

Student Interviews Exploring the Influence of the Coronavirus Pandemic on Graduate Nursing Education

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Abstract

Introduction: Advanced practice nurses are needed to fill the primary healthcare gap in the United States. Advanced practice/graduate nursing students were profoundly affected by the coronavirus pandemic in ways that may impact their educational experience.

Objective: The objective of this study was to explore the influence of the coronavirus pandemic on the educational experience of graduate nursing students.

Methods: An exploratory descriptive qualitative study using semistructured video conferencing interviews of 11 graduate nursing students at one university in the United States was conducted during July 2020. Data were explored using theme analysis.

Results: Four themes expressing the pandemic's impact on graduate student experience were identified: Alteration in human connections; Agility in action; Collaborative construction of change; and Metamorphosis emerging from disruption. The pandemic brought an alteration in how students connected with faculty, other students, and family. Many faculty and students responded with agility to the new mandates for social distancing. The students and faculty worked together to construct changes needed to provide the students with the required components of graduate education. These factors together created a metamorphosis in the functioning of the institution, breaking through hierarchical barriers in academia.

Conclusion: The disruption in graduate nursing education due to the pandemic led to opportunities, including swift faculty innovation, a collaborative spirit between faculty and students, and new appreciation for connections with faculty and fellow students. Continuing intentional implementation of these opportunities would benefit students' experiences moving forward.

Keywords

advanced practice nursing, graduate nursing education, COVID-19, graduate nursing student experience, descriptive qualitative study

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Background

The COVID-19 pandemic is the most serious health epidemic this century. As of February 15, 2022, there have been over 413 million diagnosed cases worldwide and over 5.8 million deaths, according to the Coronavirus Resource Center (John Hopkins University and Medicine, 2022). Despite an increase in persons being vaccinated, the surge in infections attributed to new variants is evidence that the coronavirus continues to be a worldwide health crisis (World Health Organization, 2022).

The pandemic has had an unprecedented impact on health systems, educational institutions, and healthcare professionals

throughout the world. As in many countries, the United States (U.S.) has needed to mobilize resources to provide care to the large number of affected patients. And in the midst of the pandemic, one in five U.S. health care workers have left their health

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care jobs (Galvin, 2021). The effect on our graduate nursing students has been multidimensional. As U.S. advanced practice nurse (APN) and other graduate nursing students often work in health care while at university, they have been profoundly impacted at work, in school, as sons and daughters, as parents, and financially (Emory et al., 2021; Galvin, 2021; Rosenthal et al., 2021).

At the study site prior to the pandemic, the vast majority of graduate courses were completely online ($n = 217/339$ sections or 64%). Thirty-five percent of course sections ($n = 119/339$) were hybrid. That is, a course may have an in-person component, often an intensive week early in the semester, and an online portion. The online portion typically includes both synchronous and asynchronous modules. Skills labs were part of the intensive week if the course(s) had a clinical focus. Skills labs may include use of simulation. In-person portions were converted to online at the onset of the pandemic, including skills labs.

Clinical practicum courses are organized and managed by the nursing school's department of clinical placements in collaboration with program Specialty Directors. At the onset of the pandemic, in spring 2020, clinical practicums were put on hold as sites closed to all students (e.g., medical, pharmacology, and undergraduate and graduate nursing students). Gradually, access to patient care opened to students, starting with telehealth visits. During summer 2020, sites began to accept students. In fall 2020, practice sites again limited student placements due to rising cases of COVID-19. Our faculty who also practice served as preceptors in clinical sites for numerous students.

Literature Review

Nurses with graduate education are in demand throughout the U.S. to fill healthcare provider gaps in primary care (Delaney & Vanderhoef, 2019; Wang-Romjue, 2018). Graduate nursing students are registered nurses seeking further education to become APN, nurse scientists, and nurse leaders. Master's Degree (MS), Doctor of Nursing Practice (DNP), and Doctor of Philosophy (PhD) are the most common graduate degrees awarded to nurses. In 2018, there were about 234,000 licensed APNs in the U.S. with nearly 87 percent certified in an area of primary care (Kraines, 2018). In addition, the development of nurse educators and leaders is necessary as the U.S. seeks to cover the healthcare gap (Rosseter, 2019).

In March 2020, spring semester, SARS-CoV-2 set the world on edge. In this extraordinary public health crisis, many places went on lockdown or restricted public movement. As a result, graduate nursing students were impacted in multiple ways. The students' children were schooled from home, needing parental help with school work and daily supervision (McDonald, 2020; Narea, 2020). Elderly parents needed groceries delivered or help with other tasks as they were encouraged to stay at home (The Lancet,

2020). At work, the students were frontline healthcare professionals, with concern of acquiring the virus, required added shifts, stoppage of all planned vacations, and reassignment to other units (Aksoy & Kocak, 2020; Jones-Berry, 2020; Pearse, 2020). At university, graduate clinical experiences were put on hold, courses may have been converted to online, and graduation dates were suddenly uncertain (Rosenthal et al., 2021; Wang et al., 2020).

