Factors underlying effective clinical education: Perceptions of physiotherapy students and preceptors.

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Abstract

Background Clinical education is the cornerstone of physiotherapy education and it plays a pivotal role in shaping physiotherapy students' attitude towards future professional practice. But the implementation of physiotherapy clinical education varies significantly between the institutions. Clinical educators adapt various strategies to teach students in the clinical settings which have several advantages as well as disadvantages. Research has shown several factors influencing the clinical education of healthcare students and the objective of this study was to explore the factors that affect the effectiveness of clinical education of physiotherapy students.

Methods This research used mixed-methods approach and included 34 physiotherapy students and 26 clinical educators. Data collection was conducted in two stages. First stage of data collection used a 13 items survey at the end of 12 weeks of clinical placements to collect the student's perspectives about clinical education. Then the second stage of data collection used semi-structured interviews that included both students and clinical educators.

Results Descriptive statistics of the survey was useful to analyze the survey results and majority of students reported clinical education was effective and high levels of satisfaction was found among the students about the placement environments and clinical educator skills. Clinical education fulfilled students learning needs and the educators provided necessary support and supervision. However, the findings showed few factors hindering the effectiveness of clinical education and the qualitative study was useful in exploring those factors that are related students, clinical educators and the physiotherapy curriculum.

Conclusion The findings of this study are useful to clinical educators, students and academic leaders in physiotherapy as it provides an insight into the factors that affect the effectiveness of clinical education and recommends evidence-based educational strategies to overcome those factors.

Background

Clinical education is the heart of physiotherapy education and high-quality clinical training is vital for students' learning in healthcare settings. Clinical education is powerful in shaping the students' attitude for physiotherapy practice in future. Physiotherapy preceptors use various strategies to teach within the 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 preceptors. Clinical education is of paramount importance to link the theory to practice and the experience in real-life setting is vital to crystallize therapeutic skills. Supervised practice helps the students 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 helps the 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 the students learning in clinical settings and it include the model of clinical education adapted, attribute of preceptors and their teaching style, tools to evaluate students' performance and the environment.[3] The challenges for clinical education is higher when the 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]

In the context of this study, clinical educators are licensed physiotherapists. They are employed by the healthcare sectors and responsible of provide physiotherapy services to patients and supervise students attending placements. The college set up a memorandum of understanding with health services across the country and placed the students for clinical attachment. There was no funding to appoint an onsite student coordinator, instead the college relied on the physiotherapists employed by the hospital for student education. However, each faculty member was responsible for number of placement sites and visited on a daily or weekly basis as required. But they were not able to be involved in clinical education due to legal restrictions as they did not possess the license to practice as a physiotherapist. The health authority of the country provides registration only to the clinical practitioners working within health services not for the academic staff in the higher education institutions. Therefore, they are not entitled for patient contact and as a result they are unable to supervise students during clinical encounter. The main objective of this study was to explore the factors that affect the effectiveness of clinical education.

Research question:

What are the underlying factors for an effective clinical education?

Methods

Ten healthcare settings across the emirate of Abu Dhabi that accept the physiotherapy students for clinical placements were included in this study. These represent public and private healthcare sectors that offered acute, sub-acute and long-term care services. A total of 39 female students attended fulltime clinical placements across these sites for a period of 12 weeks. Both male and female physiotherapists working in the health services were the clinical educators. Purposive sampling was used, and all the students and clinical educators were invited to participate in this study. The Research Ethics Committees of the College of Health Sciences and Abu Dhabi Health Services company granted the permission for this study before the data collection. In addition, independent approval was granted by each participating site. The study acknowledges that there was a power relationship between the participants and one of the researchers. The participants were the students and professional colleagues of a researcher hence there was a position of authority that could influence the participants. However, the researchers ensured such power dynamics will not happen at any stage of the research process and the researchers respected the rights of all individuals who refused to participate in this study or decided to withdraw from the study at

any stage without any explanation. It is almost impossible to be bias-free especially when including a qualitative methodology especially when the researcher has professional interest on the research problem and involved as a stakeholder within the research context. However, the researchers encouraged the participants to answer the questionnaire as well as the interview questions in an authentic, honest and open manner. The researcher was self-critical throughout the process of conducting this research and ensured that his own bias did not influence the results/interpretation of the findings. Researcher showed reflexivity while interpreting the findings of the study and discussing the implications of the same to construct knowledge by making some assumptions.[5] This is believed to have minimized the bias. In addition, the research was self-critical and has taken a neutral stand which helped him to accurately interpret the findings and minimized the bias in this research and ensured the validity of the data was maintained. Researcher showed respect and empathy for all participants and ensured a comfort zone during the data collection process.

