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Joanna Hargreaves

Queensland Health

Simone Leslie

Queensland Health

Michelle Cottrell

Queensland Health

Ashlee Snoswell

Queensland Health

Shaun O'Leary

Queensland Health, The University of Queensland

Peter Window

Queensland Health

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Exploring the Barriers and Enablers to High Quality Clinical Placements in Physiotherapy at a Metropolitan Teaching Hospital Using an Implementation Science Approach

**Joanna Hargreaves,^{*} Simone Leslie,^{*,†} Michelle Cottrell,^{*} Ashlee Snoswell,^{*}
Shaun O'Leary,^{*,‡} Peter Window^{*}**

^{*} Physiotherapy Department, Royal Brisbane and Women's Hospital, Brisbane

[†] Physiotherapy Department, Surgical, Treatment and Rehabilitation Service, Metro North Health, Brisbane

[‡] School of Health and Rehabilitation Sciences, The University of Queensland

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Abstract

Background: Indicators of quality in physiotherapy clinical placements offer opportunity to assess current practise. The Consolidated Framework for Implementation Research (CFIR) provides a framework to identify barriers and enablers to guide tailored strategies for improvement.

Aims: The aims of this study were to explore adherence to indicators of quality in a single physiotherapy department at a metropolitan teaching hospital, and to conceptualise the barriers and enablers to achieving quality in clinical placements in this context using the CFIR.

Methods: A mixed-methods sequential explanatory study design was undertaken at a metropolitan hospital in Queensland, Australia. Stakeholder's perceptions of enablers and barriers to meeting quality indicators in relation to current practise were assessed using a standardised survey (n=28), followed by focus groups and semi-structured interviews (n=19).

Results: Three main themes were identified: (i) training in clinical education skills is essential but currently focuses on assessment, (ii) the clinical educator (CE) role is perceived as having low value, and (iii) opportunities identified to develop existing supports for CEs.

Conclusion: Findings from this study have informed strategies implemented at the facility under study, which focus on increasing the perceived value of the CE role, engaging CEs in training as educators, and collaboration with university coordinators.

I INTRODUCTION

Clinical placements occurring within the clinical care environment are a critical component of entry-level physiotherapy training programs (Gibson et al., 2019; Health, 2007). In Australia, entry-level physiotherapy students undertake placements across a range of clinical settings ("Clinical Training Profile: Physiotherapy," 2014). Successful completion of these placements is required to meet eligibility for registration and ensure readiness to enter the workforce (Australian Physiotherapy Council, 2017; Stoikov et al., 2020). However, several barriers have been identified which may limit the quality of clinical education provided. These include the tension between the provision of healthcare services and quality clinical education, stress associated with supervising students, and a lack of recognition and support (Baldry Currens & Bithell, 2000; Hall et al., 2016; McBride et al., 2018; Sevenhuysen & Haines, 2011).

Indicators of quality in allied health clinical education have been described in the Siggins Miller report (Siggins Miller, 2012). The alignment of current practise in the provision of entry-level clinical placements can be assessed against these quality indicators using the Clinical Placement Quality Survey – Educator (CPQS-E) (Hargreaves et al., 2016). This is a standardised tool which measures indicators of quality of a clinical placement from the perspective of the placement provider. Indicators are assessed across four domains: (i) a culture for learning (e.g., orientation provided to students, clinical education valued and supported within department, appropriate workload during placements), (ii) student/educator relationship (e.g., time to prepare and provide feedback, collaborative feedback, and opportunity to implement), (iii) opportunities for learning (e.g., opportunities for students to provide direct patient care, access to space and resources), and (iv) effective collaboration (e.g., expectations of university communicated, appropriate support provided by university).

In physiotherapy there is an absence of studies which assess the current practise of physiotherapy clinical placement providers against these indicators of quality. Similarly, barriers and enablers hereof have not been documented specific to placement provider settings. Such evaluation undertaken through the lens of a knowledge translation framework would guide analysis informative to quality improvement interventions for clinical placement providers (Keith et al., 2017; Kirk et al., 2016). The Consolidated Framework for Implementation Research (CFIR) is one such conceptual framework which is specifically designed for complex multi-level contexts such as occurs in healthcare (Damschroder et al., 2009).

