Internet Journal of Allied Health Sciences and Practice

Volume 23 | Number 2 Article 20

April 2025

Exploring Clinical Instructors' Views on Effective Role Modeling in Physical Therapy Education: Insights from a Qualitative Study Through the Lens of Social Cognitive Theory

Brittney M. Gunterstockman
Lincoln Memorial University, b.gunterstockman@lmunet.edu

Kellee Harper-Hanigan
Lincoln Memorial University, kellee.hanigan@lmunet.edu

Andrew Bartlett
California State University, Northridge, Andrew.Bartlett@csun.edu

Ian Rheault
Lincoln Memorial University, ian.rheault@lmunet.edu

Karen Menard
University of St. Augustine for Health Sciences, karen56883@gmail.com

Exploring Clinical Instructors' Views on Effective Role Modeling in Physical Therapy Education: Insights from a Qualitative Study Through the Lens of Social Cognitive Theory

Abstract

Purpose: Acting as a role model is an essential competency and requirement for physical therapy clinical instructors. The social cognitive theory may explain how physical therapy students learn from clinical instructors during clinical education experiences. This theory suggests that individuals learn through observation of models who are competent, credible, enthusiastic, and similar to the observer. This study aimed to explore clinical instructors' perceptions of effective role modeling. **Methods:** This phenomenological qualitative study used one-on-one virtual semi-structured interviews with clinical instructors (n=7) to explore effective role modeling in physical therapy clinical education. Inductive coding was used to develop codes and themes through the lens of the social cognitive theory. Peer validation, member checking, peer debriefing, and reliability testing strengthened trustworthiness and rigor. **Results:** Three themes identified were (a) role models are competent and credible clinicians, (b) role models foster student growth while demonstrating growth in themselves, and (c) role models are considered approachable. **Conclusions:** These themes depict how clinical instructors can represent themselves as role models in physical therapy clinical education. Clinical instructors can leverage these themes to enhance the student learning during clinical education experiences. Understanding the role of social cognitive theory provides insight into the learning experience of physical therapy clinical education. **Recommendations:** Students carefully observe clinical instructors to aid in their development into competent physical therapists. Clinical instructors should be cognizant of their responsibilities as role models and influencers on students' clinical education experiences and career pathways.

Author Bio(s)

Brittney Mazzone Gunterstockman, PT, DPT, EdD is an Assistant Professor and the Associate Program Director in the Doctor of Physical Therapy Program at Lincoln Memorial University in Knoxville, TN. She is also a licensed physical therapist in the state of Tennessee.

Kellee Harper-Hanigan, DPT, PhD, WCC is an Associate Professor and the Program Director in the Doctor of Physical Therapy Program at Lincoln Memorial University in Knoxville, TN. She is also a licensed physical therapist in the state of Tennessee.

Andrew Bartlett, PT, PhD, MPA is an Associate Professor in the Department of Physical Therapy at California State University Northridge in Northridge, CA. He is also a licensed physical therapist in the state of California.

Ian Rheault, PT, DPT, OCS is an Assistant Professor and the Interprofessional Education Coordinator in the Doctor of Physical Therapy Program at Lincoln Memorial University in Knoxville, TN. He is also a licensed physical therapist in the state of Tennessee.

Karen Menard, OTR/L, PhD is the Program Director for the Post-Professional Doctor of Occupational Therapy at University of St. Augustine for Health Sciences in St. Augustine, FL. She is also a licensed occupational therapist in the state of Florida.

The Internet Journal of Allied Health Sciences and Practice
Dedicated to allied health professional practice and education
Vol. 23 No. 2 ISSN 1540-580X

Exploring Clinical Instructors' Views on Effective Role Modeling in Physical Therapy Education: Insights from a Qualitative Study Through the Lens of Social Cognitive Theory

Brittney M. Gunterstockman[1]
Kellee Harper-Hanigan[1]
Andrew Bartlett[2]
Ian Rheault[1]
Karen Menard[3]

1. Lincoln Memorial University
2. California State University Northridge
3. University of St. Augustine for Health Sciences

United States

ABSTRACT
Purpose: Acting as a role model is an essential competency and requirement for physical therapy clinical instructors. The social cognitive theory may explain how physical therapy students learn from clinical instructors during clinical education experiences. This theory suggests that individuals learn through observation of models who are competent, credible, enthusiastic, and similar to the observer. This study aimed to explore clinical instructors' perceptions of effective role modeling. **Methods:** This phenomenological qualitative study used one-on-one virtual semi-structured interviews with clinical instructors (n=7) to explore effective role modeling in physical therapy clinical education. Inductive coding was used to develop codes and themes through the lens of the social cognitive theory. Peer validation, member checking, peer debriefing, and reliability testing strengthened trustworthiness and rigor. **Results:** Three themes identified were (a) role models are competent and credible clinicians, (b) role models foster student growth while demonstrating growth in themselves, and (c) role models are considered approachable. **Conclusions:** These themes depict how clinical instructors can represent themselves as role models in physical therapy clinical education. Clinical instructors can leverage these themes to enhance the student learning during clinical education experiences. Understanding the role of social cognitive theory provides insight into the learning experience of physical therapy clinical education. **Recommendations:** Students carefully observe clinical instructors to aid in their development into competent physical therapists. Clinical instructors should be cognizant of their responsibilities as role models and influencers on students' clinical education experiences and career pathways.

