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Title: Impact of COVID-19 on Undergraduate Nursing Education: Student Perspectives

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Impact of COVID-19 on Undergraduate Nursing Education: Student Perspectives

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Abstract

The COVID-19 pandemic has taken higher education in general into unprecedented times. The rapid transition from in-person to online teaching and learning proved to be difficult for students, educators, and administrators. It could be argued that medical and nursing education had an even more difficult task of determining how to effectively teach the provision of health care—a fundamentally in-person, hands-on endeavor—online. The purpose of this paper is to explore the impact that COVID-19 had on undergraduate nursing education and identify lessons learned as a result. Nursing student perspectives from 2 Midwestern universities were compiled and analyzed to identify challenges, interventions performed, and key lessons learned.
In March 2020, college students across the United States faced unprecedented uncertainty. The World Health Organization (WHO) had declared the COVID-19 outbreak a global pandemic on March 11 and, by the middle of the month, all 50 states had reported cases of COVID-19. The rapid spread of this highly contagious, potentially lethal virus presented college and university administrators across the country with the dilemma of whether or not to bring students back to campus. Undergraduate nursing programs faced an even more complex decision, since large portions of the curriculum rely on hands-on clinical experience. Ultimately, most programs completed the remainder of the spring 2020 semester remotely, while the fall 2020 semester looked different for many programs, some moving forward with in-person learning, others virtual.

The rapid transition to remote learning created challenges to learning, challenges to living, and challenges to professional commitment for nursing students. There were also opportunities for students to develop interventions and improve their experience, including changing the environment, learning via virtual gatherings, responding to the flexibility of faculty, pursuing intentional self-care, and undertaking supplemental learning. In this paper, we explore the experience of undergraduate nursing education during COVID—what worked and what did not from the student’s perspective. This exploration may prove valuable in the matriculation of future nurses.

In the following sections, we present information from around 40 interviews with upper-division nursing students from our 2 midwestern universities—a large state university and a small, faith-based liberal arts university. Our interviews were conducted in an informal manner, and student participation was voluntary. Quotes are anonymous to respect student privacy.
Challenges to Learning

Online academic activities

Disruptions. When schools of nursing transitioned from in-person learning to remote learning in March 2020, students were presented with the challenge of learning via recorded lectures, narrated PowerPoint presentations, and Zoom classes. Students reported that learning online took longer and required greater effort. One student reported, “I got distracted easily and I was less engaged during online learning.”

Online exams were problematic. Most students were no longer on campus, many were living at their family home, which created conflicts between time zones and test times. Some nursing programs required students to find exam proctors, which increased their stress.

When COVID-19 forced students to relocate to learning spaces off campus, access to reliable technology became a challenge, and some students reported fighting for bandwidth at home with family members or roommates. Wi-Fi interruptions added to the stress and anxiety of online exams. One student described, “A Wi-Fi problem, computer glitch, or shutdown during an exam did not ease my already bad testing anxiety.” These technological hurdles made it difficult for students to stay focused during exams and to regain composure after losing Wi-Fi connectivity.

The loss of resources that a college campus typically offers was another source of stress. Students’ access to tutoring and collaborating with peers or faculty became almost nonexistent. One student expressed, “It was hard not seeing my professors or getting the personal connection. I couldn’t study with friends ... I missed being in community with peers and professors.”

One student, who entered a nursing program during the pandemic, stated: “It is kind of strange to not know what people look like below their shoulders, how tall they are, how they walk. These are
all cues we use to recognize one another.”³ This sense of disconnection led to self-reported decreases in motivation and accountability and increases in procrastination.

**Responses.** Students who lived off campus reported positively about their decreased commute time, using gained time to study, work, and focus on self-care. Another positive outcome was the opportunity to spend more time with family and friends. One student stated, “Normally, I am not able to be with my family during the school year ... but when we were sent home, my family became my support system.”³ The flexibility of online classes also gave students the autonomy to choose when and where to listen to lectures. This flexibility gave students a sense of control over their circumstances, which was important in managing the stress of the transition to remote learning.

