Factors affecting physiotherapy clinical education in the United Arab Emirates: Perceptions of students and clinical educator.

Senthilnathan Ramakrishnan (✉ senthu100@gmail.com)
Fatima College of Health Science  https://orcid.org/0000-0003-4557-1301

Kalyana Chakravarthy Bairapareddy
University of Sharjah

Research article

Keywords: Clinical placements, clinical education, physiotherapy.

DOI: https://doi.org/10.21203/rs.3.rs-17562/v2

License: ☀️  This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License
Abstract

Background Clinical education is the cornerstone of physiotherapy education. Clinical educators play a pivotal role in shaping students’ attitude towards their future role as physiotherapist. But the implementation of physiotherapy clinical education varies significantly between institutions. Research has shown several factors influencing the clinical education. Therefore, the aim of this study was to explore the factors affecting physiotherapy clinical education in the United Arab Emirates (UAE).

Methods This research used mixed-methods approach and recruited participants through purposive and convenience sampling. Data was collected through a survey using questionnaire and face-to-face interviews. Thirty-four physiotherapy students completed a questionnaire after attending 12 weeks of clinical placements. Twenty-six clinical educators and 9 students participated in the interview. Descriptive statistics including frequency percentage, median and percentiles were used for quantitative data analysis. Thematic analysis method was used for qualitative data analysis.

Results Quantitative study found greater student satisfaction in clinical education. But the qualitative study identified several factors affecting clinical education in the context of this study. These factors include student interest, learning style, culture, and ability to cope with challenges. In addition, clinical educator workload, teaching strategies, curriculum knowledge, academic-clinical partnership, peer learning, placement model and expectations were the other factors that influenced physiotherapy clinical education within the UAE.

Conclusions The findings of this study are useful to physiotherapy clinical educators, students, and faculty. It provides insight into various factors affecting physiotherapy clinical education. Furthermore, it recommends evidence-based strategies to neutralize those factors influencing clinical education.

Background

Clinical education is the heart of physiotherapy education and a high-quality clinical training is vital to promote students’ learning in clinical settings. Clinical education has a powerful effect in shaping students’ attitude for professional practice (1). Physiotherapy clinical educators use various strategies to teach students in clinical settings. Peer coaching, supervised practice, role playing, and questioning are some of the popular strategies used for clinical instruction (1). Research has shown that experienced physiotherapy practitioners are effective clinical educators (1). However, there are no standardized clinical education approaches to recommend to physiotherapy clinical educators. Clinical education is of paramount importance to link the theory to practice. The real-life experience is vital to crystallize therapeutic skills. Supervised practice support the learner to develop professional skills, competence and autonomy (2). But the conceptualization and delivery of clinical education significantly varies across the globe which may affect the placement expectations. Providing optimal learning opportunities will help students to develop clinical skills and attain the attributes of a physiotherapist. But the rapidly changing
healthcare systems and the complexities in providing seamless interface may reduce the opportunities for students. Several factors affect students learning in clinical settings and it include the model of clinical education, attributes of clinical educators, teaching strategies, performance evaluation tools and the environment (3). The challenges for clinical education become multifold when students require additional support (4). Clinical education usually occurs outside the university settings and the environment is often time constrained. Lack of human resources and the fiscal pressure associated with healthcare delivery may impact the clinical education (4). A previous study identified clinical educators’ distrust on students during clinical practice, lack of familiarity with professional ethics among hospital personnel and students’ negative attitude towards their profession as the three main factors influencing nursing and midwifery clinical education (5). Providing independence and opportunities to practice different tasks and giving feedback to the students are facilitating factors whereas distrust on students by supervisors, lack of continuity during supervision, lack of opportunities to practice and perception of the their own insufficiency by students were the obstructing factors identified by students in an earlier study (6). There must be a strategic link between the curriculum delivered at the college level and the clinical education. The effective clinical education can be provided by improved faculty monitoring of clinical education when the colleges depend on preceptor model for student training. There is an identifiable gap that exists over the primary responsibility of clinical teaching. It is important to identify the alternate possibilities to organize clinical teaching and reduce the theory-practice gap (7). The current models of clinical education include mentoring, collaborative and shared responsibilities. The studies do not recommend any one approach and no model is superior to another. There is a need for research that evaluates the factors influencing the clinical education to improve the quality (8). While studying the perceptions of students and clinical educators about factors affecting clinical education, the mixed model analysis is important to identify the contextual factors. The satisfaction surveys alone may not help in identification of these factors.

**Purpose**

In the context of this study, physiotherapy faculty members did not take active part in clinical education. This was due to restrictions of Department of Health (DoH) a regulatory authority for health professions including physiotherapy. Unlike in most countries, DoH do not control teaching practice of health professions within the United Arab Emirates (UAE). Therefore, faculty members did not possess a license to clinical practice and are unable to provide clinical supervision to students. This was a concern for students and clinical educators which was reported in several stakeholder forums. It was reported that clinical educators did not have the necessary insiders’ background of the physiotherapy curriculum taught at the institution. Further, newly established physiotherapy program and the use of non-contextualized curriculum presented multiple challenges for clinical education. In addition, literature search did not yield any similar studies on this topic within the region. Therefore, it was necessary to explore the factors affecting clinical education in the UAE.