This study was conducted in July 2020 to better understand how the pandemic affected the education of graduate nursing students to assist nursing institutions in facilitating continued student success while maintaining academic excellence. Therefore, the aim of this study was to describe the influence of the pandemic on graduate nursing student education experience.

Methods

Study Design

Within a social constructivist approach we used a descriptive qualitative design which is appropriate when direct experience of a poorly understood or novel situation in historical context is needed from a naturalistic perspective of those involved, where there is a limitation of time and resources, and can form part of a subsequent mixed methods analysis (Kim et al., 2017). Knowledge of a phenomenon is context specific for each individual and influenced by the social relationships in which those experiences are situated (Guba & Lincoln, 1989). The researcher is part of the re-construction and re-telling of subjective experiences. Thus, multiple realities and experiences can be constructed through individual or group interviews, and reflexive strategies are used by the researchers to provide a low-inference theme interpretation within and across experiences (Bradshaw et al., 2017). Data included 1. Individual interviews and 2. Naturalistic student group gatherings in program virtual "Town Halls". Recruitment, data collection and analysis were conducted iteratively to build a comprehensive picture of the experience of being a graduate nursing student during early stages of a global pandemic. The study is reported consistent with international consolidated criteria for qualitative research (Tong et al., 2007).

Setting and Sample

We used semi-structured interviews of students enrolled in graduate school during the spring semester 2020 at one college of nursing in the Rocky Mountain area of the U.S. Students included MS, DNP, and PhD students. This was an independent study whose participants had completed a survey (Nodine et al., 2021; Rosenthal et al., 2021). The survey was initiated by a data administrator from outside the university system. After completing the survey, students were asked to note if they were interested in participating in

an interview, provide contact information, age, gender, with whom they live and graduate program type (MS, DNP, PhD). Of the 103 students who completed the online form, 38 were selected using maximum variation sampling for diversity across these characteristics. Students were then contacted via email to set up an interview. A final convenience sample of 11 students who responded were asked to sign, date, and return a consent document to the researchers either electronically by email or by regular mail within 2 weeks and a verbal review of the consent took place at the time of the interview. Participants were compensated \$25 through debit card.

Being graduate students, all participants were over 18 year of age and were fluent in spoken English. Interviews were conducted using Zoom video conferencing (Archibald et al., 2019; Zoom Video Communications Inc., 2016) by faculty not directly involved in the students' education. The study received exempt status from the state research review board (COMIRB #20-1069).

Interview Guide

An initial broad semi-structured interview guide was developed based on the experience and expertise of the research team around nursing education, graduate pedagogy/andragogy, teaching and learning strategies, bi-weekly COVID

Table 1. Interview Guide.

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1. Establish rapport and trusting relationship with participant so that the participant feels comfortable and safe during the interview.
 2. Start with questions that will help to clarify the participant's situation prior to the onset of the COVID-19 pandemic.
 - Did you work prior to and/or during the pandemic?
 - Were you in a didactic course during the spring semester (2020)?
 - Were you in a clinical course during the spring semester (2020)?
 3. Explore perspectives around the impact of the pandemic on the participant's life.
 - How has your home life changed since the pandemic?
 - How has your work life changed since the pandemic?
 - How has your graduate schooling changed since the pandemic?
 4. Further explore perspectives around graduate school changes during the pandemic.
 - What were some barriers to your graduate education during the pandemic?
 - Was any aspect of graduate school made easier or better with the pandemic?
 5. Explore circumstances that improved the participant's experience of graduate school during the pandemic.
 - What suggestions would you make for faculty and CON administration to help graduate students through this pandemic?
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clinical-academic strategic initiative meetings, and academic literature. Open-ended questions that explored the impact of the COVID-19 pandemic on students' lives during the spring semester 2020, including any educational barriers and benefits from the pandemic were used at the first interview and refinements were made as interviews progressed allowing for re-contextualization of the novel experiences over time. Circumstances that improved their graduate school education during spring semester 2020 were also elicited (Table 1). Additional probes, including "tell me more", were used throughout the interviews to remain close to the participant experience.

Data Collection and Analysis

Data collection and analysis were concurrent (Figure 1). The interviews were conducted by two study trained team faculty members. We used an emergent, iterative approach where we refined our questioning on the basis of our analysis of interviews (Creswell & Poth, 2018). Interviews continued until informational saturation was reached as components that described the experience became repetitive (Creswell & Poth, 2018; Kim et al., 2017). Iterative data collection builds understanding along the way thus reducing the need for further interviews. The interviews were conducted between July 19th and July 31st, 2020 via Zoom video conferencing at a mutually designated time, were audio-recorded, then professionally transcribed verbatim. The transcribed interviews were assigned numbers and de-identified. Field notes were not collected. Demographic data were collected from the survey that preceded the interview.