The aim of this study is to evaluate clinical placement practice at a large public physiotherapy department by addressing the following objectives:

1. Evaluate current practise at the local setting against indicators of quality in clinical education.
2. Gain a deeper understanding of barriers and enablers in this setting to meeting indicators of quality in clinical education.
3. Map findings to the CFIR to guide future quality improvement interventions in this clinical placement setting.

II METHODS

A Study Design

A mixed-methods explanatory sequential design was undertaken to address the study objectives (Snook et al., 2021). This consisted of a quantitative survey (Objective 1) and focus groups and interviews (Objective 2), with themes subsequently mapped to relevant CFIR domains (Objective 3). Data was collected between January and April 2021. An exemption of ethical review was granted through the RBWH Human Research Ethics Committee (LRN/2020/QRBW/72203).

B Participants and Procedures

1 Objective 1: Survey

Participants were purposefully sampled to include both managers and clinical educators (CE) within the Physiotherapy Department of a large tertiary, teaching public hospital facility (Brisbane, Australia). To be eligible managers required a minimum of two years' experience at a team leader or director level, and CEs had to, at a minimum, have completed a CE role for a five-week full time clinical placement within the previous two years.

Participants were invited via email to complete the electronic survey using REDCap™ (Harris et al., 2009), which included both demographic information and the CPQS-E instrument (Sauro, 2016). The CPQS-E instrument contains sixty-three items with 29 items measured using a 'Yes/Limited/No/Unsure' scale, and 34 items with a 4-point Likert scale anchored by 'Strongly Disagree' and 'Strongly Agree'. In line with the design of the CPQS-E, CEs were asked to respond considering the clinical education within one clinical area. Managers were asked to respond considering clinical education provided across the department.

2 Objective 2: Semi-Structured Interviews and Focus Groups

To gain a deeper understanding of the barriers and enablers identified in the survey findings, semi-structured interviews and focus groups were conducted. Participants were purposefully sampled across four stakeholder groups to include physiotherapy managers and CEs from the local setting, other allied health clinical education coordinators, and university clinical education coordinators from Queensland university physiotherapy programs. Physiotherapy managers and CEs were allocated to either a focus group or interview based on participant availability, and university coordinators and other allied health clinical education coordinators completed 1:1 interviews. Interview guides were developed for each of the three participant groups (Table 1). The guide was piloted with one clinical educator and one academic clinical educator not participating in the study, from which feedback facilitated minor changes to the interview guide structure.

Table 1

Question guide for focus group and semi-structured interviews.

Question guide for university clinical education coordinators	Question guide for clinical educators and management
How would you describe best practise in clinical education?	
In what ways does/doesn't this physiotherapy department provide best practise clinical education, and what are the indicators of this?	
What are the barriers to providing best clinical education practise in this department?	
What factors enable providing best clinical education practise in this department?	
What are the challenges to sustainability of best practise clinical education in this department?	
What are your expectations of CEs in terms of accessing training?	How would you describe opportunity for CE development and training in this department?
What are your expectations regarding opportunity for CE development and training within the local department?	Can you describe your understanding of the support universities provide for clinical education in this department?
How would you describe your role in supporting clinical education for this department?	What are your expectations regarding support universities should be providing for clinical education in this department?
What barriers/enablers do you experience in providing this support role?	What are the barriers/enablers to meeting these expectations?

Participants were provided with the interview guide prior to their interview or focus group, and the study aim was outlined at the start of interviews or focus groups. Focus groups comprised a homogenous group of either CEs or Physiotherapy management to avoid potential power imbalance while stimulating discussion between group members to elicit the prevailing range of opinions and beliefs (Patton, 2002; Ryan et al., 2013). One-on-one interviews were completed by

one member of the research team (JH) either in-person or via videoconference, a viable method for qualitative data collection (Archibald et al., 2019; Braun et al., 2017). All focus groups and interviews were audio-recorded (duration range 23-63 minutes), and transcribed verbatim by one member of the research team (JH) to maintain consistency. Accuracy of transcripts was ensured through a second member of the research team (SL) cross-checking the 5-7th minute section of half of the transcripts.

