

Does palliative care education lead to a change in the attitudes and beliefs of pre-registration Physiotherapy students about palliative care: a literature review

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Short title : Physical Therapy Reviews

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Abstract

Background

Worldwide, over 61 million people suffer from symptoms caused by conditions which could be helped by Palliative Care. Physiotherapy is increasingly utilised as part of the multi-disciplinary team in providing Palliative Care, but this is not widely accepted by physiotherapists whose attitudes and beliefs towards it may be framed by the absence of the topic in their undergraduate education.

Objectives

To evaluate the literature relating to the effect of Palliative Care education interventions on the attitudes and beliefs of Physiotherapy undergraduate students.

Methods

A structured search on Academic Search Ultimate, MEDLINE Complete, CINAHL Complete, APA PsycInfo, Education Source, Communication Source, SPORTDiscus with Full Text, Business

Source Ultimate, SocINDEX with Full Text, and Regional Business News was conducted in October 2020. Articles were limited to peer-reviewed journals published in English and involving an educational intervention delivered to pre-qualification Physiotherapy students.

Results

Four papers were included which all measured change in attitudes and beliefs. Three papers showed a significant positive change in students' attitudes and beliefs towards PC, and one showing a positive but non-significant change. There was no consensus on the ideal curriculum content, delivery method or time.

Conclusion

PC content within the curriculum is still in its formative stages within Physiotherapy education. While there is currently no consensus on the ideal method and format of how it should be delivered, there is some evidence to suggest that it can have a positive impact on Physiotherapy students' attitudes and beliefs towards PC.

Keywords: Palliative care; education; curriculum; attitudes; beliefs

Introduction

Non-communicable chronic conditions are the cause of over 70% of all deaths worldwide [1]. It is estimated that over 61 million people suffer from symptoms caused by medical conditions, which could be helped by Palliative Care (PC) [2]. The incorporation of PC into the management of people with Chronic Obstructive Pulmonary Disease [3], HIV [4], cancer [5] and heart failure [6] has been shown to improve the outcomes and quality of life for people with these life-limiting conditions.

PC is defined by the World Health Organisation (WHO) as:

an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.
[7, p. 84]

This has recently been refined as:

the active holistic care of individuals across all ages with serious health-related suffering because of severe illness and especially of those near end-of-life. It aims to improve the quality of life of patients, their families, and their caregivers. [8, p. 761]

PC is seen as a low-cost intervention in a world where resource utilisation and cost-effectiveness are an essential element of service provision [9] and has been highlighted as an ethical mandate for healthcare systems internationally [10] in supporting quality of life. To ensure healthcare professionals (HCPs) are able to deliver PC, it has been recognised that it should form an essential part of undergraduate healthcare education [11,12]. Despite this, it is suggested that its delivery is lacking in most healthcare professions [12,13].

While Physiotherapy has not traditionally been seen as an essential part of inter-disciplinary PC, there is growing evidence of the positive impact that Physiotherapists can have on the outcomes of people under PC [14]. The lack of access to rehabilitation in this population can lead to unmet needs and impact on outcomes for this population [15]. This has led to PC becoming a growing part of Physiotherapy practice and Physiotherapists becoming more integrated into PC teams [16]. This has led to the taskforce of the European Association for Palliative Care creating a framework for PC education for healthcare professionals (including Physiotherapy) [17].

However, it could be suggested that Physiotherapists can hold negative attitudes and beliefs towards PC [18], and there is still misunderstanding about the role of Physiotherapy in PC [19,20]. It has been found that Physiotherapists tend to see people with palliative conditions (terminal cancer for example) as dying from, rather than living with, their conditions, whilst not recognising these people will be seen away from specialist settings [16,18]. Educational input at an undergraduate level is one way that these issues could be addressed. It has been suggested that educational input can help students feel more enabled to manage PC scenarios [21,22]. While a lack of training can lead to reduced confidence in managing complex issues like communicating with patients and their families at end of life [13,18]. This is supported by reviews of the literature looking at the impact of PC education on the knowledge, beliefs, and attitudes of healthcare students, which show that there can be a positive impact on the knowledge and attitudes of students towards PC [23] but, as yet, there has been no review of the impact of PC education with Physiotherapy students.