This study used mixed-methods approach that included both quantitative and qualitative methods. Quantitative study targeted only students and the qualitative study included both students and their clinical educators. A survey and semi-structured interviews were used in data collection. Researchers developed a questionnaire based on the tool developed by Heidari and Norouzadeh.[6] The questionnaire included 13 statements about the learning outcomes, clinical educator, clinical supervision, clinical environment and performance feedback. Content and face validity of the questionnaire was established through piloting with the physiotherapy faculty who were involved in clinical education and experts in the field of education. The purpose of the research is to explore factors underlying effective clinical education. Therefore, it is important to understand the participants experience, feeling opinions. Interviewing the participants with thematic questions is considered a power and effective way of gathering the information.[7,8] Semi-structured interviews were used ahead of non-structured interviews for this purpose as the researchers possessed some understanding of the research problem through literature review. Separate interview guides were prepared for conducting the interviews with students and clinical educators. It included questions about participant profile and their experience during clinical education. Interview guides were peer reviewed by experts in the fields of physiotherapy and education and modified before the actual interview with the participants. Interview guide was useful to ask a focused question to each participant and their language proficiency was considered during each interview and where necessary a detailed explanation of the question was provided to get their response accurate and the follow-up questions were asked when needed using the participants response as a probe.

First, a survey was conducted among the physiotherapy students who completed 12 weeks of fulltime clinical placements. The survey includes a consent question and all participant must consent in order to complete the survey online. Participants were asked to respond using a Likert scale response of 1 to 5 for each statement in the questionnaire. A response of 1 means the participant strongly disagrees with the statement whereas 5 indicates strongly agreement with the statement. Then, another invitation was sent to all the students and clinical educators to take part in the interview. Nine students and 26 clinical

educators were willing to participate. All of them were interviewed in privacy and participants gave a written consent prior to the start of the interview and selected their preferred ways to record the interview. Most of them consented for audio recording of their interview and two educators and two students asked the interviewer to handwrite the notes of their response to the questions. All participant interviews were verbatim transcribed and analyzed in NVivo12 which is a software for qualitative data analysis. Researchers carefully read the electronic copies of each interview transcripts. Statements and the phrases that were significant for answering the research questions were highlighted in files and sticky notes were inserted for cross referencing at a later stage. Several codes were identified during this process. Finally, comparisons were made between the transcripts and thematic analysis model of Braun and Clarke was used which produced few themes and this was useful to deepen the understanding of the research problem.[9]

Results

The objective of the study was to explore the factors underlying effective clinical education. Therefore, it was essential to includes views both the students and clinical educators as they were the stakeholders of physiotherapy clinical education. A total of 39 students attended 12 weeks clinical placements. 34 students responded to the survey conducted at the end of placements and the response rate was close to 85%. Descriptive statistics in SPSS was used to analyse the survey results. Findings were useful to understand the physiotherapy students' perspectives about the effectiveness of clinical education. Table 1 provides the summary of survey findings which concludes that majority of the students reported that the clinical education was effective. It fulfilled their learning needs and they received good support and supervision from clinical educators. Students also reported high levels of satisfaction with their clinical educators' ability to deal with students as well as the learning environment.

Table 1: 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 educators 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 provides full support to the students	34	26%	53%	12%	6%	3%	100%
Clinical educator deal with student effectively	34	23%	56%	15%	3%	3%	100%
Clinical educator has a good understanding of the physiotherapy curriculum that the students' studied at their University/College.	34	23%	47%	18%	12%	0%	100%
Clinical educators have necessary cooperation with students.	34	21%	71%	6%	3%	0%	100%

Clinical educators allow the students to make decisions in patient care planning	34	29%	59%	9%	3%	0%	100%
There are sufficient number of patients for learning	34	26%	62%	6%	3%	3%	100%
There are enough facilities within the department as well as in the hospital.	34	21%	65%	12%	3%	0%	100%
There is always a supervision during the clinical training.	34	24%	62%	12%	3%	0%	100%
One to one performance evaluation of the clinical placement is provided	34	21%	68%	12%	0%	0%	100%

Manual analysis technique in NVivo was preferred ahead of the auto analysis in order to get a deeper understanding of the qualitative data gathered from the participants through interviews. Transcripts were individually analyzed and compared to other transcripts to identity if there are similar concepts, experiences and feeling reported by the participants. All closely related concepts were categorized as a code and several codes were identified in this process which include students' interest, willingness, attitude, culture, curriculum, peer learning and environment.