**Objective**
To identify the factors that affected physiotherapy clinical education in the UAE.

**Research question**

What are the factors affecting physiotherapy clinical education in the UAE?

**Methods**

**Study design**

This research used mixed methods design. Initially, quantitative data was collected from physiotherapy students through online survey using a questionnaire. Then face-to-face interviews were conducted to gather information from students and clinical educators. Quantitative method was useful in finding out students’ satisfaction with clinical education. Qualitative method was useful to gather participants’ views about their lived experience in clinical education.

**The context and location of study**

This research was conducted in a health sciences institution in the United Arab Emirates. The undergraduate physiotherapy program was established in 2013 using Australian based transnational curriculum. The integrated curriculum is structured with themed modules. First-year of the program focused on musculoskeletal physiotherapy and the second year included neurological and cardiorespiratory physiotherapy. Advanced physiotherapy practice modules formed half of the third year and the remaining 18 months of the program involved clinical education. Clinical education structured as blocked placements and students attended fulltime clinical placements covering core, advanced and elective areas of physiotherapy practice. Physiotherapy program was taught in English language and institution admitted only female students.

This study was conducted on the second and third cohort of students of physiotherapy program. At the time of this study those students were in their final and fourth year of physiotherapy program, respectively. Clinical education was organized in affiliated teaching hospitals. Students attended clinical placements in 10 different hospitals within the region. These were both public and private healthcare sectors providing acute, sub-acute and long-term care services. Students were supervised by physiotherapists employed at the hospitals.

Participants first language varied. Almost all students were native Arabic speakers whereas clinical educators spoke different first languages. The medium of instruction for clinical education was in English. However, students often communicated in Arabic as patients were predominantly Arabic speakers.

**Participant recruitment and ethical considerations**
Purposive sampling was used to recruit the participants for quantitative study. All 34 students who completed 12 weeks of clinical placements were asked to complete the survey. Qualitative study used convenience sampling to recruit participants. A total of 9 students and 26 clinical educators were willing to participate and all were interviewed. Participants’ profile presented in tables 1 and 2 below.

Table 1 Student Profile

| Participant profile        | Number | Percentage |
|----------------------------|--------|------------|
| Level                      |        |            |
| Fourth year                | 18     | 53%        |
| Final year                 | 16     | 47%        |
| Placement location         |        |            |
| Al Ain                     | 22     | 65%        |
| Abu Dhabi                  | 12     | 35%        |
| Sex                        |        |            |
| Female                     | 34     | 100%       |
| Male                       | 0      | --         |
| Age group                  |        |            |
| 20 - 22                    | 18     | 53%        |
| 23 – 25                    | 16     | 47%        |
| First language             |        |            |
| Arabic                     | 34     | --         |
| Nationality                |        |            |
| UAE                        | 19     | 56%        |
| Expatriates                | 15     | 44%        |
| Placement focus (covered in 3 rotations) | | |
| Musculoskeletal            | 34     | 100%       |
| Neurology                  | 31     | 91%        |
| Pediatrics                 | 27     | 79%        |
| Cardio-respiratory         | 11     | 32%        |
| Medical & Surgical         | 21     | 62%        |
| Academic performance       |        |            |
| Lowest cGPA                | 2.00   | --         |
| Highest cGPA               | 3.90   | --         |
Table 2 Clinical Educator Profile

| Participant profile         | Number | Percentage |
|----------------------------|--------|------------|
| Gender                     |        |            |
| Male                       | 10     | 38%        |
| Female                     | 16     | 62%        |
| Place of work              |        |            |
| Public sector              | 13     | 50%        |
| Private sector             | 13     | 50%        |
| Qualification              |        |            |
| Bachelor’s degree          | 21     | 80%        |
| Master’s degree            | 05     | 20%        |
| Country of qualification   |        |            |
| India                      | 07     | 28%        |
| South Africa               | 04     | 15%        |
| Egypt                      | 04     | 15%        |
| United Kingdom             | 02     | 7.5%       |
| Ireland                    | 02     | 7.5%       |
| Philippines                | 02     | 7.5%       |
| Jordan                     | 02     | 7.5%       |
| USA                        | 01     | 4%         |
| Australia                  | 01     | 4%         |
| Pakistan                   | 01     | 4%         |
| Years of Experience in Clinical Practice |        |            |
| Minimum                    | 05     | --         |
| Maximum                    | 32     | --         |
| Years of Experience in Clinical Education |        |            |
| Minimal                    | 02     | --         |
| Maximum                    | 12     | --         |

The principal investigator (PI) was familiar to most of the participants through his role as lecturer. Hence, there was an ethical dilemma due to potential power relationship (9). However, the PI did not influence participants’ decision to participate or not participate in this study. In this study, the PI was involved in conducting an in-depth study of participants experiences and understand their feelings. Participants were enabled to express their feelings based on their lived experience in practice placements. In addition, participants were encouraged to answer questions in an authentic, honest, and open manner. Power
dynamics was balanced at various stages of this study, as researchers sought approval from Institutions Research Ethics Committee, protected participants’ privacy, and anonymity, and ensured open communication during interviews to allow the freedom to express. The PI showed respect and empathy for all participants and provided a comfort zone during the data collection process. In addition, the PI rechecked the verbatim transcripts with participants to validate their expressions in the interview. The PI was self-critical throughout the process of conducting this research and ensured that personal bias did not influence the interpretation of findings. The PI showed reflexivity while interpreting results of the study and discussed research implications by making assumptions (9). All these measures have minimized the bias.