Regarding reflexivity, the primary researcher conducting interviews and analysis had over fifteen years of experience as a clinician, and over ten years of experience as a clinical educator in a hospital setting. The second researcher conducting data analysis (SL) had ten years of clinical experience and six years of experience as a clinical educator across various healthcare settings. This experience may have contributed to a deeper understanding of the CE role within the hospital context from the perspective of the healthcare provider. The primary interviewer was also known to participants. To mitigate concerns that these factors would introduce significant bias, several strategies were employed to enhance trustworthiness (Liamputtong, 2019). The research team included one member with expertise in qualitative research (MC), and another member with experience in clinical education (AS). Rigour was ensured through member checking of identified themes and accompanying illustrative quotes.

3 Objective 3: Mapping of Themes to the CFIR

To conceptualise barriers and enablers, sub-themes were subsequently mapped to the CFIR (CFIR, 2021). This framework provides a comprehensive menu of 39 constructs arranged into five domains that have been demonstrated to guide effective implementation. Conceptualising contextual determinants using CFIR was intended to guide intervention implementation within the specific setting under study by defining under what conditions intervention implementation will potentially be effective in that context (Keith et al., 2017; Waltz et al., 2019). Published definitions of CFIR constructs were used to guide the process, which was completed independently by three researchers (JH, SL, and AS). Disagreements were discussed until consensus was reached, with the final consensus map reviewed by a fourth independent reviewer (MC) to ensure objectivity (Kononowech et al., 2021).

C Data Analysis

Objective 1 survey data was analysed using descriptive statistics. In the absence of guidelines for interpretation, CPQS-E tool responses were collapsed within each quality indicator domain as either a negative response (No/Limited/Disagree/Strongly Disagree), a positive response (Yes/Agree/Strongly Agree), or 'Unsure'.

Objective 2 focus group and semi-structured interview data was collated into NVivo 12 (NVivo, 2012) and analysed using an inductive thematic analysis approach, following the steps described by Braun & Clarke (2013). Triangulation of the data from multiple stakeholder perspectives was used to ensure comprehensiveness and to identify divergent viewpoints (Varpio et al., 2017). Consensus coding (20% sample) was completed by a second member of the research team (SL). Codes were charted and refined into themes and sub-themes with exemplar quotes by three members of the investigating team (JH, SL, and AS) through an iterative process until consensus was reached. The research team engaged in regular review meetings throughout data collection and analysis to identify and discuss potential biases and assumptions.

III RESULTS

1 Objective 1: Survey

A total of 28 respondents (41% response rate) completed the survey, including 22 CEs and six Physiotherapy managers (Table 2). Almost three-quarters of CEs (n=16, 73%) reported having completed either none (n=6, 27%) or only the requisite training in clinical education (n=10, 46%), where requisite training is a one-day workshop provided by the universities.

Table 2
CPQS-E Survey Participant Demographics

	Year range	CE (n=22)	Management (n=6)
Years since graduation	1-5	7	0
	5-10	7	0
	10-15	2	1
	15+	6	5
Years of CE experience	0-1	3	1
	2-5	11	1
	5-10	4	2
	10-15	2	1
	15+	2	1
Highest level of CE training completed		n (%) **	n (%)
None		6 (27%)	2 (17%)
Requisite*		10 (46%)	2 (33%)
Additional to requisite*		5 (23%)	3 (50%)

