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- Pregnancy related pelvic girdle pain
- Fitness to practise in physiotherapy
- Wheelchair users' adjustment to amputation
- The use of key health questions for patient initial assessment
- Osteoarthritis treatment options in New Zealand

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The role of physiotherapy in managing pregnancy related pelvic girdle pain

Pregnancy related pelvic girdle pain (PPGP) is a common musculoskeletal condition with a prevalence ranging from 23% to 33% in New Zealand and Australia (Ashby & Johnson, 2015, Pierce, Homer, Dahlen, & King, 2012). Most women with PPGP report moderate to severe pain (Pierce et al., 2012). In addition, the ability to perform everyday activities such as getting up from a chair, bending and walking is affected (Elden, Ladfors, Olsen, Ostgaard, & Hagberg, 2005). Furthermore, a significant proportion of women report a persistence of symptoms following childbirth suggesting that the condition is not self-resolving (Elden, Gutke, Kjellby-Wendt, Fagevik-Olsen, & Ostgaard, 2016). With the pain and functional restrictions during and following pregnancy, PPGP is now considered a major public health issue (Elden, Lundgren, & Robertson, 2014).

Generally, women with PPGP report beneficial effects following physiotherapy management (Chang, Jensen, & Lai, 2015, Fishburn & Cooper, 2015, Pierce et al., 2012). For example, an Australian study reported that 75% of women had improvement in symptoms following physiotherapy (Pierce et al., 2012). Similarly, a recent clinical trial found a statistically significant and clinically meaningful effect on pain and function following a single physiotherapy treatment session (Ceprnja & Gupta, submitted for publication). In this study, pain reduced from an average (SD) of 5.6 (2.7) before treatment to 2.8 (2.2) after physiotherapy when measured using a visual analogue scale (Ceprnja & Gupta, submitted for publication). Importantly, no adverse events have been reported following physiotherapy management indicating that physiotherapy is a very safe treatment option for PPGP (Gutke, Betten, Degerskär, Pousette, & Olsen, 2015).

Unfortunately, however, not all women with PPGP are offered physiotherapy as a treatment option. This is an anecdotal observation that is supported by research findings. An Australian study reported that only 16 of 45 (35%) women reporting pain to a healthcare provider received treatment (Pierce et al., 2012). The number of women who received treatment for PPGP was even lower in a study conducted in China, with only 9% receiving physiotherapy (Chang et al., 2015). Unfortunately, little is known about the reasons for the disparity between the number of women affected by PPGP and the number that receive treatment. It is possible that health care providers, such as doctors, midwives and nurses, may not be referring women to physiotherapy due to a lack of knowledge about the effectiveness and safety of physiotherapy treatment for PPGP. Further, it is plausible that women with PPGP may also be unaware of the available treatment options. There needs to be a greater awareness that physiotherapy in PPGP is a safe and effective treatment strategy in order to reduce the missed opportunities for women to receive care.

Education is the key to informing pregnant women and their healthcare providers about physiotherapy in PPGP. Many pregnant women report that they “were unprepared for PPGP”, “did not know much about the condition” and “received little recognition and support” (Elden et al., 2014, Persson, Winkvist, Dahlgren, & Mogren, 2013). Indeed, the growth in web-based discussion forums among pregnant women suggests that they seek education, information and support (Fredriksen, Harris, & Moland, 2016). Information about PPGP and how they can access physiotherapy for treatment must be provided to all pregnant women by their health care providers early in pregnancy. In a digitally literate world, there are many opportunities for appropriate evidence-based information to be disseminated to health care providers and pregnant women.

There is also an important role for physiotherapy in PPGP beyond pregnancy. Persistent pain is common following pregnancy with up to 10% of women reporting severe consequences 11 years later (Elden et al., 2016). Managing a greater proportion of women with PPGP may identify those at risk of developing chronic pain and hence prevent persistence of symptoms post-partum. Considering persistent PPGP, as other chronic pain conditions, is associated with reduced health related quality of life (Elden et al., 2016), early assessment and treatment of all women with PPGP must be a health priority.

The way forward to better care for women with PPGP is through education and collaboration. Physiotherapy has an integral role within the multidisciplinary team to advocate for recognition of PPGP as a treatable condition. Information about the safety and effectiveness of physiotherapy management must be widely available to reassure all women with PPGP that pain and disability can be minimised. Physiotherapists are well placed to advocate for improvements in health pathways and closer collaborations between health care providers to ensure women with PPGP receive the best care available in order to meet their health needs and expectations. Such changes in health care practice have the potential to increase the number of women receiving physiotherapy and, in doing so, improve the experiences of women with PPGP during pregnancy and beyond.

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Exploring student fitness to practise in physiotherapy – strategies from the coalface

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ABSTRACT

Health professionals have high rates of burnout. Their work satisfaction is also affected by supervising students with fitness to practise (FTP) issues. FTP issues include those regarding clinical competence, professionalism and physical and/or mental health. Strategies to support health professional clinical educators are warranted but have not yet been documented. This project investigated insights into strategies that support the supervision of students with FTP issues. Participants included approximately 45 attendees at the Personally Arranged Learning Session (PeArL) at the Australian Physiotherapy Association (APA) Conference Melbourne, October 2013 and approximately 20 attendees at the Clinical Education Managers Australia and New Zealand (CEMANZ) meeting in April 2015. Clinical educators discussed peer-assisted learning and buddy systems to support clinical educators and students. There was a preference indicated for feed-forward mechanisms to support student learning needs. Educators valued faculty staff as important supports particularly when supervising students with mental health concerns. Mentoring for clinical educators was also encouraged to help support staff new to the educator role. The importance of teamwork and regular breaks from clinical education were discussed. Clinical education managers discussed the inherent requirements of physiotherapy courses including strategies to flag and support students with FTP issues. Strategies to support clinical educators when supervising students with FTP issues were described.

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Key words: Clinical education, Fitness to practise, Health enhancement, Physiotherapy.

INTRODUCTION

In Australia, physiotherapy students are supervised by clinical educators who are usually clinicians working in health services. In some parts of New Zealand these clinicians are known as clinical supervisors. For consistency, we will use the Australian term in this paper.

Health professionals including clinical educators experience distress and challenges to personal wellbeing (Balogun et al., 2002). Wellbeing is recognised as being mentally challenged, enjoying work and achieving success in one's personal and professional life (Shanafelt and Dyrbye, 2012). Student fitness to practise (FTP) issues have been found to impact on clinical educators' wellbeing (Lo et al., 2017a). According to Parker (2006) FTP issues are those that impact on clinical competence, physical and/or mental health and professionalism.

Student FTP issues also impact on clinical educators' work satisfaction. Of a sample of 75 clinical educators, 83% reported that physiotherapy student FTP issues affect their work satisfaction (Lo et al., 2017a). This is due to time pressures, lack of appreciation and quality of care conflict. Quality of care conflict describes how an educator balances allowing students to learn or gain independence while maintaining effective treatments for clients (Lo et al., 2017a).

The more generalised underperforming student is also a source of educator stress. When supervising underperforming students, Bearman and colleagues (2012) found that physiotherapy clinical educators tend to provide more of the same strategies and more of themselves. This can further impact on educators' wellbeing.

The study of the value of students in the workplace has focused on the benefits of improved staff recruitment and creation of a 'learning environment' (Baldry Currens and Bithell, 2000). However, with current demands on the healthcare system and workforce shortages, there are concerns about the impact of student supervision on service productivity and clinician burnout.

Burnout is characterised by a state of emotional, mental, and physical exhaustion combined with reduced personal accomplishment caused by prolonged stress (Maslach and Jackson 1981). In a sample of 66 newly graduated physiotherapists, 60% showed moderate to high levels of emotional exhaustion (Scutter and Goold, 1995). This study showed that physiotherapists within the first five years after graduation demonstrate higher levels of burnout than those with a longer history of work. However, this is not necessarily attributable to student supervision (Solowij, 1995). Some literature exists regarding strategies to improve burnout and improve self-care in health practitioners (Skovholt and Trotter-Mathison, 2014). One strategy that has been helpful is the support offered by university academic staff with nursing preceptors more likely to supervise students in the future if academic support is provided (Luhanga et al., 2008a). Another example is the model of education at the University of Otago which involves experienced clinicians employed by the University making weekly visits to students while they are on placement (Higgs, 2017). A further strategy shown to improve clinician wellbeing is mindfulness, the quality of being attentive to the present moment (Krasner et al., 2009).

The key reason for the present study was to elucidate academics' and clinical educators' perceptions of supporting students with FTP issues. The research question to be answered was *"How do we support the supervision of students with FTP issues more effectively?"*

METHODS

Data were collected on two separate occasions. The first was at an Australian Physiotherapy Association conference session in 2013. The second was at a meeting of physiotherapy Clinical Education Managers from Australia and New Zealand (CEMANZ) held in 2015. Ethics approval was granted by Monash University Human Research Ethics Committee, approval number CF10/1321 – 2010000703.

Design

A qualitative design was used to gather information on participants' perceptions of FTP.

Population

The conference session was a Personally Arranged Learning (PeArL) Session entitled 'Supervising students with fitness to practise issues – how do we support clinicians more effectively?'(Lo et al., 2013). The PeArL session was 45 minutes in duration with the presenter and participants considered equals discussing common problems. The initial presentation was approximately 5 minutes duration including three slides. The remainder of the session was a facilitated discussion framed around three challenging questions that the presenters were grappling with. Attendees at this session included tertiary education providers from physiotherapy programmes and physiotherapy clinical educators.

The lead author was invited to a Clinical Education Managers from Australia and New Zealand (CEMANZ) meeting as part of a FTP discussion. A component of the agenda included a one hour focus group on student FTP. The author presented some information on the current research on FTP (Lo et al., 2017b, Lo et al., 2014, McGurgan et al., 2010, Parker, 2006) but was particularly interested in finding out how participants perceived FTP. In order to facilitate discussion about FTP, participants were asked two focus questions: *What do other universities do?* and *What needs further work?* The CEMANZ meeting included approximately 20 physiotherapy clinical education managers from tertiary institutions across Australia and New Zealand. The clinical education managers are university staff who oversee and organise clinical placements.

Data collection

All PeArL participants were provided with an explanatory statement about the project and asked to contact the lead investigator if they did not consent to the data being used for research purposes. Our ethics approval allowed us to use de-identified written, audio and video data recorded in this session. In a facilitated discussion participants were asked to respond to three questions: *1. What strategies support clinical educators' wellbeing when managing students with FTP issues?* 2. *How can we create a culture that is supportive of clinician wellbeing?* 3. *What can educators do in their daily practice to support their wellbeing?*

Written notes were used to record the content of the PeArL session. The notes were recorded by one researcher (HC) as the session was conducted. These were verified by another researcher (KL) at the end of the session. Participants were provided with an opportunity during the session to view the notes and suggest corrections for inclusion to minimise interpretive bias.

Approval was also granted to use de-identified written, audio and video data recorded at a CEMANZ meeting in Queensland, April 2015. Consent was gained from all meeting attendees prior to the commencement of the meeting by either an electronic consent form or a paper-based form for those who had not given prior consent. Due to an error in the audio recording, written notes were recorded by a researcher (KL) and verified by attendees. These notes were used to record the outcomes of this meeting. We were therefore unable to transcribe written quotes to illustrate points made in this meeting for the purpose of this paper.

Data analysis

The qualitative data were summarised independently by two researchers. There was a period of consensus to determine whether the summaries reflected the clinical educators' and physiotherapy tertiary education representatives' key messages. Data were then recoded independently by both investigators (HC and KL) and analysed into the themes using the thematic analysis process described by Braun and Clarke (2006).

RESULTS

Strategies to support clinical educators

Australian Physiotherapy Association conference 2013 PeArL session

1. *What strategies support clinical educators' wellbeing when managing students with FTP issues?*

The following themes were identified from participant discussion:

Types of FTP issues: Educators discussed that students with clinical competence issues were not so difficult to manage. Educators felt that mental health issues were much more challenging to ascertain and manage, particularly if undisclosed.