**Quantitative study procedure**

A questionnaire was developed based on the tool designed to evaluate nursing students’ perception about clinical education experience (10). The questionnaire consisted of 13 items about learning outcomes, clinical educator, supervision, environment, and feedback (see table 1 for questionnaire). Likert scale (0-strongly disagree to 5-strongly agree) was used to provide a response to each item. Questionnaire was piloted with selected students, faculty, and experts in the field to establish face and content validity.

Questionnaire was administered through an online survey using Google Forms. An email invitation with survey link was sent to all physiotherapy students who have completed 12 weeks of clinical placements in the first semester of core and advanced clinical education. Survey results were in text-numeric form and it was converted to numeric form for analysis in SPSS. Descriptive statistics including median and inter quartile range were used for quantitative data analysis.

**Qualitative study procedure**

At the time of the study, the PI was pursuing PhD and worked as a lecturer whereas the other author was PhD qualified and worked as Assistant Professor and both were males. Authors possessed adequate training in both quantitative and qualitative research methods, and they have been teaching physiotherapy for more than a decade. Phenomenology research design was used to understand the factors affecting clinical education. Therefore, individual interviews were used to explore participants’ lived experience. A sample of convenience was used to recruit the participants. An invitation explaining research purpose was emailed to students and clinical educators. The response was limited from students to take part in the interview after two reminders. All students were females and represented traditional Arabic culture which might have been a factor for limited response. Among the 34 students who took part in the survey, only 9 were willing to participate in the qualitative study. Researchers believed that participants’ perceptions about the effectiveness of clinical education would be useful to validate quantitative study findings.

All willing students (n=9) and clinical educators (n=26) were interviewed. The PI conducted all interviews. One-to-one interview was arranged in privacy at the convenient place of participants. Separate interview
guides were developed and piloted with two educators and two students. Their feedbacks were incorporated into the final interview guide (appendix 1). Participants consented to audio record their interviews. Additionally, researcher made field notes. Interviews lasted approximately 30 minutes long on average (appendix 2). The PI briefed field notes to participants at the end of the interview to cross-check accuracy of information. Interviews were transcribed verbatim and returned to participants for validation. There was no requirement for repeat interview at this stage. The PI did not see data saturation which forced to interview all willing participants. Limited number of student participants and clinical educators representing different sites were the possible reasons that data saturation did not occur in this study.

Analysis of qualitative data was performed using NVivo 12 software. Student and clinical educator interview transcripts were analyzed separately. Initially, auto-coding was conducted to identify related concepts from transcripts. This produced numerous concepts because the software identified repeated words and phrases as codes. The intention was to identify concepts from participant response and therefore, the researchers chose manual coding option using the same tool. The researchers independently and thoroughly read the interview transcripts. Highly related concepts were categorized as nodes in NVivo. Repeated reading of those nodes for further analysis identified three major themes for discussion. Extracts of participant interview transcripts were quoted to illustrate the qualitative study findings and were presented under each theme. To protect participant identity, mock identifiers CE# for clinical educator and ST# for student were used in the order of interview. For example, the first clinical educator was identified as CE1 and the first student as ST1.

The research purpose was to explore factors affecting clinical education in the United Arab Emirates. Therefore, it was important to understand the participants’ experiences, feelings, and opinions. Interviews were useful and effective to gather these information (11,12). Thematic analysis helped to gain deeper insight into the research problem (13).

**Results**

Majority of students were highly satisfied with their clinical education experience. The survey findings showed that students learning needs were met, and that they received good support and supervision. Participants reported high level of satisfaction as majority of responses were between agree to strongly agree on all the items of survey tool. Percentage of participants response to each item of the questionnaire on Likert scale presented in table 3 below.