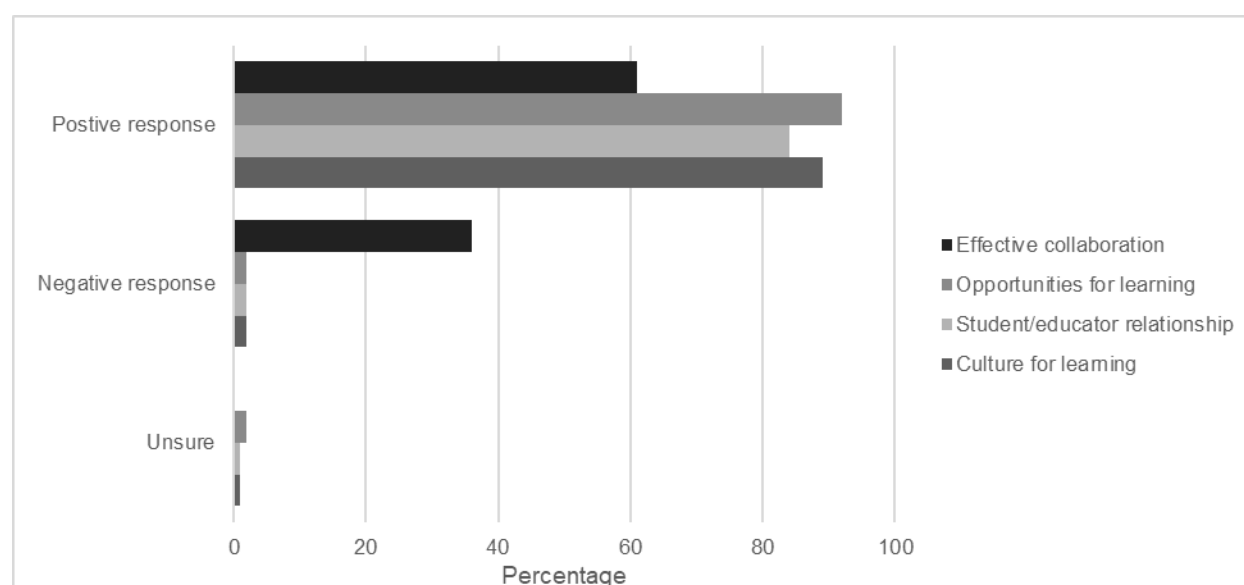
* Requisite training is one-day clinical education training workshop provided by university.

** Data available for 21/22 participants

Results from the CPQS-E indicated that CEs and management combined perceived an overall positive performance of best practise in domains of (i) culture for learning (89% positive response), (ii) student/educator relationship (84% positive response), and (iii) opportunities for learning (92% positive response) (Figure 1). A positive but lower performance was perceived in the quality indicator domain of (iv) effective collaboration (61% positive response).

Figure 1
Combined Survey Responses of Quality Indicator Domain

Responses collapsed within each of the four quality indicator domains (separate shadings) as either a negative response (No/Limited/Disagree/Strongly Disagree), a positive response (Yes/Agree/Strongly Agree), or 'Unsure'.



2 Objective 2: Semi-Structured Interviews and Focus Groups

Nineteen participants contributed to focus groups and interviews, including eight physiotherapy CEs, four management staff, two allied health clinical education coordinators, and five university clinical education coordinators. Three themes, with 27 underlying sub-themes, were derived from

the data including: (1) Training in clinical education skills is essential, but currently focuses on assessment, (2) the Clinical Educator role is perceived as having low value, and (3) there is opportunity to develop existing supports for Clinical Educators. Sub-themes and example quotes identified within each theme are provided as supplementary material. Seven participants provided feedback through a member checking process which resulted in no changes.

(a) Theme 1: Training in Clinical Education Skills is Essential, but Currently Focuses on Assessment

All stakeholders recognised that CEs require both clinical experience and a range of specific clinical education skills. These skills included being *familiar with current best practise in clinical education*, being *able to facilitate student learning*, and being *able to self-reflect*. Management focused on operational processes to achieve these skills, including *minimum years of clinical experience* and *maintaining professional development*. There was a strong consensus from all stakeholders that *training in these specific clinical education skills is essential*.

"[Clinical education] requires some other very specific skills. People have a lot of really specific skills and knowledge in their clinical area. But how do we impart that educationally, as best clinical education practice? I think [that] is another skill." (CE8)

University coordinators in particular highlighted that CEs require skills to appropriately assess students, and that at a minimum CEs should have completed training in the use of the Assessment of Physiotherapy Practise (APP) tool. This was identified as essential to ensure fair outcomes for the students and university.

"If [CEs] have never picked up a university resource or looked at anything we're asking or followed any of the [assessment] guides then they're not prepared, and I couldn't trust that their judgments would be appropriate." (UNI1)

Within the context of clinical placement provision, these resources could include university manuals and clinical education training available online.

It was acknowledged by all stakeholders that *training is currently well resourced by the universities*. This training consists primarily of one day face-to-face workshops provided by Queensland universities collectively. Despite this, CEs and university coordinators alike described that *current university training equips CEs as assessors but is limited in developing CEs skills as educators*.

"We're expecting educators...some of them have no idea what an educator [is] or how to educate. And I don't think our [university] training provides that. Our training provides the way to interpret and use a tool to assess. Asking you to be assessors, not necessarily asking you to be educators." (UNI4)

Clinical educators consistently reported the *challenges presented by student's support needs* and the *perceived burden of being a CE* as the reasons for requiring targeted training and support.

