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Title Page

Title: Teaching person-centred practice in physiotherapy curricula: A literature review

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Abstract

Background

There is a growing expectation that healthcare should focus on the needs of the individual patient with the philosophy of person-centred practice as the central model for care delivery. Given the importance of person-centred practice, there is a need to understand how curricula are preparing physiotherapy students for working in a person-centred manner.

Objectives

The aim of this literature review was to explore empirical studies relating to educational interventions to teach person-centred practice in physiotherapy pre-qualifying curricula.

Methods

A systematic search was conducted across six electronic bibliographic databases to identify relevant studies. Data were extracted and analysed with thematic and narrative synthesis.

Results

A total of 1621 studies were identified through the search strategy and screened against the inclusion/ exclusion criteria. Eight studies met the inclusion criteria (five qualitative, two quantitative, and one mixed methods). Three themes were identified from the student perspective on the educational interventions: positive impact on learning; creating a safe, authentic, person-centred learning environment; and challenges in changing views. Quantitative studies suggested the interventions enhanced learning on person-centred practice.

Conclusions

A wide range of educational interventions were used to teach person-centred practice which appeared to have a positive impact on student learning and led to a greater sensitivity of person-centred practice. Further research is needed to understand whether educational interventions to teach person-centred practice translate to changed behaviour in clinical practice to the benefits of those receiving physiotherapy services.

Keywords

Person-centred practice

Physiotherapy curricula

Physiotherapy education

Pre-qualifying

Word count (excluding tables and references): 3,928

Teaching person-centred practice in physiotherapy curricula: A literature review

Introduction

There is a growing expectation that healthcare should focus on the needs of the individual with the philosophy of person-centred practice as the central model for care delivery [1-3]. Person-centred practice is about ensuring that the values and preferences of the person receiving healthcare influence how their needs are met with a view to optimising experiences of care [4]. Core principles of person-centred practice include respect; choice and empowerment; patient involvement in health policy; access and support; and information [1].

Person-centred practice is important because it has been associated with greater engagement in health promoting behaviours [5] and when compared to usual care, has been found to lead to enhanced self-management and improved physical and psychological health [6]. However, challenges exist around how person-centred practice is defined and implemented as different professions tend to focus on different elements [7-9]. There are also a range of terms used to describe it in the published literature with references to being patient-centred or person-centred. Whilst similarities are evident between the two concepts, literature suggests that there are differences in the overarching goals with the goal of patient-centred practice being on a functional life, and person-centred on what makes life meaningful [10]. These authors would argue that the term person-centred is more appropriate in a physiotherapy context given that physiotherapy should consider the whole life requirements of the individuals they work with.

Physiotherapy is evolving such that service users are moving from being passive recipients to becoming active participants with a voice [11,12]. This shift can be challenging for physiotherapists as practice has been dominated by a biomedical perspective [13,14]. This biomedical viewpoint can limit the ability of the physiotherapist to manage key aspects of person-centred practice such as building a positive therapeutic relationship, the valuing of patient preferences, managing expectations, and fostering a sense of hope [13]. Thus, in principle, physiotherapists embrace person-centred practice, however, they can struggle to implement it clinically [15].

Given the importance of person-centred practice in enhancing healthcare, there is a need to understand how curricula are preparing healthcare students for working in a person-centred manner. A recent review of nursing curricula found that nurse educators seek to promote person-centred practice, but challenges exist around its conceptual clarity [16]. A range of pedagogies have been used to promote person-centred practice in healthcare education [16]. However, as far as the authors are aware, no study has synthesised the literature on how person-centred practice is taught in pre-qualifying physiotherapy curricula. This is important because if the future physiotherapy workforce is to be prepared to practice in a person-centred manner, then this should be reflected in physiotherapy curricula. Thus, the aim of this literature review was to explore empirical studies relating to educational interventions to teach person-centred practice in physiotherapy pre-qualifying curricula.

