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The clinical education experience of physical therapist students during the COVID-19 pandemic: a phenomenological study

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Abstract

***Purpose*:** The purpose of this study was to explore the lived experience of physical therapist (PT) students participating in clinical education (CE) experiences during the COVID-19 pandemic.
***Methods*:** This qualitative study used an interpretive phenomenological analysis to explore the lived experiences of entry-level PT students enrolled in New York (NY) and New Jersey (NJ) PT educational programs in an effort to understand the unique experience of completing full-time CE experiences during the COVID-19 pandemic. Twelve students from accredited programs in New York and New Jersey who participated in a full-time CE experience during the COVID-19 pandemic were interviewed.
***Results*:** Four themes emerged: disruption in their academic education, altered CE experiences, emotional responses to these unanticipated disruptions, and their ability to adapt to these changes.
***Conclusion*:** The COVID-19 pandemic was an exceptionally disruptive experience. However, with support, understanding, and encouragement, students adapted to the disruptions created by this unpredictable clinical environment.

MeSH terms: *preceptorship*; *physical therapists*; *students*

Keywords: *clinical education*; *COVID-19*; *physical therapist education*; *adaptability*

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In March 2020, the COVID-19 pandemic surged in the New York (NY)-New Jersey (NJ) Metropolitan area,[1] forcing physical therapist (PT) education programs to quickly transition to online remote education. The pandemic impacted physical therapy practice in most practice settings.[2] Inpatient healthcare systems were overwhelmed with critical cases and outpatient services were significantly curtailed. Students participating in their clinical education (CE) experiences saw their experiences suddenly aborted, delayed, or rescheduled, with most future placements cancelled. Graduation was delayed for some students, and the curriculum sequence was quickly modified for others. A small percentage of students completed CE experiences during the first wave of the pandemic.[3] Some clinical sites reopened their doors to students in the summer and fall of 2020, allowing students to resume clinical experiences, while other healthcare organizations remained closed or at reduced capacity.

Curricular changes in both didactic delivery and CE were accompanied by emotional responses relating to the transition to online learning, limited peer interaction, isolation, and uncertainty.[4,5] Negative effects of the pandemic on the breadth of clinical exposure have been reported in medicine.[6] Fear relating to potential exposure to a deadly infectious disease has been reported in medical trainees[7] and PTs[8] on the front line of the pandemic.

#Portions of this work have been accepted for a platform presentation at the 2022 Educational Leadership Conference.

Existing literature on the PT student experience focused on didactic education,[4,5] but to our knowledge no literature has explored the CE experience of PT students during the COVID-19 pandemic. The pandemic changed the clinical environment,[2,8] and how it impacted the clinical learning of PT students is unknown. The lack of insight into students' experiences is a critical gap in the literature, as we do not know what they experienced or how they persisted in their clinical coursework in an uncertain environment. Understanding students' lived experiences and challenges faced during this crisis can aid academic and clinical educators in fostering strategies to support student success during other disruptive events.

The purpose of this study was to explore the lived experience of PT students participating in CE during the COVID-19 pandemic. This study sought to answer multiple research questions: How did the COVID-19 pandemic affect PT students' CE experience? How did the COVID-19 pandemic affect the perceived preparation for CE? How did the COVID-19 pandemic affect the perceived quality of CE experiences? What was the students' emotional response during CE?

Methods

Design

This qualitative study used an interpretive phenomenological analysis (IPA) to understand the unique experience of students who completed full-time CE experiences during the COVID-19 pandemic.[9] A constructivist paradigm guided the development of demographic questions, open-ended interview questions, and probes to understand the phenomenon of completing a CE experience during the COVID-19 pandemic by reflecting on their experiences (Table 1).[9] An experienced qualitative researcher consulted with the research team regarding research design, question development, and data analysis. The Job-Demands-Resource (JD-R) Model[10] was used to frame this study and shed light on our analysis. *The JD-R model describes how changes in the demands and resources of the work environment, which in this case is the educational and clinical environment*, impact the individual or student.