"Now we have so many more universities, we have so many more students, with different backgrounds, and even for students I think it's so hard because they often now have jobs and they've got so many other things going on in their lives now." (CE7)

"It's, like, mentally and everything-ly exhausting" (CE4)

(b) Theme 2: The Clinical Educator Role is Perceived as Having Low Value.

Clinical Educators consistently described a perceived limited value of the CE role. At an individual level, CEs *lacked identity as a CE within their role as clinician*.

"I don't see myself as a clinical educator. I'm a Physio, who has to do clinical education." (CE9)

At the organisational level both CEs and management participants perceived *rostering structures as de-prioritising clinical education*:

"We need to give [clinical education] a bit more kudos. I think the department needs to see clinical education as being not only something that people who work in Queensland Health have to do because it's our duty. But as being something that's really important, and a skill. And acknowledge that rather

than perceiving it as 'who's going to do it this roster? Well you drew the short straw!' I think we've got it around the wrong way." (CE7)

Similarly at a profession level the devaluing of clinical education was described, specifically with reference to the *absence of an established CE development pathway*.

"[External professional body] has cardiorespiratory [pathways] - huge money and time is spent getting these pathways neat and tidy. Clin Ed hasn't hit that realm yet because it's kind of across all of them...That's a bigger picture thing." (CE6)

Furthermore, CEs consistently identified that they do not pursue further professional development in clinical education as the available *training lacks both reputation and incentive*. This was specifically contrasted with the quality of professional development available in other physiotherapy clinical specialties.

"In terms of [attending a clinical education] conference I'm going to say 'no' because you don't know the topics specifically or the speakers...I don't know who a guru is in Clin Ed, you know, we all know your [clinical expert's name] ... Those names people associate with low back pain and stuff. I don't know if Clin Ed has that?" (CE6)

A low perceived value of pursuing professional development in clinical education was similarly reflected by several university coordinators expectations of CEs:

"You don't need that much. If you have an interest and you read a bit on this fine, but no, I don't expect it. If they want to, fine." (UNI3)

(c) Theme 3: Opportunity to Develop Existing Supports for Clinical Educators.

There was a strong consensus across all stakeholders that the current clinical education *structures at this facility provide good learning opportunities for students*. In terms of internal influences, enablers for achieving best practise in clinical education included the presence of a *clinical education team leader*, the *support for the primary CE within clinical teams*, and a *model* that enables CEs to be focused on a group of students without simultaneously carrying a clinical caseload. Barriers to best practise were described by both CEs and Management and included a lack of *standardisation of clinical placement structures*, a lack of *offline time for CEs to attend to non-clinical responsibilities*, a lack of *peer supervision processes*, and the *complexity of rostering processes* within a large department.

Regarding external supports, a mismatch of expectations and assumptions was identified between the university coordinators and CEs. University coordinators generally described their *expectations of CEs as being met*, particularly regarding communication between the university and CEs regarding student performance. However, university coordinators also presented *assumptions regarding operational practise (e.g., accessing resources) which did not align with actual practise*.

"Sometimes I make an assumption that where there is a large organization...that there would be a repository of resources that are arranged in a way that when an educator is drafted in ... there would be some kind of understanding that it was their responsibility to access these resources." (UNI1)

The CEs perception of support from the university coordinators was described as *variable across the different universities*, and *disconnected from the lived experience of CEs* facilitating students on clinical placements. In particular CEs described the *input provided by universities during clinical placements as procedural* (e.g., providing a second opinion on student performance) rather than as value-adding for the CE.

"if someone is struggling and that's part of escalation just like we have escalated medical care. Now you do this, now you do that - it's procedural, it's academic. But how can they [the university coordinator] then further support to make it more than just a procedural thing?" (CE6)

3 Objective 3: Mapping of Themes to the CFIR

Sub-themes were subsequently mapped to 12 constructs, across four domains, of the CFIR framework to guide future interventions (see Table 3) (CFIR, 2021).