Table 3: Students’ perspectives about clinical education
| Items                                                                 | Number of responses | 5 - Strongly Agree | 4 - Agree | 3 - Undecided | 2 - Disagree | 1 - Strongly Disagree | Total |
|----------------------------------------------------------------------|---------------------|--------------------|-----------|---------------|--------------|-----------------------|-------|
| Provided with the objectives of the clinical placement on the first day | 34                  | 35%                | 56%       | 3%            | 6%           | 0%                    | 100%  |
| Clinical education is in alignment with the objectives of the placement | 34                  | 35%                | 47%       | 9%            | 6%           | 3%                    | 100%  |
| There is a link between educational objectives and expectations of the clinical educator from students | 34                  | 32%                | 62%       | 3%            | 3%           | 0%                    | 100%  |
| There is compatibility between theoretical curriculum and clinical activities. | 34                  | 26%                | 53%       | 15%           | 0%           | 6%                    | 100%  |
| Clinical educator                                                    | 34                  | 26%                | 53%       | 12%           | 6%           | 3%                    | 100%  |
provides full support to students

| Clinical educator deal with student effectively | 34 | 23% | 56% | 15% | 3% | 3% | 100% |
|------------------------------------------------|----|-----|-----|-----|----|----|------|

Clinical educator has a good understanding of the physiotherapy curriculum that students' studied at their University/College.

| Clinical educators have necessary cooperation with students | 34 | 21% | 71% | 6% | 3% | 0% | 100% |
|-------------------------------------------------------------|----|-----|-----|----|----|----|------|

Clinical educators allow students to make decisions in patient care planning.

| Clinical educators allow students to make decisions in patient care planning | 34 | 29% | 59% | 9% | 3% | 0% | 100% |
|-----------------------------------------------------------------------------|----|-----|-----|----|----|----|------|

There are sufficient number of patients for learning.

| There are sufficient number of patients for learning | 34 | 26% | 62% | 6% | 3% | 3% | 100% |
|------------------------------------------------------|----|-----|-----|----|----|----|------|

There are enough

| There are enough | 34 | 21% | 65% | 12% | 3% | 0% | 100% |
|------------------|----|-----|-----|-----|----|----|------|
facilities within the department as well as in the hospital. There is always a supervision during the clinical training.

|                                           | n | 24% | 62% | 12% | 3% | 0% | 100% |
|-------------------------------------------|---|-----|-----|-----|----|----|------|
| One to one performance evaluation of the clinical placement is provided | 34 | 21% | 68% | 12% | 0% | 0% | 100% |

Median, minimum, maximum and percentile statistics for each item of the questionnaire presented in figure 1 below.

Figure 1 Median and IQR Statistics

Findings of the qualitative study showed several factors affecting physiotherapy clinical education in the United Arab Emirates. Those factors were related to students, clinical educator and other academic aspects of physiotherapy program delivered at the host institution. Factors affecting clinical education are presented under these three themes. Extracts of participant interviews were useful to interpret and report the qualitative study.

**Theme 1: Factors related to student**

Student’s interest, learning style, personality, culture, and the ability to cope with uncertain situations in clinical placements are the factors that affected their clinical education experience.

**Interest**

The placement focus did not match with students’ interest. This was reported by several clinical educators and students. For example, below extracts from clinical educator and student shows that
students’ interest is an important factor which affected their clinical education experience.

*Our outpatient department focuses on musculoskeletal conditions and the inpatient focuses on neurological rehabilitation. I found some students were really interested in and willing to be in the outpatient's unit than inpatients.* (CE 11)

*In the last rotation I was in stroke unit. I didn’t like neuro, so it was a bit difficult.* (ST 5)

**Learning style**

According to clinical educators, individual student learning style was another factor that influenced their clinical education experience.

*I can't paint them all with the same brush. My last student was excellent but the one before that was not really very good.* (CE 7)

*You find students who are very inquisitive. On the other hand, there might be a passive student who would need a lot of prompts.* (CE 25)

**Culture**

The local culture was another factor that affected clinical education in the context of this study. Students were all females and represented traditional Arabic culture. It was evident from participant interview quotes that students were very conservative and hesitant to handle male patients and work with male clinical educators.

*I have seen many students expressed concerns to see a male patient.* (CE 1)

*I am man, so a female student takes more time to become familiar with me. When handling male patients there is some shyness.* (CE 12)

*I am a little bit shy in dealing with male patients especially if they are locals.* (ST 5)

**Coping with challenges**

Students’ ability to cope with challenging situation was also a factor that affected clinical education. According clinical educators, each student's ability to cope with uncertainties was not the same and this affected their clinical education experience which was acknowledged by few students.

*In one of the sessions we have had two students and me. Patient was not onboard with what the plan of treatment was, and in an agitated state, and was not agreeing with the plan of care. One student was leading the session at that time, she got nervous and almost gave up, and wouldn't want to talk to the patient at all. I think, she was just taken back by the whole situation and couldn't cope up with it. On the other hand, the second student did take over and she was able to really communicate with that patient in a way that the patient left the session agreeing to plan of care.* (CE 25)
I treated patient with amputation and psychological issues, and I felt like crying. (ST 1)

Timing was not easy, and it was too long without break. (ST 6)

**Theme 2: Factors related to clinical educator**

Clinical educator workload, teaching strategies and knowledge of physiotherapy curriculum taught to the students were the factors belonging to clinical educators which affected clinical education.

**Workload**

According to clinical educators, it was hard for them to manage their dual role of providing health services and at the same time train students on site. Few students reported that their clinical educators did not provide adequate attention to their learning. Therefore, clinical educator workload was a major factor that affected clinical education in the given context.

