

‘Come, let’s exercise’: A qualitative analysis of undergraduate physiotherapy students’ perceptions of treating patients with cancer

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Background. Education and training of undergraduate physiotherapy students in exercise prescription to cancer patients have recently come under the spotlight, with studies highlighting the absence of this focus in training programmes in numerous countries. However, no literature investigating exercise prescription to cancer patients by physiotherapists in South Africa (SA) could be found.

Objectives. To explore the perceptions of final-year physiotherapy students at an SA university about their preparedness to include exercise in the management of cancer patients.

Methods. A qualitative study design was used, with focus groups as data collection method. Purposive sampling was applied that resulted in 13 students volunteering to participate in one of two focus group discussions. Ethical approval was obtained to conduct this study. A semi-structured interview guide was followed. Manual thematic analysis was conducted using Braun and Clarke’s six-step process.

Results. Two themes were identified, i.e. students’ lack of knowledge within the context of physiotherapy and their responses to prescribing exercises to cancer patients. The students’ lack of basic knowledge of cancer made them feel unsure of their role and unsafe in prescribing exercises to their patients. Many participants reported reacting emotionally to the complex and life-threatening nature of their patients’ condition. Participants further described a lack of debriefing channels to manage their feelings.

Conclusion. This study highlighted the need for foundational knowledge and skills to enable a safer transition for healthcare students to include exercises in the management of cancer patients. Future research should consider the impact of managing patients with life-threatening conditions on the emotional wellbeing of health professions students and their professional identity development.

Keywords: undergraduate, physiotherapy, cancer, exercise

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Cancer is a complex health condition and in recent years has been recognised as a chronic disease, with increasing numbers of cancer survivors living longer with side-effects of the disease and its management.^[1] The rising prevalence of cancer, and the increasing survival rate of cancer patients, means that healthcare professionals (HCPs) from all disciplines potentially have to manage patients who have cancer. HCPs should have comprehensive cancer-related knowledge, skills and attitudes to manage patients with cancer who are undergoing medical treatment or living with the side-effects of the disease and its management.^[2-4] HCPs should be able to effectively perform specific physical examination techniques and have the ability to communicate with cancer patients in a patient-centred way.^[3,5] This has highlighted the urgency to evaluate the education and training of HCPs to manage cancer patients’ healthcare needs across the disease trajectory.^[4,5] By implication, health professions curricula should prepare students to effectively manage patients with cancer.^[2,5-7]

Physiotherapists are regarded as health professionals with a key focus on exercise rehabilitation for patients with various conditions.^[5,8] Exercise rehabilitation, as a management intervention, can be implemented throughout the cancer disease trajectory to address impairments, as well as functional and participation restrictions associated with cancer and its management.^[9,10] Physiotherapists working in oncology healthcare settings in Ireland and the UK reported a lack of education on the topic of cancer

and exercise in two survey studies.^[11,12] Furthermore, a qualitative study of rehabilitation professionals working in primary care in Sweden, including physiotherapists, reported a lack of knowledge regarding the role of physiotherapy in the promotion of physical activity among cancer patients, as well as the side-effects of cancer and its treatment.^[13] No literature on South African (SA) physiotherapists’ knowledge and inclusion of exercise in the management of cancer patients could be found. Therefore, the purpose of this study was to explore the level of knowledge and perceptions of preparedness of final-year physiotherapy students at an SA university to include exercise in the management of cancer patients.

Methods

A phenomenological research approach was adopted within the qualitative research design.

The choice of research design allowed for deep exploration of the lived experiences^[14] of undergraduate physiotherapy students regarding their clinical encounters with cancer patients.

The target population for this study was the 2019 cohort of fourth-year physiotherapy students ($n=48$) at Stellenbosch University. The aim was specifically to invite students who had been exposed to managing a patient with any type of or in any stage of cancer during either the 2018 and/or 2019 clinical rotations (work-based-placed learning). During clinical

rotations students completed statistical lists indicating the main diagnoses of patients. These lists were reviewed in 2019 and students who had the requisite exposure were invited to participate in this study voluntarily. An email invitation, including the study aim and objectives, was sent to the identified students who had the requisite exposure to cancer patients. One follow-up email was sent to this group two weeks later. Furthermore, during a class meeting, more participants were invited by explaining the purpose and objectives of the study. A total of 14 students volunteered to participate in the study by submitting a signed informed consent letter.

