics; and finally link-up to current and emerging investigation projects as co-authors. All of these activities were developed in a structured way and let our students innovate far beyond our primary curriculum. Academy is the main axis of our group. Here, students themselves were encouraged to prepare literature reviews and explain different surgical-related topics with the support of surgical attendants, aiming to deliver multiple and relevant perspectives on key surgical topics.

Finally, experience is the subgroup where we give our members a particular space to learn more than medical related things, we have talks about magic, history, leadership, personal and fulfilling stories from our attendings, mindfulness sessions led by one of our main surgeons Dr. Akram Kadamani, and so many others. But in 2020, we faced a huge wall—COVID-19, an obstacle we would not let stop us. We redesigned the way of connecting with our members, we held virtual meetings to reach students no matter where they were due to the lockdown. We managed to keep the original work plan. When our members from 7th semester onwards were allowed to return to the hospitals, we saw a chance to boost up the group: we started recording, with all the respective authorizations, videos of surgeries and procedures, and then reviewed them with the help of interns, residents and attendants, strengthening the bonds in our group.



LATIN AMERICA & THE CARIBBEAN REGIONAL OFFICE

Later this year, we proved our initiative to the American College of Surgeons, who added us to their directory of Students Surgery Interest Groups. We also presented this idea to the Colombian Surgery Association, but given that there were no other precedents in our country on this topic, we decided, along with the Colombian Surgery Association, to design and create a division called Future Surgeons Chapter, in order to promote the creation and collaboration of more surgery interest groups in Colombia. We have served as guidance to many other universities which have reached out to us to understand the structure and steps to follow to create a surgery interest group. Among our plans, we wish to inaugurate a congress with all the other Colombian groups and international groups to start generating collaborative learning with everyone interested in surgical specialties. We passionately believe that the love for surgery needs to be cultivated from early on in the career of a doctor, and that will prove to be one of the traits to raise an excellent surgeon.



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AAHCI Student Leadership Initiative (ASLI): *Abstract*

Global Health New Perspectives in Medical Education

Botucatu Medical School - UNESP

AUTHOR(S):

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PURPOSE

Medicine is somewhat romanticized by society and beginning undergraduate students, focusing mostly on disease and heroic interventions. New health politics are strengthening prevention attitudes and patient-centered treatments. There is the growing awareness of globalization as an interrelation in policies, economics, and culture among countries, reflected in an increasing flow of people, services, money, technologies, and research, among others. Future doctors must be trained with global perception, experience, and responsibility, changing their attitudes and perceptions toward global health issues. Students should better understand the impact of the environment, the cultural environment, and health system and local policy on health, adopting broadened multicultural perspectives. Global learning should be promoted, as well as the understanding of how medicine/health depends on different factors. It is the role of medical schools to prepare future doctors with greater awareness of the impact of the global context and to be capable of innovating in global health policies

INNOVATION

Botucatu Medical School (FMB) - UNESP has certainly worked to include Social Sciences and Public Health in its curriculum, integrating different subjects (such as Nursing and Nutrition) with the society. In 2020, a virtual discipline on Global Health and Climate Change was offered by FMB-UNESP in partnership with Cornell University - USA, addressing water crisis, migration, agriculture, data on climate changes and forecasts, and diverse subjects that seemed far from the understanding of “health” for first and second-year medical students. Considering the environment as a fundamental part of people’s health has become obvious, immediate, and urgent. Water, temperature, housing, and food are vital to all of us, from Botucatu to New York to all parts of



the globe. As one of the first Brazilian school to offer this course within its regular curriculum, FMB has broadened its students' vision of health and the role of a doctor.

IMPACT

It was remarkable experiencing Global Health classes in 2020, when, in Brazil, President Bolsonaro continued with the negationist policy, when we saw our biomes burn, our species disappear, and our population die. Having completed the Global Health course, surpassing our expectations, it gave us a new insight into the importance of thinking globally, considering “health” as a broad issue. Health is not only linked to disease or absence of disease, but is also linked to the environment; and the term “global” is not and should not be used to discuss differences but the aspects that unify us. Finally, we understand that education is a powerful tool to change the world, but if restricted to the academic environment, it loses its transforming essence. We realized that without the construction of solid national bases, international actions will become empty and based on the reality of one single country, impairing efficient dialogue and effective change within each nation and in the world as a whole. The discussions and the new understanding made us aware to be more critical and more proactive in global processes.