Clinical education is an important element of physiotherapy education and it is important to understand the effectiveness of clinical education that forms one third of the physiotherapy curriculum. Though the findings of the quantitative study showed positive experience for students in clinical education, there were some potential factors potential that hindered the effectiveness of clinical education. The aim of the qualitative study was to explore those factors underlying effective clinical education and the data collected from physiotherapy students and clinical educators in interview was useful to draw conclusion about the factors underlying effective clinical education. These factors were mostly related to the students, clinical educators and curriculum. The findings of the qualitative study are presented below in three main themes that include several sub-themes which illustrates the underlying factors for an effective clinical education.

Theme 1: Student Factors

Student related factors were mainly their area of interest, learning style, personality, cultural issues and their ability to cope up with challenges arising during the clinical placements.

Student's interest:

There should be coherence between the student's interest and placement focus. But the placements were arranged according to curricular needs and capacity framework. The mismatch between the student expectation and placement focus was one of the main factors that affected the effectiveness of clinical education. Several clinical educators and the students reported this in their interviews. For an example, one of the clinical educators stated that,

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)

One of the students expressed similar views on this,

In the last rotation I was in stroke unit. I didn't like neuro, so it was a bit difficult. If you compare the neuro patients to musculoskeletal patients, they are much more difficulty to do the assessment, position and explain. (ST 5)

Student's learning styles:

There were differences in students learning style, some were enthusiastic and motivated but the other were not motivated to learn in clinical settings. Attitude for self-directly learning was missing in some students. Several educators confirmed this in their interview.

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)

Some are not proactive. They are anxious and have a feeling that they may harm the patient. So, they are apprehensive. (CE 24)

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)

Student's culture:

The culture within the context of this study had a significant impact on students learning in clinical settings. All the students were females and grown up in the Arabic culture and they have had their own restrictions to handle male patients and to develop a working relationship with male clinical educators. Several clinical educators and students reported in their interview that culture is a major barrier for students learning in clinical placements.

I have seen many of the students initially expressed the concerns to see the male patient. (CE 1)

I am man, so a female student takes more time to become familiar with me. When handling male patients who are adult and, in their adolescence, then there is some shyness. (CE 12)

When we ask them to practice on us, they were very shy and nervous to do that. So that does come across with patients. (CE 17)

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

Student's ability to cope with challenges:

In this context, students attended clinical placements within a busy healthcare environment that presented lot of challenges to students and they were overwhelmed by the multicultural patient populace and healthcare workforce. Students demonstrated varied abilities in overcoming these challenges. The following quotes from clinical educators highlight the student's abilities to manage challenging situation.

Sometimes they have challenging patients who are refusing to treatment or family members requesting more therapy when not indicated and issues around discharge planning. They were quite good at communicating with the patient and their family members in a very calm way. They know when to seek assistance and refer to clinical educator. (CE 16)

We found some students raising to the challenges and although they would be uncertain, they would really try to find their ways out, but some would shrink back. (CE 3)

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. So, we had two personalities there. (CE 25)

Three of the students reported the following in their interview.

I treated patient with amputation and psychological issues, and I felt like crying. (ST 1)

I cried twice when I was saw patients who were dying. It was emotional. (ST 5)

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

Theme 2: Clinical Educator Factors

Several factors related to the clinical educators were influencing the effectiveness of clinical education. These include their workload, instructional strategies and awareness of physiotherapy curriculum.

Clinical Educator's Workload:

Clinical educators had to manage a dual role of providing care of their patients and teaching the students. It was obvious that the priority for the physiotherapists was their patients which hindered their additional responsibility of being a clinical educator. In this context, clinical educators were asked to teach, supervise and assess the physiotherapy practice of students attending the clinical trainings. This was a humongous task considering their operational needs that demanded them to see loads of patients and no dedicated time to teach the students.