Consistent with an exploratory descriptive qualitative design, a team-based inductive then deductive analytic toolkit was used for low-inference theme analysis (Fereday & Muir-Cochrane, 2006). This involved individual and paired line by line inductive analysis of each transcript using manual labeling techniques to describe experience components, ascribe codes and create categories (Vaismoradi et al., 2016). After the third interview the team compared within and across all transcripts, building a list of similarities and differences within and across experiences. We looked for deviant cases and outlier experiences to examine closely for situated understanding and relevance to the graduate nursing student experience. Deductive strategies were then used to look for the established inductive experience components by graduate program, age, gender and living arrangements to identify patterns of meaning and highlight any outliers. No conceptual lens was applied. Themes were then generated as experience components, codes and categories were re-contextualized and compared and abstracted to the level of the graduate student group experience (Fereday & Muir-Cochrane, 2006; Vaismoradi et al., 2016). A reflexive, team-based set of triangulation strategies for low inference interpretation and abstraction included subject matter expertise, qualitative expertise, data

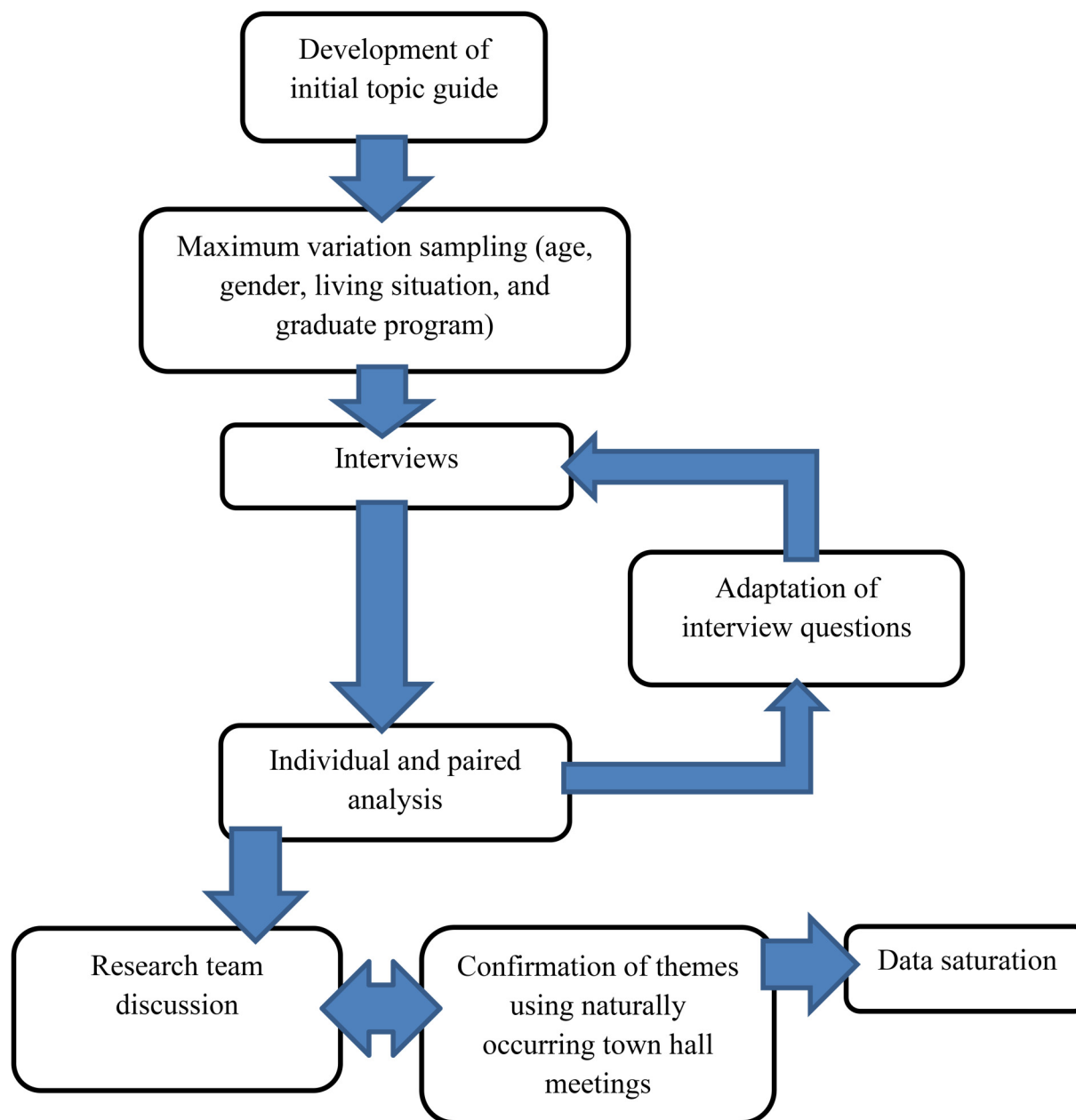


Figure 1. Flow chart of data collection and analysis.

characteristics, interviewer, team member and audit trail discussions (Creswell & Poth, 2018; Vaismoradi et al., 2016). A consensus approach was used to inform theme labeling and theme structure. We resolved differences by finding consensus through active listening and discussion, and prolonged engagement with the data working online over nine months.