Methods

Search strategy

A systematic search was conducted across the following electronic bibliographic databases: CINAHL Complete; Medline; SPORTDiscus; Academic search premier; Education Research Complete; and ERIC. No date limits were applied, and the final search was carried out in January 2021. Using a Boolean search strategy, key terms and their alternatives were entered into the databases (Table 1). Due to the complexity of the concept of person-centred practice, the selection of keywords was challenging, and the authors acknowledge that the terms are not exhaustive. To strengthen the search strategy the authors drew on search terms and their synonyms from a similar review of person-centred practice in nursing curricula [16]. The search was limited to peer-reviewed papers published in English. Reference lists of eligible studies were hand searched. The authors of studies which met the inclusion criteria were contacted to see if they were aware of any other relevant studies, however, this did not yield any further results.

[Table 1 near here] Search terms

Eligibility criteria and study selection

Since the aim of this review was to explore the literature relating to educational interventions to teach person-centred practice in pre-qualifying physiotherapy curricula, the authors did not want to limit articles based on methodological approach. As such, quantitative, qualitative, and mixed-methods study designs were eligible for inclusion. The inclusion and exclusion criteria are outlined in Table 2.

Articles identified by the database search were initially screened by for eligibility by CK using their title and abstract. Full texts screening was used where it was difficult to determine if an article met the inclusion criteria based on title and abstract. Full text articles were independently reviewed by CK and AT. Discrepancies regarding eligibility for inclusion were resolved by discussion and consensus with CW and JS. Search results were handled using an excel spread sheet to facilitate an audit trail of article screening.

[Table 2 near here] Inclusion and exclusion criteria for eligibility

Data extraction and synthesis

Data extraction was performed by the first author using customized data extraction forms. These included information regarding aims, study design, sample characteristics, data collection instruments, data analysis, intervention, and outcomes. The data from qualitative studies were analysed using thematic synthesis [17]. The findings sections of each qualitative study were copied verbatim and imported into QSR International NVivo 12 qualitative data analysis software. Each study was then coded line-by-line in the first phase of open coding. The second stage of qualitative synthesis involved organizing the free codes into related areas to construct descriptive themes. The third stage involved generating analytical themes which sought to go beyond the data of the primary studies to generate interpretive constructs in relation to the research question [17]. The process of theme development can be seen in table 3.

Limited quantitative data were reported in the mixed methods study [18], therefore only the qualitative data were extracted for this study and used in the qualitative synthesis. Data from

quantitative studies were analysed using narrative synthesis [19]. A narrative synthesis is an approach to synthesizing findings from various studies which can involve statistical data but predominantly uses words and text to summarise and explain the findings of the synthesis [19]. As the quantitative data were limited in this study, the authors synthesised the data via a textual summary of the education interventions and results, including student percentage responses to survey questions where appropriate.

Results

Study selection

A total of 1621 studies were identified through the search strategy. Eight studies met the inclusion criteria (five qualitative, two quantitative, and one mixed methods). Figure 1 shows the process of study selection based on the Preferred Reporting Items for Systematic Reviews and Meta-Analysis [20].

[Figure 1 near here] Process of study selection

Study characteristics

The research studies included in this review employed a range of data collection methods, including interviews, focus groups, content analysis of posters, surveys, student evaluations, and patient-practitioner outcome measures. The included studies analysed their qualitative data using approaches such as content analysis, thematic analysis, grounded theory, and interpretive phenomenological analysis. Quantitative studies analysed their data using pre- and post-test comparative measures and categorical data analysis.

Sample sizes ranged from six to 96 participants. The age and gender of participants were not consistently reported. Three studies were based within the United Kingdom [18,21,22], two in the United States of America [23,24], with the remaining studies based in New Zealand [25], Denmark [26], and Portugal [27]. Table 4 provides an overview of the included studies.

[Table 4 near here] Overview of included studies

Educational interventions of the included studies

Studies used a wide range of education interventional to teach person-centred practice. These can broadly be divided three groups: those which involved service users in the university setting [21,22,26]; those which had students work with service users in the community setting [18,23,25]; and those which had no direct service user involvement but instead used aspects of narrative reasoning and teaching which addressed communication skills and psychosocial aspects of care [24,27].