The aim of this review is to evaluate the literature relating to the effect of Palliative Care education interventions on the attitudes and beliefs of Physiotherapy undergraduate students.

Materials and methods

Search strategy

This review searched the databases Academic Search Ultimate, MEDLINE Complete, CINAHL Complete, APA PsycInfo, Education Source, Communication Source, SPORTDiscus with Full Text, Business Source Ultimate, SocINDEX with Full Text, and Regional Business News in October 2020. The search terms are shown in [Table 1](#) and included Boolean Logic. The search generated 203 potential articles dated between 2005 and 2020. This was chosen to coincide with the Council of Europe recommendations. These were subsequently limited to peer-reviewed journals and by English language. After the removal of duplicates by the databases, the remaining 126 articles were screened by title and abstract in line with the inclusion and exclusion criteria. This was repeated with the remaining articles using the full text. The reference lists of the selected articles were hand searched for additional references, but none were identified. The search strategy is presented in the form of a PRISMA diagram [24] in [Figure 1](#).

Figure 1. PRISMA diagram showing paper selection method. [+](#)

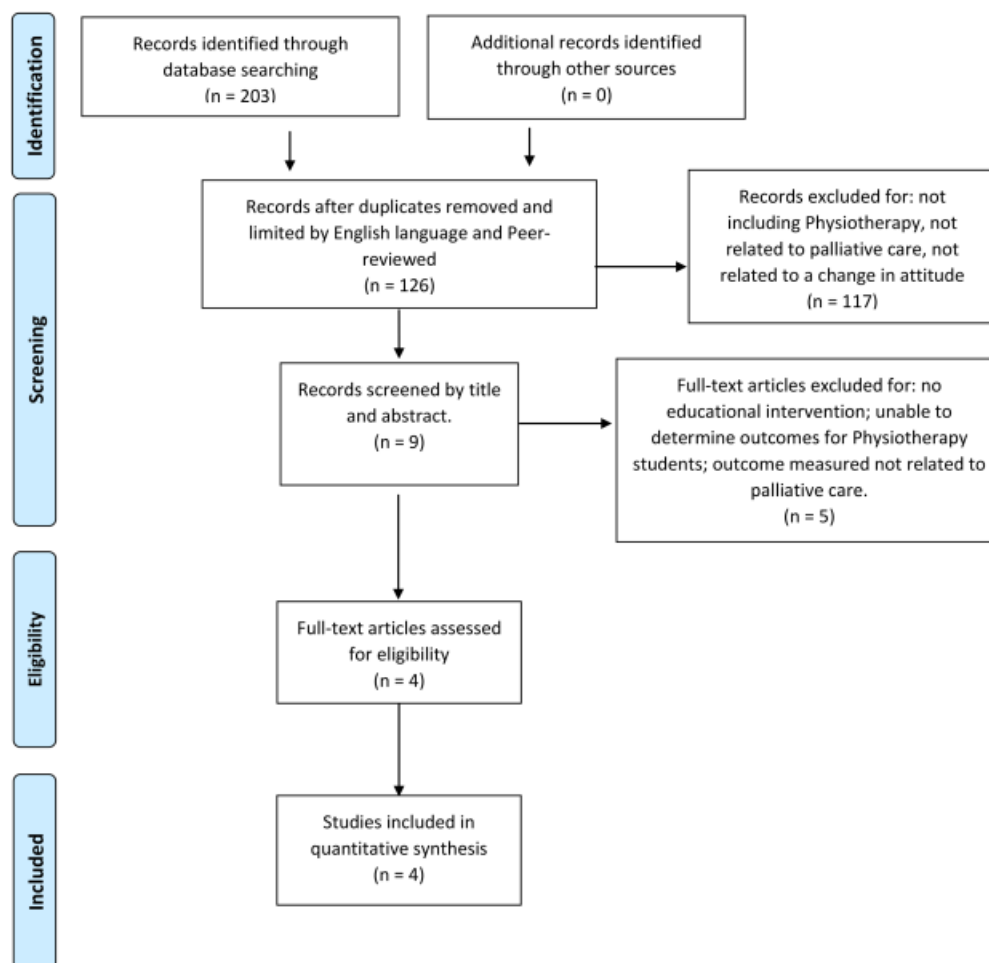


Table 1. Search items. [+](#)

| Key concept | Terms used |
|------------------------|--|
| Palliative care | Palliative Care or end of life care or terminal care or dying care |
| Education | Education or curriculum or training |
| Attitude | Attitudes or perceptions or opinions or thoughts or feelings or beliefs |
| Physiotherapy students | Physiotherap* or Physical therap* or Physiotherap* student or physical therap* student |