Ethics approval

Nazareth University's Institutional Review Board (SP 2021-24) approved this study.

Subjects

Purposeful criterion-based sampling recruited 12 PT students (Table 2). Ten participants were enrolled in traditional PT programs and two in a weekend program. Inclusion criteria included students enrolled in an accredited entry-level PT education program in New York and New Jersey who participated in at least one full-time CE

Table 1. Interview guide

Semi-structured interview questions
1. Tell me how COVID-19 affected your clinical education.
• Probes: Could you stay? Did you start your CE experience? What happened?
• Probes: How did you feel about the communication from the site? How did you feel about the communication from the academic program?
• Probes: If your CE experience was shortened, how did you feel? How was it resolved? What happened?
• Probes: Did you have enough weeks of clinical education to graduate?
• Probes: Did you meet the criteria to 'pass' the experience?
• Probes: Describe your experience
• Probes: How, if at all, was your caseload of patients affected by the pandemic in terms of volume, complexity, variety, etc.?
2. Describe your feelings about going out to the clinic as a physical therapy student during the COVID-19 pandemic?
3. Tell us about your clinical education experience(s) while you were working in the clinic.
• Probe: Setting of the CE experience if not shared.
• Probe: Tell us about the environment of your clinic.
• Probe: How was the delivery of care different than you expected?
• Probe: Tell us about your experience with telehealth.
4. How do you feel COVID-related changes impacted the quality, breadth, and depth of your clinical education?
5. How do you feel COVID affected your ability to perform in your clinic?
• Probe: How did virtual learning affect your clinical education experience? If so, describe your experience.
6. Tell us about any personal or financial implications related to your participation in clinical education during the pandemic.
7. What do you feel has been the biggest impact of COVID-19 on clinical education for physical therapy students?
8. Is there anything else from your clinical education experiences during the pandemic that we did not discuss that you would like to add?

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Table 2. Participant demographics

Participant	Gender	Age (years)	State of DPT school	Year of study in March 2020	Full-time CE during the study period March 1, 2020 – March 1, 2021	Scheduled weeks of CE	Actual weeks of CE	CE before COVID
P1[a]	Female	24	New York	Y2	1. Acute care (8 weeks) 2. Preschool (8 weeks)	36	38	2
P2[a]	Female	26	New Jersey	Y2	1. Acute care (8 weeks) 2. Orthopedic (12 weeks) 3. School-based (12 weeks)	42	40	1
P3[a]	Female	28	New York	Y2	1. Orthopedic (6 weeks) 2. Orthopedic (8 weeks) 3. Acute rehabilitation (8 weeks) 4. School-based (8 weeks)	32	30	0
P4[a]	Female	29	New Jersey	Y2	1. Acute care (10 weeks) 2. Orthopedic (12 weeks) 3. School-based (12 weeks)	42	40	1
P5[a]	Female	28	New Jersey	Y2	1. Orthopedic (8 weeks) 2. Orthopedic (12 weeks) 3. Pediatric acute care (12 weeks)	42	42	1
P6[a]	Male	29	New York	Y3	1. Orthopedic (10 weeks) 2. Acute care (12 weeks)	40	40	2
P7[a]	Female	33	New York	Y2	1. Orthopedic (8 weeks) 2. Acute care (4 weeks)	44	40	1
P8[a]	Male	31	New York	Y3	1. Orthopedic (8 weeks) 2. Acute care (4 weeks) 3. Orthopedic (10 weeks)	32	30	1
P9[a]	Female	26	New York	Y2	1. Orthopedic (8 weeks) 2. Orthopedic (6 weeks) 3. Orthopedic (8 weeks)	40	38	1
P10[a]	Female	24	New York	Y3	1. Acute rehabilitation (8 weeks) 2. Outpatient (10 weeks) 3. Acute care (10 weeks)	34	34	1
P11[b]	Female	24	New York	Y2	1. Acute care (6 weeks)	36	34	0
P12[b]	Female	24	New York	Y1	1. Outpatient (8 weeks)	36	34	0