Focus group discussions were used to gather the thoughts, feelings and experiences of the study participants regarding their shared experiences of managing patients with cancer.^[15] Before the focus group discussions, a pilot interview was held with one of the students who provided informed consent. This interview helped to establish the suitability and clarity of the interview guide and determine the approximate time and logistics required for the focus groups. The data from the pilot interview were excluded from the data analysis of this study. The focus group interview guide consisted of three sections that focused on: (i) demographic information; (ii) physical skills; and (iii) emotions. The development of the open-ended questions was informed by the study aim and objectives, as well as information gained from key literature sources.^[11,12] The guide provided a framework within which participants could direct the conversation in the group.^[16] In turn, the focus group facilitator could re-direct the group's conversation by posing questions to ensure that all topics of the interview schedule were covered.^[16]

Two focus group discussions were held one day apart during an on-campus theory week for the physiotherapy students during the first week of August 2019. The focus groups were conducted in a neutral venue in the Faculty of Medicine and Health Sciences of Stellenbosch University. The group discussions were conducted by an experienced facilitator, unknown to the fourth-year physiotherapy group and not affiliated to the physiotherapy division. The focus groups consisted of six and seven members respectively, with predominantly female students present. The focus group discussions lasted 45 and 50 minutes, respectively. Study participants were reminded of their right to withdraw from the study at any time.

The two focus group discussions were recorded via a digital audio recorder, with the recordings transcribed by an independent and qualified transcriber. Transcribed recordings were kept in a coded folder on a password-protected laptop that was locked in a secure cabinet. Coded numbering was used to deidentify focus group members to allow for anonymity of the study participants.

Manual thematic analysis was used to analyse the entire data set. The social, cultural and structural aspects that could influence the participants' experiences were considered. The six-step process described by Braun and Clarke,^[17] which is recursive in nature and allows the researcher to review previous steps while finding new data or themes, was followed.^[18] The six steps followed by the research team included: (i) familiarising ourselves with the data; (ii) generating initial codes; (iii) searching for themes; (iv) reviewing themes; (v) defining and naming themes; and (vi) producing the report or manuscript.^[18]

Throughout the data collection and analysis process, the researchers used various methods to enhance the trustworthiness of the data.^[16] The researcher read and compared the transcripts while listening to the audio recordings of the focus groups to ensure the correctness of the data. The focus group facilitator concurred that the transcripts were accurate.

The transcribed data were sent to four focus group participants to verify the correctness of the information (member checking).^[18] Reflexivity was employed using 'bracketing' at each stage of the research process^[15] by exploring and setting aside the researchers' own beliefs and views about the topic being studied.

Ethical approval to conduct this study was obtained from the Health Research Ethics Committee of Stellenbosch University (ref. no. S19/03/052).

Results

In this article we focus on two over-arching themes that were identified during analysis, i.e.: (i) students' understanding of the role of physiotherapy in the context of cancer; and (ii) students' responses to including exercises in the management of cancer patients.

Students' understanding of the role of physiotherapy in the context of cancer

Students' understanding of the role of physiotherapy in the context of cancer was influenced by their limited knowledge of cancer and their resulting uncertainty about how physiotherapy is practised in the context of cancer.

Lack of knowledge about cancer

Students reported that they were not taught content on cancer during their degree programme. In the first quote, the student refers to 'tools in my bag', referring to the skills needed to be able to manage the cancer patient:

'For me I think, when I approach the patient and I find out they have cancer, it's like my brain just doesn't make that switch. It's almost like a lack of tools, because you don't know how to approach the patient actually, because I don't feel like I had the tools in my bag.' (P1, FG1)

Students felt their limited knowledge had an impact on their ability to identify relevant precautions and contraindications during the management of a cancer patient:

'And then the knowledge gap – like we've all been saying that we have a knowledge gap with regards to the precautions and contraindications and because there is so many different types of cancer, then also it's like learning those precautions and contraindications to the different types of cancers.' (P1, FG2)

Uncertainty regarding the role of physiotherapy

Students' lack of knowledge about cancer had a direct impact on how they perceived their role in treating a patient with cancer. It appeared that students were focused only on the curative role of physiotherapy on a condition, instead of considering the role of prevention, promotion and rehabilitation.