Inclusion and exclusion criteria

Studies were excluded if not published in peer-reviewed journals and not in English. Further exclusion criteria included: if the study did not involve an educational intervention, it did not include Physiotherapy students, if the data for Physiotherapy students was not shown separately from other HCPs or if the outcome measured was not a change in attitude around PC. Full inclusion and exclusion criteria are shown in [Table 2](#).

Table 2. Inclusion and exclusion criteria. 

| Inclusion criteria | Exclusion criteria |
|---|---|
| <ul style="list-style-type: none"> Involved Physiotherapy Students Looked at attitudes and beliefs around Palliative Care | <ul style="list-style-type: none"> Not in English Not in peer-reviewed journal Did not have an educational intervention Did not measure a change in attitude around Palliative Care Outcome measures related to interprofessional working Data for Physiotherapy students was not separated from other healthcare professions |

Quality appraisal and data extraction

A modified version of the Downs and Black methodological checklist [25] was used to evaluate the quality of the studies identified in the database search. The Downs and Black checklist was selected as it has been shown to be a validated tool for assessing the quality of non-randomised control trials (RCTs), as all of the studies selected fell under this category. A modified version was used to ensure equal weighting throughout the checklist [26]. As none of the studies reviewed were RCTs, the two related questions were removed, as has been done previously [27]. Appraisal was completed by the authors and is shown in [Table 3](#).

Table 3. Modified downs and Black checklist. 

| Question | Kumar et al. 2011 | Chiarelli et al. 2014 | Efstathiou and Walker 2014 | Goldsmith et al. 2015 |
|---|-------------------|-----------------------|----------------------------|-----------------------|
| 1) Is the hypothesis/aim clearly described? | 1 | 1 | 1 | 1 |

| Question | Kumar et al. 2011 | Chiarelli et al. 2014 | Efstathiou and Walker 2014 | Goldsmith et al. 2015 |
|---|-------------------|-----------------------|----------------------------|-----------------------|
| 2) Are the main outcomes to be measured clearly described in the introduction or methods section? | 1 | 1 | 0 | 1 |
| 3) Are the characteristics of the subjects included in the study clearly described? | 1 | 1 | 0 | 0 |
| 4) Are the interventions of interest clearly described? | 1 | 1 | 1 | 1 |
| 5) Are the distributions of principal confounders in each group of subjects to be compared clearly described? | 0 | 1 | 0 | 0 |
| 6) Are the main findings of the study clearly described | 1 | 1 | 0 | 1 |
| 7) Does the study provide estimates of the random variability in the data for the main outcomes? | 1 | 0 | 0 | 1 |
| 8) Have all important adverse events that may be a consequence of the intervention been reported? | 0 | 0 | 0 | 0 |
| 9) Have the characteristics of subjects lost to follow-up been described? | 1 | 0 | 0 | 1 |
| 10) Have actual probability values been reported for the main outcomes? | 0 | 1 | 0 | 1 |

| Question | Kumar et al. 2011 | Chiarelli et al. 2014 | Efstathiou and Walker 2014 | Goldsmith et al. 2015 |
|---|-------------------|-----------------------|----------------------------|-----------------------|
| 11) Were the subjects asked to participate in the study representative of the entire population from which they were recruited? | 1 | 1 | 0 | 0 |
| 12) Were those subjects who were prepared to participate representative of the entire population from which they were recruited? | 1 | 1 | 0 | 0 |
| 13) Were the staff, places, and facilities where the subjects were treated, representative of the treatment the majority of subjects receive? | 0 | 0 | 0 | 0 |
| 14) Was an attempt made to blind study subjects to the intervention they have received? | 0 | 0 | 0 | 0 |
| 15) Was an attempt made to blind those measuring the main outcomes of the intervention? | 1 | 1 | 1 | 0 |
| 16) If any of the results of the study were based on 'data dredging', was this made clear? | 1 | 1 | 1 | 1 |
| 17) In trials and cohort studies, do the analyses adjust for different lengths of follow-up of subjects, or in case-control studies, is the time period between the intervention and outcome the same for cases and controls? | 1 | 0 | 1 | 0 |