Students appreciated that the standard of education was never lowered while navigating online classes. This was key to their feelings of personal and professional success. One student reported, “The standard was never lowered for us while we were online. Sometimes we had more work to do in online classes than being in-person, but it was all worth it if it will help me save a life one day.”⁶

One of the most troubling negative responses associated with remote learning was academic misconduct. Faculty attempted to implement methods of testing that eliminated cheating; however, academic misconduct still occurred. Some nursing courses required students to find their own proctor, and it was reported that the proctor was usually a family member due to isolating at home during the global pandemic. If the family member did not monitor them, students had full access to resources that could assist in cheating. Other nursing programs required students to take exams via webcam, but students reported attaching pages of notes to
their computer screen not visible via webcam. These methods of cheating are a disappointing finding. More effective methods of preventing academic misconduct are needed.

Another negative response was the student perception that virtual activities failed to match the educational experience of hands-on learning activities. A nursing student stated, “We watched videos of what we would have been doing in the lab, but it just didn’t stick with me. It was super weird.”\textsuperscript{5} One student stated, “The biggest struggle of going through nursing school during this time is not being able to participate during in-person activities.”\textsuperscript{6} Remote learning requires current technological skills from both learner and faculty, as well as accommodation of individual student’s learning needs.

**Clinical experiences—Lost or virtual**

**Disruptions.** The onset of the COVID-19 pandemic abruptly disrupted clinical experiences. One hundred percent of nursing students in the 2 schools where we conducted interviews for this paper were removed from the clinical setting for the last half of the spring 2020 semester. Some students missed valuable clinical work or experiences in specialty areas that could not be repeated without prolonging the degree program (e.g., maternal-newborn field). Many students felt that this created potential challenges for future employment in those areas since they were not able to decide if the specialty was of interest or not.

Losing the opportunity to practice hands-on care disrupted knowledge application and skill building. For many students, proficiency is linked to the repeated opportunity to practice performing skills. The findings of one study showed that repetitive practice combined with mentorship in an academic laboratory environment fostered skill competence and retention.\textsuperscript{7}
Virtual programs that simulated a clinical day were introduced to replace in-person experiences, but they were often time consuming and confusing for students. One student stated, “While our professors worked hard ... I did not feel like our online clinical experience was as informative as it would have been pre-COVID-19.” Another explained,

I had a hard time navigating the material ... since we had never used the program before and the professor was not able to see the student point of view. In order to complete the simulation and required coursework, it took me longer than a typical 12-hour ... shift ... it felt like I ... spent all my time clicking boxes and going back and forth trying to find the correct answers.

Online clinical experiences added approximately 12–15 hours in front of a computer screen per week. This often resulted in extreme fatigue and frustration. Texas Woman's University (TWU) acknowledged students' concerns and recommended using a 2:1 ratio between online clinical simulation and clinical experience hours. TWU acknowledged that the quick response required for virtual simulations did not allow faculty to effectively plan, implement, and evaluate virtual products. Moving forward, faculty can tailor experiences and take student evaluations into account to achieve an improved virtual simulation experience.

Responses. In response to the loss of in-person clinical experiences, new opportunities were implemented. Virtual clinical simulations that were developed by nursing faculty at one university, in partnership with faculty from the school of social work, were very beneficial. One student stated, “Simulations that mimicked telehealth visits provided us with valuable opportunities to interact with clients and increase our confidence in our interviewing abilities. Working alongside another nursing student also fostered teamwork.” Paid nurse internships were developed—based on an American Organization for Nursing Leadership policy brief—that
allowed students to work alongside health system nursing staff while earning clinical credit. A practice/academic partnership program was instituted by a number of regional universities in partnership with medical centers. Between our 2 midwestern universities, approximately 80 students participated. The number of clinical hours in the program varied, but was limited to 36 hours per week. In addition to required clinical hours, students worked shifts as nurse technicians to aid with COVID surge staffing. Students consistently reported that this clinical experience was an “outstanding” or “favorite” learning experience, and it increased their confidence at the bedside. Both of our universities are currently working on an evaluation tool for the program that will be used to capture the experience from the preceptor and student point of view.