> When the clinical case load is so busy, the time you have for students is often prioritized off and sometimes you are trying to teach students at a particular time, but you might be pulled in several directions to attend MDT meeting and/or other things. (CE 16)

> It's hard for us to have the main responsibility in fairness to students and the practitioner who must continue the same amount of work in the same quality with the added load of doing education to students. (CE 21)

> Clinical educators don't concentrate on us. They concentrate more on the patients. (ST 7)

**Teaching strategies**

Inconsistency in teaching strategies applied by clinical educators was another factor that affected clinical education within the context of this study. Participants reported that bed side teaching and empowering students to make decisions were some of the strategies enhanced clinical education experience for students, whereas unsupervised practice opportunities hindered their learning experience.

> We make them do the presentation to the team. They reflect on their theory to a case and present. Often, we ask them to reflect why they made that decision and what their clinical reasoning is? (CE 9)

> Sometimes they use to send me alone to see the patients, but I was scared and nervous. I understand that they want us to be confident, but we do not have much experience. (ST 2)

> Some of the educators were friendly, flexible and welcoming. One therapist supported me in being independent but not all of them are same. (ST 3)

**Knowledge of physiotherapy curriculum**
Clinical educators reported that they were not fully aware of the physiotherapy curriculum taught at the college. Participant demographic information was useful to understand the diversity among clinical educators. They qualified from different countries and their experiences varied. Hence, it was vital for them to get in-depth background of what students have learnt at the university so that they can adapt the learning activities for students in clinical settings. Therefore, limited knowledge of physiotherapy curriculum for clinical educators was also a factor that affected clinical education in the UAE.

*We don’t know what they have learnt. I don’t have enough knowledge and background of the curriculum and rely on the student information about their background.* (CE 13)

*We didn’t have much information about what they have studied and learnt.* (CE 23)

**Theme 3: Other academic factors**

Physiotherapy faculty involvement, placement expectations, clinical education model, and peer learning were the other factors from academic aspect that affected clinical education in the context of this study.

**Physiotherapy faculty involvement in clinical education**

According to clinical educators, academic staff were not involved in teaching and assessment of students in clinical education. Participants reported that faculty involvement would have strengthened clinical education. Clinical educators expected the academics to provide support to students to bridge theory-practice gap and jointly assess students’ performance. In the given context, faculty were not involved in clinical education and this affected clinical education.

*We meet with the faculty clinical supervisors once a week, but it needs to be more of a practical session. Maybe we can do assessment and treatment session together with the student, so we can correct them. It would make the marking better way.* (CE 4)

*It would be better if somebody allocated to students with a dedicated time to go through specific topics and see patients with students within the protected time.* (CE 16)

*More faculty involvement is needed to focus on the student and to take the burden out the clinician. Perhaps they can observe the patient care and discuss about it.* (CE 21)

**Placement expectations**

The findings showed that there was a mismatch in expectations among students, clinical educators, and the college. Clinical educators have reported that there were inconsistencies in the expectations set to them by the college regarding students’ level of knowledge and skills. Similarly, students raised concerns about the way their clinical educators have graded their performance in clinical placements.

*We were asked to consider them when they were in the fourth year, they like a new graduate but that level was not there.* (CE 14)
If we could have an understanding about what we expect from students, so when they come they already have some idea of what kind of conditions they are going to see, what type of a setting it is, so that is not so much of a shock. (CE 3)

Some of the educators put low marks without reasons even if the student did very well. But I want to know the reasons for low scoring so that I can work on those areas. (ST 5)

Clinical education model

Clinical educators reported that the placement duration was very short, and students expressed concerns with the unintegrated nature of placements. Shorter duration did not help students to settle in a new place. Additionally, placements did not run parallel to theory courses. Below quotes from participant interviews confirm that both these factors affected clinical education.

Placement for 4 weeks are quite shorter. Students take some time to get oriented to the hospital, so, perhaps longer placements for 6 to 8 weeks may be the student would be more benefited. (CE 16)

We need more time, one month is not enough to achieve all the learning objectives. (ST 7)

I think the clinical placements should go along with the courses so that we can get real-time experience and benefit. For example, if we learn about assessment of a condition then we should simultaneously apply in real patients. (ST 5)

Peer learning

According to clinical educators, there was peer learning opportunities for students in clinical placement. This helped them to overcome difficult situations and promoted self-directed learning. Hence, peer learning was reported as one of factors that positively influenced clinical education.

There is some self-directed learning when they are together and discussing cases. (CE 17)

The pairing helps because there are two of them, so they do not feel overwhelmed and they always consult each other. So, it makes it more calming for them. (CE 3)

In this mixed methods study, findings of quantitative study showed high level of students' satisfaction with clinical education. Conversely, the qualitative study findings showed mixed responses and identified several factors affecting clinical education within the context of the study.

