Feelings on remote education in the era of coronavirus pandemic, a pilot study

Check for updates

Gwen Leigh, DNP, RN, CNE*, Tricia Templet, DNP, APRN, CPNP-PC, FNP-C,
Cynthia Watson, DNP, APRN, FNP-BC

University of Louisiana at Lafayette College of Nursing and Allied Health Professions, Lafayette, LA, USA

ARTICLE INFO

ABSTRACT

The 2020 COVID-19 pandemic required schools of nursing to change content delivery to a remote platform. For those who had little or no previous online educational experiences, this change created an array of feelings and emotions in both students and faculty.

Methods: A mixed method exploratory study was used to explore the feelings and emotions of students and faculty associated with the rapid adjustment to changes in delivery of content and its impact on their emotional well-being.

Results: Feelings of frustration, stress, and anxiety at the pandemic in general, and toward remote learning in particular were found. The inability to see others in person was also a source of stress.

Discussion: Major themes such as increased workload and the displeasure with having didactic content delivery online were major themes. Students prefer mandatory synchronous didactic delivery and were concerned that online clinical experiences may not be as effective as in-person clinical experiences.

© 2021 Organization for Associate Degree Nursing. Published by Elsevier Inc. All rights reserved.

Background

With the implementation of social distancing, the shelter at home mandate, and the cessation of traditional face-to-face classes during the 2020 COVID-19 pandemic, many colleges and universities moved to delivery of content via remote learning strategies (Rahiem, 2020). With the decision to shelter at home and change to remote education given on short notice, faculty at a Bachelor of Science in Nursing program in the southern United States were required to deliver both didactic and clinical content online. As the majority of undergraduate nursing programs deliver content in a face-to-face environment, most undergraduate faculty had little to no experience teaching online.

When making the change to remote teaching, it was recommended by administrative officials that lectures should be delivered asynchronously. Class meetings were not mandatory for students during the spring semester of 2020 since lecture content was delivered in an asynchronous format and clinical experiences kept the students in contact with their clinical instructors. Video conferencing was utilized for office hours, answering student questions for clarification of content, and additional student contact as needed. Didactic content was presented via pre-recorded lecture presentations using various tools such as VoiceThread and voice over PowerPoint. Online virtual

meetings were conducted with a variety of platforms such as Microsoft® Teams and Zoom. Alternate virtual clinical experiences were also initiated as clinical partner hospitals reduced the number of non-essential personnel on their campuses and restricted access for clinical students. Instead of hands-on nursing care at healthcare facilities, clinical experiences transitioned to case studies and virtual simulations. All examinations were taken remotely using exam software or quizzing features of the learning management system (LMS) utilized for content delivery. Remote education was new to both undergraduate faculty and students and may have created a variety of feelings and responses. The purpose of this pilot study was to explore the feelings experienced by undergraduate nursing faculty and students at this university during a time of rapid transition from standard face-to-face didactic content delivery and clinical patient care experiences to that of remote delivery of both theory and clinical learning.

Review of the Literature

A wealth of literature exists on the study of emotional and mental health in college students but prior to the COVID-19 pandemic in 2020, little research was done on students' and faculty's feelings and perceptions about a sudden shift from traditional face-to-face classes to online learning. Transitioning to university life is a change that causes stress in young adults (Herrero et al., 2019), and negative life events are positively correlated with mental health problems (Li et al., 2015; Peng et al., 2012). When a series of earthquakes in

*Corresponding author.
E-mail address:* gwen.leigh@louisiana.edu (G. Leigh).

2010 and 2011 disrupted classes at a university in New Zealand, students reported feelings of stress and anxiety related to their education (Wright & Wordsworth, 2013). Feelings about online learning were mixed, with some appreciative of the opportunity to continue their education, while others felt stressed by the need for computer and internet access. The traits students reported valuing in instructors were empathy, flexibility, sensitivity, adaptability, and good communication (Wright & Wordsworth, 2013). Lack of motivation, procrastination, and difficulty concentrating were commonly reported, as well as fear and anxiety, confusion, stress, and worry about academic failure (Hemanth, 2020; Kalman et al., 2020; Peloso et al., 2020). Students in health-care related fields had similar emotions, as well as anxiety about impaired clinical and professional training (Peloso, 2020). Kalman et al. (2020) found that students with pre-existing poor time-management skills struggled with lack of motivation and procrastination, feeling they had more time to complete their work. Hemanth (2020) studied trends in social interaction during the COVID-19 pandemic and found increased feelings of loneliness, poor motivation, and fear of academic failure. Nursing students reported mixed emotions, ranging from interested and alert, excited and hopeful, to doubt, helplessness, and stress and concern about the future (Huang et al., 2020). These findings were similar to those of a study done following an H1N1 influenza pandemic on a college campus in which student nurses reported feelings of interest, alertness, and curiosity, sympathy and compassion, and anxiety and worry (Kim & Niederdeppe, 2013).