This newly developed internship opportunity not only helped students financially, but also enhanced employment possibilities. One student stated, “I was able to build a relationship with the other nurses and staff during my internship. I made a good impression and ... I was told I had a very high probability of getting hired after graduation.” Medical facilities also benefited from the internship program. An adjunct faculty professor stated if student interns committed to the facility where they were completing clinicals and started the orientation process during clinicals, it would decrease the time needed to complete orientation when hired. If 80% of interns were retained in the neonatal intensive care unit, for example, up to $45,000 could be saved in orientation costs. Nurses would also work independently at the bedside sooner, which could increase the overall patient census.

Pandemic limitations caused schools of nursing to identify additional clinical learning site opportunities. Testing clients for COVID-19 and administering vaccines helped provide public health learning opportunities and gave nursing students a front row seat to the largest global
vaccine initiative in recent history. Responding to the needs of the pandemic enhanced nursing student morale and pride in the contributions they were making.

**Instability of schedule**

**Disruptions.** The COVID-19 global pandemic created uncertainty in the lives of nursing students. Many students traveled home to other states for spring break and were unsure whether to return to campus. Some students were informed before the end of spring break that there would be no return to campus for the remainder of the spring semester, while other schools delayed this announcement for a few days. While all faculty made a significant effort to communicate with students, any delay in communication created uncertainty.

Schedules changed rapidly and class schedule information was often released at the last minute. A student shared, “[Class] became more difficult when PowerPoints or recordings were not posted before our class time, and a lot of times I just wouldn’t watch them.” Another student stated, “There’s been a lot more confusion surrounding assignments and ... due dates.”

Telehealth clinical simulation times and sign-up lists were sometimes not released until the day before, creating conflicts with work schedules.

Further instability resulted from the mandatory COVID-19 screening required after travel or any possible exposure to the virus. If students did not pass the screening, they were not permitted to be on campus or to participate in clinical experiences. While this measure was essential to minimize the spread of COVID-19, it was hard to adapt to the sudden scheduling changes that COVID-19 exposure or infection mandated.

**Responses.** Positive developments included an increase in flexibility. One student stated: “I have become more resilient and flexible throughout this pandemic. Every week, you never knew ... what you would need to adjust to make sure you were healthy and doing schoolwork.” From
another student perspective, “The flexibility that has been required this past year has helped develop resilience.” Flexibility will benefit students in their future jobs because it can reduce stress levels and allows individuals to respond quickly to change, an essential skill in nursing. The ability to learn remotely will aid students in future online academic endeavors and practice as telehealth and electronic health records become more common.

Negative responses included students reporting that they became less academically successful and experienced more stress. If students missed class due to schedule issues, it was hard to make up. Students often had to increase work hours to mitigate financial strain caused by the pandemic. One student reported having to get a job because both parents lost their jobs. Another student described the difficulty of working while remote learning.

I was working before COVID, but I have had to work considerably more since COVID ... My first semester of nursing school I had 3 jobs. It’s hard, and COVID has made me have to work more, so I have to spend less time with school.

Challenges to Living

Mental health challenges

Disruptions. The COVID-19 pandemic took a toll on mental health. In our experiences, nursing students were not required to enter COVID-19 patient rooms, but there was still fear of becoming sick. Uncertainty about the future also posed an ongoing mental struggle.

One of the most dramatic effects of the COVID-19 pandemic was isolation. When nursing school became remote, this eliminated most interpersonal contact. When in-person clinical experiences resumed with the fall 2020 semester, clinical group members were often the only classmates a student would see. One student stated, “Having to sit alone … for so long was and still is difficult for me. Not being able to really connect with other students ... has taken away a
lot of the intentionality with school.” Another student described, “I did cry a lot, just having to sit in my room and study and sit on my computer for hours a day.” Isolation increased throughout the semester as more students were required to quarantine due to exposure or sickness, and parts of some clinical experiences became remote again.