AAHCI Student Leadership Initiative (ASLI): *Abstract*

Leadership-based Virtual Medical Education

Universidad del Rosario

AUTHOR(S):

Mateo Andrés Díaz Quiroz, *Medical Student*; Juan Pablo Ávila Madrigal, *Medical Student*

SUMMARY

The 2020 COVID-19 pandemic emergency has transformed the way we used to know education. Virtuality has become the daily basis of medical students, bringing new challenges to both educators and trainees. One of the most relevant challenges is related to the absence of developing soft skills through clinical practice, social isolation, and depersonalization of medical education.

Many strategies have been used to approach this issue, within these, leadership has been described as key. According to Victor H. Vroom "Leadership is a process...It involves a particular form of influence called motivating, resulting in collaboration in pursuit of a common goal." In the context of medical education, Citaku F. et al. worked this topic through an observational study where they evaluated leadership competencies necessary to establish leadership in medical education and concluded that five strategies could be used: (1) Social Responsibility, (2) Innovation, (3) Self-Management, (4) Task Management, and (5) Justice Orientation, in order to establish a positive impact leadership in medical education.

We propose that the problems we are facing through virtuality in medical education could be addressed via the application of an innovative Leadership Based Virtual Medical Education (LVME). LVME is an educational program that intends to reinforce leadership competencies in medical students around the world. Soft skills such as assertive communication, emotional education, self-management, group work, creative thinking, and others are necessary to develop an adequate and good medical practice. Additionally, these new educational dynamics interrupt social learning not only generating a distance between teacher-student, but also student-student, and the lack of these social interactions perpetuate a depersonalization of medical education and the absence of a sense of belonging to a medical program.



LVME could improve the development of soft skills and fight against isolation and depersonalization of medical education through the application of self-leadership, relational leadership, and systemic leadership, following a sequential relation between these steps.

The main strategy to apply this program depends on two aspects:

1. Following a sequential pattern in which in order to lead, first it is important to have several personal competencies named as self-leadership in order to continue with relational leadership and finishing with a systemic leadership, based on the identification and solving of problems in different contexts.
2. Generating classes in which leadership and medical education could be addressed and discussed, with this being coherent with other academic sceneries of the medical curriculum. We consider that the application of LVME could address the main problems previously discussed and it could have a short- and long-term impact.

The short-term impact could be related with reinforcing the motivation of medical students in their individual and global virtual learning process, meanwhile the long-term impact could be related with achieving leadership competencies that the students and future medical doctors will use in their future learning process and in their future clinical practices.

AAHCI Student Leadership Initiative (ASLI): *Abstract*

Ophthalmology Interest Group

Universidad del Rosario

AUTHOR(S):

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SUMMARY

Ophthalmology is an extensive field that is not given enough importance throughout the undergraduate degree (medical school). Universidad del Rosario's Ophthalmology Interest Group was created to establish strong and deep knowledge in ophthalmology, through group reviews and case analysis always supervised by ophthalmologists and fellows, for a better approach. Our objective is to pass our interest to everyone through basic subject learning and a live living clinical experience approach. The aim is to increase the interest of those who do not yet know this area and those who want to have a deeper knowledge of it.

Despite the pandemic, our progress has not been impeded, as virtuality has been an excellent tool for us. It has helped us to find global connection strategies, as students and specialists from different cities and universities have assisted and participated in the different activities we have developed. Also, it has allowed us to create new links between students with common interests, residents, and even specialists. Also, it has helped us to polish communication skills and to encourage overcoming the fear of public speaking.