[a]Entry-level education completed at the time of the study.
[b]Entry-level education in progress at the time of the study.

experience between March 1, 2020 and March 1, 2021. This region was selected due to its proximity to the epicenter of the first wave of the COVID-19 pandemic.[1] Nine of the 12 participants completed at least one CE experience before the COVID-19 pandemic began. Ten participants completed all CE experiences at the time of the study, and two had additional CE experiences remaining.

Procedures

The researchers emailed the Directors of Clinical Education (DCE) and Site Coordinators of Clinical Education (SCCE) in the NY and NJ Clinical Education Consortium to inform them of the study, and requested they forward the recruitment email to students who met the inclusion criteria. A sample of the first 12 participants who qualified and consented to participate provided sufficient cases to gather information for an in-depth analysis to answer our research questions.[10] The Standards for Reporting Qualitative Research requirements were used during this study's conceptualization, application, and reporting to ensure trustworthiness (Table 3).[11]

Table 3. Standards for reporting qualitative research (SRQR) checklist

	Topic	Item	Page
Title and abstract			
S1	Title	Title indicates the qualitative approach, 'A Phenomenological Study'	Page 1
S2	Abstract	Abstract includes background, purpose, methods, results, and conclusions	Page 1
Introduction			
S3	Problem formation	Description and significance of the problem/phenomenon	Page 1–2
		Review of relevant theory and empirical work	Page 1–2
		Problem statement	Page 1–2
S4	Purpose or research question	Purpose of the study and specific research questions	Page 2
Methods			
S5	Qualitative approach and research paradigm	Phenomenology with interpretive phenomenological approach (IPA) (individual semi-structured interviews, multi-round consensus coding) with a constructivist stance	Page 2–4
S6	Researcher characteristics and reflexivity	Researcher personal attributes, qualifications/experience, relationship with participants, and reflexivity	Page 3–4
S7	Context	Setting/site and salient contextual factors; rationale	Page 3
S8	Sampling strategy	How and why research participants were selected; criteria for deciding when no further sampling; rationale	Page 3–4
S9	Ethical issues pertaining to human subjects	Ethics review board and participant consent; data security	Page 3–4
S10	Data collection methods	Types of data collected; data collection procedures (start/stop dates of data collection and analysis, iterative process)	Page 4–5
S11	Data collection instruments and technologies	Instruments (interview guides) and devices (e.g. audio recorders) used for data collection	Page 2–4 Table 1
S12	Units of study	Number and relevant characteristics of participants included in the study	Page 3 Table 2
S13	Data processing	Methods for processing data prior to and during analysis, (transcription, data management, data coding, deidentification)	Page 3–4
S14	Data analysis	Process by which themes were identified and developed (researcher involvement)	Page 3–4
S15	Techniques to enhance trustworthiness	Member checking, audit trail, triangulation	Page 3–4
Results/Findings			
S16	Synthesis and interpretation	Main findings and integration with with prior research	Page 4–10
S17	Links to empirical data	Evidence to substantiate analytic findings	Table 4 Table 5
Discussion			
S18	Integration with prior work, implications, transferability, and contribution(s) to the field	Main findings, how they challenge, support, or extend earlier scholarship; scope of application/generalizability; identification of unique contribution	Page 7–11
S19	Limitations	Trustworthiness and limitations of findings	Page 10–11
Other			
S20	Conflicts of interest	Potential sources of influence or perceived influence on study conduct and conclusions	Page 10–12
S21	Funding	Sources of funding	Page 12

Data collection

Participants participated in individual 45–60-min semi-structured Zoom interviews in November 2021. The research team has experience working with PT students in both academic and clinical settings. Two of the four researchers (MD and RH) with previous experience in qualitative research conducted the interviews. Interviews were recorded and transcribed verbatim by Rev.com. Each transcript was de-identified and then emailed to the participants for member checking.