Discussion

In this study, culture was one the factors that affected physiotherapy clinical education. Female physiotherapy students' cultural restrictions were reported as a barrier for developing interpersonal
relationships during clinical placements. Particularly students were not collaborating well with male patients and educators and this was due to their cultural beliefs and tradition. The institution is not a co-education place which did not help students to prepare for this experience. It is inevitable that health professionals like physiotherapists manage patients of both sexes. Therefore, it was vital for students to develop interpersonal skills without any restriction and clinical placements provided numerous opportunities for it. McBee and colleagues reported similar finding in their study in which culture was a major factor that influenced clinical education. Furthermore, their study recommended that educators should develop strategies to address cultural barriers in clinical placements (14). Learning style and ability to cope with challenges were the other factors attributed to students that affected clinical education. Findings of previous research indicated that physiotherapy students preferred one of the four Kolb’s learning styles. These include accommodating, assimilating, converging, or diverging style of learning (15). A systematic review of physiotherapy learners’ learning style concluded that physiotherapy learners prefer active participation (16). Inability to cope with anxieties can affect learning and performance in clinical settings. Therefore, clinical educators must develop resilient measures to support students in clinical education. Delany and colleagues recommended to replace stressful challenges with positive coping strategies to develop self-efficacy for learners in clinical settings (17). The interest of learner was another factor that influenced clinical education in the context of this study. Findings showed that physiotherapy students did not enjoy placements in areas that are not of their interest. A study on medical students at the University of Western Australia reported that students’ preferred placements were found to be the most useful clinical placement compared to other placements (18). However, options cannot always be given to students because the physiotherapy program requires students to attend placements across several areas of physiotherapy practice to achieve various learning outcomes. On the other hand, placement providers and physiotherapy educators may consider students’ interest where possible, for example, in elective placements.

In this study, workload of clinical educator was reported as one of the barriers for physiotherapy clinical education. This was consistent with previous research findings on medical and physiotherapy clinical education in the United Kingdom and Australia respectively (19,20). This is an important factor to be addressed by the institution and physiotherapy educators to enhance the quality of clinical training within the UAE. In this study, clinical educators used different strategies such as problem-solving, self-directed directed learning and reflective practice in clinical education. But students’ reported inconsistencies between clinical educators and it affected their clinical education experience. Previous studies also reported lack of consistency in the use of pedagogical principles for clinical teaching (21,22). Therefore, there is a need to innovate teaching strategies to fit the needs of learners particularly in physiotherapy clinical education. Clinical educators have reported lack of knowledge of physiotherapy curriculum that developed the foundational knowledge and skills of students. This is another factor that impacted physiotherapy clinical education in the UAE. Knowledge of models and principles underlying the design of curricula is listed as a core competency for nurse educators (23) and this can be applicable for physiotherapy clinical education.
Lack of physiotherapy faculty involvement in clinical education was a concern for clinical educators. They reported increased burden and time constraints which did not help them in clinical education. Academic-clinical partnership is of paramount importance and sharing of expertise helps to minimize theory-practice gaps (24). However, in this context faculty was not connected to clinical education, particularly in evaluation of students’ performance in clinical placement courses. This brings up a question on the reliability of evaluating students’ performance in clinical education. Therefore, physiotherapy educators and the institutions must develop a plan to overcome the barrier for faculty involvement in clinical education. The health authority and higher education institution need to collaborate to address this issue and enable physiotherapy faculty to be actively involved in clinical education in the UAE. Clinical education model and placement expectations were the other factors that influenced clinical education in this context. The blocked model of placement with just four weeks duration did not help students. Moreover, the curriculum was designed in a way that clinical education was not integrated with academic courses. As a result, there was a potential theory-practice gap for students when they entered clinical placements at the later end of the program. The duration and structure of clinical placement was reported as important factors that determined the belongingness of nursing students in clinical education (25). Clinical educators and students recommended longer duration placements that runs parallel to theory courses. There was also a gap in establishing clear expectations between clinical educators, students, and academics. Lack of supervision for students and exceedingly high expectations provided to clinical educators were also considered as factors that affected clinical education in the context of this study. Early exposure to clinical education and incorporating supervision strategies are some of the ways to overcome these barriers (21,26). Research findings indicate that clinical educators determine the quality of learning experience for students in clinical education. Clinical educator skills in providing a constructive feedback positively influenced students’ learning in clinical settings (27,28). Peer learning was another factor which influenced clinical education. Clinical educators observed students supporting each other in overcoming their challenges. Previous research findings showed peer-assisted learning reduced students’ anxiety, enhanced safe feeling and collaborative working, and reduced clinical educator burden (29).

Research evidence indicate that respecting students, supporting their learning needs and good communication are some of the essential qualities of a clinical educator (30,31). Clinical educators have used several strategies to promote students learning. It is recommended that they make thinking visible to students by scaffolding ideas (32,33). Several studies have found reflective practice as a useful measure to manage anxieties, build confidence and promote life-long learning (8,34,35). Case study presentations and small group discussions are some of the ways to promote reflection in clinical education (36).