This initiative has not only created a space to review topics of interest but also, a space to learn about ophthalmological research and be able to work on it. As research is currently given little time to medical students and it has increased in relevance, we aim to make medical students more interested in this field. Therefore, reviews in clinical research are also carried out to lay the groundwork for future ophthalmologists and researchers. This has enabled members of this group to have the opportunity of acquiring research experience in their area of interest and developing research projects of the highest quality as young researchers, with the support of our group mentors.

All of the above allows, in the short-term, to develop both academic and social skills, providing an opportunity to build foundations of knowledge in ophthalmology, as well as promoting commitment, respect, and teamwork. In the long-term, it can guide students to decide on their future speciality, and to be prepared with basic ophthalmology and research knowledge and experience.

AAHCI Student Leadership Initiative (ASLI): *Abstract*

Peer Mentoring Program

TecSalud Tecnológico de Monterrey

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SUMMARY

The transition to health careers is considered a stressful period—even more so when the COVID-19 pandemic disturbed students' first entry, making them subject to possible demotivation and potentially resulting in high attrition rates. Peer mentoring programs have proven to be effective in counteracting such consequences. These programs decrease specific psychological symptoms caused by academic pressure and improve communication skills, leadership, and professionalism. Peer mentoring is defined as an academic relationship where a qualified student guides a less experienced student.

This research protocol's objective was to assess the effects of a novel peer mentoring program on academic performance and anxiety levels of first-year students at Tecnológico de Monterrey. It specifically aims to reduce anxiety levels and improve mentees' academic performance, and sophomores' communication and leadership skills through the experience of guiding first-year students, thus strengthening the support network within the School of Medicine and Health.

We explored the hypothesis that participants would show lower perceived anxiety rates secondary to their academic training and better overall academic performance than those who did not take part in the program. A pilot study was conducted through the Zoom platform with volunteer students from the aforementioned school. Students from one academic society were included. Sophomore students served as mentors (n= 7) and freshmen as mentees (n= 12); the pairing was randomized with a 1:2 ratio. The program had a pilot period during the August-December 2020 semester, in which mentors received a mentoring guide and were tested on their understanding of the material. Thereafter, mentees performed an initial integration dynamic, meetings with their mentors for the tracking of personal and academic goals, and were offered active-learning dynamics. Throughout the project, weekly follow-up between members was overseen by the





coordination team. Both groups were given a mid-semester monitoring survey and attended a focus group at the end of the semester to collect feedback.

Qualitative results from monitoring surveys, focus groups, and interaction suggests that the peer mentoring pilot program helped mentors revise past topics; develop additional communication, organizational, and leadership skills; and feel the satisfaction of assisting someone with less experience. Mentees reported feeling accompanied, supported by their mentors, and satisfied with the educational benefit of the learning dynamics. They also reported that the program helped reduce their anxiety levels and improve their academic performance by developing new studying strategies and organizational skills. Comments from both groups reflect the strengthening of the support network within the academic society.

These results correspond to what was found in the literature on peer mentoring programs, as they show an improvement in mentoring skills, besides a sense of academic and emotional support because of bilateral accompaniment despite the challenges posed by the COVID-19 pandemic. Complementary insights, such as the successful implementation of recreational activities, were key to students' sense of belonging and a better relationship with their mentors. Areas for improvement were identified in learning dynamics planning, objective projection, review, and interaction between mentors and mentees.



AAHCI Student Leadership Initiative (ASLI): *Abstract*

Resource Distribution to Assure Digital Inclusion to All Students During the Online Learning Period Due to COVID-19 Pandemic in a Developing Country

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SUMMARY

While on-line medical education was massively implemented worldwide, due to the need for social isolation for the COVID-19 pandemic, in developing countries, problems such as unequal access to a reasonable internet connection and lack of resources to obtain proper electronic devices increased social differences between students with good financial conditions and those with social vulnerabilities, mainly those supported by social inclusion programs.

Digital inclusion aims to ensure that all individuals and communities, including the most disadvantaged, have access to information and communication technologies. This concept consists of five elements: robust internet service, internet-enabled devices, quality technical support, access to digital training and applications, and online content designed to enable and encourage self-sufficiency, participation, and collaboration (National Digital Inclusion Alliance – US).