Students recognised that when they received a referral for a patient with cancer, it was more likely owing to a condition that fell within their current perception of what the role of physiotherapy is. However, the role of physiotherapy in the management of patients with cancer was unclear to them:

'We don't get referrals because the patient has cancer, because we can't do anything about the cancer itself. It's more about the side-effects maybe or the patient not feeling great and needing to get up or needing help with assistive device ... It's either their femur got fractured or they have secretions on their lungs or something like that ...' (P4, FG2)

Their uncertainty about the role of physiotherapy in the management of cancer was further exacerbated by a need to know the indications for physiotherapy for such a patient:

'Is this patient even ... do they need physio in the first place? Are we treating because the cancer is so bad and now, we have to treat function? Is it ... are we treating a secondary complication? Is this person here because there's a femur fracture and he has cancer? So, do we treat the femur fracture? So, information with regards to, are we needed and what are we needed for?' (P2, FG2)

The students' uncertainty of their role in the management of patients with cancer also appeared to influence their perspective in terms of the importance of being exposed to cancer patients while they were still at undergraduate level, with some feeling conflicted as to whether such exposure was necessary:

'I don't know if cancer is one of the main things that we need to focus on as undergraduates, so I'm a bit torn with how much energy we need to put into that, versus maybe more ortho or ...' (P4, FG2)

A further area of uncertainty for the students related to their role as physiotherapists, which manifested when patients asked for more information and a more extensive explanation of their condition and/or its prognosis. Students felt unprepared and conflicted by their obligation to address the patients' questions while remaining within their ethical boundaries as HCPs:

'We shouldn't be the first person telling this. Like ethically there are issues with that. But we have never been counselled. What we can say, what we can't. I mean the list will be extensive, but there should be some basic guidelines - like let's say with cancer: what can we say; what do we discuss; when do we go to the doctor - that kind of thing. They just say: "Refer to us", but refer how? You know? A little more detail in that sense, I think.' (P2, FG1)

Uncertainty about exercises for cancer patients

There was a mixed response from the students as to whether they would include exercise as a management strategy for patients with cancer. Some of the students were very uncertain about whether they should prescribe exercises, the type of exercises to include, as well as the intensity level of exercise for patients with cancer:

'... with the one patient that I saw for six weeks - he had osteosarcoma and he had a big POP [plaster of Paris] on and then I'm supposed to exercise him and get him out and it was so confusing as to how much exercise you can actually do.' (P4, FG2)

Students' responses to providing care to cancer patients

Over their 2 years of clinical training, some of the students in this group had exposure to the management of patients after mastectomies due to breast cancer. These students appeared more knowledgeable about the inclusion of exercise, the purpose thereof, the type of exercises to include, as well as the format that exercise sessions could take. Furthermore, the holistic and patient-centred approach mentioned by one of the study participants showed a deeper level of understanding of the role of health professionals in the management of this vulnerable population group:

'I also saw a few mastectomy patients, ... so, I thought of making a group, like putting them together and to see how they interact with each other

as well and the social support that they get, because for a woman to get a mastectomy - it's very traumatic for some of them, and to have that support is also very effective.' (P3, FG1)

Furthermore, students shared how they responded to providing care to their patient, describing a lack of confidence and their emotional responses to treating patients with cancer. They also shared how they dealt with these challenges.