Keywords: role models, preceptor, mentor, Doctor of Physical Therapy, clinical placement

INTRODUCTION

Clinical instructors (CIs) are expected to serve as effective role models and clinical teachers according to the Commission on Accreditation in Physical Therapy Education,[1] despite the lack of training requirements. Effective CIs set clear goals, provide timely orientation, explain the student's roles and responsibilities, communicate clearly and concisely, and are competent clinicians.[2-4] During clinical education experiences, students are mentored by CIs to aid in the development of clinical, problem-solving, interpersonal, and communication skills.[5-7] One method students may learn is through observation, as suggested in the social cognitive theory of learning.[8]

Developed by Albert Bandura, the social cognitive theory suggests that students learn through observing individuals, or models, including their behaviors and associated consequences.[9] Students are more likely to recreate actions in which they previously witnessed success from a model.[9] Success interpreted by a student physical therapist may be witnessing positive patient outcomes or building good relationships. Bandura defined four characteristics of effective models: competence, credibility, enthusiasm, and perceived similarities. This learning theory has been used to support role modeling in medical residents.[10] There is limited research that explores role modeling in physical therapy clinical education, however there has been some exploration of role modeling in other healthcare professions such as nursing, medicine, and occupational therapy.[10-12]

Nursing students and medical residents expect CIs to demonstrate ethical and desirable skills and behaviors so they can better understand healthcare professionals' roles and responsibilities.[10,11] When nursing students view their CIs as a role model, they are more satisfied with their clinical education experiences.[12] A qualitative study by Greenfield et al[13] found that novice CIs identified being a role model as an important role to facilitate translation of didactic coursework into real-world patient application. Having a role model in clinical education improves physical therapy and athletic training students' confidence and facilitates translation of didactic training to clinical experiences.[11,13]

Acting as a professional role model was a proposed competency of physical therapy CIs in a descriptive study.[14] According to CIs, behaviors of a professional role model, from the perspective of site coordinators of clinical education and directors of clinical education, include promoting honesty, integrity, and respect, seeking feedback on teaching effectiveness, and demonstrating professional, effective, and open communication.[14] There are overlaps between the attributes and behaviors of effective CIs and the proposed behaviors of role models in physical therapy clinical education; however, there is limited research on if and how physical therapy CIs are perceived as role models. An understanding of behaviors that are associated with being a role model could enhance the student's learning experience and suggest a need for continuing education courses to target these behaviors.

In occupational therapy, athletic training, and nursing, it is well understood that CIs should act as role models and are perceived that way.[15-17] However, it is unclear how CIs define and represent themselves as effective role models during physical therapy clinical education experiences. This phenomenological qualitative study aimed to explore CIs' perceptions of role models in physical therapy clinical education using the theoretical framework of the social cognitive theory. This qualitative study sought to answer the following research questions:

- How do CIs define effective role modeling in physical therapy clinical education?
- How do CIs describe common attributes of effective role modeling in physical therapy clinical education?

METHODS

Study Design

This study was a phenomenological qualitative study. This study design was most appropriate as it allowed for richly descriptive information to be gathered on individuals' thoughts and experiences.[18] Semi-structured interviews were conducted to explore CIs' beliefs and experiences about role modeling in physical therapy clinical education. Themes were developed through the lens of the study's theoretical framework, the social cognitive theory. This study was approved by the University of St. Augustine for Health Sciences and Lincoln Memorial University Institutional Review Boards. All participants signed an informed consent, and the study was conducted following principles of the Declaration of Helsinki.

Throughout this study, the researchers acknowledged that personal biases could influence the interpretation of data. Therefore, peer validation and peer debriefing were performed to improve the dependability and confirmability of the study. Peer validation allowed the opportunity to practice interviewing and gain feedback on the interview questions.[18]

Participants

Following Institutional Review Board (IRB) approvals, physical therapists in the southeast region of the United States who have served as CIs were recruited via email. Targeting the southeast region was a feasibility consideration; the lead researcher taught at a program in the southeast region and therefore has connections to clinical sites and CIs in that region. Two recruitment emails

were sent over two weeks to 240 individuals. A purposive sampling strategy was used to recruit participants who could speak in depth on the phenomenon of interest,[18] effective role modeling in physical therapy clinical education. Eight individuals initially expressed interest; however, one failed to return emails for eligibility screening.