Support: Educators stated that staff members needed some peer-support / advice. Supportive relationships with the university were helpful, involving good links to key people in the tertiary education sector. These faculty members act like a mediator.

Feed forward information: Handovers to feed forward information and openly disclose issues were helpful to address factors such as anxiety.

Early identification: Early identification was highlighted as a very useful strategy. This needed the support of senior staff and structures in place to reduce angst in junior educators.

Too much care: A question was posed, whether educators care too much due to the caring nature of the profession. Participants wanted advice as to where to draw the line as often students were kept closely supervised when there were issues. Educators were not sure when to let students out of their reach. Educators asked "*Is it a clinician's responsibility to get students over the line?*" The consensus was that seniors helped advise less experienced educators. However the main consideration is to provide a clinical placement with no expectation to pass the student. There were comments about physiotherapists having to work out their educator identity, many said they used their nurturing nature to benefit the student. There were discussions on the importance of autonomy, role definition, and boundaries for the clinical educators.

Labelling difficult students: There were concerns about labelling or defining the difficult student and whether there may be associated FTP issues present.

Educator preparation: There were also concerns regarding the education of junior staff who are often perceived to be *"thrown"* into the educator role with limited to no preparation. It was also noted that educators themselves may not be fit to practise.

2. *How can we create a culture that is supportive of clinician wellbeing?*

From this question arose the following themes:

Workload: 12 weeks of supervising students leads to exhaustion and there may be a need to change the continuous load on educators over this prolonged period. The importance of giving staff breaks was highlighted, as was the importance of teamwork.

Peer-learning: There were discussions about the positive aspects of peer-learning and that there were benefits in having two students on placement at a time. This enabled students to talk and provide support to each other independent of the supervisor. This also gave the supervisors a break.

3. *What can educators do in their daily practice to support their wellbeing?*

Regular breaks: There was a need for structured downtime or strategic breaks to rejuvenate educators. This included strategies to help them have time to eat each day and do their other administrative and clinical tasks.

Strategies of relevance to university staff in supporting students

CEMANZ meeting, Queensland, April 2015

"*How do we support the supervision of students with FTP issues more effectively?*"

The following themes arose during this meeting to answer this question.

1. *What do various universities do?*

Inherent requirements: Inherent requirements are the components of a course/unit that are seen as essential skills to achieve the core learning outcomes of the course/unit. The University of Sydney has a list detailing the inherent requirements of the physiotherapy course including communication, observation and sensory tasks, physical and intellectual tasks and interpersonal and social interactions (The University of Sydney, 2014a). For students with physical, intellectual, cultural, religious or other factors that impact on their ability to meet these requirements, the University will make reasonable adjustments to help support them. These inherent requirements are made transparent to both prospective and current students thus enabling students to make informed decisions about the course and their associated career path. Monash University also have a "Practical Considerations for Clinical Components of the Bachelor of Physiotherapy Degree" document that has a list of the physical, mobility, mental and emotional requirements of the course. This encourages students to self-declare whether they wish to discuss any FTP issues with an academic staff member (Lo et al., 2017b).

Registering practitioners was also discussed. All students are required to apply to the Australian Health Practitioner Regulation Agency (AHPRA) to register as a health practitioner. Universities must submit the details of any students that are eligible for graduation to the AHPRA board. Thus, once the course requirements are fulfilled, students are eligible to become primary health practitioners.

Feed-forward information: Students were encouraged to discuss what the issues are and the strategies they have in place.

Additional preparation for clinical placements: Some universities such as Melbourne University offer extra tutorials for at-risk students to help prepare them for clinical placements. Participants then asked "*What are the different issues that trigger supports to be put in place in preparation for clinic?*" The two main factors specified were learning issues and communication issues, in particular non-English speaking students and students with autism spectrum disorder were referenced. There was a request for discussion and a sharing of any practices that support these particular student issues.

2. *What needs further work?*

Reporting FTP issues to Australian Health Practitioner Regulation Agency (AHPRA): A question asked by participants was *"Can the university report FTP issues to AHPRA?"* Australian universities are mandated to disclose issues of student 'notifiable conduct' to AHPRA. A second question posed was '*What triggers initiate an AHPRA report?*" Issues of notifiable conduct include:

> "*Practising while intoxicated by alcohol or drugs, sexual misconduct in the practise of the profession, placing the public at risk of substantial harm because of an impairment (health issue), or placing the public at risk because of a significant departure from accepted professional standards*" (Australian Health Practitioner Regulation Agency, 2016).

Specifically, education providers are obliged to report students with an impairment or health issue that may, "*Either in the course of study or clinical training, place the public at substantial risk of harm*". There was further discussion as to what factors may trigger significant concern requiring further academic intervention. These were considered by participants to be criminal issues and plagiarism and possibly multiple unsubstantiated applications for special consideration for tests or exams. The third item that arose as part of this discussion was the need for mandatory reporting to be a formal step in any FTP policy flowchart.

Learning disabilities: Learning disabilities were specifically discussed with reference to what constitutes reasonable adjustments to support students' learning. It was thought that students need to satisfactorily pass the units but could have supports in place, such as additional time to read notes for those with dyslexia. It was important, however, to note that students must be able to fulfil the duties of a health practitioner on graduation, frequently without these additional supports in place.

Assessment: There was a call for practical exams / Objective Structured Clinical Examinations (OSCEs) to have a component that assesses communication. This may assist in preparing students for clinical placements.

A comparison of the qualitative data from the two discussion groups (PeArL session and CEMANZ meeting) is displayed in Figure 1.

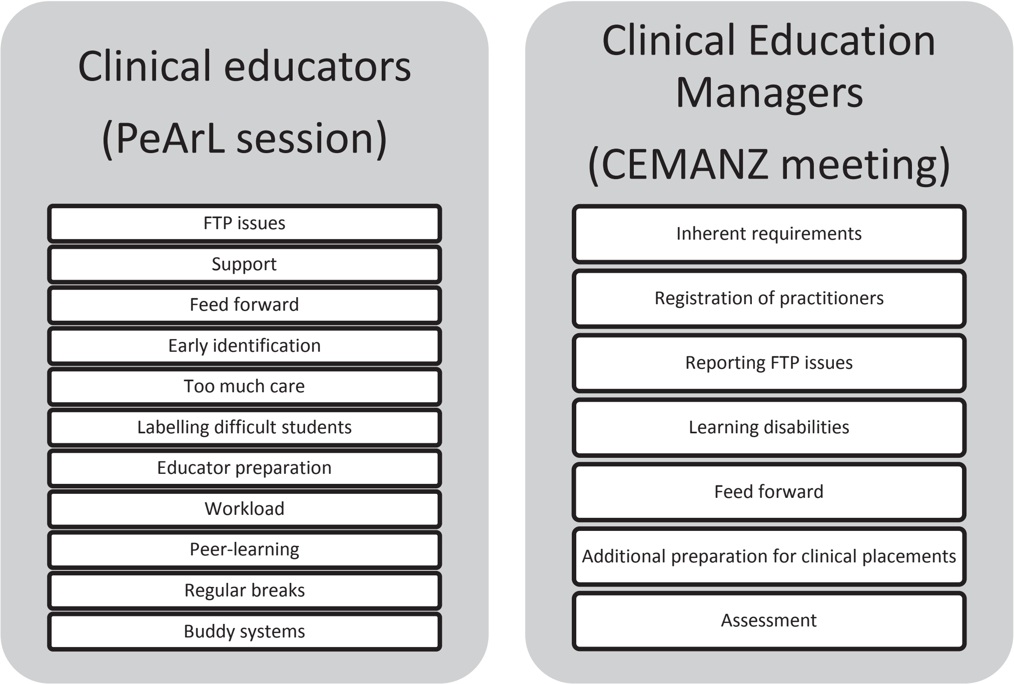

Figure 1. Comparison of data from clinical educators and clinical education managers

DISCUSSION

Participants provided valuable insights into the complexity of physiotherapy student FTP issues. Strategies to enable more effective support in supervising students with FTP issues were discussed.

Strategies to support clinical educators' wellbeing

Educators' comments about mental health issues were supported by Lo and colleagues (2016) who demonstrated that physiotherapy clinicians feel significantly less confident and comfortable managing student mental health issues than problems with incompetent practice. Students and their clinical educators need to have accessible strategies to identify and support student mental health issues. This might include mental health first aid (Bond et al., 2015, Hadlaczky et al., 2014).

The benefits of supportive tertiary staff have been discussed previously. Luhanga et al. (2008a, 2008b) reported that faculty support enabled nursing preceptors to make critical decisions about student progress, and that clinicians may otherwise be reluctant to fail underperforming students (Luhanga et al., 2008b). Preceptors who consider faculty unsupportive or unresponsive may also be unwilling to supervise future students (Luhanga et al., 2008a). Thus faculty need to prepare educators with appropriate orientation, particularly regarding the support of FTP issues. Faculty may also assist educators to process challenging experiences (Kemper, 2007).

The merit of open disclosure of FTP issues has been discussed in the literature (Lo et al., 2016). Student self-declaration is used to institute proactive strategies to support student FTP. There are factors which encourage self-declaration of FTP issues and these are confidentiality, a positive relationship with university staff (i.e. trust, familiarity, rapport), a willingness to help and a supportive environment (Lo et al., 2014). Educators discussed that strategies to feed-forward information and openly disclose issues were helpful to address issues such as anxiety. Educators felt it would be beneficial to make the feed-forward of information compulsory. There are however difficulties with the feed-forward of information due to a creation of potential bias.

There are also difficulties associated with a lack of feed-forward of information with the learning approach being fragmented due to a lack of information about students' previous placements (Bearman et al., 2012).

In support of educators' comments that they may be too compassionate due to the caring nature of the profession, it has been found that physiotherapy educators do provide more of themselves when managing the underperforming student (Bearman et al., 2012). It is important for both the health services and the university to be clear about the boundaries of their role with respect to students' wellbeing. The research by Bearman and colleagues (2012) also discussed the phenomenon of the underperforming student being kept closely supervised when there were issues with educators being reluctant to let students out of their reach. There is a balance between facilitating independence and maintaining client safety. In Bearman and colleagues (2012) the minority of educators advocated for shifting the responsibility to the student to encourage them to take ownership of their learning whilst decreasing educator stress. Educators asked "*Is it a clinician's responsibility to get students over the line?*" The consensus was that senior clinical educators may provide advice to other educators but not create the expectation that the student will pass. Educators' reluctance to fail students is reported in the literature (Dudek, 2005). The reasons for this were identified as a lack of experience as an educator, reluctance to have students incur personal cost, educator feelings of guilt, reluctance to take on the extra workload, a lack of appropriate tools and time for sufficient student evaluation and pressure of perceived staff shortages (Luhanga et al., 2008b). There were comments about physiotherapists "working out" their educator identity, trying to use their nurturing nature to benefit the students. It has been noted that educators' identity is important with self-esteem issues, fear, anxiety and self-doubt occurring as a result of failing a student (Hrobsky and Kersbergen, 2002).

The support of senior staff and structures in place to reduce angst in junior educators was discussed by educators. This has been cited in previous publications which encourage students to be assigned to experienced clinicians to achieve positive outcomes (Kemper, 2007). This however may lead to stress in those repeatedly requested to supervise students. This is noted in comments on the limitations of 12 weeks of straight supervision. There were discussions of the importance of autonomy for the clinical educators. Literature supports that feelings of competence and autonomy relate to both emotional wellbeing (Reis et al., 2000) and job retention (Hanson et al., 1990).

There were concerns about labelling or defining the difficult student. The stigmatisation of students has been discussed previously with educators focussing on the negative aspects of supervising a previously underperforming student (Cleland et al., 2008).

There were also concerns regarding the education of junior staff who are often perceived to be "*thrown*" into the educator role with limited to no preparation. Orientation is recommended which focuses on preparation of the clinician as an educator (Kemper, 2007).