Lack of confidence

Apart from influencing the extent to which students felt that they could confidently identify relevant precautions and contraindications, the lack of basic knowledge and 'tools' also made them feel less confident when they had to manage a patient with cancer, and they were unsure of how to approach the patient:

'I think when you hear "cancer" you are kind of scared to treat the patient, because you're not as confident. Just, even though you can't like specifically "touch" the cancer ...' (P1, FG1)

'And then with another cancer patient I got, I was so scared because it was my first block and first ... in third year and they told me last minute, in the last thirty minutes that I must quickly go and see this cancer patient and I was like: "Oh no, I don't know what to do."' (P4, FG2)

Emotional responses to treating cancer patients

Students also described being shocked by, and unprepared for, the side-effects of chemotherapy on their patients, as well as the fast deterioration of the patients' functional abilities:

'I was a bit torn, because sometimes I felt so emotional if I like "Come let's exercise", because it's my job, but I don't know personally how he is feeling or that he is not feeling well, and I think that came with - not lack of knowledge, but I just didn't fully grasp like, what's the effect of the chemo on him. I didn't know that they throw up that much. Like, should I come after the chemo, before the chemo or like, when is the best time for me to intervene?"' (P3, FG2)

Students expressed concern and were scared about including exercise for patients with cancer due to the possibility of the cancer metastasising, especially if exercise involved movement of the area where the cancer was located:

'I wouldn't really want to do any type of exercises - I don't want to further the metastasis or cause a metastasis ... So just from my own experience I wouldn't want to do exercise on any big form of tumours or anything along those lines if it is in a joint or bone.' (P2, FG2)

The physiotherapy students' concerns for doing exercises with a cancer patient were accentuated when witnessing a sudden worsening in a patient's condition directly after performing an exercise:

'Sometimes the doctors aren't there, and the patient just started complaining of this hectic-like, headache and then her pillow was full of the fluid, and I just stopped right there and I was so scared. So, then I was like, "did I do something wrong?" I didn't make the exercise extra hard, but maybe something happened through the night? No one checked up on her before I got to her, and she seemed fine and then that happened and then I just stopped.'" (P3, FG2)

Dealing with patients whose health deteriorated and/or who died

Students described having difficulty dealing with their own emotions, especially when treating patients in the terminal stage of life, as well as with patients close to their own age group:

'I saw a patient who had a tumour in his spinal cord, which was quite bad. His family came to fetch him before they could do an operation and then he wasn't allowed to sit up at all, otherwise he would crush his spine. His family said it's fine, they are just going to take him to the *sangoma* [traditional cultural healer] to heal that. So that was quite sad, because he was only twenty-three years old and still studying.' (P4, FG2)

'She had cancer: a tumour in her bowel and she was terminal at this stage. I saw her the Thursday, and she was standing and by the following Wednesday or Thursday she was on her deathbed ... so I wasn't really emotionally prepared for that.' (P2, FG2)

Seeking help and/or coping mechanisms

Students reported on strategies to address their lack of knowledge or to inform their inclusion of exercise for patients with cancer. Some of them asked for direction or clarification from the referring doctors, whereas others did their own research on the type of cancer and management options:

'I definitely spoke to the doctors a lot to see what their reason was for referral, because sometimes their referral was just so quick: mobilisation. But then actually hearing what their reasoning behind it was or why they want this ... Do they maybe want to send the patient home for the next two days for them to come back to get chemo or do they want us more to focus on like, secretions ...' (P4, FG2)

'I would say I feel confident in working with cancer patients. Yes, because I have a few family members who also have cancer and that inspired me to do extra research. It inspired me to do some extra research and so I guess I just have a liking of the field.' (P3, FG1)

Discussion

The main aim of this study was to explore the perceptions of preparedness of final-year physiotherapy students to include exercise as a management intervention for patients with cancer. From this study it became clear that several factors influenced the inclusion of exercise in this context. The study participants experienced a great deal of uncertainty as to the need for their involvement in the management of cancer patients, and about the safety of their exercise interventions. This uncertainty led to a cascade of emotional turmoil for them. These findings are discussed in greater detail, considering the prevailing literature, in the sections below.

Becoming a physiotherapist

The study findings highlight the interplay between the study participants' learning needs and their identity development as physiotherapists (their 'being and becoming') during the management of cancer patients.^[19] Many of the study participants experienced the interaction with a cancer patient as complex and perplexing. These experiences were framed by the way in which they, as individuals, responded to environmental factors and the community of practice in which they were functioning.