Several studies examined responses to the rapid change to online learning but examined teaching techniques and outcomes rather than students' emotional responses. Studies did report that when the change to online learning occurred, students struggled with motivation, time management, and participation (Kalman et al., 2020; Peloso et al., 2020). Reich et al. (2020) studied the response of teachers to the rapid shift to online learning and found teachers had concerns similar to those of the students. Teachers struggled to motivate students and worried about the socioeconomic inequities that impaired learning for less affluent students. Teachers also reported a loss of a sense of efficacy and professional identity. With the COVID-19 pandemic continuing across several semesters, more research is emerging about the effects on students of the pandemic and changes to educational delivery methods.

Method

The purpose of this research study was to explore the feelings of both students and faculty associated with the transition to remote education. A mixed methods exploratory pilot study was undertaken and consisted of three Likert scale questionnaires with one optional open-ended question at the end of the survey. After institutional review board approval was obtained, all faculty were provided an explanation of the research and recruited by email for participation. A scripted message written by the researchers was posted on the LMS announcement boards for nursing courses to assist in recruiting students for participation. The recruitment message sent to students provided reassurances regarding their anonymity and confidentiality with participation, as well as a reassurance that their decision regarding participation would not impact course grades. To ensure anonymity for all participants, a link to the survey on Qualtrics® XM was emailed to faculty and posted on the LMS for the students. At the end of the survey, all participants were referred to a campus counseling center, Student Health Services, or their primary physician for a telehealth session if they experienced any undiscovered emotions or felt the need to further discuss their feelings.

Student demographic data consisted of age groups, gender, ethnicity, and current semester of enrollment. To ensure the anonymity

of faculty, demographics were limited to age groups. Survey questions regarding general feelings related to changes wrought by the pandemic, feelings about remote delivery of lecture content, and feelings about online clinical experiences were utilized. Free-text dialogue entry at the end of the survey was provided for participants to voice any additional comments. The Perceived Stress Scale (PSS) was used and adapted with additional items based on a literature review pertaining to stress and anxiety experienced by college students (Cohen et al., 1983; Mirsa et al. 2000; Putwain, 2007). The validity of the PSS has a better predictability of different health related outcomes than various stressful life-event scales (p<.05), and the predictability of depressive and physical symptomatology (p<.05). The PSS scale has a coefficient alpha reliability of 0.85, a test-retest correlation of 0.85 and an internal consistency reliability of 0.75 (Cronbach alpha). The PSS 5-point Likert scale was used for the survey (Cohen et al., 1983). Permission was obtained from the authors of the PSS for non-profit and academic purposes.

Feelings pertaining to the rapid change from face-to-face instruction to remote learning were assessed by asking students and faculty to rate their responses on a scale of 1-6, corresponding to never, almost never, often, fairly often, and very often; with higher scores demonstrating a larger response to the emotion or stress. A total of 31 emotions related to the change to remote learning were explored. Both lecture delivery and online clinical experiences were surveyed.

Descriptive statistics were used to analyze the demographic data and survey item responses. The open dialogue responses were analyzed using ©Quirkos v2.4.1, a qualitative data analysis program. Several major themes were deduced from these responses.

Table 1
Demographics.

Students N = 363			Faculty N = 31		
Age (years)	n	%	Age (years)	n	%
19-21	199	54.82	30 or less	1	3.23
17-18	67	18.46	31-40	8	25.81
22-24	74	20.39	41-50	8	25.81
25-27	9	2.48	51-60	6	19.35
30-33	3	0.83	61+	4	12.90
28-30	1	0.28	No answer	4	12.90
34+	3	0.83			
No answer	7	1.93			
Gender					
Female	334	92.01			
Male	26	7.16			
No answer	3	0.83			
Ethnicity					
Caucasian	278	76.58			
African American	59	16.25			
Asian	4	1.10			
Hispanic	6	1.65			
Other	7	1.93			
No answer	9	2.48			
Class					
1st semester Freshmen	71	19.56			
1st semester Sophomores	113	31.13			
2nd semester Sophomores	11	3.03			
1st semester Juniors	61	16.80			
2nd semester Juniors	33	9.09			
1st semester Seniors	36	9.92			
2nd semester Seniors	37	10.19			
No answer	1	0.28			