Strategies that educators can use in their daily practice to support their wellbeing

It was noted that educators may reduce their FTP-related burnout; high prevalence of burnout has been reported in health professionals and professional students (Block et al., 2013, Scutter and Goold, 1995, Śliwiński et al., 2014). Burnout affects the quality of care provided with an associated increase in error rates and lack of empathy (Shanafelt et al., 2010, West et al., 2006).

There were discussions about the positive aspects of peer-learning. The benefits of having two students on placement at a time was that these students could talk to each other and decrease the pressure on the educator. In a randomised controlled trial of peer-learning versus traditional clinical education, educators and students preferred traditional clinical education to peer-assisted learning, despite similar student performance outcomes (Sevenhuysen et al., 2014). There may be a need to educate students and clinical educators further as to the benefits of peer-assisted learning given the on-going pressures to provide clinical education to an increasing number of students.

The necessity for structured downtime or breaks to rejuvenate educators was discussed. An example of this is to use a 4-day per week clinical placement model rather than a 5-day per week model. It is well known that clinical educators are time poor and juggling heavy workloads in both the clinical and educational areas (Bearman et al., 2012). Further workplace incentives such as peer-assisted learning may be required to enable staff to manage clinical education as an ongoing part of their usual workload. Perhaps this could be extrapolated to a buddy system for clinical educators too to support each other.

The strategies universities use

A number of topics arose in the discussions between the university clinical education managers. The first was about inherent requirements, which links to the work at the University of Western Sydney on writing physiotherapy inherent requirement statements. Bialocerkowski and colleagues (2013), writing of their experiences at the University of Western Sydney, expanded upon an existing university approved framework and included items from the physiotherapy professional standards and the statutory requirements. There were eight prescribed domains: "ethical behaviour, behavioural stability, legal, communication, cognition, sensory abilities, strength and mobility, and sustainable performance" (Bialocerkowski et al., 2013). For each domain there was a statement of introduction, description of the inherent requirement, justification for the fundamental nature of the requirement and description of potential reasonable adjustments. These inherent requirement statements were deemed transparent and defensible requirements of physiotherapy study with potential to be transferable across other courses both within and potentially outside of Australia.

Factors that need further work

Where FTP issues arise there is a dual role for educators in providing support whilst being mandated to report more serious health issues that place the public at risk. In the physiotherapy literature, flags of possible FTP issues include clinical competency issues, mental and / or physical health issues, professionalism issues, communication issues and recognition of limits (Lo et al., 2016).

Learning disabilities were specifically discussed with reference to what constitutes reasonable adjustments to support students' learning. The Disability Discrimination Act specifies what adjustments need to be made to policies and procedures to provide fair access to those with disabilities (Turner and Robinson, 2011). These may be supported by university programmes such as additional tutorials for at-risk students. A recommendation suggested by the clinical education managers was to include the assessment of communication in OSCEs. Some authors recommend narrative feedback to traditional checklist assessments of communication skills in OSCEs (Van Nuland et al., 2012). Early development of communication skills shows stable performance over a period of 18 months following an introductory course (Humphris, 2002), however the duration of the communication course is important with shorter duration courses of two hours being unsuccessful in demonstrating change in dental students' communication skills (Cannick et al., 2007). More comprehensive communication courses are indicated.

Limitations

This study was a qualitative study of Australian participants attending a 45 minute session scheduled as part of an APA conference and a one hour meeting of 20 Clinical Education Managers from Australia (n=18) and New Zealand (n=2). As the data were gained as part of a conference presentation / meeting, the comments are brief and further examination of themes was limited. Due to an error in the audio recording, written notes were used to record the outcomes of the CEMANZ meeting thus we were unable to include written quotes. It is recognised that the data collected for this paper primarily pertains to Australia as limited New Zealand specific data were collected. The Australian issues discussed however will most likely resonate with those experienced in New Zealand.

Future research

Future research includes the potential to create consistency across Australia and New Zealand in managing students with FTP issues, especially in light of the new Physiotherapy Practice Thresholds in Australia and Aotearoa New Zealand (Physiotherapy Board of Australia and Physiotherapy Board of New Zealand, 2015). Further research is required into strategies to support wellbeing, minimise burnout and optimise work satisfaction in physiotherapy clinical educators. Approaches are also required to assist clinical educators in the support of students with mental health issues and the student remediation process. As described in a systematic review by Cleland and colleagues (2013) regarding the challenges of health professional remediation, rigorous approaches to both the development and evaluation of remediation interventions are required.

CONCLUSION

This paper describes potential strategies to support clinical educators when supervising students with FTP issues. Educators suggested the benefits of peer-assisted learning to support both clinical educators and students. There was a preference for feed forward mechanisms to support student learning needs. Educators valued faculty staff as a mediator for issues. Particular support for mental health issues was requested. Mentoring for junior staff was also encouraged to help support staff new to the educator role. The importance of teamwork and regular staff breaks from clinical education were discussed. Clinical Education Managers discussed the inherent requirements of physiotherapy courses including strategies to flag and support students with FTP issues.

KEY POINTS

1. Clinical educators felt that mental health issues were much more challenging to ascertain and manage than clinical competency issues.
2. Clinical educators felt that staff members needed peer-support and that supportive relationships with the university were important.
3. Early identification, feed-forward information, educator preparation and regular breaks for clinical educators were important supportive strategies.
4. Clinical education managers agreed that feed-forward strategies were helpful. They differed in opinion with respect to issues around inherent requirements, reporting and management of students with FTP issues, preparation of students for clinical placement and assessment of communication skills.

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The lived experience of older adults' adjustment to amputation in the context of wheelchair use

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ABSTRACT

Amputation has a profound psychological impact on recipients. The experience of adjustment to lower limb amputation (LLA) by older adults who use wheelchairs was explored using Interpretative Phenomenological Analysis (IPA). Four men with lower limb amputations due to vascular disease who identified as wheelchair users were interviewed. Participants' experiences of adjustment to LLA are represented by two themes: "Being an Active Agent" and "Psychosocial Adjustment as an Iterative Process". Being an Active Agent included three elements: self-reflection, a sense of control over one's LLA and the belief one is able to take action in decision-making in daily life. The second theme 'Psychosocial Adjustment as an Iterative Process' described the ongoing nature of the participants' narratives of adjustment to LLA. This theme also encompassed participants' experiences of adjustment to LLA as firmly linked to management of previous life events. Participants' adjustment did not appear to be directly influenced by the mobility aid they used; rather, the mobility aid provided opportunities for adjustment to occur. Older adults' adjustment to LLA appears to be influenced by their perception of being an active agent in their adjustment process, particularly in relation to decision-making. Adjustment also appears to be a process which older adults continue to engage in after the amputation event. The findings of this study suggest practical strategies that clinicians can use with older adults undergoing amputation.

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Key words: Amputation, Psychological adjustment, Aged, Resilience, Agency

INTRODUCTION

Amputation is an end stage treatment option for individuals with vascular disease suffering profound and unresolving infection, pain and consequent immobility. Those undergoing (even) lifesaving amputation are likely to have lasting psychological sequelae. Those who undergo amputation because of vascular disease tend to be older and more likely to have both pain and lower physical functioning before their amputation, compared to those undergoing traumatic amputation (Kratz et al., 2010). They may also have co-morbidities such as diabetes (Peters et al., 2001), pain and obesity (Roberts et al., 2006), cardiovascular disease (Priebe, Davidoff, & Lampman, 1991), peripheral neuropathy (Potter, Maryniak, Yaworski, & Jones, 1998), reduced cognitive ability (Hanspal & Fisher, 1997) and phantom pain after amputation (Nikolajsen, Ilkjær, Krøner, Christensen, & Jensen, 1997). Within this population, wheelchair users tend to be older, have more co-morbidities, report higher levels of pain and fatigue and ambulate less efficiently (Karmarkar et al., 2009) compared to prosthesis users. Therefore it seems likely that wheelchair users may experience psychosocial adjustment to LLA in a different way to prosthesis users given their more complex health and personal profiles.

While adjustment in the context of prosthesis use post amputation has been well documented (Atherton & Robertson, 2006; Desmond, Gallagher, Henderson-Slater, & Chatfield, 2008; Murray & Forshaw, 2013), wheelchair use after amputation comes with its own set of less-reported challenges. In one qualitative study (Stokes et al., 2009) of 25 people with LLA (disease or trauma) who had returned home prior to prosthesis fitting, participants generally thought their wheelchairs were essential to them but at the same time viewed them negatively. Some participants reported that they felt "stuck" and like they were "second class citizens". Prolonged sitting and limited space to move were common challenges. While these perspectives draw attention to the difficulties faced by people who use a wheelchair before prosthesis fitting, the experience of those who use wheelchairs in the long term remains unclear; in particular, the process of adjustment to wheelchair use when this is likely to be long-term.

Various definitions of adjustment in the context of chronic health conditions exist, usually based around the presence of negative mental health outcomes such as depression and anxiety. Negative adjustment, or maladjustment, is when an individual suffers from overwhelming levels of grief, depression, anxiety or social discomfort, negative views of self or a lack of hope for the future or a change in circumstances (Gallagher & MacLachlan, 2000; Horgan & MacLachlan, 2004). Conversely, positive adjustment is described when:

> *The person places value on existing abilities and moves beyond physical losses (Wright, 1983), experiences an optimal level of congruence between the subjective world and the external environment (Shontz, 1975), and exhibits success in utilising problem-solving skills and in managing his or her environment (Roessler & Bolton, 1978).* (Smedema, Bakken-Gillen, & Dalton, 2009, p.51).

Psychological adjustment to acquired disability has also been conceptualised as a staged process in which an individual moves through a generally linear series of discrete stages (Smedema et al., 2009).

Several psychosocial variables have been shown to have a positive effect on adjustment to LLA. In prosthesis users, hope (Unwin, Kacperek, & Clarke, 2009) along with personal traits such as optimism and perceived control (Dunn, 1996; Oaksford, Frude, & Cuddihy, 2005) have been shown to be related to positive adjustment. While such studies have explored adjustment in the early years following amputation, some researchers (Hanley et al., 2004) have postulated that psychosocial variables may take a year or more to manifest fully in an individual's adjustment experience. Currently little is known about the experience of older adults who have undergone amputations and are living as wheelchair users despite their high risk for negative adjustment. The research question was: What is the experience of older adults' adjustment to lower limb amputation in the context of long-term wheelchair use?

METHODS

Design

This study was undertaken by LL, under supervision, as part of a Master's degree. Salient points regarding methodology and analysis are presented here for clarity. Interpretative Phenomenological Analysis (IPA) was chosen because it offers an in-depth understanding of the experiences of a small number of participants through idiographic, inductive and interrogative methods of analysis (Smith, Flowers, & Larkin, 2009).

This study took place in an urban centre in the South Island of New Zealand between 2011 and 2013. Ethical approval was provided by the regional Ethics Committee (URB/11/EXP/0390).

Participants

Participants aged over 65 years were identified from a publicly funded health database. Inclusion criteria were: lower limb amputation (vascular disease), amputation three or more years prior to the study (to allow substantial time for adjustment to have taken place); daily wheelchair user within the home; English language speaker and cognitive skills to participate in an interview (determined by their General Practitioner). Participants known to the interviewer (LL), a physiotherapist, were excluded. See Figure 1 for flow of participants in study. Four participants were interviewed for this study. See Table 1 for description of participants' characteristics.

Table 1: Participants' characteristics

Participants			Characteristics		
(pseudonym)	Age (year)	Amputation (level/ years prior to study)	Mobility Aids	Abode	Social Factors
George	75	Unilateral transtibial/5	Self-propelling wheelchair. Practising prosthetic walking with physiotherapist	Own home with carer visits and modification e.g. ramps	Widower, lived alone. Daughter nearby.
Barry	84	Unilateral transtibial/12	Self-propelling wheelchair for home based activities. Prosthetic leg for community use. Drove modified car.	Own home with modification e.g. ramps	Lived alone. Supportive neighbours.
Steve	90	Bilateral transfemoral/5	Powered wheelchair. Attendant propelled wheelchair as a back up	Own home with carer visiting twice daily and house modified e.g. ramps	Lived with his wife. Family nearby.
Tony	88	Unilateral transtibial/3	Attendant propelled wheelchair	Residential care facility	Some cognitive difficulty observed. English was his second language.