Spending large amounts of time on Zoom and other virtual communication platforms led to “Zoom fatigue,” a new phenomenon of the COVID-19 pandemic. Shachak and Alkureishi explained “Zoom fatigue” in the larger context of health technology: “Health information technology often leads to unintended consequences such as ... higher rates of burnout.” Bailenson expounded on the specific causes of Zoom fatigue, including: “Close-up eye gaze, cognitive load, increased self-evaluation ... and constraints on physical mobility.” Students experienced exhaustion and burnout related to extended use of virtual platforms. From a student perspective, “It is really hard ... to sit on a laptop for 8 hours for classes ... 1 hour of Zoom lecture feels like 2 hours of in-person lecture.” Overwhelming feelings of tiredness and a pervasive lack of motivation were challenges.

Another barrier to mental health was the loss of regular self-care opportunities. Staying at home began to feel overwhelming. A student stated, “When home is work, school, and play there is no way to feel rested.” For student athletes, an important outlet was taken away. One student athlete reported, “My sport is how I release all of the tension and stress from school. We practice 6 days a week, 3 hours each day, and even more time is spent in the gym when we have a game. With that key outlet taken away, I did not know how to release all of that ... stress.” Students had to explore new methods of self-care or experience negative consequences.
Responses. One positive response was the development of increased awareness regarding wellness resources. Many university campuses offered free counseling to all students, transitioning the service to a telehealth format in March 2020. Increasing numbers of students took advantage of this resource as the pandemic continued. At one university, from the 2019–2020 term to the 2020–2021 term, students using counseling services increased by 12.8%, and counseling appointments attended by students increased by 24.9%. One student reported that after the pandemic began, “I started using the therapy at [school]. That is something I would recommend to other students and possibly [that] faculty … advertise it more to students.” Universities also provided free fitness videos and virtual discussions about mental health. Many faculty advised students to take Zoom breaks or find other ways to decompress.

Students learned to cultivate resilience while adapting to change and learning how to cope in crisis situations. One student stated, “I have definitely learned how to be more resilient, flexible, and organized.” Resilience is an essential quality for nurses and will help students succeed by allowing them to progress through significant changes and crisis situations in the workplace.

Students developed new methods of self-care, like exercise and meditation. Another student explained, “My methods of self-care are the same, but I spend considerably more time doing them.” These strategies helped many students avoid mental distress and remain successful in school. Unfortunately, students also developed maladaptive coping strategies. One student reported using food to cope with stress. Others described spending more time on social media platforms or using video games as a distraction. While these strategies may help in the short term, they provide no positive lasting effects on mental health and stress levels.
Physical health challenges

Disruptions. The varying physical manifestations of COVID-19 left students in frequent fear that their seemingly benign headache, congestion, or itchy throat could actually be COVID-19. During fall 2020, a positive COVID test indicated that the student needed to quarantine for 10 days from the onset of symptoms, while a known exposure meant 14 days of quarantine. Participation in school during the 10-day period varied greatly for students due to the inconsistency of viral symptoms. For most students, quarantine resulted in missed clinical experiences, clinical simulations, and/or lectures. Some students were able to continue to participate in online activities, while others needed extended time off to facilitate recovery. Both types of quarantine posed challenges. One reported difficulty was obtaining food and needed items during quarantine. Students became dependent on delivery services for food and personal care needs. One student, who had to quarantine and join class via Zoom, reported feeling like a “non-participant.”

Responses. Students responded to these challenges in various ways. One student, who tested positive for COVID-19 early in the fall 2020 semester, said, “I never truly felt as if I was fully caught up after recovering from COVID-19. I had to take 5 or 6 days off from school ... I always felt like I was trying to play catch-up.” Falling behind academically added stress to the lives of students. However, when faculty were flexible and understanding, the student was able to adapt and make up assignments while they worked on current academic activities. The previous student stated, “I missed one of my first big exams of the semester due to COVID-19. I was ill enough that I could not study ... My professor was extremely flexible with me and gave me the opportunity to study ... after I recovered and then take the exam. If she had not done that for me, I would not have been successful.”
**Challenges to professional commitment**

**Disruptions.** At the end of the spring 2020 semester, some students began to receive news that summer nursing externships were canceled. Students felt they would be less prepared to enter the workforce as a professional nurse without this experience. Patient care experience was also limited during the fall 2020 semester, as students were not allowed to enter rooms of COVID-19 patients or patients under investigation. Missing out on important care experiences challenged students’ readiness for the nursing profession.