Table 3
Subthemes Mapped to CFIR Framework Domains and Constructs

Construct	Sub-theme (Theme number)
I. INTERVENTION CHARACTERISTICS: Provision of entry-level clinical placements	
Evidence strength and quality	- Current placement models and operational structures provide good learning opportunities for students (3)
Relative advantage	- Standardising clinical placement structure could support CE preparation and performance (3)
Adaptability	- Complex rostering processes for clinical education balance staff availability, readiness to take students, and CE fatigue (3)
Complexity	- Student's support needs are a challenge for CEs (1) - CEs need to be able to facilitate student learning (1) - CEs require skills to appropriately provide student assessment (1)
II. OUTER SETTING: External to physiotherapy department	
Cosmopolitanism	- Mismatch between current operational practice and university coordinator assumptions (3) - Access to university support is variable (3) - University coordinator's expectations of CEs are largely being met, with priority on communication (3)
III. INNER SETTING: Internal to physiotherapy department	
Structural characteristics	- Clinical education Team leader role is a necessary but limited resource (3)
Culture	- Team dynamics influence support of primary CE (3)
Implementation climate:	
i. Tension for change	- Being a CE is perceived as burdensome (2)
ii. Organisational incentives and rewards	- Clinical education professional development is not pursued as it lacks both reputation and incentive (2)
iii. Goals and feedback	- Absence of established CE-pathway is limiting development of CEs (2)
Readiness for implementation:	
i. Leadership engagement	- Current rostering structures place low priority on clinical education (2)
ii. Available resources	- Current training is well resourced by universities (1) - Structured peer supervision processes are limited (3) - CEs need offline time to complete non-clinical responsibilities and to reduce overtime (3)
iii. Access to knowledge & Information	- At a minimum CEs must have training to use assessment tool (1) - CEs require training in specific clinical education skills (1)
IV. CHARACTERISTICS OF INDIVIDUALS: Individual CEs	
Knowledge and beliefs about the intervention	- CEs need to be familiar with current best practice in clinical education (1) - A minimum clinical experience is recommended to develop own clinical skills before taking students as primary CE (1) - CEs feel support provided by universities is disconnected from lived experience of CEs (3) - CEs feel university's input during placements provides limited support to CE (3) - Lack of identity as a CE within clinician role (2)
Self-efficacy	- Current training equips CEs as assessors but is limited in development of educator skills (1)
Other personal attributes	- CEs need to be able to self-reflect on own practice as an educator (1)

IV DISCUSSION

Survey findings addressed the first study objective by highlighting two key areas of concern in physiotherapy clinical education practice in the department under study. The first was insufficient training. Of the CEs who participated in the survey 27% had undergone no CE training, and 46% only the requisite one-day workshop training provided by the universities. The second area of concern was the low proportion of positive responses (61% of respondents) for the clinical education quality indicator of effective collaboration with universities (e.g., expectations of university communicated, appropriate support provided by university the limited effective collaboration with university partners alignment to quality indicators). Addressing the second study objective these deficits were more deeply explored in focus groups and semi-structured interviews with key stakeholders which generated three themes concerning; assessment-focused training, insufficient value given to CE roles, and opportunities to support CEs. These themes and sub-themes are discussed herein under the four CFIR domains (study objective three) to best inform future clinical education quality improvement interventions.

In the domain of *Intervention characteristics*, the perceived burden and challenge of undertaking a CE role was identified as a barrier. This is consistent with previous studies describing increased stress, job dissatisfaction and associated burnout in this cohort (Newstead et al., 2018). A study of Canadian Physiotherapy CEs found perceived stress to be the most influential contributor to Physiotherapists opting whether to supervise students (Hall et al., 2016). This included being unprepared, challenging students, fear of being judged, and fear associated with workplace demands (e.g., meeting caseloads in addition to supervising students). Additional challenges are described when students present with gaps in their fitness to practise, such as when students are underperforming and require more intensive support for concerns regarding clinical competence, mental health, professional behaviour, or physical health (Lo et al., 2017). While the actual impact of student supervision on workload is inconclusive (Bourne et al., 2019), CEs generally report reduced clinical productivity and time for non-clinical tasks, and an increased overall workload (Bourne et al., 2019; Waters et al., 2018).