The study participants reported on what they perceived as a lack of basic knowledge of cancer and how this influenced their confidence to practise, similarly to what was reported by primary healthcare providers in Sweden.^[13] This perceived lack of knowledge related to the underlying pathology of cancer and the impact on the presentation of a cancer patient.

During clinical rotations, physiotherapy students are expected to provide a healthcare service to patients, while drawing on their theoretical knowledge gained from the pre-clinical years.^[5] For this group of students, it was quite difficult to implement their knowledge into practice due to a limited knowledge base. This illustrates the lack of constructive alignment,^[20] as the learning outcomes of the pre-clinical years were not aligned with the expectations and demands of the clinical years.^[5,6]

Providing cancer education during the undergraduate clinical years is therefore encouraged so that it is co-ordinated with students' clinical rotations and exposure to the management of cancer patients.^[5] Even though this group of students had exposure to cancer patients during their clinical rotations, they felt that the lack of basic knowledge of cancer impeded their holistic management of these patients, as well as their own learning and development in becoming a physiotherapist. Learning during clinical rotations can be influenced by several factors, e.g. the clinical environment, interaction between colleagues, guidance from educators and exposure to different patients.^[5,6,21]

The students' perceived lack of knowledge of cancer and its management, as mentioned above, led them to feel uncertain of what their role as physiotherapists would be in the management of patients with cancer. Miller's pyramid, which is an assessment heuristic technique, offers a good illustration of how the learning of a health professions student could be scaffolded to enable them to provide a healthcare service to a client (does/action).^[22,23] The base of Miller's pyramid is assigned to knowledge (knows), which is foundational to what follows, i.e. competence (knows how), then performance (shows how) and finally the action (does).

Students had a sound knowledge of exercise types and dosages but lacked knowledge on how to adapt these exercises to a patient who was dealing with the side-effects of cancer and its medical management. Students could build from this clinical encounter through identification of learning objectives and sourcing of literature to enhance their learning from this clinical situation, as illustrated in the adult learning model of Taylor and Hamdy.^[22] Some students demonstrated this aspect beautifully by reflecting on their own learning through what is termed the consolidation phase,^[22] whereas others did not appear to have progressed past the dissonance phase of the adult learning model (reflection on knowledge base and finding it incomplete). This highlights the importance of the learner's motivation, stage of development and preferred learning approach, which could be influential in learning and developing.^[22] The influence of a positive learning environment with feedback channels from more experienced clinical physiotherapists could be the catalyst needed by students to progress in their learning cycle.^[5,21]

Dealing with the cancer patient

Study participants reported emotional distress during their management of patients with cancer. The students were especially affected when managing patients with advanced forms of cancer, those in the final stages of life and nearing death, as well as those who were young or of similar age as the students themselves. This emotional reaction of the study participants can be regarded as normal in this setting, considering the condition the patient with whom they were presented. During the clinical encounter with the cancer patient, students were exposed to the patient's emotions, as well as their own emotions. A cancer diagnosis is associated with a high psychosocial burden and is linked with anxiety and depressive symptoms in patients.^[2,4] High-quality communication skills are required to deal with cancer patients and their psychosocial needs.^[2] Physiotherapists should be

educated in recognising and managing the patient's signs and symptoms during sessions, but also be aware of and seek help for the management of their own emotions. This has implications not only for curriculum development, but also for how student learning is supported.^[5,6]

A concerning finding from this study was that students mentioned no channels or mechanisms to debrief the highly emotional and distressing experiences during clinical sessions with cancer patients. If students are unable to manage their own emotional reactions, and they are not supported to do so, it can be detrimental to their mental wellbeing and influence their learning from the clinical encounter.^[23] Students reported concern and anxiety for the patient's safety during clinical encounters due to their lack of knowledge of the relevant precautions and contraindications to consider during patient management. Feeling threatened or unsafe in a clinical encounter with a patient can also have a negative impact on the student's learning from the encounter.^[23] The high threat value within some of these clinical encounters with cancer patients could detrimentally impact the students' learning and identity development.^[20]