Additionally, students witnessed overloaded and stressed nurses in the clinical setting. Many nurses declined to have a student follow them because their workload was so high. This experience created a negative perception for students about the typical nurse workload and expectations in the workplace.

**Responses.** Some students reported a significant increase in motivation after witnessing nurses in action on the front lines of patient care. One student stated, “The pandemic has made me even more motivated to become a nurse because I have been so inspired by the nurses saving lives each day. I want to help others in the way that I am seeing nurses helping the world right now.”

Despite an increase in motivation among students, fear of entering the nursing profession during a global pandemic was also common. As health care workers, nurses run the risk of contracting the virus every day, especially working on a COVID-19 unit. However, since the vaccine has become available, students have reported decreased fear of patient care responsibilities. The availability of the COVID-19 vaccine gives hope for the future.
Another fear was nursing burnout. After witnessing overloaded, short-staffed units and stressed nurses in the clinical setting, many students reported feeling unprepared to enter a workforce where many nurses are unhappy and overworked. One student described their perception,

I think the pandemic has shown me that while nurses are so vital to health care, they are often under-appreciated and overworked even when there is not a pandemic going on, making it hard to feel ready about going into the profession.

Interventions

Changing the environment

Changing the home environment to adapt to online learning became a necessity for many students. With campus study areas no longer available, students were forced to create a new school area at home to meet their needs. One student stated, “I am the oldest of 7 kids and my brother took my room when I went to college, so I had no space to be or to study.”

The pandemic also kept other household members home, creating a need for separation to learn effectively. One student stated, “The pandemic kept my 2 children and husband home full time, causing my school area to no longer be efficient. I had to convert my guest room into a new study space and purchase a new desk and chair.”

Learning from home also required time management. The flexibility of the online environment allowed students to learn at their own pace, but also allowed procrastination. Students were told to treat each day as if they were going to class and dedicate the same amount of study time each day as they did prior to the pandemic. One student stated they worked a specific schedule to properly utilize time and ensure success during the semester.
Virtual gatherings

It is critical that faculty and students understand how to navigate the resources necessary to improve future nursing education. Multiple students reported positive experiences from group study sessions over Zoom. During Zoom lectures, students said that the use of breakout rooms improved their involvement and engagement online. These breakout rooms promoted productive peer discussions and the professors were able to jump into each breakout room to assess students’ progress and answer questions. One student reported that her virtual simulation and lab experiences were done on Zoom by faculty in the university’s lab space, which allowed faculty to use more resources and for students to better visualize a clinical situation. Faculty had to become creative to teach over Zoom, but students thrived in this environment because it was as close to in-person nursing as possible during the COVID-19 pandemic.

Flexibility of faculty

Faculty support and flexibility remained essential during online education. Many students expressed gratitude toward faculty for striving to provide quality education during uncertain times. Support and flexibility offered by professors helped alleviate student stress. Providing varying materials to aid students in at-home learning was another source of support. Some professors uploaded podcasts, narrated PowerPoints, recorded lectures, and posted other supplemental materials, letting students pick materials that best suited their learning style. A student summarized the impact faculty made, stating, “Our professors truly cared for us and wanted to see us succeed. They were always available ... and wanting feedback on what they could do to make things better.” A 2018 study supports this, finding that a poor relationship with professors increased a student's perception of stress in the academic environment. As the
COVID-19 pandemic continues, faculty are urged to remain supportive and flexible to help students succeed in online education.

**Intentional self-care**

Many students found that old self-care methods were no longer feasible during the pandemic. Students reported that making time to stay active throughout the day was an effective way to reduce stress. One student described this method: “Making time to stay active worked well because it is so easy to just sit and watch Netflix, but mentally preparing myself with schedules helped decrease stress.” Students also explored meditation and yoga to relieve stress. One student reported using virtual connection as self-care: “To cope [with isolation], I have mostly just used technology. FaceTime has been my best friend.” Favorite hobbies, such as reading and crocheting, were reported to be effective self-care methods that students had more time to engage in at home.