In the *Outer setting* domain, the results of this study highlighted the need for effective collaboration between academic institutions and clinicians at placement sites. University coordinators reported that their expectations regarding communication were largely being met. This is consistent with the literature describing communication being essential particularly for placement preparation (Siggins Miller, 2012). However, CEs described variable access to support across universities, that was also perceived as being disconnected from practise and of limited value. Furthermore, a mismatch was found in terms of operational support between what university coordinators assumed was being provided for CEs and actual practise. This disconnect is consistent with literature recognising the challenge of enabling continued dialogue between education providers and healthcare providers to inform future changes (Henning et al., 2011; Rodger et al., 2011), and highlights the need for reform in physiotherapy clinical education practise that creates strong and equal academic partnerships between clinical facilities and academic programs (Jensen et al., 2017). Physiotherapy CEs have indicated appreciation of support from universities to complete assessment of students especially where decisions are high-stake (e.g., determining if a student's performance is 'adequate' or 'not adequate') (Milne et al., 2022). However further investigation is required regarding the support needs of CEs beyond assessment decisions (Milne et al., 2022). This need is particularly pertinent in view of the changing landscape of physiotherapy clinical education with less experienced clinicians undertaking CE roles in response to increasing student numbers both locally and internationally (Bourne et al., 2019).

Several enablers for best practise were identified by stakeholders in the *Inner setting* domain. These included the placement model and operational structures currently implemented in the facility under study, support of the primary CE through team dynamics and the Clinical Education Team Leader role. In particular, the current model and structures were recognised to provide good learning opportunities for students, suggesting this model is appropriate given that no gold

standard model has been defined for physiotherapy clinical placements (Lekkas et al., 2007). The variability in models adopted across the physiotherapy workforce is likely situation dependent and based on historical precedent rather than robust comparative studies (Lekkas et al., 2007; Stiller et al., 2004). Likewise, the support of the primary CE through multiple clinicians providing observation and informal feedback to both the student and primary CE is comparable with other Physiotherapy CE roles in Australia (Bearman et al., 2013; Lo et al., 2017) and consistent with high quality culture in health professions education (Bendermacher et al., 2021).

The barrier of perceived low value of the CE role was represented at multiple levels in the context under study in the *Inner setting* domain. Firstly, at the individual level, CEs described not pursuing professional development in clinical education due to its lack of reputation and incentive. While Australian Physiotherapists undertaking CE roles have no formal training requirements, a lack of both recency and level of training have been reported (Newstead et al., 2018; Sevenhuysen & Haines, 2011). Data collected across two Australian states indicates that nearly half (44%) of Australian Physiotherapists have completed no clinical education training since graduation (Newstead et al., 2018). In physiotherapy there is limited literature that explores the association between additional training and CE effectiveness, with inconclusive findings (McCallum et al., 2016). In contrast, academic healthcare faculty and medical education regulatory bodies increasingly require formal training for CEs (Advance HE, 2011; Sethi et al., 2017). In these fields, training in educator skills has been associated with developing self-efficacy and identity as an educator (Snook et al., 2019; van Lankveld et al., 2017), which in turn facilitates effective functioning, persistence in the educator role, and optimal student learning (Chesnut & Burley, 2015; Klassen & Tze, 2014; Kunter et al., 2013; Kusrkar et al., 2013). There is a lack of evidence regarding training requirements for CEs beyond applying assessments (Milne et al., 2022). Further work is required to understand the minimum needs of both CEs and university program providers to ensure safe and effective clinical placements.

Secondly, at an operational level, current structures at the facility under study were described to de-prioritise clinical education. In addition to the perceived lack of reputation and incentive of professional development in clinical education, a lack of offline time to complete non-clinical responsibilities may contribute to why 27% of CEs in this study had completed no training in clinical education since graduation. Furthermore, whilst acknowledging the complexity of organisational requirements the absence of an established CE pathway was considered a factor limiting CE professional development. Within medicine the lack of career pathway for medical educators is suggested as a primary reason underlying difficulties filling medical educator positions (Hu et al., 2013). While a CE development pathway is currently under development in physiotherapy (Paunovic, 2020) CE roles are yet to be recognised as a specialty training pathway (Australian Physiotherapy Association, 2021).