Limitations of the study include small sample size particularly student participation in the qualitative study. Hence it is difficult to make assumptions on findings. The researchers tried to limit the bias through open communication. But still the power dynamics could have been a factor that limited student participation and could have influenced the openness of students’ responses. All students were female and therefore, perceptions and feelings reported did not include the views of male students. Though the
study was limited to only one of the three institutions offering physiotherapy education within the UAE, findings are useful to understand the factors affecting clinical education in this context.

Conclusion

This research identified several factors affecting physiotherapy clinical education in the UAE. These factors include students’ interest, learning style, ability to cope with challenges, and culture. Clinical educator attributes include workload, teaching strategies and curricular knowledge. Faculty involvement, clinical education model, placement expectations, and peer learning were the other academic factors impacting clinical education within the context. Mixed methods study was useful to explore clinical educator and student views about clinical education through their lived experience. Findings of this study contribute to existing literature on this topic and brings a new evidence to physiotherapy clinical education within the region.

Abbreviations

CE – Clinical Educator

DoH – Department of Health

PI – Principal Investigator

SPSS – Statistical Package for Social Sciences

ST – Student

UAE – United Arab Emirates

Declarations

Ethics approval and consent to participate: Fatima College Research Ethics Committee (FCHS/RECA/003/2017-18) and Abu Dhabi Health Services Company (SEHA Corporate Learning & Development) approved this study. All participants gave written informed consent.

Availability of data and material: The data are not publicly available to protect privacy and confidentiality for the participants. Anonymous interview transcripts and survey results are available on reasonable request.
Competing interests: The authors declare that they have no competing interests.

Funding: Self-funded.

Authors' contributions: The first author (SR) conceptualized this study and responsible for methodology, investigation, data analysis and writing original draft of this manuscript. KB contributed to this study with resources, reviewing and editing of the manuscript. Both authors read and approved the final manuscript.

Acknowledgements: Authors acknowledge Prof. Abdulai Abukari for his valuable advice, guidance, supervision, and feedback to the principal investigator during the conduct of this study. We would like to thank Dr. Marian Grace Gabor for her time to proofread and the support for English language editing.

References

1. Dockter M, Roller J, Eckert J. Preparing physical therapy students for the role of clinical educator: A case study report. Work. 2013;44(3):255–63.

2. Lekkas P, Larsen T, Kumar S, Grimmer K, Nyland L, Chipchase L, et al. No model of clinical education for physiotherapy students is superior to another: A systematic review. Aust J Physiother [Internet]. 2007;53(1):19–28. Available from: http://dx.doi.org/10.1016/S0004-9514(07)70058-2

3. Williams LG, Ernstzen D V, Statham SB, Hanekom SD. Evaluation of clinical sites used for training undergraduate physiotherapy students: Factors that may impact on learning. African J Heal Prof Educ. 2014;6(2):207.

4. Lo K, Curtis H, Keating JL, Bearman M. Physiotherapy clinical educators’ perceptions of student fitness to practise. BMC Med Educ. 2017;17(1):1–11.

5. Tazakori Z, Mehri S, Mobarakni N, Dadashi L, Ahmadi Y, Shokri F, et al. Factors Affecting on Quality of Clinical Education from Perspectives of Operating Room Students TT - یافته‌های تاثیرگذار بر کیفیت آموزش کلینیکی از پرسپکتیو دانشجوهای دانشجویان حوزه امداد در بخش بیماری. arumshcj [Internet]. 2015 Jun 1;17(2):128–36. Available from: http://hcjournal.arums.ac.ir/article-1-332-en.html
6. Löfmark A, Wikblad K. Facilitating and obstructing factors for development of learning in clinical practice: a student perspective. J Adv Nurs [Internet]. 2001 Apr 1;34(1):43–50. Available from: https://doi.org/10.1046/j.1365-2648.2001.3411739.x

7. Lambert V, Glacken M. Clinical education facilitators: a literature review. J Clin Nurs [Internet]. 2005 Jul 1;14(6):664–73. Available from: https://doi.org/10.1111/j.1365-2702.2005.01136.x

8. Rowe M, Frantz J, Bozalek V. The role of blended learning in the clinical education of healthcare students: A systematic review. Med Teach. 2012;34(4).

9. Trede F, Smith M. Teaching reflective practice in practice settings: Students’ perceptions of their clinical educators. Teach High Educ. 2012;17(5):615–27.

10. Norouzadeh R, Heidari MR. Nursing students’ perspectives on clinical education. J Adv Med Educ Prof. 2015;3(1):39–43.

11. Kassirer JP. Teaching clinical reasoning: Case-based and coached. Acad Med. 2010;85(7):1118–24.

12. Dunning D, Heath C, Suls JM. Flawed self-assessment implications for health, education, and the workplace. Psychol Sci Public Interes Suppl. 2004;5(3):69–106.

13. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101.

14. McBee E, Ratcliffe T, Picho K, Schuwirth L, Artino AR, Yepes-Rios AM, et al. Contextual factors and clinical reasoning: Differences in diagnostic and therapeutic reasoning in board certified versus resident physicians. BMC Med Educ. 2017;17(1):1–8.