Participants were screened by phone to determine if they met the following inclusion criteria: English-speaking physical therapist, at least 18 years old, has access to the online video chat platform, and served as a CI for at least one physical therapy student during a full-time clinical education experience in the past 10 years. An individual was excluded from the study if they were not currently practicing in the southeast region of the United States or did not serve as a CI within the past 10 years. Clinical education length and placement in curricula greatly vary amongst Doctor of Physical Therapy programs; therefore, minimum length of the clinical education experience or level of the student was not considered for inclusion/exclusion criteria in effort to minimize participant biases and enhance generalizability.

Data Collection

One-on-one virtual semi-structured interviews were conducted via Zoom (Zoom Video Communications Inc.; San Jose, CA, USA) by a single researcher (B.M.G.). The semi-structured nature allowed the researcher flexibility in the order and wording of questions.[18] A synchronous format was chosen to promote a conversational environment. Interview durations ranged from 26 to 53 minutes.

Participants were sent the interview guide, which included demographic and interview questions, for reference during the interview. Demographic questions included age, gender, and experience as a CI and clinician. Interview questions were intended to elicit narrative responses targeting the research questions. Interview questions were developed by the research team through the lens of the social cognitive learning theory and review of previously published literature.[15] Table 1 demonstrates the alignment between the research questions and interview questions. The definition of a role model was purposely not defined to participants in this study to avoid influencing the participants' perceptions.

Table 1. Relationship Between Research Questions, Interview Questions, and Study Themes

Research Questions	Interview Questions	Study Themes
1. How do clinical instructors (CIs) interpret and make meaning of effective role modeling in physical therapy clinical education?	**1**. In the physical therapy clinical education setting, describe your definition of a role model. Probing Question 1a: Explain what role modeling means to you as a CI. Probing Question 1b: Explain how you use role modeling or how does someone you see use role modeling as a CI. **2**. Please describe your experiences of being a role model for students in the physical therapy clinical education setting. Probing Question 2a: Explain how being an effective role model influences physical therapy students during their clinical education experiences. Probing Question 2b: Tell me what the differences are between effective and ineffective role models in physical therapy clinical education. Probing Question 2c: How do *effective* role models impact students in the physical therapy clinical education setting? Probing Question 2d: How do *ineffective* role models impact students in the physical therapy clinical education setting?	**Theme 2**: Role models foster student growth while demonstrating growth in themselves.
2. How do CIs describe common attributes of effective role modeling in physical therapy clinical education?	**3**. What are common attributes of effective role models in the physical therapy clinical education setting? Probing Question 3a: What do you do to be an effective role model to physical therapy students during clinical education experiences? Probing Question 3b: In your opinion, what aspects of your personality contribute to you being perceived as an effective role model in physical therapy clinical education? **4**. How confident are you at being an effective role model in physical therapy clinical education? Probing Question 4a: What are the challenges or barriers to being an effective role model?	**Theme 1**: Role models demonstrate the behaviors of an effective clinician. **Theme 3**: Role models are considered approachable.

Only audio was recorded during the interviews to protect the participants' identities. Initial verbatim transcripts were generated through Zoom and then reviewed and corrected by B.M.G. to ensure accuracy and participant anonymity. It was assumed that participants answered interview questions honestly and truthfully, facilitated by the voluntary nature of the study and the anonymity of the participants.

Member checking was performed to allow the participants an opportunity to raise questions or concerns regarding representation accuracy[19] and improved the credibility of the study methods by validating data accuracy.[19] Five participants reported no errors in their transcripts, outside of typographical or grammatical errors that did not impact the ideas represented in the interview. Two participants did not respond to the member checking email.

Data Management and Analysis

ATLAS.ti Version 23 (ATLAS.ti Scientific Software Development GmBH, Kreuzberg, Berlin), a qualitative software application, was used for project and data management.[20] All transcripts were added to an ATLAS.ti password-protected project. Recruitment, data collection, and data analysis occurred concurrently. B.M.G. utilized inductive coding to code full transcripts of all participants. Intermittent peer debriefing between B.M.G., K.M., and/or K.H.H. occurred throughout data analysis. Data saturation was assessed using code frequency counts,[21] which occurred concurrently with data collection. This approach determined that data saturation occurred when no new codes were identified. No new codes were created after the fourth participant (Table 2). This study utilized data saturation[18] to determine the sample size of seven participants.