For confirmation of themes, minutes from naturally occurring townhall meetings with graduate students were included in the analysis. Townhall meetings were conducted by the Assistant Dean of Graduate Student Academics with students from each master's specialty program. The purpose was to elicit student feedback about their graduate education; to

hear the voice of students; and listen for inductive themes related to successes of our program and opportunities for improvement. We used the townhall meetings in fall 2020 to ask a question, "how did the COVID-19 pandemic contribute to your graduate nursing school experience?". Twelve townhall meetings were held via Zoom. The number of students attending each session ranged from 6–27 (Total $n = 180$). Student feedback from townhall sessions was written verbatim by a notetaker and transferred to password protected word documents. We confirmed themes identified by analysis of student interviews by deductively comparing and contrasting to themes from townhall sessions. Thus,

extending the transferability of an adequate sample of 11 participants by re-contextualizing findings into the same graduate student context of a larger group (Vaismoradi et al., 2016). Further, abstracting themes and theme structures (how the themes fit together as a higher level of abstraction) into the graduate student group was also vital in the absence, at the time, of established COVID literature as a final analytic step (Figure 2). Together these aspects reflect criteria for trustworthiness (credibility, transferability, dependability and confirmability) and integrity in qualitative research (Guba & Lincoln, 2018; Morse, 2015). Credibility can be found in the prolonged engagement with participant data and group data confirmation of analytic themes. Confirmability is established through team-based, reflexive processes, investigator triangulation, participant demographics and inclusion of participant quotes. Dependability is documented through team meetings and an audit trail. Finally, transferability is established through maximum variation and purposeful sampling combinations, iterative sampling and analysis leading to informational data saturation and rich description of the experiences through themes and theme structures.

Results

Eleven students were interviewed. The participants had a broad age range, were in various graduate programs, and had diverse work and home life backgrounds (Table 2). The average duration of interviews was 25:22 min with a range of 10:41 to 40:12 min.

Four themes were identified from the data analysis to help answer how the onset of the pandemic influenced the educational experience of graduate nursing students: Alteration in Human Connections; Agility in Action; Collaborative Construction of Change; and Metamorphosis Emerging from Disruption. Examples of quotes related to each theme are provided in Table 3. A thematic schema illustrating the relationship between themes is provided in Figure 2. Agility in Action and Collaborative Construction of Change within academia came into fruition during the onset of the pandemic as an adaptive mechanism to successfully move through the changes necessary to continue providing clinical opportunities and didactic lessons to students during a time of mandated social distancing. Alterations in Human Connections during the pandemic have been both a hindrance and benefit to students' graduate education. These three themes are interconnected and this fluid connectedness has led to opportunities; a Metamorphosis in graduate nursing education during the onset of COVID-19.

Alteration in Human Connections

This theme described the effects of the social isolation and changes in communication due to the pandemic on students' graduate education. A recurrent theme that arose during interviews was the importance of communication. Since in-person teaching and mentoring was, by necessity, radically decreased,

the importance of maintaining lines of communication increased. The essential nature of human connection was highlighted both between faculty and student and between students. One student commented, "Transparency and consistency in communication was huge" (Townhall meeting, 9/16/20).

The alterations in human connections were viewed as both positive and negative. For example, use of Zoom "kept us going" [communicating], but "lacked physical presence" (#7, p. 4). Communication with faculty took the form of group or one-on-one interactions by phone, email or video conferencing. Students appreciated the efforts of most of the faculty to reach out more than before the pandemic. On the other hand, some students were perturbed by faculty who did not demonstrate any compassion for the students and went on "as if there was no pandemic" (#3, p. 5).

Several students in our study commented on the limitations of distanced forms of communication exclusively. One student noted that it was important "not to just have [communication through] Zoom, but talking back to us about the assignment, which is really great" (#7, p. 6). Someone else stated that "I think there is also that disconnect of, you know, not being able to get to have that one on one interaction and real time feedback" (#4, p. 4). The individual support of students by faculty, such as timely responses to their emails or checking on their well-being during Zoom sessions, was appreciated during the early phase of the pandemic.

Communication between the students was also felt to be essential during the pandemic. A student commented that "the relationships that I have established with my peers in the program [prior to the pandemic] have been tremendously helpful for me. [It is important] to be able to reach out to them" (#2, p. 8). Student-to student communication was seen as something that helped them through their courses during the pandemic.

It was interesting that although communication was important during this period, and helped reinforce human connections, some students felt that the ability to reduce constant interaction was helpful. One student commented that "I was ok with a little bit of calm in my personal life" (#1, p. 3). For many students, human connection at the university was essential for getting through the pandemic, both with the faculty and with each other. For other students, the decrease in pressures for in-person meetings may have helped them and allowed them to feel less stress than they did pre-pandemic.

Agility in Action

This theme described the manner in which both the institution and the students adapted to continue didactic and clinical education during the pandemic. Given social distancing and overall disruption owing to COVID-19, faculty and students were forced to become nimbler in order to continue their work and maintain their responsibilities.