The timescales of the educational interventions varied across the studies including: service users involved in single sessions in a university setting [21,26]; whole module interventions with direct service user involvement [18,25] or with specific module content to enhance learning on person-centred practice [24,27]; or whole curricula interventions with service users and carers involved across the span of student training [22,23]. Further details of the educational interventions are included in table 4.

Thematic synthesis of the qualitative data

Thematic synthesis [17] of the qualitative data led to three themes that were important from the perspective of physiotherapy students in regard to the educational interventions used to teach person-centred physiotherapy practice. These themes are presented with direct quotes taken from the participants of the included studies.

[Table 3 near here] Table of theme development

Positive impact on learning

This theme reflects the impact on learning from the broad range of education interventions being used to teach person-centred practice. Learning was notable in three key areas: the development of interpersonal skills, a better understanding of patient illness experiences, and the importance of collaborative, therapeutic relationships.

Firstly, there was a perception from students that the educational interventions had enhanced interpersonal skills such as listening, observation, and communication skills [18,22,26,27].

> One important part of the course is the active listening. It is not just about listening to the patient, but really hear what he is telling us. It is not only his words but his posture, the way he deal with us…we are more able to give attention to these details. [27]

For curricula that involved service users in taught sessions, students became more aware of their own body language, tone of voice, when it was appropriate to ask questions and when it was

more appropriate to be quiet and let the person speak [22]. Students were also more aware of their use of jargon in clinical encounters and the challenge this can be to communicating clearly with patients [22].

Secondly, the students expressed a better understanding of patient illness experiences and that each patient deals with their health challenges differently [21,22,25-27]. This led to a change in focus for the students with a greater ability to see patients as individual people rather than a disease, pathology, or injury [18,21,25-28]. Physiotherapeutic encounters were no longer just about the clinical condition or physical challenges but about how the patient was dealing with their condition [18,21,25,27]:

> It is important that health professionals are aware that after being disabled, a time of adjustment is required by the person involved, and that, during this time, it may be difficult to help the person physically. Time may be better spent on learning to help them adjust emotionally, particularly grieving the loss of function, rebuilding self-esteem and replacing previous activities no longer possible with new activity which bring the same pleasure. [25]

The third key impact on learning was the change in the way that students viewed their relationships with patients. The importance of the development of a collaborative, therapeutic relationship in which the views of the patient were integrated into practice cannot be understated. Attitudes towards assessing and treating patients shifted from following a set of questions or a specific protocol, to building a relationship with a willingness to learn *from* patients with a view

to understanding them as individual people [18,21,26,27]. This ability to interact with patients was seen to be at the heart of being an effective therapist:

> And I just sat there thinking…It's being able to effectively interact with your patient…you can have all the knowledge in the world, but if you can't interact with your patient, and adapt… you're not going to be effective. (Interviewee 1, p. 21, line 8) [22]

Whilst technical knowledge was still viewed as being important there was an understanding that this knowledge is only the starting point and needs to be understood in the context of the uniqueness of individual patients. This understanding led to students being more open in patient encounters to the priorities and agenda of patients and in adopting more individualized approaches, taking into account patient's characteristics and needs [18,21,26,27].

Creating a safe, authentic, person-centred learning environment

This theme reflects the importance of the formation of a safe, authentic, person-centred learning environment for teaching person-centred practice. This safe environment was particularly notable in the studies that included service users and carers as a means to teach person-centred practice [18,21,22,26]. Part of the safe person-centred environment appeared to stem from the fact that the presence of service users created a different learning environment; it was more informal and relaxed:

> ...it was a very relaxed session because you felt quite safe…and they weren't asking questions… and just enjoyed…rather than [having] to think too much yourself…[21]

In addition, the role of the service user in the classroom was different to that of a lecturer creating a more open environment which legitimised the option to ask questions which students might otherwise perceive to be ‘stupid’ [26]. For some, learning from service users was quite an emotional experience as they listened to the challenges that service users faced [21]. The involvement of service users led students to recognize the fact that patients were experts in their conditions [22,26]:

> And I like also that they were experts about that sort of condition (murmurs of agreement) like, they have knowledge that we would never have, unless we just listen to them about it. [22]

As well as being a more relaxed and open learning environment, having service users involved changed the content and focus of the sessions. The authenticity of the environment was an opportunity to apply learning and highlighted the gap in their knowledge between the technical aspects of practice and the social practice skills needed to interact with patients and carers [22]. Learning was no longer about learning about patients through reading books or lectures, but it was an authentic person-centred learning environment such that students could hear real stories:

> Teachers tell us about what happens with the body, but all the important personal matters can only be told by someone who has actually experienced it themselves. [26]

This safe, open environment was contrasted with clinical practice environments where students felt that they needed to be competent and professional at all times; this professional role then made it difficult for them to take on the learner role in clinical practice [26]. The removal of

professional expectations allowed students to focus on the development of transferrable skills such as communication and understanding from the patient perspective [18,21,22].

Interestingly, having a range of service users involved was important in creating a broad learning environment as different service users have different messages such as the importance of communication or of peer support in hospital [21].

Challenges in changing views

This theme reflects some of the challenges involved in changing the student's views of person-centred practice. For some students, the biomedical philosophy they developed in the early stages of their education did not necessarily align with person-centred practice and they were initially resistant to changing their views:

> In the beginning I think we were against this approach. We would finish the tutorials and we would discuss how could those subjects relate to our practice. We didn't understand. Our minds were not opened enough to consider these issues. . .and if the tutor hadn't been there, always challenging us, always asking questions, we wouldn't have been able to challenge ourselves...[27]

The role of the tutor or lecturer appeared to be important in facilitating the process of challenging views and eventually led to a change in professional identity from being therapist-centred to more person-centred [27].

However, some students were unable to achieve a shift in perspective and had negative views of service user learning. For example, in the educational intervention which involved a non-professional community placement as a means to promote person-centred practice, approximately a quarter of the students were resistant and viewed it as being ‘a waste of their time’ [18]. Instead, these students wished for concrete, technical knowledge over psychosocial learning.

One of the challenges in changing views stemmed from the perception by students that person-centred practice not recognized in clinical contexts by other health care professionals [27]. This made it difficult for some students to practice from a patient-centred perspective in clinical environments.

The inclusion of service users to teach person-centred practice was important for some as it challenged their assumptions, expectations, preconceived ideas, and prejudices they held towards patients [21,22,25]. Some students felt that prior to learning from service users, they found they tended to focus on the disability and the physical aspects of a person health. After the sessions with the service users, they realised that those with disabilities did not necessarily focus on the physical limitations but instead on things that brought happiness such as family and life achievements.

> This has taught us much about our expectations for someone else, that it is impossible to predetermine subjective concepts of an individual by their situation and condition. To understand an individual, it takes input on an individual level. [25]

Narrative synthesis of quantitative studies

Two studies took a purely quantitative approach to evaluating the impact of the education intervention on person-centred practice with their students [23,24]. Ross and Haidet [24] evaluated their module on communication skills and psychosocial aspects of care using two outcome measures which were carried out prior to the course and at the end. These were the Patient-Practitioner Orientation Scale (PPOS) and the Tasks of Medicine Scale (TOMS). Findings suggested that there were statistically significant differences in the attitudes of students towards patient-centred practice and the prioritisation of psychosocial factors after the course was completed. However, it was not known whether these changes in attitude would carry over to clinical practice [24]. Rapport and colleagues [23] designed a survey, specifically focusing on areas associated with a patient-centred philosophy, to assess students' perceptions of their learning from the three-year community volunteer programme. The survey results found that 91% of students felt that the volunteer programme had helped them understand life with a disability; 76% said it had helped them link classroom information to real-life situations; and 79% felt it had helped them develop their communication skills [23]. Thus, overall, the survey results were positive and indicated that the community volunteer programme had enhanced learning related to patient-centred practice.