Table 2. Code Frequencies Used to Assess Data Saturation

Participant ID	Number of New Codes
L01	12
L02	3
L03	2
L04	1
L05	0
L06	0
L07	0

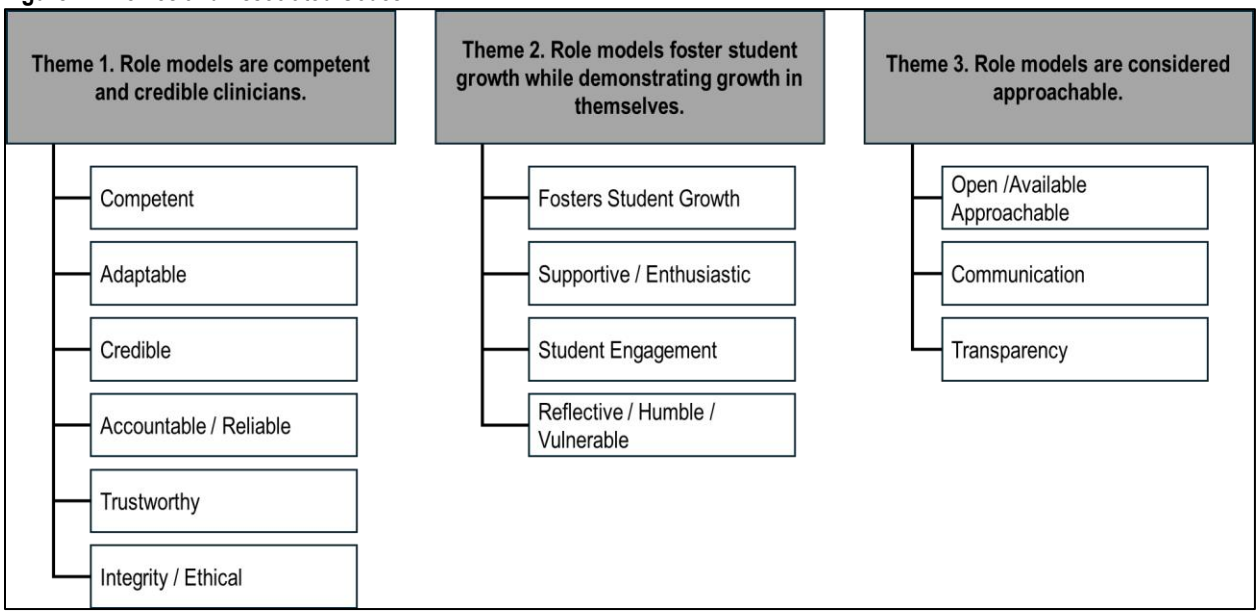
Codes were organized into major schemes or categories, also known as axial coding.[18] Codes and study themes were developed through the lens of the social cognitive theory.[22] The categories and schemes were exhaustive, mutually exclusive, sensitive to the data, and aligned with the study purpose. Associations between codes and study themes can be found in Figure 1.

Trustworthiness and Rigor

Validity and reliability of qualitative studies are established through credibility, transferability, dependability, and confirmability.[18] Credibility, or internal validity, assesses how congruent the study findings are with reality. Study credibility was established through member checking and reliability testing. Transferability, or external validity, considers the generalizability of the study findings. Data saturation, peer debriefing, and rich descriptions were methodological steps for transferability. Dependability and confirmability are indicative of the repeatability and ability to confirm the study's findings. An audit trail was used for dependability and confirmability. Additionally, peer validation or pilot testing of the interview questions was conducted to improve the study' dependability and peer debriefing was performed to improve confirmability.

To validate the accuracy of coding, two independent researchers (A.B. and I.R.) coded a subset of the data[23] (transcripts from two participants) for reliability testing. I.R. was a Doctor of Education student with limited qualitative research experience and A.B. was a researcher with qualitative study experience; both were physical therapists. For selected quotations, each coder chose the most appropriate code using a code manual (Supplemental Material). Using ATLAS.ti, files from the two coders were evaluated for intercoder agreement. The two coders demonstrated 74% agreement, with a Krippendorff's alpha of 0.68, which is considered acceptable interrater reliability.[23]

Figure 1. Themes and Associated Codes



RESULTS

The response rate to the recruitment emails was 8 out of 240 individuals, or 3.33%. Participant demographics are displayed in Table 3. The age of participants ranged from 34 to 60 years old, with an average age of 46.1 ± 11.3 years old. Four participants were male, and three participants were female. Years of experience as a physical therapist and CI varied, as did the number of physical therapy students (students from Doctor of Physical Therapy and Physical Therapy Assistant programs) mentored for full-time clinical education.

Table 3. Participant Demographics

Participant ID	Age (years)	Gender	Practice Setting	Years of experience as physical therapist	Years of experience as clinical instructor	Number of students mentored
L01	37	Female	Outpatient*	11-15	6-10	16-20
L02	47	Male	Outpatient	11-15	11-15	> 26
L03	59	Male	Outpatient*	> 26	21-25	11-15
L04	34	Male	Outpatient	6-10	6-10	1-5
L05	52	Male	Outpatient	> 26	21-25	> 26
L06	60	Female	Outpatient	> 26	16-20	6-10
L07	34	Female	Outpatient	6-10	6-10	6-10

**Indicates specialization in pediatric patients*

Three themes emerged: 1) Role models are competent and credible clinicians, 2) Role models foster student growth while demonstrating growth in themselves, and 3) Role models are considered approachable. The alignment between the research questions and study themes can be found in Table 1.