| Question | Kumar et al. 2011 | Chiarelli et al. 2014 | Efstathiou and Walker 2014 | Goldsmith et al. 2015 |
|---|-------------------|-----------------------|----------------------------|-----------------------|
| 18) Were the statistical tests used to assess the main outcomes appropriate? | 1 | 1 | 1 | 1 |
| 19) Was compliance with the intervention/s reliable? | 0 | 0 | 0 | 0 |
| 20) Were the main outcome measures used accurate (valid and reliable)? | 0 | 0 | 0 | 1 |
| 21) Were the subjects in different intervention groups or were the cases and controls recruited from the same population? | 0 | 0 | 0 | 0 |
| 22) Were study subjects in different intervention groups or were the cases and controls recruited over the same period of time? | 1 | 1 | 1 | 1 |
| 25) Was there adequate adjustment for confounding in the analyses from which the main findings were drawn? | 0 | 0 | 0 | 0 |
| 26) Were losses of subject to follow-up taken into account | 0 | 0 | 0 | 0 |
| 27) Was the sample size justified? | 0 | 0 | 0 | 0 |
| Total/25 | 14 | 13 | 7 | 11 |

Results

Four studies were identified through the search criteria. The data extraction was completed by the author and is shown in [Table 4](#). The studies were completed in India, Australia, the United Kingdom, and the United States of America. A total of 189 participants were involved, all of which were in the final two years of their Physiotherapy education. Three papers gave data on the demographics of their

participants [30–32] which showed that 71% of the participants identified as female, with an average age of 23 years and age range of 13 years.

Table 4. Data extraction table for four included articles. 

| Paper | Population | Exclusion criteria | Country | Intervention | Outcome measure | Results | D & B score |
|--|--|--|-----------|---|--|---|-------------|
| Kumar, S., Jim, A. and Sisodia, V. 2011 | 52 final year student Physiotherapists, 23.1% male, 76.9% female; mean age 20.51 ± 1.78 years. | Unable to understand English, incomplete questionnaire, refused consent. | India | Lecture, case examples, and active demonstration incl. WHO def. PC, spiritual, death and healing, models of PC and role of PT. 6 h total | Self-administered PTIPC-KABE (Likert) Scale with 37 questions. Total score: 104 Subsections on: knowledge, attitudes, beliefs and experiences. | A significant positive change in knowledge, attitudes, beliefs and experiences was reported, with an overall significantly positive change. | 14 |
| Chiarelli, P., Osmotherly, P., and Johnston, C.L. 2014 | 89 third year student physical therapists, 79 (89%) pre-course —34% male, 66% female. Age—22.8 ± 4.7 years 63 (71%) post-course —37% male, 63% female Age—22.9 ± 4.9 years | None | Australia | PCC4U Four modules covering principles, communication assessment and optimization. Involved case studies and reflective tasks. Primarily online with initial face to face lecture | Unpublished Questionnaire based on Likert scale 40 questions—pre-course 47 questions—post-course. Subsections on: knowledge, confidence and emotional preparedness | A significant change in knowledge and confidence in PC reported. No significant change in emotional preparedness reported. | 13 |