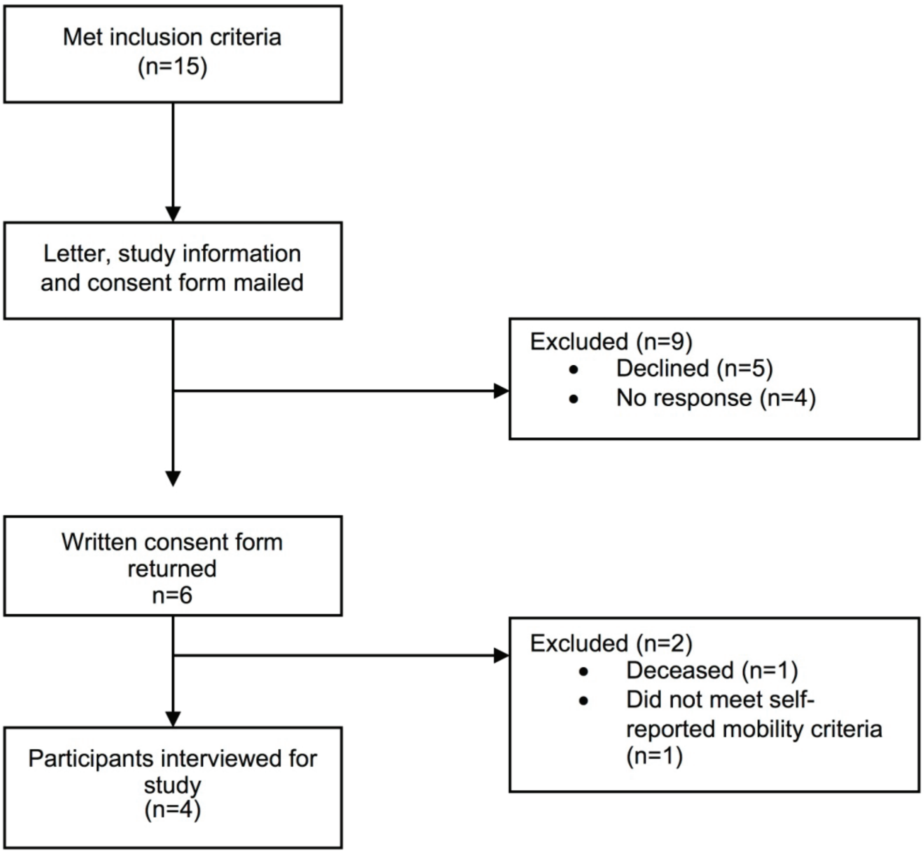

Figure 1: Flow of participants through study

Data Collection

Semi-structured interviews with an interview guide were conducted by LL in the participants' homes. One participant's wife was present and her comments were transcribed to add to the context of the participant's responses. Interviews lasted between 15 and 41 minutes. One interview was stopped at 15 minutes as the participant appeared to have some cognitive difficulty. Participants were encouraged to speak freely about their amputation experience and describe their current daily life. Interviews were audio-recorded and transcribed verbatim.

Consistent with IPA, LL made brief notes on the interview immediately after each interview including any comments that the participant had made after recording ceased. The interviewer also noted any initial reflections on themes and her own reactions that she had become aware of during the course of the interview. These notes formed a summary for each participant's interview and were referred to in the development of themes.

Data analysis

The primary researcher (LL) read through each transcript several times and made notes to become more familiar with their content. Dominant and recurrent expressions or ideas related to adjustment were highlighted. Notes were consolidated into a list of codes for each transcript with coding of a full transcript completed before moving to the next transcript. The four lists of codes (one for each of the four transcripts) were then compared with one another. Related codes from across the transcripts were then grouped together into preliminary themes, which were discussed by two of the authors (LL and FG) to clarify theme definitions and 'boundaries', and cross-check with coded data. Themes were then discussed by three of the authors (FG, LL and EJCHS) and refined further until a final set of themes was agreed.

Rigour

Rigour was sought using three strategies. First, methods of data collection and analysis were clearly documented. Second, all themes were discussed by multiple researchers (LL, FG and EJCHS). Third, all participants were invited to participate in member checking (Bradbury-Jones, Irvine, & Sambrook, 2010) via comment on a written or verbal summary of themes. Two participants responded to this invitation and agreed with the content of the summaries.

RESULTS

All four participants were men with an average age of 84 years. Only one participant lived with a spouse. See Table 1 for descriptions of the four participants: George, Barry, Steve and Tony. These descriptions give context to the participants' stories presented here.

Themes

Two main themes described the experience of older wheelchair users adjusting to LLA: (1) Being an Active Agent and (2) Adjustment is an Iterative Process (see Table Two). The first theme, "Being an Active Agent" highlighted three elements of adjustment: self-reflection, a sense of having control over one's situation and the belief one is able to take action in tasks like decision-making and daily life. The second theme, "Adjustment is Iterative" reflected how key experiences in the participants' adjustment to amputation were a part of an ongoing, cyclical pattern of adjusting to loss and change throughout life. Participants did not directly refer to how their wheelchair use influenced their adjustment to LLA. Instead, analysis showed wheelchair use was an integral part of how participants perceived a sense of agency (i.e. control) or not, in life following LLA and how they engaged in valued life activities.

Table 2: Results: Themes arising from Participants' narratives

Themes	Elements
Being an Active Agent	Self-reflection A sense of control Able to take action
Adjustment is Iterative	(nil)

Being an Active Agent

The theme reflected the overarching sense that participants' adjustment to LLA was impacted by the extent they were active agents in the events leading to and following their LLA. The three elements evident in this theme appeared linked by the importance of the participants as authors, or not, of their adjustment.

Self-reflection

Self-reflection appeared to facilitate participants' self-perception as active agents and help them plan a way forward. Barry's comments revealed the reflection he engaged in as he considered his life after amputation.

> *And I think it's in your mind, that you're gonna do it, you know, you could lie back and say, ohh poor me, couldn't ya'? You know, oh if it's me like, could say right ... I never took that attitude, I always thougth, ohh, I'll just get up and do it, you know. Mmm... I made it up from the start, it was ah, once I could get moving I's ... I've always been fairly active, you know, … [laughs] and so I thought, well I'm not going to miss out on that, I'm gonna get back, and get moving again. So ... I belong to, clubs and different things and ... I mean you get to the corner [point of decision] and say, poor me, and sit there but, but I thought oh I'm not gonna do that.*

Barry assessed his ability to adjust to amputation, the personal strengths he could draw on to help him adjust for example, his physical fitness and to explore his motivation to adjust to LLA through connecting with people at social clubs. Barry's narrative also illustrated the importance of his proactive attitude to adjustment. For Barry, adjusting to LLA could go one of two ways: being stuck in a "corner" and feeling sorry for himself or "get up" and strive to move and socialise again.

A sense of control over LLA

Three participants described times where they felt in control of the decisions leading up to and at the time of amputation, which appeared to have a powerful impact on their comfort several years later about the decision to amputate. George's description of the decision to amputate illustrated this:

> *The pain was really intense. So I went to my doctor … Mr [surgeon] said, we've got two options ... the knife ... or, some very strong painkillers ... I opted, as I would, for the strong painkillers. I lasted a day and a half. And I said to my doctor, 'for God's sake, put me into hospital' ... and he, Mr [surgeon] came 'round and he said, 'I knew you'd be back' ... so it's a loss ... but I have adapted to it.*

George's description of how he chose amputation from the treatment options offered him for his leg pain highlighted his sense of control in a seemingly inevitable situation. In contrast, Tony's narrative reflected a lack of control regarding amputation and his subsequent feelings.

> *…the nurse told me we have to amputate your leg ... and I was not so very happy about it ... they think it was really necessary to get it out of order ... I had, taken that in advance ... because I couldn't go on.*

Tony's comments appeared passive and disempowered. Tony's narrative lacked the sense of control over his health as expressed by the other participants. Instead, from Tony's perspective, control appeared to lie with health professionals, whom he perceived to have made the decision to amputate for him.

Able to take action

Although Steve was dependent on his carers and his powered wheelchair to move independently, he talked with satisfaction of what tasks he could do around his home.

> *... this one* [powered wheelchair] *I'm more independent. See you can, alter your position during the day … yeah about 12 hours on the bed and 12 hours on this, and that's me day!* [laughs] *... but at least you can move about ... I can go to the gate and get the mail and all that stuff … it's no hassle, ... I've got enough kindling wood cut for this winter … things are just going A1.*

Despite noting his day is spent in his bed or his wheelchair, Steve emphasised the actions he could do rather than his activity restrictions when he said: "at least you [meaning himself using his wheelchair] can move about". For Steve, being able to take action in his everyday life was important, not that this required wheelchair assisted mobility.

In contrast, Tony's sense of being able to take action in his life with LLA appeared to be less certain. Tony appeared troubled about the difficulty he had in everyday living with one leg and felt unable to cope.

> *I've got one leg ... I can't cope with one leg, really ... Well ... it's very hard to describe sometimes. I like to explain to the people how, how strongly I feel having one leg, you know? ... it's not very nice having one leg, and ah try to cope with it all, but I can't do it … I talked to my doctor ... but ... I was not very happy. Well he realized that. 'Specially on one leg, you know? And as I say, it's really hard … to follow the one leg system ...*

Like the other participants, Tony showed signs of attempting to find a solution or help from others when he spoke with his doctor. Ultimately though, his attempts were unsuccessful and Tony's comments portrayed his unhappiness in his struggle to "move on" or adjust to his LLA which he did not want. As a result, Tony appeared to be dealing with strong feelings of unhappiness and disempowerment.

Adjustment is an Iterative Process

Participants described their adjustment to LLA in the context of their current, previous and anticipated future experiences. This created a complex narrative that did not necessarily follow a chronological order nor have an 'end'. Rather, participants noted similarities and repetitions in their adjustment to a range of life events such as other losses or ill health. For example, George clearly described himself as having "adapted" to his leg amputation. Alongside this comment however ran a theme of repeated, painful loss (his wife, jobs, his ability to dance) which he hinted he was still dealing with when he described his daily anti-depressant: "… with this happy pill that I get, I have no feelings of loss". George described himself as having adjusted to his circumstances, yet feelings of loss clearly remained.

In contrast, Tony's narrative also featured iterations of disempowerment around his amputation which appeared to echo previous life events. Tony appeared to cycle between acknowledging amputation was needed for his health and not wanting his leg to be amputated.

> *I didn't want my leg amputated, because ah I want to keep it as long as I can … and I still can't understand why I have to wait so long* [for a doctor or answers] *… I'm waiting for a doctor … I've seen a doctor four times, I think. Four times … she ask me if I want to ah stay in here* [care facility]*, or go home.*

Tony's rumination acknowledged the "good" outcome of LLA, i.e. less pain from a deteriorating leg wound, and the not wanting LLA in the first place. Tony's amputation experience echoed another life experience of immigrating with family to "a very nice country" yet also wanting to return to his homeland. Tony referred to immigrating throughout his interview, although he did not directly connect this to amputation. However, the two narratives mirrored each other in that he could see the constructive aspects of both events while also feeling sad or discouraged when he reflected on them.

Steve's narrative also illustrated a cycle of adjustment to LLA as he both described progress he had made since having his amputation and acknowledged future ambitions.

> *I knew I'd get through it ... yeah ... there's a long way to go yet ... You got to live to 102 to break even with the government for your taxes ... It was in the* [newspaper] *years ago, I cut it out ... it said that the average person's got to live to 102. I said, well that'll do me. And that's my aim, yeah ... it's not going to be hard to do if I ... the way I am.*

Steve found a meaningful goal after LLA in aiming to live a long life and LLA was an intervention that helped him to achieve this goal. Despite recognising the LLA as valuable, Steve also acknowledged that it affected what he could do and how he lived. Negotiating this balance of value and difficulty was something Steve would be adjusting to for the rest of his life.