Discussion

The aim of this review was to explore the empirical literature relating to educational interventions used to teach person-centred practice in physiotherapy pre-qualifying curricula. This knowledge is important in ensuring that the future physiotherapy workforce is prepared to practice in a person-centred manner. This review found that a wide range of educational interventions were used to teach person-centred practice. The qualitative studies highlighted the positive impact that these interventions had on student learning, the importance of creating a safe, authentic, patient-centred learning environment, and the challenges in changing student views. The quantitative studies (albeit limited in number) suggested the interventions enhanced learning related to person-centred practice.

This study has three contributions to make to how person-centred practice is taught in pre-qualifying physiotherapy education. Firstly, the various approaches used to teach person-centred practice in this review were on the whole positively evaluated by students and led to a greater sensitivity of person-centred practice. The interventions showed pedagogic innovation. For example, students interviewed persons with disability about their views and experiences [25]; students learnt from volunteers who self-identified as having a physical disability over the course of their three year degree [23]; they engaged with community groups [18]; as well as more traditional involvement of service users in a university setting [21,22,26]; or specifically teaching the enhancement of psychosocial skills needed to practice in a person-centred manner [24,27]. However, many of the strategies were at a sessional or modular level rather than across the curricula. These authors would agree with O'Donnell and colleagues [16] that there is a lack of evidence regarding whole curriculum developments that are reflective of the theoretical

underpinnings of person-centred practice [16]. Further investigation would be needed to understand whether interventions across the curricula are more impactful in terms of enhancing person-centred practice in the longer term or if single sessions or modular interventions are as effective.

Secondly, the synthesised qualitative findings from this study highlights that there is a different dynamic when service users and carers are involved in university learning settings compared with the type of learning which takes place in practice-based settings. The presence of service users in the classroom led to a different learning environment; it was more informal, relaxed and open which meant students were able to ask questions of the service users that they would not normally ask in a practice-based learning environment [26]. Thus, whilst practice-based learning on placement is of paramount importance, involving service users and carers in university learning settings has value in bridging the knowledge-practice gap by shifting learning from the technical aspects of practice to the social skills needed to practice in a person-centred manner [18,21,22,26]. This is important because in the UK context, pressures of training in the National Health Service and lack of role models have been found to affect students development of person-centred practice [29]. There is also a disparity in views between how physiotherapy students perceive person-centred practice when compared to service users [30]. Involving service users in university settings could help in bringing parity to some of those views [25].

Literature suggests that both service users and students benefit from involvement in health care programmes [31,32]. The challenge is whether the involvement of service users translates into changed behaviour in practice or benefits to the service users receiving care [31]. To better

understand this, more longitudinal studies are needed to track students learning on person-centred practice over the course of their education and into post-registration working. This approach would help in understanding the challenges students face in implementing person-centred practice in areas where they perceived it was not currently taking place [27].

Interestingly, only one of the studies included in this review involved carers [22]. This is an important consideration in the context of teaching person-centred practice as carers are a vital part of supporting person-centred practice [33,34]. Furthermore, it is suggested that a range of service users and carers be involved in teaching person-centred practice as they each have different messages and experiences they wish to communicate to students [21].

Finally, this study found that the educational interventions challenged student's assumptions, expectations, preconceived ideas, and prejudices they held towards patients and person-centred physiotherapy practice [18,21,22,25,27]. It is not surprising that the students faced challenges in their views of person-centred practice as these challenges are similarly felt by qualified practitioners who theoretically embrace the principles but can struggle to implement them in clinical practice [15]. Some of the challenges faced by students related to the biomedical philosophy they developed in the early stages of their learning [18,27]. Physiotherapy practice and education is typically underpinned by a biomedical discourse [13,35-38]. Despite a move in more recent times towards biopsychosocial models of practice [39], it would appear that the biomedical model continues to have a key influence over the way students view patients. This focus on the biomedical may limit the ability of students to manage aspects of person-centred practice upon graduation. Therefore, curricula which are underpinned by more embodied,

person-centred approaches may help students collaborate with patients in a more person-centred manner and would warrant further investigation.