15. Milanese S, Gordon S, Pellatt A. Profiling physiotherapy student preferred learning styles within a clinical education context. Physiotherapy [Internet]. 2013 Jun 1;99(2):146–52. Available from: https://doi.org/10.1016/j.physio.2012.05.004

16. Stander J, Grimmer K, Brink Y. Learning styles of physiotherapists: A systematic scoping review. BMC Med Educ. 2019;19(1):1–9.

17. Delany C, Miller KJ, El-Ansary D, Remedios L, Hosseini A, McLeod S. Replacing stressful challenges with positive coping strategies: a resilience program for clinical placement learning. Adv Heal Sci Educ. 2015;20(5):1303–24.

18. Kandiah D. Perception of educational value in clinical rotations by medical students. Adv Med Educ Pract. 2017;Volume 8:149–62.

19. Norman RI, Dogra N. A survey of the practice and experience of clinical educators in UK secondary care. BMC Med Educ. 2014;14(1):1–9.

20. Sevenhuysen SL, Haines T. The slave of duty: Why clinical educators across the continuum of care provide clinical education in physiotherapy. Hong Kong Physiother J [Internet]. 2011;29(2):64–70. Available from: http://dx.doi.org/10.1016/j.hkpj.2011.06.002

21. Alhaqwi AI, Taha WS. Promoting excellence in teaching and learning in clinical education. J Taibah Univ Med Sci. 2015;10(1):97–101.

22. McLeod P, Steinert Y, Chalk C, Cruess R, Cruess S, Meterissian S, et al. Which pedagogical principles should clinical teachers know Teachers and education experts disagree disagreement on important
pedagogical principles. Med Teach. 2009;31(4).

23. World Health Organization. Nurse Educator Core Competencies. Who [Internet]. 2016;1–36. Available from: http://apps.who.int/iris/bitstream/handle/10665/258713/9789241549622-eng.pdf?jsessionid=8DCAD822F36D10F1B829697B0637542D?sequence=1

24. Bvumbwe T. Enhancing nursing education via academic–clinical partnership: An integrative review. Int J Nurs Sci [Internet]. 2016;3(3):314–22. Available from: http://dx.doi.org/10.1016/j.ijnss.2016.07.002

25. Levett-Jone T, Lathlean J, Higgins I, McMillan M. The duration of clinical placements: A key influence on nursing students’ experience of belongingness. Aust J Adv Nurs. 2008;26(2):8–16.

26. White S, Humphreys N. Undergraduate physiotherapy students’ expectations and perceptions of rural/regional clinical placements. Aust J Rural Health [Internet]. 2014 Aug 1;22(4):172–8. Available from: https://doi.org/10.1111/ajr.12102

27. Johnston C, Newstead C, Sanderson M, Wakely L, Osmotherly P. The changing landscape of physiotherapy student clinical placements: An exploration of geographical distribution and student performance across settings. Aust J Rural Health. 2017;25(2):85–93.

28. Wijbenga MH, Bovend’Eerdt TJH, Driessen EW. Physiotherapy Students’ Experiences with Clinical Reasoning During Clinical Placements: A Qualitative Study. Heal Prof Educ [Internet]. 2019;5(2):126–35. Available from: https://doi.org/10.1016/j.hpe.2018.05.003

29. Sevenhuysen S, Skinner EH, Farlie MK, Raitman L, Nickson W, Keating JL, et al. Educators and students prefer traditional clinical education to a peer-assisted learning model, despite similar student performance outcomes: a randomised trial. J Physiother [Internet]. 2014;60(4):209–16. Available from: http://www.sciencedirect.com/science/article/pii/S1836955314001283

30. Egege S, Kutieleh S. Critical thinking: Teaching foreign notions to foreign students. Int Educ J. 2004;4(4):75–85.

31. Koharchik L, Redding SR. Strategies for Successful Clinical Teaching. Am J Nurs. 2016;116(7):62–5.

32. Delany C, Golding C. Teaching clinical reasoning by making thinking visible: an action research project with allied health clinical educators. BMC Med Educ [Internet]. 2014;14(1):20. Available from: https://doi.org/10.1186/1472-6920-14-20

33. Cutrer WB, Sullivan WM, Fleming AE. Educational strategies for improving clinical reasoning. Curr Probl Pediatr Adolesc Health Care [Internet]. 2013;43(9):248–57. Available from: http://dx.doi.org/10.1016/j.cppeds.2013.07.005

34. Ramli A, Joseph L, Lee SW. Learning pathways during clinical placement of physiotherapy students: a Malaysian experience of using learning contracts and reflective diaries. J Educ Eval Health Prof. 2013;10:6.

35. Ramli A, Ruslan AS, Sukiman NS. Reflection of physiotherapy students in clinical placement: A qualitative study. Sains Malaysiana. 2012;41(6):787–93.

36. Mostert-Wentzel K, Frantz J, Van Rooijen AJ. A model for community physiotherapy from the perspective of newly graduated physiotherapists as a guide to curriculum revision. African J Heal
Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Appendix12.docx