Data analysis

An IPA was used to code, classify, and identify themes that were relevant to the student experience of participating in CE during the pandemic.[9] All four researchers, two with experience in qualitative research and two novice

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coders, coded using Microsoft Excel individually as the transcripts were completed. The research team met regularly over a 10-week period to reach consensus regarding codes, categories, and themes. Operational definitions were created in a code book using Google Sheets. An audit trail documented thoughts when coding, the rationale for merging codes, and relationships among findings to prevent overinterpretation. After 12 interviews were conducted, researchers determined that no new information, codes, or themes were being generated and saturation had been achieved.[12–14]

Reflexivity, through weekly discussions to bracket preconceptions and biases, contributed to transparency and safeguarded credibility.[15] Initial open codes included descriptive, emotional, and value coding to categorize data.[14] Axial coding collapsed information into smaller units, the cross-case analysis identified connections, and weekly discussions led to agreed-upon emergent themes. Superordinate themes were identified, leading to a narrative description of the data.[14]

Results

Four themes emerged from the student interviews: disruption in academic education, altered CE experiences, students' emotional responses to these unanticipated disruptions, and their ability to adapt to these changes. Refer to Tables 4 and 5 for participant quotes for each theme.

Disruption in academic education

The abrupt transition from in-person to online teaching reduced hands-on practice, diminished student interaction with other students and faculty, and led to a lack of perceived preparation for CE (Table 4). Online coursework required more self-directed learning on the part of the student. Students described feeling less engaged and lacked the motivation to be as interactive as in an in-person class.

A major impact noted was the inability to practice clinical and hands-on skills to develop psychomotor competency. Nearly all students expressed that online learning negatively impacted their ability to master psychomotor skills. Additionally, students feared that the first person they would perform these skills on would be the patient. Perceptions of the success of virtual learning varied among participants, but students consistently questioned their preparation to work with patients in the clinic after limited hands-on skill practice.

Altered CE experiences

Most clinical sites were unwilling or unable to host students during the pandemic, resulting in many students' originally scheduled experiences being cancelled or changed. Students were concerned about missed time in the clinic due to cancellations or the need to quarantine, resulting in a possible delay in graduation. As CE resumed

Table 4. Themes 1 and 2 illustrative quotes

THEME 1: Disruption in didactic education
'If I have a set time I need to be in class, I'm going to be there, but if you tell me hey watch these eight lectures on your own, I have no motivation to do it.' (P1)
'Myself and my classmates, we all, I think agree that it was significantly more difficult to learn things online.' (P11)
'Did I pay as much attention? No. Did I graduate? Yes.' (P1)
'All the hands-on stuff I feel like had to be learned and adapted in clinical when I wanted to work on it beforehand.' (P12)
'But I think my program in general did a really good job of reassuring us and showing us that their commitment was to getting us to our end goal graduation on time.' (P4)
THEME 2: Altered clinical education experience
'You don't know what email or text you're going to wake up to today like, "Hey, you're not in this clinical anymore," or "Hey, you have to quarantine." It was crazy. Just have to go with the flow.' (P1)
'I actually wanted to end my last rotation in a hospital. I didn't get that chance just because pretty much 80% of my class didn't do hospital or inpatient at all.' (P9)
'I'm short four weeks for my graduation now. What do I do next?' (P8)
'There were a lot less patients in the hospital that had... I was on a rehab floor, so instead of having two patients per room, they would have one patient per room. And then I wouldn't be able to see the ones that were COVID positive. So that knocked it down even more.' (P8)
'Outpatient, I know they had to schedule patients differently so they wouldn't overlap in the gym … You couldn't see as many people at once.' (P10)
'I wouldn't have been able to see what I saw had it not been COVID. I would've seen the orthopedic. We saw all the other floors like we would have, and then to see the pandemic, and somebody going from completely fine 50-year-old walking around to bedridden on a vent. I was, not to say that I'm grateful for this pandemic, but to see that they really need PT, just to help them stand up was wow, makes your heart feel warm. They really appreciate it.' (P1)
'I feel like I learned so much during that clinical… I feel like if we were in a regular world and I had three patients at the same time, maybe my CI wouldn't have been able to give me the time she was giving me during this experience.' (P5)
'It was difficult to get a lot of one-on-one mentorship or training with a clinical instructor. People would either be assigned to more clinical instructors than usual because it was hard to find places that were taking students, or if clinical instructors got sick or needed to take care of someone, their students would be reassigned to someone else.' (P7)