Sample

A convenience sample consisting of approximately 755 nursing students and 49 nursing faculty members at a state funded university in southwest Louisiana were asked to participate in the study. A response rate of 363 students and 31 faculty members was obtained. Included in the sample were pre-licensure nursing student enrolled in the traditional baccalaureate of science nursing (BSN) program and nursing faculty teaching clinical or didactic courses in the pre-licensure BSN program. Excluded were students in the online RN-BSN program, students enrolled in graduate courses, and faculty teaching only online courses. First semester freshmen and first semester sophomores were preclinical nursing students and were included in the study. Students in this undergraduate curriculum do not enroll in a nursing class in the second semester of their freshman year, thus were excluded from the study.

Results

As shown in Table 1, the majority of the students (n = 363) completing the survey were between the ages of 19-21 years old (54.82%) and 22-24 years old (20.39%). Sixty-seven students were from the age group of 17-18 years old (18.46%) and the oldest students were older than 34 years (0.83%). The demographics included 334 females (92.01%), 26 males (7.16%) and 3 unspecified (0.83%). The majority of student participants identified themselves as Caucasian (76.58%) or African American (16.25%). The remaining 26 students (7.16%) reported either other ethnicity or chose not to answer the question. First semester sophomores (31.13%) comprised the largest portion of the participants. In this nursing program, clinical coursework starts with Fundamentals of Nursing Care during the second semester sophomore coursework (3.03%), followed by the first junior semester medical surgical course (16.8%). Thirty-three students taking the Community/Psychology course (9.09%) as part of second junior semester coursework and 36 students taking Maternity/Pediatrics course (9.92%) during the first senior semester completed the survey. Thirty-seven graduating seniors (10.19%) completing their advanced medical surgical course also participated. The age groups of the faculty (n = 31) completing the survey consisted of less than 30 years old (3.23%); 31-40 years old (25.81%); 41-50 years old (25.81%); 51-60 years old (19.35%) and 61 years old or greater (12.90%).

Cronbach alpha was calculated with a 0.97 coefficient using a 95% confidence interval, indicating an excellent reliability.

Reliability Table for Cronbach alpha

Scale	No. of Items	α	Lower Bound	Upper Bound
Cronbach	48	0.97	0.96	0.97

Note: The lower and upper bounds of Cronbach's α were calculated using a 95% confidence interval

Students' feelings (Table 2) related to the use of remote instruction ranged from feeling stressed (M = 1.98, SD = 1.72) to satisfied (M = 4.14, SD = 1.11). Students reported feelings of nervousness (M = 2.69, SD = 1.22), anxiety (M = 2.28, SD = 1.34), and fear (M = 3.10, SD = 1.55). Missing the ability to see fellow students (M = 1.82, SD = 1.22) and faculty (M = 1.88, SD = 1.17) in person was reported by students. Since lectures were recorded for remote learning, students' feelings ranged from unable to control things around them (M = 2.37, SD = 1.45) to feeling they were 'on top of things' regarding maintaining their schedule of learning (M = 3.82, SD = 1.35). Student feelings about transitioning clinical experiences to online delivery methods ranged from inability to cope with virtual clinical (M = 4.12, SD = 1.47) to feeling irritated about virtual clinical (M = 2.75,

Table 2
Student Feelings N = 363.