Changes in course structure and clinical experiences were applied rapidly and with a large amount of originality. It was

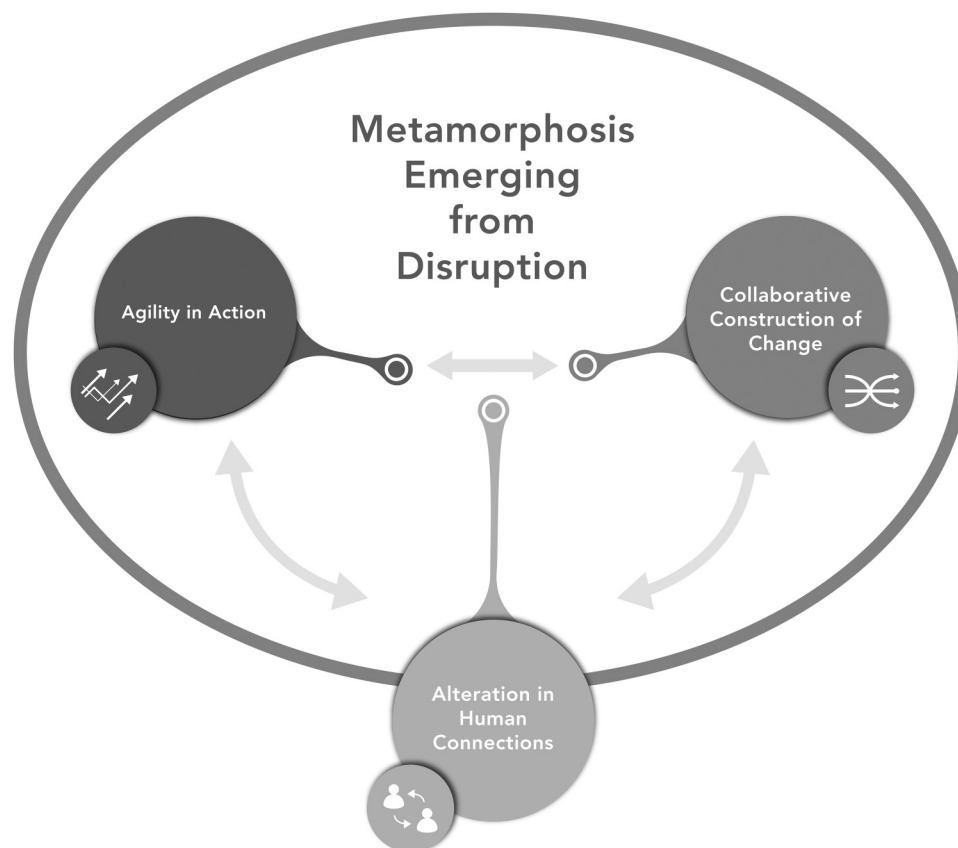


Figure 2. Thematic schema.

Table 2. Participant Characteristics (N = 11).

Characteristic	Value, n (%)
Age (years)	
20–30	4 (36%)
31–40	4 (36%)
41–50	3 (27%)
Female	9 (81%)
Masters degree seeking	6 (55%)
Married	7 (64%)
Living with children	4 (36%)
Employed as RN ^a	10 (91%)
Enrolled in didactic course during Spring 2020	11 (100%)
Enrolled in clinical course ^b during Spring 2020	5 (45%)

^aRN, Registered nurse.

^bMaster's level clinical practicum or DNP practicum.

noted that many faculty and students had to think outside the box. Innovation was required of faculty to adapt curricula that were traditionally offered in-person to online. Students remarked on the provision of academic grace, faculty flexibility, and “adapting on the fly to the changes that need to be done” (#5, p. 3), and transparency with prompt decision making.

All MS students enrolled in an APN degree program are required to complete practicum hours demonstrating their skills with patients in multiple different clinical settings. As

the certification agencies were not willing to change the 500 h of supervised clinical experience for graduate students, there was not leeway in the graduate curriculum for APN students. This contrasted with undergraduate programs for which the governor of the state where the research took place, and other governors, gave an executive order decreasing required clinical hours to urgently matriculate undergraduate nursing students if needed (Polis, 2020).

The abrupt changes in clinical sites caused students and faculty to shift gears swiftly. Fortunately, students felt they had a “variety of different things to pull from (#4, p. 6)” to assist in the completion of these practicum hours. These new resources included newly-developed simulations and the use of safe alternate clinical sites and preceptors. One student noted the agility of her program director when they said, “She is basically trying to do anything that she possibly can to have us succeed and make sure we are getting the learning that we need” (#6, p. 6).

As the spring semester 2020 finished with pandemic uncertainty, a few students noted the lack of confidence surrounding those changes, and the need to be agile during this period of time. Two students interpreted messages from the school's administration quite similarly as, “We are going to try to go forward with this and try kind of a new way of doing it” (#6, p. 7) and, “We will get more information as we go.

Table 3. Themes with Illustrative Quotes.