A further barrier described by clinicians in the *Inner setting* domain is the lack of identity as a CE. Physiotherapists within the facility under study are clinicians for whom contributing to clinical education is part of their role requirements, which is comparable to Physiotherapists in many other clinical contexts (Lo et al., 2017). Similarly, research considering professional identity shows that Physiotherapists view themselves primarily as clinician rather than educator (Ong et al., 2019). This is consistent with the broader healthcare educator literature which indicates that the role of 'clinical educator' is often perceived as secondary to the role as 'clinician' or 'researcher' (Cantillon et al., 2019; van Lankveld et al., 2021). The lack of CE's identity as educators is concerning as the literature across healthcare shows that a strong educator identity has been associated with increased investment in professional development as educators, willingness to implement best practice in education, increased advocacy for clinical education, and enjoyment of teaching roles (Bendermacher et al., 2021; Hurst, 2010; Thomas et al., 2020; Trautwein, 2018; van Lankveld et al., 2017; van Lankveld et al., 2021). A strong identity is also protective for workforce sustainability and mitigating against individual burnout (Brown et al., 2020).

In the domain of *Characteristics of the individual*, all stakeholders recognised that training in specific clinical education skills is essential. Required skills included ability to facilitate student learning, ability to self-reflect as an educator, familiarity with current best practise in clinical

education, and ability to appropriately provide student assessment. Interestingly our findings highlighted disparity between CEs and university coordinators in the reasons why training is important: CEs related this to the challenges associated with facilitating students, while university coordinators emphasised training to ensure fair assessment outcomes for students. It is widely recognised that Physiotherapists require targeted training to undertake CE roles (Greenfield et al., 2014; Health Workforce Australia, 2010; Steinert et al., 2016; Walsh et al., 2018). Our findings indicated that the training identified as 'requisite' at the facility under study is well resourced by the universities. This training consists primarily of one day face-to-face workshops provided by Queensland universities collectively, which typically involve standardised content with a particular focus on calibration of assessment using the standardised physiotherapy assessment tool (the APP) (Milne et al., 2022). However, CEs and several university coordinators described that while current training equips CEs as assessors there is limited availability of further training for developing CE's skills as educators. Overall in this domain findings suggest that further exploration of individual Physiotherapy CE needs is required in order to effectively address the sustainability of this workforce.

Collectively the findings of the study have informed a multi-pronged clinical education quality improvement intervention which is currently underway at the facility under study. The intervention will be implemented using strategies focused on increasing the perceived value of the CE role, engagement of CEs in training in educator skills additional to skills in assessment and strengthening of collaboration with university coordinators. Assessment of the fidelity and effectiveness of the implemented intervention will be the focus of future research.

V STRENGTHS AND LIMITATIONS

There are both strengths and limitations of this study. The strengths of this study included the use of a validated survey tool to collect quantitative data, which in turn was used to guide a richer exploration of perceived barriers and enablers through focus groups and semi-structured interviews. This is also the first study incorporating qualitative perspectives from multiple stakeholders involved in clinical education. Structuring final themes through an implementation framework has informed the direction of future strategies relevant to this context. Trustworthiness and rigour of qualitative findings was achieved using transcription accuracy, consensus coding and member checking processes. The focus group method can be considered a strength but can also lead to censoring comments and conformity (Carey & Asbury, 2012). To mitigate this, the number of focus group participants was limited, and the facilitator encouraged all participants to engage.

The limitations of this study include that participants were recruited from a single metropolitan teaching hospital in a defined geographical area (as consistent with the methodology of this study), so may not be generalisable to all clinical placement settings. For example, regional and remote facilities may have less access to clinical education resources. This possibility is raised by our finding which identified the presence of a dedicated clinical education Team Leader role as an enabler for high quality. Further research is therefore recommended to explore the barriers and enablers to high quality clinical placements in rural and remote hospitals as well as other community based clinical placement settings. As the research team was associated with all stakeholders, participants may have provided responses that they deemed favourable to the researchers. Finally, student's perceptions were not included as stakeholders in this study.

VI CONCLUSION

While Physiotherapy CEs play a critical role in preparing the future Physiotherapy workforce little is known about enablers and barriers to CEs meeting best practise clinical education quality indicators. This study is the first to explore enablers and barriers to quality of clinical placements in a specific setting using an implementation framework. Highlighted barriers included the limited availability and perceived value of CE training, and the perceived de-prioritising of CE roles at multiple levels including internal operational, partnerships between academic program and

healthcare providers, and professional levels. Exploring the implementation of an intervention to address these barriers at a local context is an important next step in understanding how to enable Physiotherapy CEs to achieve best practise.

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