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 the 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 the students and the practitioner who must continue the same amount of work in the same quality with the added load of doing education to the students. (CE 21)

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

Clinical Educator's Teaching Strategies:

Clinical educators used versatile approaches to teach the students on practice placements and adapted their teaching style to suit the student needs. Some wanted to empower the students and make them a reflective practitioner. Providing prior information about the cases and teaching at the bed side was found to be useful in enhancing the students learning. Two of the educators reported the following in their interview.

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)

They have access to what patients come in the next day which gives them some work to do at home. The more prepared they are the more they can apply their knowledge. (CE 25)

Two students confirmed in their interview the differences in clinical educators' teaching style.

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)

Clinical Educator's Awareness of Physiotherapy Curriculum:

Clinical educators in this context are physiotherapists that qualified from several countries and might have studied on different types of physiotherapy curriculum. But the physiotherapy curriculum that the students studied is Australian based and not contextualized. It was evident that the clinical educators

were briefed about the college curriculum during their preparatory workshop. However, most of the clinical educators did not possess a good understanding the physiotherapy curriculum which the students studied, and this seemed to affect their ability to teach students during the practice placements. Two of the educators reported this in their interview.

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: Academic Factors

Faculty support for clinical education, placement expectations, duration and preparation and the peer learning opportunities were the major curriculum or academic related factors that influenced the clinical education.

Faculty to support for clinical education:

The academic staff were not actively involved in clinical education and the burden was fully on the clinical educators. Though the faculty were facilitating student placements, they did not engage in the learning and assessment activities within the clinical settings which brings up questions about the reliability of assessment of physiotherapy practice of students. If the university lecturers get involved in clinical education, it will be helpful to bridge the theory-practice gap for students. Several educators reported the need for academic staff support in 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:

It is important to establish clear communication between the parties involved in clinical education. Clinical educators should understand the students' background and their learning needs. Simultaneously, students must be aware of the expectations of each placement site as every place may have their own policies and procedures regarding patient care and clinical education. However, in this study the clinical educators possessed limited understanding of the placement expectations. The following excerpts from participant interviews confirm this finding.

It will good for us the educators to understand what the college wants from us. (CE 10)

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 the 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)

I wanted to see different cases. Someone should explain to me, but this didn't happen. (ST6)

Placement duration:

Each placement rotation was four weeks long and it was not adequate for the students to accommodate to the new environment and learn effectively. When the students move to different placement sites and area of practice at four weeks interval, they seemed unsettled in all the places.

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)

Integrated placements:

According to the physiotherapy curriculum, in this context clinical placements happen in the fourth year of the program. There is a long delay in providing real-life clinical exposure to students and this was the root cause for their theory-practice gap.

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:

Placement providers and coordinators must provide peer learning opportunities for the students. Peer learning was beneficial to the students especially in difficult circumstances and to enhance self-directed learning.

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)

Discussion

Physiotherapy students appreciated the clinical educators who were friendly, kind and supportive and valued their feedback as it helped them to enhance their clinical reasoning and decision-making skills. Students were critical of the educators who did not provide adequate supervision. Ludin and Fathullah believed that clinical teachers determine the quality of learning experience for healthcare students in the clinical settings and reported that the clinical educator's ability to provide constructive feedback is an important attribute that positively influences students learning experience.[10] Clinical educators should consider this and devise strategies to support the students' during their clinical placements. In Wijbenga, Bovend'Eerdt and Driessen study students apricated the clinical teachers who provided feedback regularly.[11]

Clinical instructors who showed respect towards the students were found to be influential in motivating the students' learning and considered as a role model. But findings of this study showed lack of consistency in relationship between the students and clinical educators. Some students reported that they did not receive timely feedback and their educators were busy with their clinical routine and reported gaps in their clinical education experience. Several authors reported that showing respect to students, supporting their learning needs and good communication are the key qualities of an effective clinical educator.[12-14] Delany and Golding suggested the use of "making thinking visible approach" as a pedagogical approach to develop the clinical reasoning. They believed that the clinical teachers using this approach are forced to make their thinking visible so they start to reflect about their clinical reasoning teaching and it facilitates them to articulate their own reasoning process by scaffolding it to the students, who can access and use it in their practice.[15]