Feelings	M	SD
Feelings on Remote Learning		
Calm	3.59	1.26
Tense	2.83	1.22
Secure	3.60	1.36
Strain	3.01	1.32
At Ease	3.97	1.22
Worried about academics	2.05	1.36
Satisfied	4.14	1.11
Frightened	3.10	1.55
Comfortable	3.70	1.24
Self-confident	3.73	1.21
Nervous	2.69	1.22
Jittery	3.44	1.36
Indecisive	3.00	1.51
Content	3.78	1.12
Confused	2.85	1.52
Pleasant	3.69	1.10
Scared	3.01	1.62
Anxious	2.28	1.34
Stressed	1.98	1.22
Emotionally numb	3.70	1.65
Trouble sleeping	3.08	1.69
Discouraged	2.58	1.53
Little interest in work	3.24	1.73
Jumpy	4.08	1.43
Less active	2.85	1.63
Easily annoyed	2.76	1.48
Isolated	2.48	1.51
Miss seeing students in person	1.82	1.22
Missed seeing other faculty in person	1.88	1.17
Total Score	97.13	43
Feelings on recorded lectures upset	2.70	1.46
Unable to control things	2.37	1.45
Confident in your ability	3.56	1.45
Could not cope	3.44	1.67
Irritated	2.76	1.53
On top of things	3.82	1.35
Angry	3.07	1.73
Difficulties piling up high	2.88	1.66
Total score	24.6	12.3
Feelings	M	SD
Feelings on virtual clinical		
Upset	2.90	1.45
Unable to control things	2.85	1.56
Confident	3.38	1.33
Could not cope	4.12	1.47
Irritation	2.75	1.58
On top of things	3.40	1.30
Angry	3.23	1.63
Difficulties piling up high	3.68	1.69
Instructors did what they could	1.96	1.32
Total score	28.27	13.33

M= mean; SD= standard deviation.

SD = 1.58). Students did feel instructors did everything they could to ensure adequate learning with online clinical experiences (M = 1.96, SD = 1.32).

As shown in Table 3, faculty feelings since the university transitioned to remote instruction ranged from worry for their students (M = 2.58, SD = 1.06) to feeling less active than usual (M = 4.92, SD = 1.26). Faculty reported feelings of anxiety (M = 3.40, SD = 1.38), nervousness (M = 3.73, SD = 1.08), and tension (M = 3.31, SD = 1.38). Missing the ability to see students (M = 3.46, SD = 1.53) and fellow faculty (M = 2.15, SD = 1.32) in person was reported by the faculty. Since lectures were recorded for remote teaching, faculty feelings ranged from confidence in their ability to handle online lectures

Table 3
Faculty Feelings N = 27

Feelings	M	SD
Feelings on Remote Learning		
Calm	3.04	1.40
Tense	3.31	1.38
Secure	2.92	1.13
Strain	3.15	1.54
At Ease	3.31	1.44
Worried about my students	2.58	1.06
Satisfied	3.35	1.02
Frightened	4.58	1.14
Comfortable	3.08	1.20
Self-confident	3.00	1.06
Nervous	3.73	1.08
Jittery	4.62	1.17
Indecisive	4.31	0.93
Relaxed	3.42	1.39
Content	3.19	1.41
Confused	4.12	1.31
Pleasant	2.85	1.19
Scared	4.31	1.32
Anxious	3.40	1.38
Stressed	2.77	1.37
Emotionally numb	2.77	1.37
Trouble sleeping	4.69	1.52
Discouraged	3.85	1.43
Little interest in work	3.85	1.22
Jumpy	4.60	1.15
Less active	4.92	1.26
Easily annoyed	3.50	1.77
Isolated	3.35	1.41
Miss seeing students in person	3.46	1.53
Missed seeing other faculty in person	2.15	1.32
Total score	106.18	38.9
Feelings on recorded lectures		
Upset	3.44	1.23
Unable to control things	3.44	1.36
Confident in your ability	3.08	1.26
Could not cope	4.76	1.20
Irritated	4.20	1.35
On top of things	3.28	1.21
Angry	5.12	1.27
Difficulties piling up high	3.88	1.51
Total score	3.12	10.39
Feelings on virtual clinicals		
Upset	4.08	1.25
Unable to control things	3.62	1.50
Confident	2.67	1.05
Could not cope	4.96	1.20
Irritation	2.08	1.06
On top of things	3.08	1.35
Angry	5.12	1.36
Difficulties could not overcome	4.54	1.41
Total Score	30.15	10.18

M=Mean, SD=standard deviation.
Note. Likert scale options: Very Often = 1, Fairly Often = 2.
Sometimes =3, Almost Never = 4, and Never = 5.

(M = 3.08, SD = 1.26) to feeling angry for having to teach classes online (M = 5.12, SD = 1.27). Faculty feelings about online clinical experiences ranged from irritation (M = 2.08, SD = 1.06) to feeling angry for having to conduct clinical learning online (M = 5.12, SD = 1.36).

A statistical significance between the different classes (N = 363) and difficulty sleeping (p = .016) was determined with a Kruskal-Wallis rank sum test. First semester sophomores, which were students enrolled in a nonclinical nursing course, had the most difficulty sleeping (M = 218.576), and second semester seniors had the least difficulty sleeping (M = 157.531). Kruskal-Wallis rank sum test found no statistical significance with faculty feelings.