Importantly, whilst the principles of person-centred practice are required to be embedded within physiotherapy curricula [40-42], challenges remain about what is meant by this 'fuzzy' concept [9,43]. This can make it difficult not only to operationalize in practice [7,8] but to teach. Nursing colleagues are further ahead than physiotherapy in their development of person-centred nursing frameworks [44,45] and raises the question as to whether there should be a physiotherapy framework for person-centred physiotherapy practice? This may help in operationalizing the 'fuzzy' aspects of person-centred physiotherapy practice and make concrete the 'constellation' of person-centred practice ideas that can be used to critically guide practice [46]. A framework which is underpinned by relevant person-centred philosophies would help support a shared understanding of the meaning of person-centred physiotherapy across the academic and practice-based learning elements of physiotherapy pre-qualifying programmes.

Strengths and limitations

Limitations of this study include the fact that the synthesis is based on a small number of studies (i.e., five qualitative, two quantitative, and one mixed methods). The heterogeneity of the study design made the inclusion of quality assessment problematic and as such recognise this as a limitation of the review. The authors also recognise the complexity of person-centred practice as a concept which presented challenges in developing the search strategy. Thus, whilst the authors attempted to carry out a comprehensive and rigorous search strategy there is no guarantee that all relevant studies were located. The included studies were from the United Kingdom, United

States of America, New Zealand, Denmark, and Portugal, offering an international perspective on how person-centred practice is taught in physiotherapy education.

Conclusions

This study sought to synthesise the literature on educational interventions used to teach person-centred practice in physiotherapy pre-qualifying curricula. Findings suggest that a wide range of interventions were used to teach person-centred practice. These included the involvement of service and carers in the curricula [21,22,26], engagement with community groups [18], interviewing and learning from individuals with disabilities [23,25], or specific teaching on psychosocial skills needed for person-centred practice [24,27]. From the student perspective, the interventions appeared to have a positive impact on their learning, challenging their views of person-centred practice.

Further research is needed to understand whether educational interventions to teach person-centred practice translate to changed behaviour in clinical practice to the benefits of those receiving physiotherapy services. To better understand this, more longitudinal studies are needed to track students learning on person-centred practice over the course of their education and into post-registration working. Ongoing challenges around operationalizing what is meant by person-centred physiotherapy practice exist. These authors would suggest that a person-centred physiotherapy framework, underpinned by person-centred philosophies would help support a shared understanding of the meaning of person-centred physiotherapy across the academic and practice-based learning elements of physiotherapy programmes.

Conflict of interest

The authors declare that there is no conflict of interest.

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Table 1 Search terms

Search terms		
"Therapeutic relationship*" OR respect* OR "Self-determination" OR "self determination" OR Empower* OR "service user*" OR "patient involvement" OR Personhood OR "Person cent*" OR "Patient cent*"	AND	(physiotherap* or "physical therap*") N2 (educat* or student* or curricul*)

Table 2 Inclusion and exclusion criteria for eligibility

Inclusion	**Exclusion**
Focus on patient or person-centred educational interventions	If it was not possible to distinguish the views or outcomes of physiotherapy students from the views of other participants involved in the study, e.g., students from other healthcare professions
Primary research with empirical data	If the focus was not an educational intervention
Pre-qualifying physiotherapy / physical therapy students	Grey literature
English language studies published in peer-reviewed journals	Systematic reviews

Table 3: Table of theme development

Stage 1: Open coding	Stage 2: Descriptive coding	Stage 3: Analytical themes
Became better listeners Better at communicating Better observers Better deal with complexity Shifting students' focus Students had changed their views	Became better listeners, observers, and communicators	Positive impact on learning
Awareness of barriers to access healthcare Each patient is different Explore other aspects of patient's life Seeing patients as people Understand the person beyond the pathology Better understanding of patient experiences	Better understanding of the illness experiences	
Developing distinctive competencies Learning from patients	Student learning	
Integrate patients' views More open minded More empathetic relationships More individualised approach	Collaboration and therapeutic relationship	
Authentic patient experiences Feels like a safe environment Different patient instructors have different messages Opportunities to apply learning Pedagogical format Issues of authority and intimacy	Content matters Issues of realism and individual perspectives	Creating a safe, authentic, person-centred learning environment
Patient as the expert Knowledge-practice gap Patient instructors create a different learning environment Preparation for clinical practice	Power relations and issues of authority and legitimacy	
Challenging the professional identity Negative views of service user learning Person-centred practice not recognised in clinical practice by other health care professionals Preconceived ideas of patients	Difficulty for students	Challenges in changing views