Theme 1: Role Models are Competent and Credible Clinicians

All participants expressed their ability to be an effective clinician by demonstrating competency and credibility while discussing role modeling in physical therapy clinical education. L03 demonstrated being an effective clinician in their sentiment, "you're showing that you can be an effective clinician by what you know, but also that you're able to relate to these patients and families." Being a competent clinician involves providing quality care to patients through the utilization of evidence-based practice. L01 discussed this stating, "I show our students what best practices are. And not only does that mean making sure [I'm using] research-based

[techniques]…, but also just the way that I treat patients and …families." Similarly, L04 reported using demonstration of skills and evidence-based practice explaining, "I would instruct a student on whether it's interviewing a patient a certain way, guiding them through how I would do an evaluation, or how I view the CPGs [Clinical Practice Guidelines]." L07 recalled their experience as a student in clinical education and described how their CIs demonstrated the use of different physical therapy techniques, "my other CIs taught me great techniques, and I've used a lot of their, you know, physical therapy techniques, but also a lot of their techniques for like how they deal with patients since starting my practice."

Participants also mentioned aspects of credibility that influenced their viewpoint of themselves as role models, as well as the students' perceptions of them as role models. Participants described credibility in terms of years of experience, experience with various diagnoses, and acknowledgment by others of their work as effective clinicians. For instance, L01 stated, "I've worked with so many rare genetic diagnoses. And I've worked with so many different kids over the years. I feel very confident answering those questions." L02 expanded on years of experience by emphasizing the importance of quality experience and development by stating, "demonstrating that you can have 20 years of experience doing the same thing over and over again for 20 years, or you can have 20 years of evolutionary experience." L06 recalled a patient's perception of them as an effective clinician and how that influenced the students' perceptions of the CI as a role model:

> *"This is just what I eyewitness and not to say I'm like a super-duper therapist. I know I'm effective, [be]because I know my patients get better, but students will hear our patients come in, and they will say, "Oh, this is so and so, she's my student." They will stop and say, "You know, you're learning from the best." So, if you're good, your patients will know you're good, and they know you're good and then they tell the student that you're good."*

Having integrity and making ethical decisions was also a part of being credible. Four of the six participants iterated the importance of "practice what you preach," and demonstrated that the CI must have integrity in their behaviors. L04 stated, "If the learner can't trust what you're saying, then they're not going to be able to learn."

Theme 2: Role Models Foster Student Growth While Demonstrating Growth in Themselves

All participants described ways they fostered growth in their students and demonstrated growth in themselves. Different sentiments related to fostering growth transpired; many focused on guiding students and progressing students to autonomy. For example, L01 stated:

> *"For the first couple of weeks, I usually do ask to be more observed, or just an extra set of hands to hold a toy or carry a gait trainer or something like that. And then, after that, they can build rapport with our patients. And then in the next couple of weeks, they start doing a little bit more of the hands-on."*

L02 stated, "In general, it is that we are hope, peddling, change agents," when describing how effective role models influence the student. L03 expanded on the topic of growth beyond the student to the profession in the sentiment, "As a CI, it means that I'm hopefully helping to teach kind of a new generation of clinicians how to continue to grow the profession."

Some CIs expressed being supportive and encouraging to students when fostering growth. For example, L01 stated, "If a student comes up with a great answer, I'm like, 'That's perfect, that's how I would answer it. Great job!'" And L06 stated, "I am like a mama bear. I will coddle them until they learn it." Support comes in different forms, including verbal encouragement, providing the student with resources, conforming to a student's learning style, and spending extra time reviewing cases or skills.

All participants mentioned demonstrating growth in themselves. Some focused on the importance of self-reflection. For example, L02 stated, "you're constantly checking your rearview, assessing your blind spots, your biases, seeking not to improve upon your areas of strength, but seeking to sure up your areas of weakness." Other participants focused on humility and vulnerability to demonstrate growth. L05's sentiment regarding being vulnerable was:

> *"Showing the person that I don't have all the answers all the time and that I will have to go pull up a resource. Whether that's an old book that I have versus doing a little research on the computer versus communicating with another healthcare provider. So, me showing my vulnerabilities as a not know it all person should help them feel more confident that they don't know it as well."*

Furthermore, L07 explicitly connected growth with role modeling by stating, "I know that there's always room to grow, but I really do enjoy it. And I think that's part of what makes me effective is I want to provide the best role modeling and educational experience that I can for them."