Kruskal-Wallis rank sum test was conducted to assess significant differences based on an alpha of 0.05 (Table 4). Statistical significance was found between the different classes related to student feelings about recorded lectures for remote learning (p = .0001). Since lectures were recorded for remote learning, first semester sophomores reported being the most upset, and second semester sophomores the least upset. First semester sophomores felt unable to control things around them the most and first semesters seniors felt the least out of control. First semester juniors felt the most confident in their ability to handle online lectures and the second semester juniors felt the least confident. First semester freshman felt they could not cope with online lectures and second semester sophomores felt stronger about their ability to cope. Feeling irritated with online lectures, second semester seniors felt this the most and second semester sophomores the least. First semester juniors felt the most strongly about being 'on top of things' maintaining your schedule of learning, and first semester freshman felt the least strongly. Second semester sophomores felt the most anger for having to take classes online and second semester seniors, the least. First semester seniors felt they had the least difficulties and second semester sophomores felt they had most difficulty with recorded lectures for remote teaching.

Kruskal-Wallis rank sum test was conducted to assess significant differences based on an alpha of 0.05 (Table 4). Statistical significance was found between the different classes and online clinical experiences. First semester juniors felt the most upset about clinicals being transitioned online and first semester seniors the least. Second semester sophomores felt unable to control things around them and second semester seniors felt the most control. Second semester seniors also felt confident in their ability to handle virtual clinicals, while first semester juniors felt the least confident. Second semester sophomores felt least able to cope with virtual clinical experiences. Second semester seniors felt they could cope and were the least irritated with virtual clinical experiences. First semester juniors were the most irritated about virtual clinical experiences. Second semester sophomores felt the least able to 'stay on top things' regarding maintaining their clinical learning, and second semester seniors felt the most able. Second semester juniors felt more anger than second semester sophomores about having to attend clinical online. Second semester seniors were the least affected by difficulties and were easily able to overcome issues, while first semester juniors felt they had the most difficulty with this. Second semester seniors felt instructors did everything they could to ensure learning with online clinicals more than their first semester junior counterparts.

An open-ended question at the end of the survey asked both faculty and student survey participants for any additional comments they wanted to say about the remote learning experience. One hundred and sixty-five verbal responses were provided by students and 17 responses were received from faculty. Some of the major themes expressed by both students and faculty in response to the open-ended final survey question were feelings of frustration, stress, and anxiety at the pandemic in general, and toward remote learning in particular. Another major theme was the concern regarding online clinical experiences not being as effective as in-person experiences and trepidation about being prepared for the following semester or for obtaining nursing positions after graduation. Increased workload and the displeasure with having didactic content delivery online were also major themes for both students and faculty.

Discussion

The second semester seniors used the recorded lectures for remote teaching and participated in virtual clinicals for 2 months before graduating. These students felt the least amount of anger, out of control feelings, inability to cope and difficulties about virtual clinicals. These students also felt the most confident, felt they were on top of things and the clinical instructors did their best with virtual

Table 4
Kruskal-Wallis Findings on Student Feelings Ranked According to Class.

Feelings	Class	Mean Rank	χ^2	p
Lectures Were Recorded for Remote Teaching				
Upset	First Semester Sophomores	230.06	23.56	.001
	Second Semester Sophomores	99.55		
Unable to control things around you	First Semester Sophomores	237.26	24.99	<.001
	First semester seniors	110.77		
Confident in your ability to handle online lectures	First semester juniors	203.58	34.32	<.001
	Second semester juniors	116.00		
Could not cope with online lectures	First Semester Freshman	241.58	30.93	<.001
	Second Semester Sophomores	118.86		
Irritated about online lectures	Second semester seniors	233.50	23.92	.001
	Second Semester Sophomores	114.73		
"On top of things" maintaining your schedule of learning	First semester juniors	212.25	15.38	.31
	First Semester Freshman	139.47		
Angry for having to take classes online	Second Semester Sophomores	235.12	21.39	.003
	Second semester seniors	115.64		
Difficulties piling up so high that you could not overcome them	Second Semester Sophomores	243.46	30.74	<.001
	First Semester Senior	120.55		
Since clinicals were transitioned online				
Upset	First semester juniors	107.50	27.008	.001
	First semester seniors	47.688		
Unable to control things around you	Second Semester Sophomores	91.864	16.073	.0029
	Second semester seniors	52.422		
Confident in your ability to handle virtual clinicals	Second Semester Sophomores	96.781	12.598	.013
	First semester juniors	61.682		
Could not cope with virtual clinicals	Second Semester Sophomores	93.394	21.263	.00028
	Second semester seniors	50.250		
Irritated about virtual clinicals	First semester juniors	96.017	15.851	.00032
	Second semester seniors	55.625		
"On top of things" maintaining your schedule of learning	Second semester seniors	91.656	9.323	.054
	Second Semester Sophomores	64.707		
Felt angry about having to attend clinical online	Second semester juniors	97.017	21.923	.00021
	Second Semester Sophomores	49.562		
Difficulties piling up so high that you could not overcome them	First semester juniors	101.62	36.16	<.001
	Second semester seniors	45.30		
Instructors did everything they could to ensure learning with online clinicals	Second semester seniors	104.047	22.344	.00017
	First semester juniors	65.765		