The aim of the physiotherapy undergraduate curriculum is to produce and deliver graduates with the qualities, characteristics, knowledge, skills and attitudes to provide a healthcare service specific to the needs of the communities they will serve, including patients affected with cancer.^[5,6] The lack of coverage of cancer as a condition, and the role physiotherapy must play in the management of patients with this condition, can negatively affect the development of the undergraduate physiotherapy students' identity formation. Apart from covering cancer as a topic in the curriculum, Cruess *et al.*^[24] stated that it is also important to include the process of professional identity formation. By making students aware of this concept, the links to professionalism and socialisation can also be clearer and better understood by them. Including these topics in the curriculum can empower undergraduate physiotherapy students to track and monitor their own development as they progress through their studies,^[24] and to ask for assistance when they are concerned about their development.

Clinical implications

Health professions curricula are known to be very full, with a number of foci vying for time and space. Considering the rising prevalence of cancer and the survival rate of cancer patients in SA, curriculum developers may need to revisit the foci and time allocation within curricula. The current evidence base promotes exercise for cancer patients throughout the disease process, as it improves the quality of life of patients.^[5,7] It can be argued, therefore, that the education of undergraduate physiotherapy students regarding the purpose of and the need for exercise for the cancer patient population should be considered during curricula renewal. Based on these reasons, together with the participating students' feedback in this study, the education of physiotherapy students on the precautions and contraindications needed for consideration during the management of cancer patients, is imperative. The inclusion of this information can not only contribute to the safe management of cancer patients but also aid the confidence of the students during exercise interventions.

To enable a better understanding and knowledge of the multidisciplinary team and each team member's role in the care of cancer patients, teaching undergraduate health professions students from different programmes together on cancer and its management, could facilitate this process.^[6] Furthermore, during clinical rotations, teaching and learning activities, such as ward rounds,

could facilitate a better understanding of the roles and responsibilities of the different team members^[5,6] and enhance interprofessional education and training. This sharing of knowledge and information could add to the patient-centred focus of management and quality of care that cancer patients receive and impact their treatment outcomes.

Reports of the participating students on their emotional distress during the management of cancer patients, are a matter of concern. No debriefing mechanisms were reported by these students. Such events could impact the students' long-term psychological wellbeing. The implementation of a wellness programme and/or debriefing channels in the physiotherapy division or the greater faculty would be beneficial to address this aspect.

Study strengths and limitations

This study employed rigorous methodological processes to ensure the trustworthiness of the data generated. The inclusion of a neutral focus group facilitator and the pilot study enhanced the study processes.

Implications that emerge from this study should be made with caution, as the findings are based on a small study sample from one physiotherapy division. Although all efforts were made to invite all relevant fourth-year physiotherapy students who had exposure to the management of patients with cancer during their clinical rotations, some students may have been omitted in the process.

Future research

Based on the findings of this study, a thorough evaluation of the physiotherapy curriculum content would provide justification for these study participants' views that they covered little to no content on cancer, and the role of physiotherapy in the management of cancer patients. A useful further avenue of future research would be to collaborate with the physiotherapy departments of the other six universities in SA that offer this programme, to determine the content and extent to which cancer and rehabilitation of cancer patients are covered in the respective curricula. A further suggestion is to form a task team from the various universities to take this initiative forward and to work on developing key outcomes and learning objectives for cancer rehabilitation. Such an initiative would have a great impact on undergraduate physiotherapy students' preparedness to manage patients with cancer and to include exercise in their management programmes. Better prepared physiotherapy students can result in better quality of healthcare delivery to cancer patients, with the ultimate aim of promoting the health, wellbeing and quality of life of these patients.

Conclusion

The participating students felt insufficiently prepared to include exercise as a management strategy for patients with cancer. This sense of under-preparedness related to the students' uncertainty regarding the role of physiotherapy in the management of cancer patients because of their limited knowledge of cancer, its medical management and the resultant effects on the cancer patient. The availability and use of support systems for the students during their clinical rotations and management of cancer patients appeared limited. There were no reports from the students on how they managed their emotional distress or regarding debriefing channels. A clearer understanding of the role of the physiotherapist in the management of cancer patients could enhance the development of the emerging professional identity of the undergraduate physiotherapy student.

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