Table 5. Themes 3 and 4 illustrative quotes

THEME 3: Emotional response
'I was a little bit frustrated because I'd secured housing somewhere else.' (P7)
'Panic. I really needed to graduate on time because of my scholarship.' (P10)
'I was in limbo for a couple of weeks hoping am I going to find a clinical.' (P1)
'I was a hot mess. I was so anxious. I was so worried that I would get there and just be like, "I don't even know what to do. I've never done it before."' (P12)
'There's definitely students out there who are scared… I was scared…I delayed, but most of my classmates didn't. They were ready to go, ready to rock and roll.' (P8)
'I was also very nervous to now be in a hospital without a vaccine.' (P1)
'I'm very grateful because our school did awesome…They adjusted super quickly.' (P5)
'I had a very good experience…I had a very good instructor and the hospital had good policies in place for students. So, I didn't feel overwhelmed. … I felt more confident leaving that rotation that I learned a lot of skills that I would use in the future.' (P11)
'It was definitely a little stressful…I was in a hospital setting…we were getting more COVID patients, and their staff needed to be redistributed to different floors, it was a week by week of whether or not I would be sent home or changed to an outpatient clinic and lose the rest of that experience in the acute care setting.' (P2)
'I had enough faith in my school and the DCE to know I would end up somewhere.' (p4)
THEME 4: Adaptability
'It was just like limbo. So, I just went with the flow. Just accepted it.' (P8)
'Everyone really shows how adaptable you have to be in challenging situations, this pandemic is still going on, you have to figure out new ways to get creative and just be safe.' (P9)
'He [CI] consistently went over the PPE with me… he was like, I just want to make sure you don't get sick and you're okay. And he was always asking me how I felt. And I did feel okay. But a large part of the reason is because he was always asking me.' (P11)
'Having someone else who understood and basically went through a similar, if not worse situation during the pandemic was definitely helpful in me navigating it myself.' (P2)
'I think that COVID in the clinical setting made me… a stronger clinician.' (P11)

and students returned to clinical sites, students expressed disappointment over a lack of variety in available CE settings. Inpatient experiences and specialty experiences were particularly difficult to reschedule.

In hospital settings, the reduced volume and variety of patient caseloads were attributed to the overwhelming number of patients testing positive for COVID-19 regardless of other diagnoses, reduced number of elective surgeries, and social distancing requirements, resulting in students expressing concern over the decreased variety of diagnoses treated. Reflecting on their experience, students reported feeling uncertain about providing effective treatment, including telehealth, to patients diagnosed or recovering from COVID-19. Other students expressed gratitude for the experience of treating patients with COVID-19.

A decreased caseload created more downtime for some students to spend with their clinical instructor(s) (CI) on clinical learning and increased one-on-one time with patients. Reports of lower patient volumes in outpatient clinics provided additional time to practice psychomotor skills with their CI, increasing confidence. Conversely, other students felt individual mentorship was scarce due to the high number of students at the site. Students discussed CIs verbalizing discomfort with non-physical therapy job tasks necessitated by COVID-19 but felt that the CIs were role models by demonstrating how they adapted to uncertain situations in the moment. Students noted the perceived stress of CIs; however, most students stated that CIs were supportive, collegial, and fostered learning. Illustrative quotes are located in Table 4.