| Paper | Population | Exclusion criteria | Country | Intervention | Outcome measure | Results | D & B score |
|---|---|--------------------|--------------------------|---|--|--|-------------|
| Efstathiou, N. and Walker, W.M. 2014 | 11 final year Physiotherapy students enrolled; 10 completed questionnaires. | None reported | United Kingdom | Interprofessional simulation workshop in E-O-L communication 3 scenarios (before death, last days of life, after death). 3 areas of interactive group discussion: Video replay, Fear in a Box, What if? | Questionnaire consisting of 14 questions. Subsections on: knowledge, skills, confidence and competence. | An improvement in self-perceived knowledge, skills, competence and confidence was shown. A statistically significant improvement in self-perceived knowledge was seen. | 7 |
| Goldsmith, J., Wittenberg-Lyles, E., Frisby, B.N. and Small Platt, C., 2015 | 64 final year Physical Therapy students. 28% male, 72% female Age: Mean 25.86—range 23–36 years. 63 Caucasian, 1 Hispanic | None reported | United States of America | COMFORT communication training—5 of 7 modules completed (M and T not completed) Lectures, videos and activities 6 h | 3 questionnaires used: Willingness to Communicate Scale [28]; Communication Apprehension Scale [29]; Comfort in communicating and Communication skills confidence. | No significant change was seen in: Willingness to communicate, comfort with skills, confidence with skills, or Communication Apprehension with Dying. | 11 |

Abbreviations: WHO = World Health Organisation; def. = definition; PC = Palliative care; PT = Physiotherapy; PTiPC-KABE = physical therapy in palliative care—knowledge, attitudes, beliefs and experiences; PCC4U = Palliative Care Curriculum for Undergraduates; sig. = significant; diff. = difference; E-O-L = end of life; COMFORT = Communication, Orientation and Options, Mindful presence, Family, Openings, Relating and Team;

All the papers were non-RCTs and used a version of a Likert scale as an outcome measure. One study [32] used an additional reflective writing exercise as an outcome measure. The educational input varied across the four studies, but all included some face to face teaching. Two of the papers [32,33] identified as pilot studies.

The quality of the studies was scored on the Downs and Black checklist, which has been shown to be valid for studies which are not RCTs [25]. All studies scored between seven to 14 points. This could be converted to a percentage, out of the modified score of 25, and results in a percentage score range of 56% to 28%, with 2 papers [30,31] being considered ‘fair’ on this scale and 2 papers [32,33] which

would be considered to be poor quality [27]. Due to the novel nature of this literature review, it was decided that no papers be excluded due to level of quality.

Van Tulder et al. [34] suggests that if there are ‘consistent findings among multiple low quality RCTs and/or CCTs’, that this would constitute a moderate level of evidence of effect of an intervention. It is therefore suggested that there is moderate evidence to suggest that a PC educational intervention has a positive impact on Physiotherapy students’ attitudes and beliefs of PC.

Discussion

Methodological analysis

All the studies demonstrated similar methodological flaws, increasing the risk of cumulative bias in the studies and reducing the confidence in the conclusions that can be drawn in this literature review.

No study explicitly reported on confounding factors, with only one study [31] identifying 23 participants that had received previous palliative care training, which may be considered a confounding factor and reduce the certainty that any changes observed were as a result of the educational intervention [35]. This may mean that participants’ previous exposure to PC, either through personal experience or through other educational input (such as placement) may modify the impact of the educational input on the change in participants’ attitude and beliefs.

None of the studies justified their sample size or showed a power calculation. This may give credence to speculation that the studies could be underpowered, and therefore not give a reliable answer [36]. However, three of the four studies showed a statistically significant change overall, and so it could be argued that they must be sufficiently powered to demonstrate such an effect.

The aim of the study was to assess if a PC educational intervention could positively affect pre-registration Physiotherapy students’ attitudes and beliefs towards PC. The results suggest that there is moderate evidence that this is the case. However, there are key differences in how the papers approached this.

Curriculum content

While there were similarities in the four papers, there were also marked differences in the curriculum content between them.

All the interventions looked at communication. Good communication is considered an essential element of effective PC [13,37–39]. However, while Goldsmith et al. [32] and Efstathiou and Walker [33] focussed on communication in an end-of-life setting, Kumar et al. [30] and Chiarelli et al. [31]

looked at communication throughout the course of a person's life-limiting condition.

All the educational content within the studies looked at, to some extent, the multi-disciplinary team (MDT) approach to PC. In Efstathiou and Walker [33], this was implicit within the MDT approach to the workshop design. In Goldsmith et al. [32] this area may have been less explored due to the authors' decision to remove the 'Team' aspect of the COMFORT training due to time constraints.