One faculty member began each lecture with a mindfulness exercise that focused on deep breathing, imagery, or stretching. Guided mindfulness was an effective mental health intervention for many students. Starting each lecture with a calming, centering exercise reduced stress and cleared the mind to improve focus.

**Supplemental learning**

For some students, learning online increased the need for supplemental learning. While many Zoom lectures provided opportunities for questions and feedback, many students still felt lost and needed supplemental learning to reinforce their knowledge. YouTube, Khan Academy, paid content, and other methods were used to reinforce learned content. One student stated,

> When we had in-person lectures, I was able to grasp information better because I was able to use multiple senses to engage learning. After sitting on Zoom for a
lecture, I quickly realized I was going to need supplemental learning ... I watched
YouTube videos and paid for 2 nursing school study programs to help me
succeed.11

Recommendations

Skills labs should be in person

During the first year of nursing school, the focus is often on building foundational skills. Skills lab is an in-person, nonjudgmental learning environment with faculty support. In March 2020, skills labs in nursing programs across the country transitioned to a virtual format. Students reported that the virtual experience was more challenging and described low engagement, decreased confidence, and frustration and disappointment with final test scores received.27 The following semester, skills lab resumed in-person for smaller groups of students. Student feedback shows that there has been no adequate replacement for learning nursing skills in person with faculty support. Skills lab should continue in-person whenever possible.

New approaches needed to online testing

To maintain the highest academic standards for nursing students, new methods of online testing should be explored. These new methods of assessment could include opportunities for students to demonstrate the hands-on skills they have learned in class and apply them outside of traditional written exams. Students need direct help using technology and more time to take an exam when technical difficulties occur. Exams already elevate stress and anxiety in students, and those stressors will only increase if a student is experiencing connectivity issues. While being online, there is a high volume of academic misconduct that is essentially uncontrollable by faculty. It would be beneficial for remote learners to explore more options for socially distanced, in-person test taking. To decrease cheating, students should not be asked or
allowed to self-select their proctor for an exam. The COVID-19 pandemic has made students question if tests alone are sufficient to examine a student’s knowledge and understanding. Is there a better method to assess learning during remote and online education?

**Expand public health education opportunities**

The value of public health knowledge and competencies for health care professionals was deemed invaluable during the COVID-19 pandemic. While public health has always been an important facet of education for nursing students who are pursuing a bachelor’s degree, its importance seems to resonate even more as the pandemic continues. The spread of misinformation since March 2020 has been vast, and nursing students should be equipped to be a knowledgeable source during this time. Students should continue to be involved in public health events, such as infectious disease vaccination and testing clinics.

**Commit to improving communication**

Clear, timely communication is what students value most from faculty, especially in a time of uncertainty. Direct initial notifications of scheduling and any subsequent changes thereafter are necessary for students to be prepared and feel valued and respected. Faculty members’ use of multiple platforms for communication created difficulties for nursing students. It created confusion among students as to where important information was located and how and where to appropriately respond to faculty. One student stated, “Trying to figure out [the Microsoft] Teams and then Zoom [platforms] and then the links [for class and clinical sign-up], that [has] definitely been difficult ... There’s so many different things and different aspects in different areas.” The key lesson is to maintain timely, direct communication with students on as few platforms as possible.
Conclusion

Throughout the COVID-19 pandemic, nursing students have been challenged to learn and grow. The pandemic also gave students resilience. Nursing students are able to cope better in challenging situations after having lived through a pandemic. Implications for future research include the development of resilience in students as a result of the COVID-19 pandemic, the effect of faculty support on student success, student engagement in virtual learning versus in-person learning, the prevalence and long-term effects of cheating on nursing education, and the efficacy of online clinical experiences for nursing students.

Key facets of student support that should be maintained in the future include direct, timely communication; accessible mental health resources; and reliable faculty support. Overall, nursing students have learned that great difficulties can be overcome with determination and flexibility. Although this pandemic has been challenging to students in all aspects of life, valuable opportunities to grow appeared in the midst of the crisis.
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