Teaching strategies used by the clinical educators helped the students to develop critical thinking and problem-solving skills that are vital for sound clinical reasoning and judgment. They have promoted inquiry based learning and reflective practice approach to facilitate the students' learning clinical reasoning skills. When the clinical educators have identified theoretical gaps in the students', they have directed them to read relevant sources to enhance the students' ability to diagnose. Cutrer et al. recommended that scaffolding and reflection are the two main strategies the clinical teachers can adapt to promote clinical reasoning skills development.[16]

Preclinical preparation, clinical placement expectations and duration are the main barriers reported by both the physiotherapy students and clinical educators. Students have reported mixed feelings about their preparation for clinical education. They thought the college-based education adequately prepared them for the clinical placements, but they felt there was a huge gap in their exposure to clinical environments as it happened in the very late stages that is in the fourth year of their study. Clinical Educators have said that they are not completely aware of the placement expectations and they relied mostly on student information to know the placement expectations. Both educators and students have reported that the clinical placement focus was not maintained in some placements due to lack of resources and unavailability of cases in the specialty where the student was placed. Students have

criticized the clinical educators' evaluation of their performance and felt that the rationale for their low scoring was not appropriate. Both the students and educators felt that the placement duration was not adequate to provide an effective clinical education.

Peer learning is another factor that determined the effectiveness of clinical education. When two students are together, they support each other to overcome the challenges in clinical education and this enhances the overall learning experience. However, there may be barriers peer learning especially if the two students are not friends and they may shy away from one another and do not engage in an interactive learning. Sevenhuysen et al. (2015) concluded in their study that the peer-assisted learning reduces anxiety among the students and provides a feeling of safety and reduces burden of the clinical educator and enhance collaborative working.[17]

Culture plays a crucial role in deciding the effectiveness of clinical education and the local culture of the UAE had a strong influence on the clinical education. All the female students reported that their cultural beliefs were a big barrier for them to develop interpersonal relationship with male patients and educators. McBee et al., (2017) study reported that culture is a major factor that influences clinical education and the educators must incorporate strategies to address these in clinical placements.[18]

Roman and Dison (2016) reported that South African universities faced a lack of student preparedness for clinical placements due to the multilingual needs and large intake.[19] Though the students initially experienced anxiety later they developed confidence and similar findings were reported in Ramli, Ruslan and Sukiman study.[20] According to Rowe, Frantz and Bozalek (2012), undergraduate education should prepare the students for reflective practice and life-long learning.[21] Ramli, Ruslan and Sukiman believed that, if the students reflect critically and learn from their mistakes it will deepen their learning.[20] Therefore, clinical educators should develop strategies to promote reflective practice and the learning need forms and reflective portfolios are useful ways to enhance reflective practice (Ramli, Joseph & Lee, 2013).[22] Mostert-Wentzel, Frantz and Van Rooijen, (2013) suggested that small group discussions and case presentations could be considered as activities that promotes reflection during clinical placements.[23]

Conclusion

This study was conducted on the physiotherapy students studying in a health sciences college in the UAE and there were two other universities that offered physiotherapy education. But the scope of the study was limited to only one institution where the researcher had access and the difference in curriculum followed at the other institutions limited the possibility of including the students of those institutions. However, the findings of this study provide strategies for effective clinical education that can be used across physiotherapy programs within the country and globally. The experiences and feelings reported by the students represented female sex and it will be interesting to explore the experiences of male students.

It is recommended that universities develop a clinical education framework that addresses all the factors that affected the effective delivery of clinical education. An understanding of the factors underlying

effective clinical education will help the institutions to overcome their shortcomings. The findings of this study useful for leaders in healthcare education, academic, clinical educators and the students attending practice placements as it provides an insight to various factors influencing clinical education and recommend evidence-based strategies to overcome those variables. The findings of this study are expected to contribute to the literatures in healthcare educational research and believed to support the clinical teachers in devising their educational strategies. In addition, the mixed-methods research approach used in this study adds value as the previous studies that were either relying on quantitative or qualitative methodology.

Abbreviations

SPSS – Statistical Package for Social Sciences

CE – Clinical Educator

ST - Student

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 before data collection.

Consent for publication: Not applicable.

Availability of data and material: The datasets generated and/or analysed during the current study are not publicly available due to the privacy and confidentiality assured for the participants as the qualitative study collected data through interviews that were audio recorded with participant consents but the anonymous transcripts of interviews and survey results are available from the corresponding author on reasonable request.

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