Theme 3: Role Models are Considered Approachable

All participants mentioned the importance of communication in role models. CIs strived to create an open environment, where they are considered approachable by students to ask questions. L03 described, "they [the student] realize that we're not here to judge or criticize, that they can feel comfortable asking questions and that it's an atmosphere where they can be open, and if there are any problems, they can come to me." L06 and L07 simply emphasized the importance of communication by stating, "communication is key," and "I think that communication is the biggest thing," respectively. L07 further expanded on their early communication strategy with students:

> *"I guess the first day when I had students come in, I like to chat with them about their learning style and see how they learn best and see where their comfort level is, as far as like "What do they like to do? What have they done in the past? Are they really gung-ho and wanna jump in and do like evals right off the bat? Or do they, you know, prefer to watch a couple of reps."*

DISCUSSION

This is the first study to explore CIs' perceptions of effective role modeling in physical therapy clinical education using a theoretical framework. Similar to the CIs interviewed by Greenfield et al,[13] the participants in the current study viewed themselves as role models. On the contrary, the current study included experienced CIs and expanded on the phenomenon of role modeling.

The themes that emerged from this qualitative study suggest ways that CIs can present themselves as an effective role model. For example, theme 1 advocates for CIs to demonstrate that they are competent and credible clinicians. This theme implies that the CI's skills in patient or client management are important. One can prove to be an effective and competent clinician by using appropriate, evidence-based treatment strategies that yield positive patient outcomes. A CI's title, years of experience, or perception from peers and patients can also distinguish their credibility to enhance learning and perception as a role model. Being competent has been identified as an important attribute of role models in healthcare clinical education.[24,25] Consistent with the social cognitive theory, competency and credibility are essential characteristics of effective models.[22] Learners tend to focus on models who they consider competent as they believe the model can teach them valuable skills.

To leverage the results of this study to influence a student's perception of them as a role model, another opportunity for CIs is to foster student growth. This can be apparent to the student in various ways. For example, asking the student questions about their learning style and goals or setting aside time to practice hands-on skills. Personalizing the learning experience may aid in the student's perception of the CI as a role model and improve the value the student sees in the clinical education experience. Providing students with feedback is another way that CIs have fostered student learning and growth, and this is evident in prior literature.[14,16]

Like a study by Silva et al,[15] occupational therapy students felt that CIs' commitment to personal and professional growth facilitated the perception of them as role models. Therefore, the CI should make evident their commitment to their own personal and professional growth. It is appropriate for CIs to show students that they are vulnerable, humble, and require additional resources to make clinical decisions. CIs may seek constructive feedback on their performance from students and peers. It may also be beneficial for a CI to engage in continuing education and make this apparent to the student to demonstrate their commitment to professional development.

Another important aspect of role modeling was for the CI to be approachable. Being approachable and available were previously identified as valuable attributes in the literature.[25-28] The CI should strive to create an open, trusting environment where the student is comfortable asking questions. They may need to set aside dedicated time to create an impression of being accessible and approachable. Additionally, their demeanor could influence the student's perception of approachability. A CI should be aware of how their behaviors may be perceived as intimidating, distant, or unfriendly.

A comprehensive understanding of a role model was explored using a qualitative approach using the theoretical framework of the social cognitive theory. A student's clinical education experience and future career path are influenced by CIs and other role models in their lives.[29] The education of future physical therapists will continue to include clinical education experiences; therefore, it is important to optimize the learning environment to generate quality clinicians and future role models for subsequent generations of physical therapy students. Future studies should explore student perceptions and different practice settings to further understand the influence of the social cognitive theory on the clinical education learning experience.

Limitations

The present study findings were interpreted cautiously due to common limitations of qualitative research and limitations unique to this study. Response bias or social desirability bias is a common limitation in qualitative studies, where participants respond in a way that they believe is desired by the researcher or peers.[30] To minimize response bias, the researcher asked open-ended questions and avoided commenting on participants' responses during the interviews. Recall bias also applies to the current study. Inclusion criteria were set for participants to have served as a CI within the last 10 years; however, it is possible that some memories were altered if a large gap existed between the interview and when the participant had last served as a CI.

This study may also be susceptible to investigator bias[31] due to the researchers' previous experiences in clinical education lending to preconceived notions. Attempts were made by researchers to be reflective and debrief with peers to improve the credibility and generalizability of the study findings.

The inclusion criteria of supervising at least one physical therapy student may be considered a limitation since participants' may have had limited experience mentoring and supervising students during clinical education experiences. Therefore, they may not have spoken in-depth on the phenomenon or considered how role modeling may differ for each student or different personalities. Although, six of the seven participants reported mentoring at least six students. Similarly, the level of student and duration of clinical education experiences was not gathered, which could be seen as a limitation. This limits the researchers' understanding of the student details that CIs worked with.