Themes	Illustrative Quotes
Theme 1: Alterations in human connection	<p>... honestly I couldn't have been as successful without those connections that I made through the groups that I was in. ... Because we are all sort of going through this process together and so I think that has been a really big factor for my success. (#1)</p> <p>The greatest barriers? I guess again, the lack of physical communication. Other than just sitting here talking at the camera through Zoom. I like more of the connection with the Professors that I'm dealing with. (#9)</p> <p>The Chairs have so much that they are going ahead and doing that they don't have time as frequently as I need to get to talk to them So I can't always rely on just them. That's why I'm saying being able to reach out to my peers has been, in some ways helpful, because at least then when I am really, really stuck, or I am really ready to explode and burst into tears with the computer crashing or whatever it may be, that I have that ability to reach out. And there are people there. It is just you don't always want to bug people because they are not my family. But I don't have family. (#2)</p>
Theme 2: Agility in action	<p>I would just say be patient and kind and try to think outside the box. As I say, with our Specialty Director trying to tweak the curriculum and search for new Clinical Sites. I mean she is basically trying to do anything that she possibly can to have us succeed and make sure we are getting the learning that we need. (#6)</p> <p>And it was just a lot of like, um, there was a lot of just like, well, let's try and do this. Like let's see if this works. What did the Students think of this? And then I just took it upon myself to do a ton of online like Grand Rounds and Webinars and just kind of self teaching of stuff.</p> <p>Yes. I think the University made it pretty clear that it was like we are dealing with unprecedented times. We are going to try to go forward with this and try kind of a new way of doing it.</p> <p>And we will get more information as we go. You know, don't go into crisis mode yet. We are still trying to figure out how we are going to do this. (#8)</p> <p>But to me that is a big part of life. Just that there are going to be times when we really don't know exactly what is going to happen and we still have to do our best and you know, I'm having to take an online Physical Assessment via Zoom Test. Right? And so I have no idea what that is going to look like, but all I can do is study my best and prepare as best that I can and then once we get more information about that, then I can apply that information. (#2)</p> <p>So it meant that I had to get more creative with getting engaged through polls and getting engaged through activities where I could use breakout rooms and still go into the breakout rooms to hear what they were talking about.</p> <p>And so... it means I have now had to adapt my proposal. (#1)</p> <p>... which I appreciated with our CNS Group, was that we had a variety of different things that we could pull from to work through our Clinical time. (#4)</p> <p>... it was just like a total scramble, trying to figure out how to get those clinical hours in. Thankfully, Dr. X had different simulations and things that we could get done.</p> <p>So I would say there is a lot of leniency that I could do whatever I need to do. (#11)</p>

(continued)

Table 3. Continued.

Themes	Illustrative Quotes
Theme 3: Collaborative construction of change	<p>... dealing with the CAPE [SIM lab] and dealing with those in person assessments has been a real challenge. But both Dr. A and Dr. B have been very straight forward about, you know, this is what we know. This is what we don't know. Here is kind of what the tentative plan is and I think both the teachers and the students have been pretty flexible and understanding that everything is in flux right now and nobody has the answer so we kind of just have to take things as they come. (#5)</p> <p>But just so... I mean we also realized that [faculty] are living this too. ... And it is kind of a universal... we are all universally affected by it and so it is not... you know ... it is not a condescending way that you would say, Hey, we know a lot is going on. Cause it is everybody. (#10)</p> <p>Everyone has been very understanding and flexible and whether it be from our Instructors, from our Clinical Preceptors, so that has been the biggest thing. (#4)</p> <p>And I actually emailed my two Instructors and I said to them: Would you consider having this second test be open book? It was supposed to[use] Proctorio [online test proctoring software]. ... And I said would you consider having this be an Open Book Test? I said, you know I'm overwhelmed and I'm not even working with Covid Patients. I said I know that many of my fellow Nurses are taking care of Covid patients and trying to do school. And I said, I know personally that things are not settling into my brain. I am doing my best, but I am not performing at peak. ... And it's interesting. I shared that with some of my fellow students... And their response was there is no way in H-- they are going to say Yes to that. And I was really thinking, I think it is a reasonable request. And they did say Yes to it. (#3)</p> <p>And I was in two separate clinical sites. One of them shut down altogether and the other one, thankfully, my preceptor was doing Tele-Health at the end. So she let me enjoin that for the Tele-Health. But man, it was stressful and my stress level last semester just sky rocketed. (#9)</p>
Theme 4: Metamorphosis emerging from disruption [a compilation of other themes]	<p>"I think clear communication is definitely a big one and I really didn't appreciate how much my faculty did for us until, I think, this Semester. Especially with the Clinical. That has been a big success factor because I know I was worried about having, you know, we can't be a one income family, unfortunately. And I really do love my job. But it doesn't have the flexibility being outpatient that inpatient nurses do. They can decide to work on the weekends. They can decide to trade shifts off very easily. And I know that has been a factor I voiced to faculty early on, before clinicals and she, you know, supported me in finding my own preceptor. You know and was very flexible with that. Connecting me with another preceptor that had more flexible days I could work with. I think that is a huge success. Other factors: I think our Cohort has definitely gotten a lot closer, earlier on. I think we started getting closer last fall. And I think I was kind of hesitant to establish relationships - as horrible as that might sound - with some individuals just because it can be very time consuming. You know?" (#7)</p> <p>"I think the online simulation that my faculty created, it was like a 32 h simulation. That was so beyond helpful. Even though you are kind of feeling like you are missing out in some way, otherwise valuable Clinical experience; just to be able to get the hours in. I mean it was still a learning experience. So that was beyond helpful, the extension that they gave us to get our hours in, rather than cutting off at the beginning of May." (#11)</p> <p>"The Instructor Flexibility. I'm sure that we needed deadlines extended here and it seemed like last semester it wasn't a problem whatsoever. It was just ask and the Instructors were super flexible with, oh yeah, you can have an extra week or something like that to get assignments done." (#9)</p>

You know, don't go into crisis mode yet. We are still trying to figure out how we are going to do this" (#8, p. 10).