Emotional response

Early in the pandemic, emotions were characterized by shock, uncertainty, panic, stress, and fear. Initial emotions resulted from moving classes to an online format, cancellation of clinical placements, housing, finances, and the potential of not graduating on time. When students were allowed to resume CE, emotions were centered on the fear of being exposed to COVID-19 and feeling underprepared for patient care. Over time, emotions changed to feeling thankful and grateful to both academic and clinical faculty for the learning experience of working in the clinic during a pandemic. Sample quotes are located in Table 5.

Student adaptability

Despite the initial stress of cancellations and changes in CE placements, students trusted that their DCEs' actions would allow them to meet CE graduation requirements. Frequent communication, even in the absence of a solution, was crucial for reassuring students. Students accepted, despite being disappointed, that they may have experiences in different settings than originally planned because graduating on time was their priority. Many

realized that while the experience differed from the initial placement, it was a good learning experience.

Safety measures implemented by sites and CIs contributed to students adapting to working in an uncertain, frequently changing clinical environment and contributed to feelings of safety. Students reported less fear of working in the clinic once vaccinated, when strict and explicit safety measures were in place, and when these measures were enforced at their site. Creative solutions to working within the new safety precautions forced students to work outside their comfort zones, but with support from the CIs, students were successful. Some sites instituted policies that prohibited students from working with patients who were positive for COVID-19, which helped students feel safe. At other sites, CIs gave students agency in choosing if they were comfortable treating this population. Both options helped them feel more secure. Illustrative quotes are located in Table 4.

Discussion

Our findings extend the knowledge of the impact of the COVID-19 pandemic on PT students and add new insights specific to CE experiences that have not previously been discussed. This new understanding of the student experience is important because approximately 30% of their PT education occurs during CE.[16] In this sample of PT students, initial responses were centered on the rapid switch to online learning, fear of not graduating on time, and possible financial implications. Similar emotions of uncertainty are documented in medical students[17] and PT students.[4] Tuition affordability[5] and financial and food insecurities[18] have previously been reported as stressors for PT students during didactic education. Additional financial implications of housing changes required for rescheduled clinical placements and not graduating on time were new findings specifically related to CE that were not previously reported. These concerns, although mentioned, were not an overwhelming focus, possibly because the interviews were conducted after the initial surge of the pandemic and students had resumed CE or had graduated.

Early in the pandemic, students cited the importance of communication with their program DCEs in coping with uncertainty. They trusted that their DCEs were working hard to find CE placements that would allow them to complete graduation requirements. Previous findings of the students' need for faculty support to modulate stress in the classroom[4] were expanded upon in our study because students also needed faculty support to manage stress in the clinical setting.

Students' concern regarding their preparation to competently perform psychomotor skills in the clinic due to the lack of hands-on practice corroborated the findings of Hyland[5] and Anderson.[4] Although our findings differ from Kothe, who found no difference in perceptions of preparedness in the beginning of CE or final outcomes, our study expands their findings by adding additional information relating to the student experience and how they completed and achieved CE outcomes.[19] These pre-clinical fears were eased with the understanding and mentorship of their clinical instructors. Participants consistently cited CIs' understanding that students had limited preparation in hands-on practice and may not have been prepared was crucial to easing their fears.

Students worried about contracting or spreading the disease to relatives or roommates through encountering patients positive for COVID-19. These emotions were consistent with those experienced by PTs[8] and medical students and residents.[7] Although inadequate personal protective equipment (PPE) was reported by both PTs[8] and surgical residents,[20] this was not a major concern to students in this study. One possible explanation was that PT students were not sent to clinical experiences until the initial wave had subsided and PPE was more readily available.