Recruitment methods may limit the generalizability of the present study's findings. Eligible participants were recruited from the southeast region of the United States; this was a decision made due to the feasibility of recruitment. Another consideration for generalizability is the small sample size (n=7); however, data saturation did occur, improving the rigor of this study.[31]

Generalizability may be further limited by the participants' demographics. Four participants were male and three were female. This ratio was not representative of the overall physical therapy profession's distribution of gender, reported to be about one-third male.[32] All participants worked in the outpatient practice setting and two worked mainly with pediatric patients. Therefore, diversity in practice settings was not represented in this sample. While outpatient is the most common practice setting in the physical therapy profession,[32] it is unclear if the current study findings apply to other practice settings such as acute care, inpatient rehabilitation, skilled nursing, and home health. All participants reported at least six years of experience as a physical therapist, which means that new graduates were not represented in the study sample. New graduate physical therapists may offer a unique perspective on role modeling that may not have been apparent in the experiences of physical therapists who took part in this study. Additional research is needed to improve the generalizability of the study findings and impact of role modeling on physical therapy clinical education.

A comprehensive understanding of students' perception of role modeling in physical therapy clinical education may also add to the generalizability of this study's findings. The student perspective may provide more insight into the student-CI relationship. Finding alignment between the student and CIs may warrant the creation of a continuing education course to develop or enhance role modeling attributes and behaviors in physical therapy CIs.

CONCLUSION

CIs play an essential role in physical therapy clinical education. It is apparent that CIs should serve as effective role models, however it is unclear exactly what that means. This study provides insight into how CIs view role models and the attributes and behaviors of effective role models. A role model should represent the physical therapy profession in a positive way to facilitate student learning. Role models are effective, competent, and credible clinicians. When CIs facilitate growth in students while growing themselves, they are considered role models from the CIs' perspective. It is also important for role models to be approachable to aid in building trusting, open relationships between students and CIs. Having a good role model is likely to positively influence not only the student's future but also future generations of physical therapists who learn from that student.

DISCLOSURE STATEMENTS

Authorship

All designated authors meet the journal's criteria for authorship.

Acknowledgments

We would like to acknowledge Dr. Sunddip Aguilar for her contributions to this work.

Conflicts of Interest

All authors have no conflicts of interest.

Permission to Reprint
Not applicable.
Human and Animal Rights
This study was approved by the University of St. Augustine for Health Sciences Institutional Review Board (Protocol #: 23-0802-223) and Lincoln Memorial University Institutional Review Board (IRB #: 1172).