As has been previously mentioned, effective PC takes a holistic view of the person. Therefore, it can be argued that a curriculum covering this area should take a similar approach, to ensure a fully developed foundation to face the challenges within this field. Two of the papers [30,31] took a broad approach to their PC curriculum, looking at various aspects of person-centred care. This covered spirituality, goal setting and illness trajectory amongst others and both showed statistical improvements in their participants attitudes and beliefs. However, two of the papers [32,33] with a narrower focus, on communication in an end of life situation, showed mixed results.

One possible reason for the differences in the curriculum content between the papers was the lack of guidance or consensus on what should be included within a PC curriculum, particularly for Physiotherapists. It was only as recently as 2004 that there had been some consensus on the curriculum for undergraduate PC in Nursing in Europe [40] with Nursing considered to be the largest profession within the PC MDT [12]. This was reviewed in 2020 and showed that, despite fifteen years of implementation, there is still a large variation in PC education across Europe within Nursing [12], although there have been marked improvements in some countries [41].

In 2013, the European Association for Palliative Care (EAPC) released guidance for what could be considered the key competencies needed for any HCP who may encounter people with life-limiting conditions [37,38]. Part of this guidance was the recommendation of 'institutional collaboration, shared learning and curricula design, and the need to align the curriculum as an instrument of learning' [37, p. 87]. This suggests that a PC curriculum, once implemented, could be shared and modified to develop best-practice. However, with very few pre-qualification Physiotherapy programmes incorporating PC into their curricula [18,42], there is little opportunity for sharing and consensus on best practice to be achieved.

While it is hard to draw conclusions on the ideal curriculum content to lead to attitude and belief change, it should be noted that the paper that did not achieve statistical significance appeared to have the least focus on the MDT element of PC, while both papers that took a broad approach to PC education had a statistically significant impact.

Curriculum delivery

These differences in the curriculum continued into how the educational input was delivered. The

breakdown of how the content was delivered was poorly defined in all four papers.

All the papers appeared to incorporate some face to face interaction, to a greater or lesser extent. Chiarelli et al. [31] appeared to have minimal face to face teaching, reporting an introductory lecture with most content subsequently delivered online. Whereas the other three papers described a more intensive face to face structure involving lectures, workshops, simulations and group discussions. Kumar et al. [30] and Goldsmith et al. [32] were the only papers to specify the length of course, both saying that the intervention totalled six hours.

All papers but one [30] explicitly included reflective exercises or discussion as part of the content delivery. Paal et al. [17] highlights this as one of the most important teaching methods which could be deployed. Reflective practice is considered a core constituent of the Physiotherapist's role in the United Kingdom (UK) [43], meaning pre-qualification Physiotherapy students in the UK are well equipped to engage with this.

Due to the potential personal and sensitive nature of students' experiences with death, and the cultural and spiritual aspects of PC, any educational input may require a flexible and responsive approach. Paal et al. [17] suggests that teachers need to 'be able to run and manage the session, create awareness and, if necessary, reduce students' anxiety', which may require flexibility to local requirements. Paal et al. [17] goes on to say that knowledge and competence in PC is necessary, which would be needed to ensure that educators are comfortable with the clinical reasoning of a PC approach. However, with Taylor and Bryan [18] suggesting there are as few as two hundred and four (out of fifty-one thousand physiotherapists) in the UK declaring PC as a specialty, the shortage of resources in this area could be another potential barrier to enabling utilisation of this expertise.

Another aspect of content delivery which is not covered in the papers is the practical/placement element of Physiotherapy education. It has been suggested previously that some practical/placement element of PC education is essential to embed the learning gained from theoretical education [44]. However, in a meta-analysis by Donne et al. [23] it was suggested that practical/placement-based education was not essential when looking at HCPs generally.

Again, it is difficult to draw conclusions as to what is the optimum method, length of time and which year of the course to deliver a PC curriculum from the papers reviewed. However, with three papers showing statistically significant improvement in attitudes and beliefs around PC, it can be suggested that a positive impact could be achieved in as little as six hours.