Note: Lectures were recorded for remote teaching N = 363, alpha value = 0.05, and df = 7.
Since clinicals were transitioned online N = 178, alpha value = 0.05, and df = 4.

clinicals. These findings are not surprising because these students were the most mature and had already had four semesters of clinical. However, these students were the most irritated about recorded lectures and remote teaching, possibly because they had to adapt their learning and studying styles the last semester before graduation.

With lectures recorded for remote teaching, first semester sophomores were enrolled in a nonclinical nursing course and felt the most upset and unable to control things around them. These students were newer to taking classes at the university and in this college of nursing, which could have contributed to these feelings.

Second semester sophomores were enrolled in their first clinical course and felt the most inability to control things around them, inability to be 'on top of things', and inability to cope with virtual clinicals. These findings may be explained by having to learn their first nursing skills and how to interact with patients in a virtual environment. These students, however, were the least upset about recorded lectures, felt they could cope, and were least irritated about remote learning.

Having the entire Department of Nursing transition to remote learning with only three days' notice was an unprecedented occurrence and it would be reasonable to anticipate high emotions from both faculty and students. Both students and faculty expressed strong feelings of stress and of feelings over missing in-person contact with other people. Other more common emotions expressed by students were nervousness, anxiety and worry about academics. Faculty reported other common emotions of general self-confidence and worry about student performance.

Although some students did provide qualitative feedback reporting a preference for the remote, optional delivery of didactic content, a strong desire for mandatory synchronous classes was also expressed by many students. Students also provided extensive qualitative feedback regarding faculty support and assistance provided via remote learning. Some felt faculty offered great help and support, but others felt faculty were not supportive and hindered their learning. Demographics did not show these feelings were related to any specific group or class. Conflicting responses to questions are a limitation of the study. Another limitation of the study is the generalizability of the results; the COVID pandemic was a unique moment in time and may never be replicated. In addition, the results may have limited generalizability due to a relatively small convenience sample. The mixed method design gives strength of the study.

Future Implications

Results of the surveys were given to the department administration at the end of the spring semester, when it became apparent the pandemic would continue to impact the delivery of nursing content in the fall semester. Based on the responses from the survey question "What else would you like to say about remote learning?", changes were made in the fall semester of 2020. Freshman and sophomore students had some face-to-face class times on campus while maintaining social distancing and mandatory mask usage. Due to limitations in space and classroom seating to accommodate social

distancing mandates, the didactic content for junior and senior students continued to be delivered online.

Junior and senior didactic classes did have a mandatory synchronous component added to the fall semester of 2020 as a result of student comments. Although the traditional face-to-face classes were up to 3 to 4 hours in length, there was poor student engagement if a virtual lecture using video conferencing such as Zoom, MicroSoft® Teams or Google® Meet was attempted. Didactic content was divided into smaller sections with videos lasting less than thirty minutes. A usual two-hour face-to-face lecture resulted in four to seven asynchronous videos containing PowerPoint slides. The student could readily note the length of the video before beginning the recorded lecture. Students were instructed to view videos prior to the mandatory synchronous component which took place during their scheduled class time but for a shorter duration than the traditional face-to-face lecture.