To promote digital inclusion, it was mandatory to assist students in need. The School of Medicine of the University of São Paulo (USP) concerned with this reality, in partnership with students' representatives initiative, performed a survey that initially identified that 4 percent of 455 students could not attend the online activities. There were no similar institutional initiatives before the COVID-19 pandemics.

The dean of medical school, in collaboration with students and the Center for Development of Medical Education, readily responded to this demand, preparing and distributing about 60 Chromebooks and SIM cards to all students in need. It was observed, as short-term impacts, that all medical students were able to attend all online activities during the entire period of social distancing. Additionally, the long-term impacts were the development of a digital inclusion plan, as well as increasing the sense of belonging and caring among students. All that is essential in times when virtual education will probably remain.

AAHCI Student Leadership Initiative (ASLI): Abstract

The Use of the Low-cost Manikin with "Face- to-Face "Feedback for Virtual Basic Life Support at Medical School:

A Pilot Study

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BACKGROUND

Due to the SARS-Cov-2 pandemic, the teaching-learning processes of traditional disciplines at medical schools were adapted for continuing education worldwide in a remote environment. In this context, basic life support (BLS) was a tremendous educational challenge for synchronous hands-on training in the remote environment. Traditionally, BLS used to occur at the Skill Laboratory with one instructor to 7-8 students using intermediate-fidelity manikins (Little Anne QCPR, Laerdal Medical Ltd., Norway) under individual face-to-face feedback. The innovative adaptation for this hands-on activity was created by Kids Save Lives Brazil (KSLB), an elective discipline at the São Paulo University Medical School that used low-cost handmade manikins with recycled materials (<https://youtu.be/DNnyGnovkPo>). Students were divided into groups (n=7-8) trained by one instructor under the same individual "face-to-face" feedback. This observational pilot study aimed to compare the effectiveness of traditional previous hands-on BLS (Traditional-BLS) and the innovative remote training (Innovative-BLS-KSLB) on competencies acquisition and satisfaction with training in the medical school.

MATERIAL AND METHODS

Thirty undergraduate students underwent hands-on BLS according to the 2015 American Heart Association Guidelines for Cardiopulmonary Resuscitation (CPR). Among them, 15 subjects underwent Traditional-BLS (mean age 21.6 y.o., 6 male), and 15 subjects underwent Innovative-BLS-KSLB (mean age 21.6 y.o., 4 male). The effectiveness of each BLS program was assessed by the success rate of competencies acquisition. Instructors used a checklist of skills and attitudes with no/yes answer over the hands-on BLS. Learners used the same list to self-report their perception of competencies acquisition after the training. The competencies assessed were: (1) checking local safety; (2) evaluating victim's responsiveness; (3) calling for help; (4) evaluating victim's

breathing; (5) compression effectiveness divided in (a) hands and straight arms placement on the sternum (1/3 inferior part), (b) compression depth, (c) compression rate between 100 and 120 per minute (at least 1-minute), (d) chest release after compression; (6) the external automatic defibrillator (EAD) use task divided in (a) turning on the equipment, (b) connecting patches on the victim, (c) favoring adequate cardiac rhythm analysis with no one touching the victim, (d) shock discharge, (e) immediate return to chest compression; and (7) victim positioning after recovery in lateral decubitus. Satisfaction with the two programs was pointed as very bad, insufficient, regular, good, or very good training. Chi-square test analysis was performed to compare both groups' skills data.

RESULTS

Students of both programs had a 100 percent success rate in all skills acquisition when assessed by instructors. Similar results were found in self-reported competencies acquisition in both groups, with only two students denying the acquisition of "turning on the EAD" when arrival to the scene in the innovative-BLS-KSLB group ($p>0.05$). Students of both groups reported the hands-on Innovative-BLS-KSLB as good or very good, similar to the Traditional-BLS.

CONCLUSION

The Innovative-BLS-KSLB using handmade manikins to "face-to-face" feedback training can be a new, relevant, feasible, engaging, and ethical alternative for virtual medical education. The success rate of competencies acquisition was very high and may allow students to act as multipliers of CPR in school communities.