References

1. Commission on Accreditation in Physical Therapy Education. Standards and required elements for accreditation of physical therapist education programs. 2020; https://www.capteonline.org/globalassets/capte-docs/capte-pt-standards-required-elements.pdf.
2. McCallum CA, Mosher PD, Jacobson PJ, Gallivan SP, Giuffre SM. Quality in physical therapist clinical education: A systematic review. *Phys Ther.* 2013;93(10):1298-1311. doi: 10.2522/ptj.20120410
3. McCallum CA, Reed, R., Bachman, S., & Murray, L. A systematic review of physical therapist clinical instructor demographics and key characteristics: Impact on student clinical education experiences. *Journal of Physical Therapy Education.* 2016;30(3):11-20. doi:
4. Pashmdarfard M, Shafarood N. Factors affecting the clinical education of rehabilitation students in iran: A systematic review. *Med J Islam Repub Iran.* 2018;32:114. doi: 10.14196/mjiri.32.114
5. Bacon R, Hopkins S, Georgousopoulou E, et al. While allied health students prefer face-to-face clinical placement, telehealth can support competency development: Results from a mixed-methods study. *Front Med (Lausanne).* 2023;10:1151980. doi: 10.3389/fmed.2023.1151980
6. Bowman TG, Mazerolle SM, Benes SS. The impact of clinical experiences from athletic training student and preceptor perspectives. *Athletic Training Education Journal.* 2014;9(4):156-165. doi: 10.4085/0904156
7. Grant T, Gossman P, Thomas Y, Berragan L, Frank H. 'I left feeling different about myself': What students learn on their first practice placement. *British Journal of Occupational Therapy.* 2022;86(2):139-148. doi: 10.1177/03080226221125394
8. Kay D, Kibble J. Learning theories 101: Application to everyday teaching and scholarship. *Adv Physiol Educ.* 2016;40(1):17-25. doi: 10.1152/advan.00132.2015
9. Bandura A. *Social foundations of thought and action: A social cognitive theory.*: Prentice Hall; 1986.
10. Toro-Tobon D, Thornton S. Awareness, perceptions, and characteristics of internal medicine residents as role models. *Clin Teach.* 2022;19(6):e13526. doi: 10.1111/tct.13526
11. Walker SE, Singe SM, Cavallario JM. The role mentoring plays in the transition to practice of newly credentialed athletic trainers. *J Athl Train.* 2021;56(3):227-233. doi: 10.4085/1062-6050-0242.20
12. Suliman M, Warshawski S. Nursing students' satisfaction with clinical placements: The contribution of role modeling, epistemic authority, and resilience-a cross- sectional study. *Nurse Educ Today.* 2022;115:105404. doi: 10.1016/j.nedt.2022.105404
13. Greenfield BH, Bridges PH, Phillips TA, et al. Exploring the experiences of novice clinical instructors in physical therapy clinical education: A phenomenological study. *Physiotherapy.* 2014;100(4):349-355. doi: 10.1016/j.physio.2013.10.005
14. Myers K, Bilyeu C, Covington K, Sharp A. Clinical teaching competencies in physical therapist education: A modified delphi study. *Phys Ther.* 2022;102(7). doi: 10.1093/ptj/pzac063
15. Silva LC, Troncon LEA, Panuncio-Pinto MP. Perceptions of occupational therapy students and clinical tutors on the attributes of a good role model. *Scand J Occup Ther.* 2019;26(4):283-293. doi: 10.1080/11038128.2018.1508495
16. Mazerolle SM, Barrett JL, Eason CM, Nottingham SL. Comparing preceptor and student perceptions on mentoring characteristics: An exploratory study. *International Journal of Athletic Therapy and Training.* 2017;22(2):70-77. doi: 10.1123/ijatt.2015-0066
17. Niederriter JE, Eyth D, Thoman J. Nursing students' perceptions on characteristics of an effective clinical instructor. *SAGE Open Nursing.* 2017;3. doi: 10.1177/2377960816685571
18. Merriam SB, & Tisdell, E. J. *Qualitative research: A guide to design and implementation.* Vol 4th edition: Jossey-Boss; 2019.
19. Motulsky SL. Is member checking the gold standard of quality in qualitative research? *Qualitative Psychology.* 2021;8(3):389-406. doi: 10.1037/qup0000215
20. Soratto J, Pires DEP, Friese S. Thematic content analysis using atlas.Ti software: Potentialities for researchs in health. *Rev Bras Enferm.* 2020;73(3):e20190250. doi: 10.1590/0034-7167-2019-0250
21. Hennink M, Kaiser BN. Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Soc Sci Med.* 2022;292:114523. doi: 10.1016/j.socscimed.2021.114523

22. Schunk DH, DiBenedetto MK. Motivation and social cognitive theory. *Contemporary Educational Psychology.* 2020;60. doi: 10.1016/j.cedpsych.2019.101832
23. O'Connor C, Joffe H. Intercoder reliability in qualitative research: Debates and practical guidelines. *International Journal of Qualitative Methods.* 2020;19. doi: 10.1177/1609406919899220
24. Jochemsen-van der Leeuw HG, van Dijk N, van Etten-Jamaludin FS, Wieringa-de Waard M. The attributes of the clinical trainer as a role model: A systematic review. *Acad Med.* 2013;88(1):26-34. doi: 10.1097/ACM.0b013e318276d070
25. Gibson SJ, Porter J, Anderson A, et al. Clinical educators' skills and qualities in allied health: A systematic review. *Med Educ.* 2019;53(5):432-442. doi: 10.1111/medu.13782
26. Sellberg M, Halvarsson A, Nygren-Bonnier M, Palmgren PJ, Möller R. Relationships matter: A qualitative study of physiotherapy students' experiences of their first clinical placement. *Physical Therapy Reviews.* 2022;27(6):477-485. doi: 10.1080/10833196.2022.2106671
27. Kol E, Ince S. Determining the opinions of the first-year nursing students about clinical practice and clinical educators. *Nurse Educ Pract.* 2018;31:35-40. doi: 10.1016/j.nepr.2018.04.009
28. Alghamdi SM, Siraj RA, Ari A. Evaluation of the clinical learning environment in respiratory therapy education: Student perceptions. *Respir Care.* 2019;64(2):161-168. doi: 10.4187/respcare.05055
29. Wojciechowski M. Something to run toward. *APTA Magazine.* 2022.
30. Bergen N, Labonte R. "Everything is perfect, and we have no problems": Detecting and limiting social desirability bias in qualitative research. *Qual Health Res.* 2020;30(5):783-792. doi: 10.1177/1049732319889354
31. Nowell B, Albrecht K. A reviewer's guide to qualitative rigor. *Journal of Public Administration Research and Theory.* 2019;29(2):348-363. doi: 10.1093/jopart/muy052
32. American Physical Therapy Association. A physical therapy profile: Demographics of the profession, 2021-2022. 2023; https://www.apta.org/apta-and-you/news-publications/reports/2023/physical-therapy-profile-demographics-profession-2021-22.