The overall experience of clinical training during the pandemic was not universal across professions. Some CE experiences reported by students in this study are similar to trainees in other professions, yet others are different. Medical trainees reported a negative impact of the pandemic on clinical experiences,[20] while the participants in our study reported an overall positive experience. Similar to the study by Coleman,[20] the decrease in elective non-emergency surgical procedures impacted the breadth of patient exposure in this sample of PT students. The decrease in patient volume was perceived by the participants to allow for more CI mentorship and instruction. In contrast to the medical students polled in Seifman's[6] study, most participants in our study reported adequate supervision.

Adaptability, a theme of our study, has been linked to academic performance and burnout in didactic education.[21] One study in athletic training reported the importance of student adaptability to cope with the challenges of the pandemic.[22] However, this study did not specifically discuss adaptability during CE.[19] In our study, participants cited how CIs acted as role models by sharing how they adapted and changed their practice during the pandemic. CI mentoring, coupled with academic faculty communication, helped students adapt to the changing clinical environment. Earlier studies[4,5,18] focused on the initial impact of COVID-19 on PT students and not the evolution of the student experience as the pandemic progressed. In our study, all students adapted to these unexpected changes in the clinical environment, as evidenced by their successful completion of the clinical experience and progression in the program. Those who had completed their programs were all gainfully employed. We

believe this article expands the understanding of the CE experience of PT students during a public health crisis. We postulate that an entry-level PT curriculum should intentionally include activities that require students to perform in circumstances that are ambiguous and unanticipated to assist them in developing the skills to perform in the clinical environment when the unexpected occurs, as it routinely does. This is a skill necessary to effectively navigate all healthcare environments.

Limitations

Limitations of our study included interviewing a small sample of students, all of whom attended PT programs in one geographic region that was at the epicenter of the COVID-19 pandemic,[1] demonstrating an unequal representation of PT programs on a national scale. The two male participants do not accurately represent the gender demographics of PTs. The participation self-selection process may have favored students with certain characteristics not identified, which may have influenced their responses. Additionally, our small sample of students may not have captured the group of students who were the first to return to clinics in 2020 when they first reopened. Participants did not include any students who were in their final clinical year in March 2020, impacting their ability to graduate. While we assumed students' successful completion of the clinical experience indicated their ability to adapt to the changes and stresses they encountered, we could not identify the underlying personal characteristics responsible for their success. Students less successful may have chosen not to participate.

Future research

Further research may be able to determine whether more experimentation in learning, teaching to uncertainty, and providing less structure can help students develop adaptability before entering the clinical environment. Research to determine what characteristics contribute to student success in the clinic needs further exploration. Further assessment of the impact of DCE/CI communication and types of support necessary for student success in clinical experiences during a pandemic, including policies to keep students safe, might help better prepare PT academic and clinical programs in the future. It would be interesting to explore whether PT students who studied during the height of the pandemic are prepared, are competent, and have the necessary hands-on skills to practice as they enter the workforce, particularly those students who expressed worries about not having these skills due to missed lab time and lack of hands-on practice and/or a lack of variety and breadth, depth, and volume of patients during their clinical learning. Additionally, looking at the long-term career success of these students in contrast to students who trained prior to the pandemic could share additional insights. Lastly, as our sample consisted solely of students in New York and New Jersey, it would be beneficial to study the lived experience of PT students in CE during the COVID-19 pandemic on a national or international scale.

Conclusion

The COVID-19 pandemic was an exceptionally disruptive experience. However, with support, understanding, and encouragement, students in this study adapted to providing care in the clinical environment. A supportive environment that facilitates adaptability is important because real or perceived disruptions will occur post-pandemic. Academic programs should consider placing students in low-stake, disruptive situations during their entry-level education to support the concurrent development of cognitive flexibility with clinical skills to create a safe environment for growth. Adaptability may help students navigate future challenging situations to be successful clinicians in the changing healthcare environment.

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Conflicts of interest and funding

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*Previous presentation of the underlying manuscript content

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