Clinical site utilization was resumed in the fall semester of 2020, however some specialty sites either remained closed for student experiences or were limited in the number of students allowed to participate in the assigned experiential learning activities. Students who were quarantined due to exposure to COVID-19 were provided virtual clinical experiences similar to what was utilized the prior semester via case study, virtual simulation, podcasts, or other assignments as created by clinical instructors. Students with a diagnosis of COVID-19 infection were provided virtual clinical experiences only if they were well enough to complete the assignments. Institutions of higher learning must be prepared for changes in course delivery when a disaster forces students and faculty off campus. More research is needed to determine best practices for planning and implementing distance learning for both students and faculty accustomed to traditional learning methods when a change in practice is necessary. This small study adds to the existing body of literature and was used in planning and implementing changes to remote course delivery in a subsequent semester. As the pandemic continues, more research is needed on feelings and emotions as well as how the pandemic continues to impact both faculty and students.

Disclaimer

Views expressed in the submitted article are the authors' and not an official position of the institution or funder.

Funding

Declaration of Competing Interest

None.

References

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396.

Hemanth, L. K. (2020). Changing trends of social interaction during the pandemic and its effects on mental health—A student's perspective. *Asian Journal of Education and Social Studies*, *9*(3), 7–14. doi:10.9734/ajess/2020/v9i330247.

Herrero, R., Mira, A., Cormo, G., Etchemendy, E., Baños, R., García-Palacios, A., Ebert, D., Franke, M., Berger, T., Schaub, M. P., Görlich, D., Jacobi, C., & Botella, C. (2019). An internet-based intervention for improving resilience and coping strategies in university students: Study protocol for a randomized controlled trial. *Internet Interventions*, *16*, 43–51. doi:10.1016/j.invent.2018.03.005.

Huang, L., Lei, W., Xu, F., Liu, H., & Yu, L. (2020). Emotional responses and coping strategies in nurses and nursing students during COVID-19 outbreak: A comparative study. *PLoS One*, *15*,(8) e0237203. doi:10.1371/journal.pone.0237303.

Kalman, R., Esparza, M. M., & Weston, C. (2020). Student views of the online learning process during the COVID-19 pandemic: A comparison of upper-level and entry-level undergraduate perspectives. *Journal of Chemical Education*, *97*(9), 3353–3357. doi:10.1021/acs.jchemed.0c00712.

Kim., H. K., & Niederdeppe, J (2013). The role of emotional response during an H1N1 influenza pandemic on a college campus. *Journal of Public Relations Research*, *25*(1), 30–50. doi:10.1080/1062726X.2013.739100.

Li, Y., Cao, F., Cao, D., & Liu, J. (2015). Nursing students' post-traumatic growth, emotional intelligence and psychological resilience. *Journal of Psychiatric and Mental Health Nursing*, *22*(5), 326–332. doi:10.1111/jpm.12192.

Misra, R. M., & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of Health Studies*, *16*(1), 41–51.

Peloso, R. M., Ferruzzi, F., Mori, A. A., Camacho, D. P., Da Silva Franzin, L. C., Teston, A. P. M, & Freitas, K. M. S. (2020). Notes from the field: Concerns of health-related education students in Brazil pertaining to distance learning during the coronavirus pandemic. *Education and the Health Professions*, *43*(3), 201–203. doi:10.1177/0163278720939302.

Peng, L., Zhang, J., Li, M., Li, P., Zhang, Y., Zuo, X., Miao, Y., & Xu, Y. (2012). Negative life events and mental health of Chinese medical students: The effect of resilience, personality and social support. *Psychiatry Research*, *196*(1), 138–141. doi:10.1016/j.psychres.2011.12.006.

Putwain, D. (2007). Researching academic stress and anxiety in students: Some methodological considerations. *British Educational Research Journal*, *33*(2), 207–219.

Rahiem, M. D. H. (2020). The emergency remote learning experience of university students in Indonesia amidst the COVID-19 crisis. *International Journal of Learning, Teaching and Educational Research*, *19*(6), 1–26. doi:10.26803/ijlter.19.6.1.

Reich, J., Buttimer, C., Coleman, D., Colwell, R. Faruqi, F., Larke, L, 2020. What's lost, what's left, what's next: Lessons learned from the lived experiences of teachers during the pandemic. https://edarxiv.org/8exp9.

Wright, S., & Wordsworth, R. (2013). Teaching through 10,000 earthquakes: Constructive practice for instructors in a post-disaster environment. *International Journal of Teaching and Learning in Higher Education*, *25*(2), 144–153 http://www.isetl.org/ijtlhe/pdf/IJTLHE1493.pdf.