Table 4: Overview of included studies

Study	Study aims	Setting and participants	Educational intervention	Study design
Hale 2001	To develop understanding on a participatory approach to learning about empowerment	Location: Otago, New Zealand Participants: 96 undergraduate physiotherapy students Age and gender not specified	Students had to interview persons with disability about their views on empowerment and present their findings in a group poster	Qualitative Content analysis of the student posters on empowerment
Otterwill 2006	To understand what third-year physiotherapy students experience and learn from having an expert patient involved in teaching and learning	Location: Southampton, United Kingdom Participants: 6 third year undergraduate physiotherapy students Age range: 20-33 Gender: 5 female, 1 male	A teaching session on strokes led by two expert patients	Qualitative Interviews Thematic analysis
Rapport et al. 2010	To evaluate the use of a Community Volunteer Programme to teach patient-	Location: Colorado, United States of America Participants: 3 cohorts of Doctor of Physical Therapy Students at the midpoint in	A programme which pairs students with community volunteers who have a self-identified physical disability. Students follow their volunteer throughout the 3-year curriculum and learn about life with	Quantitative Online survey Categorical data analysis

	centred care in physical therapy student education	their 3-year programme of study Age and gender not specified	a disability directly from the volunteers. Course assignments provide opportunity for reflection and guided learning.	
Henriksen and Ringsted 2011	To explore whether there is added value in involving patients as instructors in educating health professionals	Location: Copenhagen and Næstved, Denmark Participants: 23 first year physiotherapy students Gender: 10 male, 13 females Age not specified	A 3-hour teaching session entitled 'Thoughtful joint examination and respectful patient contact'. The session is designed and run by patient instructors. Students are taught in small groups and typically meet three different patient instructors during a session.	Qualitative Focus groups Content analysis
Ross and Haidet 2011	To assess attitudes toward patient-centred care in Doctor of Physical Therapy Students	Location: North Carolina, United States of America Participants: 49 Doctor of Physical Therapy Students Age and gender not specified.	A course on communication skills and psychosocial aspects of care delivered at the end of their theoretical education.	Quantitative Students completed the Patient–Practitioner Orientation Scale (PPOS) and the Tasks of Medicine Scale (TOMS) before and after the course and open-ended survey questions.
Thomson and Hilton 2011	To evaluate student perceptions of involving service users in physiotherapy education	Location: London, United Kingdom Participants: 32 pre-qualifying physiotherapy students (Levels 4-6) Age range: 18-45 years Gender: 13 males, 19 females	A programme spanning years 1-3 in a pre-qualifying physiotherapy course in which patients, carers, and service users are invited to actively participate as educators.	Qualitative Focus groups and follow up interviews Grounded theory

Roskell et al. 2012	To examine how professionalism is fostered in promoting patient-centred care in UK healthcare education	Location: Birmingham, United Kingdom Participants: 16 pre-qualifying MSc physiotherapy students Gender: 10 female, 6 males Age not specified	A service-learning placement is embedded within a module. It required students to actively engage with local community groups to run events. These experiences were designed to enhance students' awareness of potential health service users and their lives, facilitating engagement with local communities.	Pilot study Evaluation data were obtained through focus groups, questionnaires, and interviews
Cruz et al. 2014	To explore the students' perspectives of a narrative reasoning course to promote patient-centred practice	Location: Portugal Paticipants:18 final year pre-qualifying physiotherapy students Gender: 2 male, 16 females Age: mean age 21 +/- 1.1	A narrative reasoning course designed to promote patient-centred practice.	Qualitative Focus groups Interpretative phenomenological analysis

Figure 1: Process of study selection