In contrast to Steve's goal-focused approach to adjustment, Barry centred on his adjustment to his identity. At the end of his interview he made the comment that he felt "I'm like an amputee, but not an amputee, you know?" Although having a leg physically amputated qualified him to label himself an amputee, he did not seem to feel this fully encapsulated how he saw himself because he was also "quite independent really", could "drive anywhere" (in his modified car) and "do what I like sort of thing". Barry's independence appeared at odds with how he perceived an amputee should look or behave.

DISCUSSION

Three of the participants' narratives reflected positive long-term psychosocial adjustment to LLA in the context of wheelchair use, with the fourth participant's comments reflecting negative adjustment. The narratives of the three participants with positive psychosocial adjustment (George, Barry and Steve) were consistent with findings relating to positive adjustment in chronic health conditions (Smedema et al., 2009), and in the broader literature on resilience through the lifespan (Windle, 2011). Resilience represents optimal adjustment, defined as 'the successful adaptation to adversity' (Zautra, Hall, & Murray, 2010) and includes a range of traits and coping qualities (Skodol, 2010) which align well with the themes identified in the current study.

The first main theme - being an "Active Agent" – appears linked to positive long-term adaptation to LLA. This is understood more clearly when the sub-elements of this theme are considered in relation to research on positive adjustment and resilience. First, the benefits of "Self-Reflection" in allowing a process of identifying strengths, finding motivation, and developing plans, is consistent with research findings that self-understanding contributes to resilience through such processes as (a) enabling the development of strong personal identities and a sense of purpose (Alim et al., 2008), and (b) facilitating enhanced regulation of strong emotions (Gross & Munoz, 1995). Self-reflection as described by participants in this study is also consistent with a large body of research linking positive psychosocial outcomes in people with chronic illness and disability with problem-focused coping styles (Chronister, Johnson, & Lind, 2009).

The second Active Agent sub-theme involved participants having a sense of control over their situations. This suggests they possessed self-efficacy, the belief that they could use their abilities to accomplish their goals, which is also consistently linked to positive coping (Bandura, 1997). The contrast between George (who appeared to view himself as having agency and choices) and Tony (whose passivity seemed marked) illustrated the significance of self-efficacy in successful rehabilitation (Marks, Allegrante, & Lorig, 2005). Related psychological constructs also relevant to this sub-theme include having an internal locus of control (Lefcourt, 1976), optimism (Seligman, 2006) and a sense of hope (Rand & Cheavens, 2009), all of which have been shown to be associated with resilient outcomes across a range of populations (Skodol, 2010). Having a sense of *control* is also a key component (one of the 'three Cs') of 'hardiness'. Hardiness includes having a *commitment* to a purposeful life, and accepting the *challenge* that life's inevitable changes bring (Kobasa, 1979).

The third sub-element of the Active Agent theme comprised participants' belief that they could take action around decision making in their lives. Like other elements of the Active Agent theme, this finding is also consistent with an apparent self-efficacy, indications of hardiness, and a problem-solving coping style in the three participants who described positive adjustment.

The second broad theme identified in participants' narratives was the experience of "Adjustment as an Iterative Process" involving an ongoing pattern of adaptation and coping with loss and change throughout life. This theme also aligns with the *challenge* facet of hardiness (i.e., accepting the challenge of change in life). Additionally, this finding is consistent with research associating resilience with a positive future orientation (Skodol, 2010), which involves a degree of optimism tempered by an acceptance of the need to be flexible and make adjustments to stressors that might arise in life (Southwick, Vythilingam, & Charney, 2005).

The main limitation of this study is the small sample size which reflects the challenges in researching the population of older adults living with an amputation. Combined with qualitative methodology, the generalisability of these findings to older adults with amputation as a whole is reduced. However, both the common themes and diversity of experience in this study indicate that further qualitative research with a larger sample size may yield a more detailed understanding of the process of adjustment to wheelchair use after LLA. Such research could further inform larger scale quantitative research using robust psychometric measures to examine the relationship between positive adjustment and the psychological indicators of resilient coping in older persons with LLA. Future research could also control for demographic and clinical factors such as gender (only male participants in this study), muscle strength, balance and cardiovascular fitness (mentioned by this study's participants). Research investigating variables associated with positive health outcomes which participants alluded to in the current study is warranted. For example, levels of social support (Taylor, 2011), personality and cognitive functioning (Deary, Weiss, & Batty, 2010).

With regard to clinical implications for physiotherapy, the current study reinforces current best practice (Broomhead et al., 2012) and provides grounds for integrating positive psychology within a strengths-focused rehabilitation approach to amputation (Elliot, Kurylo, & Rivera, 2002). The participants' experiences in this study suggest that the 'how' of mobility (prosthesis versus wheelchair) was not as important to them as the 'why'. Physiotherapists are well-placed to guide their client through the practical issues of mobilising (via walking or wheelchair) after amputation which in turn could influence the client's adjustment experience by focusing mobility rehabilitation at a client's participation in activities meaningful to the client and building their sense of self-efficacy, and through this their resilience and quality of life. Psychosocial elements of rehabilitation programmes incorporating positive psychology principles would include a focus on increasing positive effect, developing helpful traits and coping approaches, enhancing wellbeing, focusing on strengths, and taking a "person first" collaborative approach to care (Dunn & Brody, 2008; Dunn, Uswatte, & Elliot, 2009). Practical examples of these elements for physiotherapists include listening to clients' experiences during therapy sessions, using optimistic and encouraging communication, using client centred goals to direct therapy sessions (e.g., improving wheelchair mobility in the community to participate in social gatherings and hobbies). Although outside the scope of physiotherapy, physiotherapists must stay mindful of their client's mental health and be ready to refer on to appropriate mental health services, particularly in community-based therapy sessions where clients may feel more vulnerable or unsupported. It may also be helpful for physiotherapists to familiarise themselves with evidence-based general wellbeing practices, such as the New Zealand Mental Health Foundation's "Five Ways to Wellbeing" (Mental Health Foundation of New Zealand, 2015) with a view to reinforcing these with their clients.

CONCLUSION

This study, while restricted to a small sample of older men, identified important psychosocial factors associated with adjustment to LLA in long-term wheelchair users. These factors fell under two key themes: the benefits of being an active agent; and the iterative nature of adjustment. These themes, and their sub elements, align well with constructs found in the literature to be associated with positive outcomes in chronic health conditions, including self-efficacy, problem focused coping and a positive future orientation. Moreover, they point to the importance of physiotherapists who, understandably, focus on physical aspects of LLA rehabilitation, being mindful of their client's psychosocial functioning, reinforcing healthy coping and wellbeing strategies, and taking opportunities to refer on for mental health input where indicated.

KEY POINTS

1. A sense of agency (i.e. control) appears linked with wheelchair users' positive adjustment to lower limb amputation (LLA) which was demonstrated by self-reflection, perceiving a sense of control over one's LLA and that one is able to take action.
2. Adjustment to lower limb amputation was an iterative process situated within the context of the person's life.
3. During rehabilitation, physiotherapists can use positive psychology strategies to enhance their clients' adjustment to physical disability associated with LLA e.g. building resilience by focusing on a person's strengths and healthy approaches to coping.

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This study won the ML Roberts prize awarded for the best 4th year undergraduate research project at the School of Physiotherapy, University of Otago in 2016.

The use of key health questions for patient initial assessment in physiotherapy clinical practice.

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ABSTRACT

Physiotherapists are well positioned to educate patients about lifestyle behaviours to prevent, manage and in some cases reverse, non-communicable diseases. The study aimed to explore physiotherapy students' perceptions about the physiotherapists' role in health promotion and factors influencing students to ask key health questions about physical activity, smoking and sleep health. A mixed methods design was applied in a paper-based survey involving a 10 cm visual analogue scale (VAS) and open ended questions. Participants were University of Otago final year Bachelor of Physiotherapy students (n=74). Participants perceived the physiotherapists' role in health promotion to be important (87.5% in VAS strength). However, participants only asked patients about their level of physical activity, smoking status and sleep health 84.8%, 44.6% and 47.8% of the time, respectively; confidence was a significant variable influencing these percentages. Two *a priori* themes, 'clinical setting' and 'knowledge regarding key health questions' were established, then factors influencing students in asking key health questions were explored. The major factor influencing whether participants asked key health questions was relevance to patient presentation. Participants confirmed the physiotherapists' role in health promotion is important and results provide a benchmark for the efficacy of health promotion content in entry level physiotherapy curricula.

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Key words: Entry level curricula, Health promotion, Lifestyle factors, Non-communicable diseases, Physiotherapy

INTRODUCTION

Globally, the prevalence of non-communicable diseases (NCDs) is increasing, prompting a call for more emphasis on engagement in health promotion by health practitioners (Dean, 2009). This approach is warranted given that health care priorities have shifted from the prevention, cure and management of acute, infectious disease, to the present day focus on NCDs associated with global economic development (Dean, 2009). The four main NCDs: cardiovascular disease, cancer, diabetes and chronic obstructive pulmonary disease, are responsible for 82% of the deaths from NCDs (World Health Organization (WHO), 2014). By 2030, the proportion of total global deaths attributable to such NCDs is expected to increase to 70%, and the global burden of disease to 56%, an increase of 9% and 7% respectively from 2008 (Alwan et al., 2010). The rise in morbidity and mortality due to NCDs will place an increasing burden on the health care system (Taukobong, Myezwa, Pengpid, & Van Geertruyden, 2014). Furthermore, the effect of NCDs on the well-being and life expectancy of affected individuals impacts social, human and economic development (Beaglehole et al., 2011).

Lifestyle factors including physical inactivity, smoking and poor sleep health, are strongly associated with the development of NCDs, and as such many of these conditions are largely preventable, through lifestyle modification and the adoption of healthy lifestyle behaviours (Dean, 2009). For example, the WHO (2010) identified physical inactivity as the fourth leading risk factor for global mortality and recommends that in order to meet healthy living guidelines, adults aged 18 years and above complete at least 150 minutes of moderate-intensity physical activity each week. Physical activity is activity that requires energy expenditure involving the use of muscles and includes recreational or occupational activity, transportation (e.g. walking or cycling), household chores, play, games, sports or planned exercise, in the context of daily, family and community activities (WHO, 2010).

In regard to smoking, it is known that its consequences extend beyond chronic obstructive pulmonary disease and cancer. All-cause mortality and systemic morbidity, including cancer of organs other than the respiratory tract, are increased in people who smoke (U.S. Department of Health and Human Services, 2000). Smoking was identified as the leading cause of death in 2000 within the United States of America (Mokdad, Marks, Stroup, & Gerberding, 2004). In New Zealand, the leading cause of death ranked by years of life lost in 2015 was ischemic heart disease in Māori men, non-Māori men and non-Māori females, but lung cancer, associated with smoking, was the leading cause of death in Māori females (Ministry of Health, 2015). Although tobacco consumption in New Zealand is decreasing, smoking remains a major contributor to the development of NCDs (Smokefree, 2016).

The third key modifiable lifestyle factor associated with NCDs is poor sleep health. Both quality and quantity of sleep are physiologically essential for healing, repair and recovery (Dean, 2009). Furthermore, obstructive sleep apnoea (OSA), the most common type of sleep disordered breathing, is independently associated with the development of the metabolic syndrome which involves multiple NCDs, particularly hypertension, insulin resistance and abnormal lipid metabolism (Pépin, Tamisier, & Lévy, 2012).

Many studies have demonstrated the benefits of adopting a healthy lifestyle. Ford et al. (2009) concluded from a study of 23,153 German individuals, that those who engaged in healthy lifestyle behaviours (did not smoke, engaged in physical activity for >3.5 hours/week, had a body mass index of <30kg/m^2 and followed healthy nutritional values) had 78% less risk of developing a long term condition over the eight year study period. Thus, education of the public on the benefits of a healthy lifestyle through health promotion is important.