Within the predominant theme of agility to develop new norms during the pandemic was the need of both faculty and student to be flexible. Students discussed the need to change to online learning environments and how to remain engaged. DNP students needed to adapt proposals and a PhD student mentioned dissertation data collection difficulties. The need to be flexible with time management, for example, due to evening Zoom sessions and classroom meetings, was also mentioned. The thought that best explains the need for flexibility within the predominant theme of agility is, "Teachers and the students have been pretty flexible and understanding that everything is in flux right now and nobody has the answer so we kind of just have to take things as they come" (#5, p. 2).

Collaborative Construction of Change

This theme described how both faculty and students worked together to adapt education to the pandemic. A discernment of mutual appreciation, respect, and understanding between students and faculty emerged. Faculty and students worked collaboratively, interacting bidirectionally, to adapt to changes in courses due to the pandemic. Students reported feeling that interactions with faculty were more open, honest, and understanding. Students voiced that faculty were more likely to listen to students and to take student suggestions more seriously. A student noted "everybody is working together to get through it [pandemic]" (#5, p. 9).

Flexibility on the part of both faculty and students has been crucial to getting through the challenges during the pandemic. Emerging from this collaboration and mutual flexibility was an adjustment in the hierarchy of power in academia and noted faculty benevolence. Communication was more transparent. There was a realization that the faculty and students were "living it together" (#10, p. 7).

Students with clinical site closures were particularly stressed about how they would be able to move forward through graduate school. In general, students felt that faculty and preceptors were responding to their needs. They saw that adjustments were made by faculty at the prompt of students.

Metamorphosis Emerging from Disruption

This theme described the overarching changes that occurred in graduate nursing education from the crisis of the pandemic. With emphasis on communication during the pandemic, quick action to provide clinical experiences and didactic opportunities, and faculty and students working together, to remain flexible and open to innovation, brought a transformation to graduate nursing education.

Faculty worked together creating innovative methods to teach graduate nursing student skills. Rapid development of simulation experiences occurred and faculty shared their knowledge across programs. Simulation hours substituted for

supervised clinical hours above 500 in some programs with requirements for greater than 500 h. In addition to simulation, supervised telehealth substituted for in-person clinical experience. Many faculty members also adopted a policy for academic grace during the pandemic. Assignment due dates were extended; students could make arrangements for alternative assignments when they were working extended hours as registered nurses due to the pandemic; and semester deadlines for clinical hours were made fluid. The flexibility, fluidity, and grace faculty used in constructing innovative options for student education was aided and honored by students.

Thematic Overview and Associations

These four themes were then analyzed for associations. Agility in Action and Collaborative Construction of Change within academia were rarely present prior to the pandemic but culminated because of the academic stressors of the pandemic. Human connections have been both hindered and helped by the pandemic. Students noted sadness at not being able to be closer to some family members and their student colleagues during the pandemic and the imperfections of online communication formats. But the students' appreciation of connections and communication increased.

Agility in Action, Collaborative Construction of Change, and Alterations in Human Connections were found to be fluid and interconnected. This fluid connection brought new possibilities and a Metamorphosis within the graduate nursing programs during the pandemic. The metamorphosis included the students' highlighted appreciation for close connections with other students, improved communication between faculty and students, and faculty's innovation, agility, and benevolence.

Discussion

The pandemic brought significant challenges for graduate nursing students and their institutions. With the challenges came opportunities, including increased collaboration between faculty and student, agile adaption and innovation by faculty and students, and recognition of the importance of forming connections between and within faculty and students.

A positive outcome of the pandemic is recognizing the possibility of quick and successful decision-making existing in a higher education structure, traditionally known as slow and rigid. Academic institutions can take this opportunity to continue to be agile in their response to needed change by removing barriers to promote innovation in education, including streamlining processes, removing outdated policies, and flattening hierarchies (Waite et al., 2021). The ambiguity and uncertainty experienced during the pandemic can serve as a reminder to leadership that planning and preparing for the unexpected is a necessary strategy to remain relevant and successful (McCormack et al., 2021). The need for student, faculty, and university agility remains ongoing, as the pandemic continues to impact education.

The agility with which simulations and alternate clinical sites were adapted for graduate education was notable. Simulation has been used for graduate nursing education in this research institution since 2015, but the extent increased dramatically during the pandemic. Simulation is becoming more widely used in the U.S. as a clinical education tool in graduate nursing education (De Tantillo & Christopher, 2020). The simulations completed in lieu of direct clinical care during the pandemic included use of high-fidelity mannequins, pre-selected patient scenarios, virtual reality simulations, and debriefing sessions in a laboratory. These simulations should continue to be available to graduate nursing students. The use of alternate clinical sites, such as placing students in local influenza and COVID-19 vaccination clinics, can be valuable educational sites and should continue to be utilized.