Outcome measures

All four papers used self-assessed Likert scale questionnaires to assess the change in attitudes and beliefs of Physiotherapy students. Likert scale questionnaires are commonly used and have been in

use since 1932 as a means of obtaining quantitative data from social science research [45]. Two studies [30,31] describe questionnaires utilising a 5-point scale, while one [33] describes a questionnaire utilising a 6-point scale. Kumar et al. [30] used an adapted version of the Neonatal Palliative Care Attitude scale [46] called the 'Physical Therapy in Palliative Care—knowledge, attitudes, beliefs, and experiences scale' (PTiPC-KABE). [AQ1] One study [32] used a combination of questionnaires utilising both a 5-point scale and a 100-point scale and was the only study to use validated questionnaires. These were the Willingness to Communicate Scale [28], and the Communication Apprehension regarding the Dying (CA-Dying) Scale [29]. The other studies either described using modified versions of pre-existing questionnaires (which were not tested for validity) [31] or did not describe where the questions came from [33].

The only paper not to find a statistical change in the attitudes and beliefs was the paper that had utilised the validated questionnaires [19]. The reason for the lack of statistical change observed may have been because the sample size was not large enough. The paper failed to show a power calculation. If such a calculation could be presented this would have also contributed to strengthening the quality of the evidence.

It has also been argued that while the Likert Scale is commonly used, it is not an accurate tool for measuring the responses gained [47]. This may mean that a more suitable and reliable questionnaire design, or an alternate methodology should be used to assess whether PC education influences Physiotherapy students' attitudes and beliefs around PC.

It could be noted that none of the papers used a summative assessment method for evaluating the changes gained from the educational intervention. It has been previously argued that summative assessment can be used to improve student engagement and drive achievement [48]. Therefore, the use of a more summative style of assessment, such as those suggested by Paal et al. [17], may give a truer picture of students' development. However, there is debate over these effects of summative assessment, and Harlen and Crick [48] suggest that it can have the opposite effect on motivation to learn and may disengage students from a topic.

Recommendations

The recommendation from this paper is that PC education should be implemented in the Physiotherapy curricula. The review of the literature suggests that PC education, at pre-qualification level, can have a positive impact on Physiotherapists' beliefs and attitudes towards PC. Once it is taught more widely, it can then be developed, refined, and eventually standardised leading to maximal benefit for Physiotherapy students.

A recommendation for this implementation has been given by the Council of Europe [11], suggesting that national bodies governing Physiotherapy education should ensure PC is covered within the

curricula, and a framework that the curriculum should aim to cover the basics of ten core competencies [37,38]. It can be suggested that these ten core competencies don't necessarily need to be covered in as much detail as outlined by Gamondi et al. [37], which aim to achieve a 'General Palliative Care' level of knowledge, but laying the foundations to achieve a 'Palliative Care Approach' level of knowledge could be sufficient to have a positive impact on Physiotherapy students' beliefs and attitudes [37]. Such an approach is suggested and outlined in Paal et al. [17].

Strengths and limitations

To the author's knowledge, this is the first review of the implementation of PC curriculum in Physiotherapy undergraduate education.

While this review was limited to papers published in peer-reviewed journals and published in English (as can be seen from the papers reviewed PC is an international concern so relevant papers in other languages may have been excluded) it is still apparent that there is a dearth of investigation into this area of Physiotherapy curricula, with only a few low level quality trials available for review. It would be reasonable to argue that if further research was done and reviewed, it would strengthen the evidence base in this area, and enable stronger conclusions to be drawn.

It can also be considered that the use of the search term 'education' may have unintentionally omitted other learning opportunities, such as placements, which are a core feature of the Physiotherapy degree process. This may have missed the opportunity to review the value of these learning environments in the development of PC attitudes and beliefs compared to didactic teaching.

Conclusion

PC is an essential component of comprehensive healthcare, in which Physiotherapy is a constituent part. PC content within the curriculum is still in its formative stages within Physiotherapy education and not widely implemented. While there is currently no consensus on the ideal method and format of how it should be delivered, there is moderate evidence to suggest that PC education, however delivered, can have a positive impact on Physiotherapy students' attitudes and beliefs towards PC.

Authors' contributor

Both authors contributed fully to this review and should be considered authors. David Cabrini-Back is a student Physiotherapist on the BSc (Hons) Physiotherapy programme at Bournemouth University. Professor Carol Clark is head of the Faculty of Social Sciences at Bournemouth University.

Disclosure statement

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