The World Confederation for Physical Therapy (WCPT) (2016) recognises that health promotion includes a combination of educational and environmental supports for the adoption of healthy lifestyle behaviours. A number of studies have recommended that all health care professionals, including physiotherapists, incorporate health promotion as part of key services to all patients as the evidence suggests that education from health care providers about the adoption of healthy lifestyle behaviours can prevent, manage and in some cases reverse, NCDs (Dean et al., 2011; Taukobong et al., 2014).

For well over 100 years, the physiotherapy profession has had a tradition of delivering non-invasive interventions to address impairment, disease, injury, and disability (Dean, 2009). As contemporary perspectives on the prevention and management of lifestyle conditions focus on healthy lifestyle education and simultaneous health behaviour change, physiotherapists are in a pre-eminent position to integrate health promotion into practice, particularly in the areas of physical activity, smoking cessation and sleep health, due to practice patterns that afford relatively frequent and prolonged patient contact (Dean, 2009; Walkeden & Walker, 2015). Furthermore, Walkeden and Walker (2015), in their investigation of the perceptions of physiotherapists regarding their role in health promotion, found participants generally perceived that health promotion, particularly in relation to physical activity and smoking cessation, was within their scope of practice.

The WCPT's description of physical therapy includes the fact that physical therapy practice is responsive to societal health needs, is not limited to direct patient care and also includes health promotion and the incorporation of public health strategies (WCPT, 2016). Whilst there is agreement within the literature of the need to focus the profession towards health promotion, some evidence suggests engagement in health promotion by physiotherapists has been disappointing (Walkeden & Walker, 2015). Dean et al., (2014) have suggested no current benchmark exists for health promotion content in entry level health professional curricula. Yet as health professionals, physiotherapists are expected to demonstrate proficiency in the assessment and outcome evaluation of health behaviours related to NCDs and their risk factors. Furthermore, there is limited evidence to suggest how much emphasis is placed on health promotion in entry level curricula and how effectively entry level education on health promotion has been translated into students' perceptions about the importance of asking key health questions and influencing health behaviours in physiotherapy clinical practice.

Physical activity, smoking status and sleep health are key factors that a physiotherapist has the potential to influence in managing their patients. This mixed method study aimed to explore physiotherapy students' perceptions about the role of physiotherapists in health promotion, and secondly to explore factors that influence students when asking about physical activity, smoking status and sleep health, during an initial patient assessment.

METHODS

Design

A descriptive, mixed method design was used. A paper-based questionnaire was developed to determine the use by participants of three key health-related questions: physical activity, smoking status and sleep health, in initial patient assessments in physiotherapy clinical practice. Ethical approval for this study was obtained from the University of Otago Human Ethics Committee before the research commenced. Prior to participation, each student gave written informed consent.

Participants

University of Otago Bachelor of Physiotherapy (BPhty) students in their fourth year of study were invited to participate. Students who completed their six week research module prior to the survey being circulated in July 2016, and had thus not attended a clinical placement during that time, were excluded to reduce potential recall bias. Within two weeks of completing their most recent clinical placement, students were contacted by the research supervisors via group email and invited to participate in the study at a time scheduled during a pre-placement professional development day the following week. A copy of the Participant Information Sheet was included. Paper-based questionnaires were subsequently distributed to students based in the Christchurch, Dunedin and Wellington centres. The survey took approximately 15-minutes to complete.

Survey

A paper-based survey that included both open and closed questions was developed by the research supervisors with input from the student researchers. In an earlier pilot study content validity of the questions was checked by a cohort of physiotherapy student volunteers (n=5) not included in the study who agreed to be interviewed and also consider key themes relevant to the survey questions. The interview was recorded and later transcribed verbatim by the student researchers.

The survey investigated physiotherapy students' perceptions of the role of physiotherapy in health promotion; how often students ask key health questions in the areas of physical activity, smoking cessation and sleep health; students' confidence in asking such questions; and other facilitators and barriers to their role in health promotion, that were experienced during their most recent clinical placement. All items were scored on a 10 cm horizontal Visual Analogue Scale (VAS) measuring from left to right (quantitative component), with additional comment sections allowing participants to voluntarily reply to open questions (qualitative component) (Wewers & Lowe, 1990). Questions relating to general demographic information including age, sex, ethnicity, recent placement type and tertiary level qualifications were also included, in order to describe the participant group.

Data extraction and analysis

Prior to circulation, a unique identifying code was allocated to each paper-based questionnaire by the study supervisors. All completed questionnaires were returned anonymously and results entered into an Excel file by student researchers (BP, MC) for statistical analysis. Two others (AC, MG), acted as auditors and systematically reviewed the data to ensure accuracy of entry and identify outliers or missing data. Furthermore, when an outlier was identified, the data were checked by another student researcher (BP), who recorded and corrected any errors.

Data were coded based on student responses. Results from the measurements taken from left to right of marks placed on the VAS lines were converted to an expression of percentage where 100% represented responses that were “most important”, “asked the question all the time” and “total confidence”. Each mark on the VAS was measured from the left end in centimetres to the nearest millimetre. To convert this to the “percentage of importance”/“frequency of asking key health question”/“confidence in asking the key question”, the centimetre measurement was converted to a ratio and reversed before making it a percentage using the formula:
$= (1 - \chi/10\ cm) * 100\%$, where $\chi =$ *measurement in cm*.

Age was calculated from the date of birth in years to the nearest two decimal places. Ethnicities were re-grouped and numerically coded based on keywords matching the 2013 New Zealand Census for major ethnic groups (Statistics New Zealand, 2013). Where two or more key areas of work in the clinical placement undertaken (Question A8) were selected, a “main” area was determined as being the area where the student spent 50% or more time in that key area of work.

Descriptive analyses were performed in Excel to provide basic quantitative descriptions of the demographic data. More in-depth descriptive analysis was also performed in Excel to find the mean value for “how often” each key health question was asked in each key work area. The responses to questions A6 *(importance of physiotherapy in health promotion)*, A9, A10, A11 *(how often participants asked key questions)* and A13 *(confidence in asking each key question)* were stratified into three categories based on their converted percentage scores from the 10 cm VAS: highly important/often/confident (80-100%), moderately important/often/confident (50-80%) and less important/often/confident (<50%).

Statistical analysis was performed using Statistical Package for the Social Science (SPSS) Version 20 (IBM Corporation, New York, USA). Questions A6 *(importance of physiotherapy in health promotion)*, and A9, A10, A11 *(how often the student asked about the level of physical activity, smoking status, and sleep health)* were set as one dependent variable in each analysis, with every other nominal or scalar variable set as the independent variables. For respondents with two key areas of work (Question A8) of equal percentage, their data were collapsed into two data points (e.g. inpatient and outpatient) having two identical dependent variable values. A univariate linear regression was performed for each independent variable to the dependent variable. Independent variables were selected to be included in multiple regression analysis if $p<0.25$; when there were more than seven independent variables, those with $p<0.1$ were selected.

The student participants' perceptions of the role of physiotherapists in asking key health questions were explored using thematic template analysis as a general approach for qualitative data. Two researchers (GK, MG) independently identified themes through close reading of the transcript derived from the interview of the cohort of physiotherapy students who had participated in the pilot study, and organised the themes into a coding template (Brooks, McCluskey, Turley, & King, 2015). Themes were then organised into different hierarchies, with those related to each other clustered together to produce higher order codes. A third researcher (MC) then moderated the initial themes developed. Codes were modified or discarded through multiple revisions with consensus reached among student researchers, which led to the emergence of two *a priori* themes (Brooks, McCluskey, Turley, & King, 2015). Two researchers (GK, AC) further analysed open question qualitative data responses from the surveys, clustering the related concepts.

Differences in the emerging concepts were then discussed amongst the researchers until a consensus was reached, in order to develop the final subthemes.

RESULTS

Based on the inclusion and exclusion criteria, a population of 84 students was identified, of whom n=74 (88.1%) (20 males, 54 females) agreed to participate and completed the questionnaire. Sixty one questionnaires (82.4%) were completed in full, while 13 (17.6%) had some incomplete data or an invalid answer but were still able to be included. The survey had 15 questions with a mix of quantitative and qualitative data comments (50 inputs per questionnaire) resulting in 3,700 inputs for 74 completed questionnaires. Cross-checking revealed 18 input errors (0.49%); 40 outlier-checks identified one input error (0.03%). These input errors were then corrected prior to further analysis. The VAS on the questionnaires were measured to be 9.5 cm instead of the planned 10 cm due to a distortion on printing. As such, the formula used to convert percentages was also adjusted to =(1-X/9.5 cm)*100% to maintain the ratio of the line.

Table 1: Demographic data for final year Bachelor of Physiotherapy student participants (n=74)

AGE (years)		
Mean SD (Range)	23.33 SD 4.06 (20.74 – 47.38)	
Median	22.13	
SEX	n	Percentage of total (%)
Male	20	27
Female	54	73
ETHNICITY GROUPS	n	Percentage of total (%)
European	52	70
(NZ European)	(47)	(64)
Māori	1	1
Asian	12	16
Pacific Peoples	0	
MELAA (Middle Eastern/Latin American/ African)	2	3
European and Māori	5	7
European and Asian	2	3
LOCALITY	n	Percentage of total (%)
Local student	72	97
International student	2	3
YEARS OF TERTIARY EDUCATION		
Mean SD (range)	4.60 SD 1.25 (3-10)	
	n	Percentage of total (%)
≤4 years	52	70.3
4-6 years	15	20.3
≥7 years	7	9.4

Note: SD, standard deviation

The demographic data for n=74 student participants are included in Table 1. A clinical rotation in acute/intensive care, in a District Health Board (DHB), (n=20) and a DHB inpatient rehabilitation setting (n=19) were the two clinical placements most frequently selected in the survey as being the most recent clinical rotations experienced by participants (Table 2).

Table 2: Core clinical areas and associated key areas of work described by participants for their most recent clinical placement

Clinical Placement Descriptor	n	Percentage of total (%)
Musculoskeletal	15	20
Neuro-rehabilitation	22	30
Cardiopulmonary	17	23
Community	17	23

				Mean percentage (%) for how often participants asked each key question		
No.	Key Area of Work	n	Percentage of total (%)	Physical Activity (A9)	Smoking Status (A10)	Sleep Health (A11)
1	School of Physiotherapy Clinic	4	5	89.47	69.21	60.79
2	DHB Acute Care/ICU	20	26	90.58	47.00	26.63
3	DHB Inpatient rehabilitation	19	25	91.69	32.99	36.62
4	DHB Outpatients	9	12	91.52	61.05	76.37
5	Care of the Elderly	0				
6	A school	0				
7	Paediatric Outpatient	3	4	65.26	2.81	90.88
8	Community rehabilitation	8	10	83.42	66.71	66.97
9	Spinal Unit	1	1	29.47	20.00	77.89
10	Rural Hospital	0				
11	Burns Unit	0				
12	Private Practice - General	10	13	89.79	52.42	75.26
13	Sports Injury Clinic	1	1	35.79	6.32	
14	Occupational Health	0				
15	Other	2	3	70.79	40.53	75.79

Notes: n, number of participants; No., the number listed as the key area of work for the clinical placement identified and used in the survey questions A5, A8, A9, A10, and A11 in response to the key questions

Participants perceived the importance of the role of physiotherapists in health promotion to be high, mean 87.5 SD 12.3% (Table 3). Participants asked about physical activity level (mean 84.8 SD 20.1%) more than sleep health (mean 47.8 SD 35.4%) and smoking status (mean 44.6 SD 38.9%). Participants also demonstrated higher levels of confidence in asking key questions about physical activity level (mean 92.6 SD 8.6%) compared to smoking status (mean 77.6 SD 24.3%) and sleep health (mean 73.3 SD 28.6%) (Table 3).