This study is the only study in the U.S. evaluating graduate nursing student experience during the pandemic onset. At this time, the only other similar study was carried out in Singapore, in which the impact of the pandemic on APN preparatory education and practice was assessed. Fourteen students were interviewed for this descriptive, qualitative study. Key themes found included the concept of “overcoming adversity through innovation” and “acceptance of remote learning” (Woo et al., 2021). Even with differences in educational systems and interview questions, the Singapore results aligned with aspects of this research, in that flexibility and innovation were noted by both studies to be key concepts in students adapting to the changes in graduate nursing education due to the pandemic.

Mariani et al. (2020) introduced the principles of the 4 Cs of interorganizational partnering (communication, cooperation, coordination, and collaboration) for the management and organization of academia during the onset of the pandemic challenges. Villanova’s school of nursing intentionally used these principles as a guide during the pandemic.

This research supports the importance of the 4 Cs to faculty-student interactions at the graduate level as our themes align closely with the 4 principles. Whereas Mariani et al. (2020) used these principles to direct their nursing programs through the pandemic, the authors discovered that similar themes (e.g., connection, agility, collaboration) were retrospectively considered by students at their institution to be concepts that were paramount to successfully adjusting to the pandemic. Considering the importance of communication, cooperation, coordination, and collaboration for graduate nursing education would challenge the pre-pandemic norms and move academia toward a new post-2020 norm of faculty, students, and administration working closely together toward the substantive goal of student learning and success. This research supports prior research affirming the impact of teachers’ benevolence on student success (Numa-Bocage, 2021; Rioux, 2021). Students appreciated and responded very positively to faculty’s kindness and compassion.

Due to national institutional social distancing mandates during the pandemic, alterations in human connections- how

and if we communicate, touch, or enjoy a meal with others-prompted significant adjustments for many people, including college students. Social isolation has been shown to affect health, for example by increasing cognitive impairment, accelerating the progression of cerebrovascular disease, and leading to premature mortality (Friedler et al., 2015; Kotwal et al., 2021; Sepulveda-Loyola et al., 2020). Elmer et al. (2020) studied the impact of pandemic social isolation on undergraduate students in Switzerland, noting a significant decrease in overall interactions between students and co-studying and an overall increase in mental health issues. A strategy of frequent (daily to weekly) Zoom meetings between faculty and administration, faculty with students, and student to student may improve communication, cooperation, coordination, and collaboration (Mariani et al., 2020). Certainly, educational institutions have responsibility for supporting the health of their students and should investigate effective ways to do so.

Strengths and Limitations

This study has the limitation of being completed at one institution, thus contextualized to this organization. Given the differences in the student population and workflow of institutions across the country, this study may not be transferable, although findings are similar to a study completed in Singapore (Woo et al., 2021). The research was conducted by faculty at the institution, although authors were careful not to influence responses or interact with any students for whom they had a faculty role. Students were not approached by faculty to participate and authors’ names were not available to the students during study enrollment. Our interest in the topic developed from our concern for the apparent breadth of the pandemic’s impact on the students’ lives. This may have influenced analysis. The study was conducted early in the pandemic. Today, we know the nursing workforce is in crisis with nurses leaving jobs and the profession at high rates (Raso et al., 2021). We might find comments more reflective of this professional discontent if we conducted the interviews now 24 months into the pandemic.

Strengths of this study include use of maximum variation sampling for diversity within the students interviewed, timeliness of the study during a pandemic, data and team triangulation, and researcher expertise in methods of thematic analysis.

Implication for Nursing Education

Graduate nursing students have unique characteristics compared to students in graduate programs for other health professions. They often come to graduate education after years of experience within the medical community as professional nurses. They may be working while in graduate school and are often caring for others in their homes, such as children and/or elderly parents (Rosenthal et al., 2021). These characteristics should compel faculty and administrators working with graduate nursing students to design innovative facilities

and curricula to meet their needs. This may include flexible daycare for students on campus or lectures presented to small groups several times a week rather than the whole class once a week. Those programs that rely on traditional face to face education might consider how the increased use of online resources may assist in student learning and increase flexibility.

Conclusions

As the pandemic continues to shape all our lives, faculty and administration must continue to be sensitive to the realities of our students' experiences, proceed with benevolence, and adjust the support we provide. Universities with graduate nursing programs would benefit from reflection on how best to continue to communicate effectively, work with students to innovate in the classroom and clinical sites, and act swiftly in response to the needs of students. As online environments provide different types of personal connection and experiences, faculty must consider alternate ways of effectively connecting with students through the virtual world (Gdanetz et al., 2018).

Policy changes should be implemented. Increased state and national funding for graduate nursing education to ease the burden of students' multiple responsibilities, including working to provide financial support to the family while attending higher education, would help to build the advanced practice nurse workforce and close the gaps in U.S. healthcare.

CRedit Author Statement

Nodine – conceptualization, investigation, formal analysis, writing – original draft, writing – review & editing; project administration. Carrington – investigation, formal analysis, writing – review & editing. Jenkins – conceptualization, formal analysis, writing – original draft, writing – review & editing. Rosenthal – conceptualization, formal analysis, writing – original draft, writing – review & editing. Jones – methodology, resources, formal analysis, writing – review & editing.

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