Multiple regressions were performed with results from questions A6, A9, A10 and A11 as dependent variables (Table 4). The independent variables were selected after a series of univariate linear regressions. When A6 *(importance of physiotherapists in health promotion)* was selected as the dependent variable, none of the independent variables reached significance (Table 4). However, when questions A9, A10, A11 *(how often participants asked about level of physical activity, smoking status, and sleep health)* were each selected as the dependent variable, confidence in asking the key health questions was significant with positive coefficients; 0.35, 0.36, and 0.54 and p=0.002, p=0.003, and p=0.000 respectively (Table 4). In addition, the sex of the participant was a significant variable against question A10 *(how often participants asked about smoking status)* (p=0.006) (Table 4), with male participants asking about smoking status more frequently than females. Males 73.0% SD

24.5% (32.6 - 100%): females 37.6% SD 39.2% (0 - 100%). Question A8 *(key area of work)* was significant in relation to question A11 *(how often participants asked about sleep health)* (p=0.006) (Table 4). Sleep health was questioned most frequently in paediatric outpatients (90.9%) and least in a DHB acute/intensive care setting (26.6%) (Table 2).

Table 3: Summary of the participants' responses to the importance of the role of physiotherapists in health promotion, how often the key questions were asked, and level of confidence in asking the key questions.

Importance of physiotherapy in health promotion			
Mean SD (Range)	87.54% SD 12.32% (29.47% - 100%)		
	n	Percentage of total (%)	
High (≥80%)	59	80	
Moderate (50-80%)	13	18	
Less (<50%)	2	3	
How often participants asked each key question			
	Physical Activity	Smoking Status	Sleep Health
Mean SD (Range)	84.84 SD 20.12% (22.11 - 100%)	44.64 SD 38.95% (0 - 100%)	47.76 SD 35.43% (0 - 100%)
	n	n	n
High (≥80%)	58	24	24
Moderate (50-80%)	12	14	15
Less (<50%)	7	39	38
Confidence in asking key questions			
	Physical Activity	Smoking Status	Sleep Health
Mean SD (Range)	92.58 SD 8.61% (70.53 - 100%)	77.57% SD 24.27% (3.16 - 100%)	73.30% SD 28.62% (0 – 100%)
	n	n	n
High (≥80%)	65	37	37
Moderate (50-80%)	8	21	19
Less (<50%)	0	11	13

Note: n, 77 for "how often participants asked each key questions" (A9, A10, A11) due to some participants having more than one key place of work.

Table 4: Summary of results of multiple regression analysis completed in relation to the key health question.

Survey Question No.	Variables		Coefficients	Significance (p)
A6	Importance of physiotherapists in health promotion (n=69, adjusted R^2=0.033)			
		Major Ethnic Group	0.176	0.157
	A3	International Student	0.189	0.121
	A13	Confidence in asking about smoking status	0.083	0.519
	A13	Confidence in asking about sleep health	0.122	0.331
A9	How often participants asked about level of physical activity (n=71, adjusted R^2=0.252)			
		Major Ethnic Group	0.049	0.679
	A5	Clinical area in previous placement	-0.110	0.341
	A8	Key place of work	-0.214	0.102
	A10	How often asked about smoking status	0.093	0.475
	A11	How often asked about sleep health	0.015	0.901
	A13	Confidence in asking about physical activity	0.353	0.002
	A13	Confidence in asking about smoking status	0.226	0.089
A10	How often participants asked about smoking status (n=71, adjusted R^2=0.339)			
		Age	-0.061	0.756
		Sex	-0.309	0.006
	A4	Years of tertiary education	0.167	0.398
	A7	Location of previous placement	0.106	0.349
	A11	How often asked about sleep health	0.133	0.296
	A13	Confidence in asking about smoking status	0.359	0.003
	A13	Confidence in asking about sleep health	-0.008	0.952
A11	How often participants asked about sleep health (n=72, adjusted R^2=0.447)			
		Sex	-0.051	0.607
	A8	Key place of work	0.263	0.006
	A10	How often asked about smoking status	0.082	0.414
	A13	Confidence in asking about sleep health	0.544	0.000

Notes: Dependent variables were set with n and adjusted R^2 values with associated independent variables; the independent variables were selected after performing univariate linear regression of all independent variables against the dependent variable listed; level of significance for independent variables ($p<0.05$);

The qualitative component of this study identified two *a priori* themes via template analysis from the pilot survey. Six subthemes emerged from the qualitative student survey data collected, three for each *a priori* theme (Table 5).

Table 5: *A priori* themes and inter-related subthemes that emerged from participants' free comments for the survey data collected

A priori themes subthemes and sub-subthemes		n	Example from participant responses; response linked to sub themes and survey question number the response was derived from.
1. Clinical Setting	1.1. Facilitator in asking key health questions		
	1.1.1. Relevance to patient presentation/treatment	49	"To find out the impact it could be having on condition" *A14*
	1.1.2. Being a standard question you need to fill out on an assessment form	17	"General assessment forms including questions regarding physical activity, smoking status and sleep health" *A14*
	1.1.3. Patient readiness to change	1	"If a patient has expressed an interest in changing" *A14*
	1.2. Barrier in asking key health questions		
	1.2.1. Relevance to patient presentation/treatment	28	"Dependant on setting, more likely to ask these types of questions in the hospital" *A12*
	1.2.2. Information already in medical notes	21	"Smoking was always indicated in the hospital notes already" *A15*
	1.3. Role model behaviours		
	1.3.1. Unlikely to ask if supervisor doesn't ask	3	"Supervisor never asked about sleep" *A15*
	1.3.2. Encouragement by supervisor to ask would increase likelihood of student asking	3	"Having my supervisor encourage me to complete a full and indepth subjective assessment" *A14*
2. Knowledge regarding key questions	2.1. Unsure of relevance	7	"Sleep unsure how relevant or why it is needed" *A15*
	2.2. Lack of experience asking the key health questions	4	"My own inexperience and discomfort at discussing sleep and smoking with strangers" *A15*
	2.2.1. Do not know how to ask the questions/do not want to make the patient feel judged.	7	"Didn't want them to feel uncomfortable if taken the wrong way" *A15*
	2.2.2. Unsure what to say after asking the questions	3	"Feel uncomfortable and not knowing how to respond. Not feeling adequately trained" *A15*
	2.2.3. Students not always given same respect by patients as physiotherapists so can be hard to educate some patients.	2	"Feels like 60 year old patient who has smoked all his life isn't going to take advice from an arrogant 21 year-old physiotherapy student" *A13*
	2.3. Lack of confidence in asking key health questions	3	"If you weren't confident of its relevance" *A15*

Note: n, number of participant responses linked to the subthemes/sub-subthemes.

Subtheme analysis identified the *a prior*i theme 'clinical setting' as a facilitator to asking key health questions as seen in the positive response provided to Question A14: *"On neuro/medical ward-prior physical activity is a requisite for all assessments."*

Paradoxically, comments in response to questions A10 and A15 also identified 'clinical setting' as being a barrier to asking key health questions as quoted by another respondent: *"Physical activity is not asked to patients with a complete spinal cord injury as get emotional remembering independence before injury."*

Subthemes for the *a priori* theme 'clinical setting' also included role model behaviours, which affected the likelihood of a student asking key health questions in an initial assessment, as noted by two respondents with contrasting responses: *"My supervisor would encourage me to ask about physical activity and smoking status"; and "Supervisors never asked about smoking status."*

Qualitative data from the survey to support the *a priori* theme of 'knowledge regarding key questions', was obtained largely through responses to questions A12, A13 and A15. The responses to question A12 identified the subtheme that some students were unsure of the relevance of key questions. The responses to the questions highlighted the subtheme that students do not appear to have the specific knowledge regarding these key questions as noted by one respondent: *"Don't think I have been adequately taught about sleep health so unsure if relevant to most sport injuries."*

Responses to question A13 centred around the subtheme of students lacking confidence in asking key health questions and for question A15, lacking experience in asking key health questions was a barrier to the participants' knowledge as stated by one respondent: *"Unsure of where I would direct questions after given an answer."*

DISCUSSION

The key aim of this study was to explore physiotherapy students' perceptions about the role of the physiotherapist in health promotion. The results confirmed that University of Otago final year BPhty students believed physiotherapists had an important role in health promotion. Student participants perceived the importance of the role of physiotherapists in health promotion to be high (87.5% SD 12.3% on the VAS), with 80% of participants identifying this as "highly important" (Table 3).

The literature has suggested there is a lack of evidence identifying physiotherapists' perceptions of their role in health promotion and no previous benchmark for health promotion in the entry level curricula exists (Dean et al., 2014). However, the results of this study provide evidence for the strength of perceptions about the importance of the role of physiotherapists in health promotion and thus provide a positive response to Dean (2009), who called for an increased focus within physiotherapy on the health care priority related to NCDs. Subsequent analysis of our results showed no independent variable had a significant effect on students' perceptions of the importance of physiotherapists' role in health promotion. This may suggest that entry level education on health promotion has been successfully translated into clinical perceptions by the time BPhty students reach their final clinical year, as neither demographic nor clinical background showed any significant effect on the participants' views regarding the importance of the physiotherapists' role in health promotion.

The second aim of the study was to explore factors that influenced students in regard to asking key health questions during an initial patient assessment. Whilst it is recognised that there are many factors that contribute to the reduction in risk for NCDs, for example diet and psychosocial influences, physical activity, smoking status and sleep health are of particular interest to physiotherapists in regard to health and well-being and were thus the ones addressed. Participants identified physiotherapists' role in health promotion as highly important, but only asked patients about their level of physical activity, smoking status and sleep health 84.8%, 44.6% and 47.8% of the time respectively. No significance was found between students' perceptions of the importance of the physiotherapists' role in health promotion and how frequently they ask key health questions. One possible explanation is that while education has shaped their attitude and understanding of health promotion, in clinical practice the same emphasis may not have been placed on smoking status and sleep health compared to physical activity, by their clinical supervisors and/or role models. Dean et al. (2011) suggested education from health care providers about the adoption of healthy lifestyle behaviours can prevent, manage and in some cases reverse NCDs. In this regard, clinical supervisors have an important role to incorporate health promotion as part of key service to all patients, to help their students translate theoretical knowledge into appropriate clinical practice patterns.

The level of confidence in asking each key health question was found to be the most significant factor affecting how often students asked about physical activity, smoking status and sleep health, independent from their perceptions on the importance of physiotherapy in health promotion, with positive coefficients of 0.35, 0.36 and 0.54 respectively. However, as these coefficients were <1, other factors which influence how often participants ask the key health questions may have had an influence. In addition, it is difficult to determine the causality; whether asking the questions more often increases confidence, or being more confident leads to asking the questions more often, or a combination of the two.

The frequency of asking key health questions about smoking and sleep health was influenced by sex and key area of work respectively. Males asked about smoking more often (73.0% of the time) than females (37.6% of the time), however, there was no evidence to suggest a reason to explain the difference, other than the potential for the proportion of males and females not being evenly distributed. The students' key place of work was found to be significant in determining how often participants asked about sleep health. The findings suggested that both the role models students interacted with and the clinical setting they worked in acted as both facilitators and barriers to asking the key health questions.

Within the *a priori* theme of 'clinical setting', the most influential facilitator in asking key health questions was the relevance to patient presentation/treatment (n=49). Participants frequently stated that knowing their patient's physical activity level was important for the assessment, as it could help with the development of the patient's goals and provide a baseline from which to establish goals. Although physical activity was the main area identified, participants made few comments about the need for information on smoking status and sleep health to be a priority in assessment.

The literature shows that smoking and poor sleep health contribute to the increasing global incidence of NCDs alongside physical inactivity (Dean, 2009), yet students did not associate these two key areas of health promotion with a patient treatment plan and assessment. When smoking status and physical activity were included in an assessment form, participants (n=17) identified this as a facilitator to asking these questions. Assessment forms acted as a facilitator, prompting participants to ask these key health questions although this may not necessarily translate into their treatment plan as there was an apparent lack of association, specifically with smoking status and sleep health.

'Clinical setting' also acted as a barrier to asking key health questions. Participants (n=28) indicated that if asking about physical activity, smoking status or sleep health was not directly relevant to the patient presentation/treatment in their opinion, they were less inclined to ask. Participants often stated in the questionnaires that sleep health was not relevant to their patient, yet did not elaborate on reasons. This could indicate that participants did not understand the role of sleep health in healing, repair and recovery and the development of NCDs and thus did not link the relevance to their patient (Dean, 2009; Pépin, Tamisier, and Lévy, 2012). Furthermore, 21 participants stated information from these key health questions was already in the patient's medical notes, particularly smoking status, so did not ask the question again. While best practice guidelines for smoking cessation stress that tobacco use should be addressed at every patient contact (McIvor et al., 2009), the results of our study suggested participants did not follow this line of reasoning as they addressed this key area only 44.6% of the time.

The subtheme of role modelling behaviours was identified by participants (n=6) to impact their use of key health questions. A few participants (n=3) stated they would be unlikely to ask if their supervisor did not, while other participants (n=3) stated that encouragement from their supervisors would influence them to ask these questions more. The responses supported the fact that role models, such as clinical supervisors, can impact on the development of a student's clinical practice patterns.

The second *a priori theme*, 'knowledge regarding key health questions', revealed that participants were unsure of the relevance of the key health questions and lacked both experience and confidence in asking these key questions. Some participants were unsure of the relevance of sleep health in particular and stated greater lecture content was dedicated to physical activity and smoking status throughout undergraduate education than to sleep health. Therefore, increased emphasis may need to be placed on sleep health education within the entry level curriculum. Other participants (n=7) stated that they did not know how to ask the key health questions and did not want to make the patient feel judged. This could be due to inexperience or indicate an area for further education.

Strengths and Limitations

Our study had several strengths. A mixed method approach was used, allowing analysis of key themes and exploration of subthemes. Qualitative sections in this survey provided an opportunity for freedom of perceptions to be put forward anonymously, linking with quantitative data to allow comprehensive analysis of results which addressed issues that are highlighted in this study. In addition, the 10 cm horizontal VAS used in this study has been shown to have good reproducibility and is less likely to be subject to respondent error due to the angle at which the VAS is viewed (Dixon & Bird, 1981; Revill et al., 1976). Furthermore, based on the high response rate (88.1%) to this survey, there was a greater likelihood for the questions answered in this study to be representative of the target population, minimising the probability of non-respondents error (Cook et al., 2000; Tomaskovic-Devey et al., 1994). In addition, errors were minimised through two independent cross checks (0.49%) and one outlier check of the data input (0.03%).

There are a few limitations to this study. Some participants had undertaken only two clinical placements and a research rotation, while other students had undertaken three clinical placements prior to completing the survey. Therefore, it is not possible to determine whether a difference in the amount of clinical placement experience influenced participants' responses. Furthermore, this study involved final year BPhty students from the University of Otago and therefore cannot be generalised to final year students from other physiotherapy entry level programmes around the world.

CONCLUSION

University of Otago final year BPhty students perceived physiotherapists to have an important role in health promotion. This suggests entry level education has been successful in instilling this perception and the reasoning behind it. Confidence was found to be the most significant factor affecting the frequency with which students asked the key health questions. Furthermore, the results of the study also identified that knowledge regarding key questions, role modelling, and the clinical setting also influenced how often students asked key health questions and that the participants were more likely to ask about level of physical activity than smoking status or sleep health.

In future it would be helpful to explore the perceptions regarding key health questions of final year students from other physiotherapy entry level programmes around the world, so a benchmark can be established and the role of the physiotherapist in health promotion highlighted. Effective education for physiotherapy students that incorporates health promotion in regard to physical activity, smoking cessation and sleep health is fundamental to their future role in promoting healthy lifestyles to their patients.

KEY POINTS

1. Physiotherapists have an important role in health promotion, in particular in relation to the global health issues associated with non-communicable diseases.
2. Final year physiotherapy students appreciated the relevance of asking patients key health questions but were more likely to ask about level of physical activity than smoking status or sleep health.
3. Effective education for physiotherapy students that incorporates health promotion in regard to physical activity, smoking cessation and sleep health is an essential part of the entry level curriculum.

DISCLOSURES

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APPENDIX: The use of key health questions for patient initial assessment in clinical practice

UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND

The survey questions aim to examine your recall and opinions in regard key questions applicable to general health in a patient assessment during your recent clinical placement. Please follow the instructions and answer all questions in each Sections A-C.

Section A General information

A1	What is your date of birth?	_____/_____/_____ A2 What is your sex? __________
A2	What ethnic group/s do you belong to? Tick all those relevant	☐ NZ European ☐ Tongan ☐ NZ Maori ☐ Niuean ☐ Cook Island Maori ☐ Chinese ☐ Samoan ☐ Indian ☐ Tokelauan ☐ Other state which e.g. Dutch, Japanese __________
A3	Are you an international student?	☐ YES ☐ NO
A4	How many years have you been enrolled in tertiary education?	__________
A5	What paper have you just completed in Rotation (R) 3?	☐ Phty455 ☐ Phty456 ☐ Phty457 ☐ Phty458
A6	In your opinion to what extent is health promotion (e.g. physical activity, smoking, sleep health) important for physiotherapists to address when working with patients? Mark 'X' on the 10cm line that best represents your answer.	*Very important* *Not at all important* Comment:
A7	What location were you in for Rotation3?	☐ Hastings ☐ Palmerston North ☐ Lower Hutt ☐ Wellington ☐ Nelson ☐ Christchurch ☐ Timaru ☐ Dunedin ☐ Invercargill ☐ Other __________

A8 Please select your key place/s of work in Rotation 3

☐ 1) S of Phty Clinic
☐ 2) DHB acute care/ICU
☐ 3) DHB Inpatient rehabilitation
☐ 4) DHB Outpatients
☐ 5) Care of the Elderly
☐ 6) A school
☐ 7) Paediatric Outpatient
☐ 8) Community rehabilitation
☐ 9) Spinal Unit
☐ 10) Rural hospital
☐ 11) Burns Unit
☐ 12) Private Practice - General
☐ 13) Sports injury Clinic
☐ 14) Occupational Health
☐ 15) Other ____________________

In the boxes below for each place ticked above briefly describe the age range of patients, the work environment and common types of conditions seen

From Qu A8 record the number of the place of work e.g. 2	Record % of the 6 week rotation at the placement e.g. 100%	AGE RANGE e.g. 18-90y	BRIEF DESCRIPTION OF PATIENTS AND ENVIRONMENT e.g. surgical ICU and pre and post op adults in acute care high dependency and surgical wards	COMMON CONDITIONS TREATED e.g. Cardiac surgery, colectomy, PVD

A9 For each of the numbers ticked in Qu A8 please mark 'X' on the 10cm line that best represents how often you asked the question relating to their normal level of physical activity in your initial assessment of each patient. Please feel free to comment on your selection/s.

A8 No ________

Always asked ______________________________ *Never asked*

Comment:

A8 No ________

Always asked ______________________________ *Never asked*

Comment:

A8 No ________

Always asked ______________________________ *Never asked*

Comment:

A10	For each of the numbers ticked in Qu A8 please mark a 'X' on the 10cm line that best represents how often you asked the question relating to their (or parent/guardian's) smoking status in your initial assessment of each patient. Please feel free to comment on your selection/s	*A8 No* __________ *Always asked* *Never asked*	Comment:
		A8 No __________ *Always asked* *Never asked*	Comment:
		A8 No __________ *Always asked* *Never asked*	Comment:
A11	For each of the numbers ticked in Qu A8 please mark 'X' on the 10cm line that best represents how often you asked the question relating to their sleep health in your initial assessment of each patient. Please feel free to comment on your selection/s	*A8 No* __________ *Always asked* *Never asked*	Comment:
		A8 No __________ *Always asked* *Never asked*	Comment:
		A8 No __________ *Always asked* *Never asked*	Comment:
A12	Do you have any other comments about the relevance of the three themes: physical activity, smoking status and sleep health, in your patient assessments during your last clinical placement?	Comment:	

A13 In your patient assessments on your recent clinical placement, mark 'X' on the 10cm line to indicate how confident you felt asking questions about each of the three key health themes: Please feel free to include comments to explain your level of confidence for each

Physical activity
Totally confident *Not at all confident* Comment:

Smoking status
Totally confident *Not at all confident* Comment:

Sleep health
Totally confident *Not at all confident* Comment:

A14 In the space below please state any factors you can identify from your clinical placement that encouraged you to ask your patients questions regarding physical activity, smoking status and sleep health.

A15 In the space below please state any factors you can identify from your clinical placement that discouraged you from asking your patients (or parent/guardian) questions regarding physical activity, smoking status and sleep health.

THANK YOU FOR COMPLETING THE SURVEY

Table 1. Demographic data for final year Bachelor of Physiotherapy student participants (n=74)

Table 2. Core clinical areas and associated key areas of work described by participants for their most recent clinical placement.

Table 3. Summary of the participants' responses to the importance of the role of physiotherapists in health promotion, how often the key questions were asked, and level of confidence in asking the key questions.

Table 4. Summary of results of multiple regression analysis completed in relation to the key health question.

Table 5: A priori themes and inter-related subthemes that emerged from participants' free comments for the survey data collected

This study won the ML Roberts prize awarded for the best 4th year undergraduate research project at the School of Physiotherapy, AUT University in 2016.

An exploration of the sequence and nature of treatment options available to people living with osteoarthritis of the hip and/or knee within a New Zealand context.

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ABSTRACT

The aim of this study was to explore the sequence and nature of treatment options available to people living with osteoarthritis of the hip and/or knee in New Zealand. Twenty-three people living with hip and/or knee joint OA participated in face-to-face interviews about their experiences of OA treatments they were offered and received. All data were analysed thematically. Data analysis led to the identification of three themes, which were, *General Practitioner as initial contact; lack of a clear treatment pathway; inconsistent provision of information*. Theme 1 highlighted that participants utilised their General Practitioner (GP) as their initial and primary health care provider for OA management advice. Theme 2 explored participants' reports of exploring a variety of treatment options for their hip and/or knee joint OA, establishing that there is no clearly defined treatment pathway. Theme 3 identified notions regarding participant education about OA. Analysis indicated that people living with OA are looking for consistent advice and a clear management pathway. The GP was the first health professional that most participants had contacted about their OA, however following this consultation there was no clear identifiable management pathway.

Jolly, J., Bassett, S., O'Brien, D., Parkinson, C., Larmer, P. An exploration of the sequence and nature of treatment options available to people living with osteoarthritis of the hip and/or knee within a New Zealand context. *New Zealand Journal of Physiotherapy 45(2): 90-95. doi: 10.15619/NZJP/45.2.05*

Key Words: Knee and hip osteoarthritis, New Zealand, Treatment options, Treatment pathways

INTRODUCTION

The longer people live the more likely they are to develop long term musculoskeletal disorders. Of the 291 long term disorders identified globally, osteoarthritis (OA) of the hip and knee was ranked the eleventh highest contributor to disability, up from fifteenth in 1990 (Cross et al., 2014). In line with international trends, the prevalence of OA in New Zealand has increased from 9% of adults in 2001/2012 to 10% in 2015/2016 (Ministry of Health, 2015, 2016), with a predicted rise to 17% by 2020 (Access Economics, 2010). OA does impact detrimentally on people's physical fitness, social integration, mental health, and general wellbeing (Rabenda et al., 2007). OA of the knee joint is reported to be the primary cause of disability in walking, stair climbing and activities of daily living among people 50 years of age and older (van Dijk, Dekker, Veenhof, & van den Ende, 2006). Further, people with chronic OA of the hip and knee joint have a greater risk of cardio-metabolic comorbidity (Nielen et al., 2012) and early mortality due to their reduced physical fitness (Hochberg, 2008). Consequently, these functional problems and associated comorbidities will place greater financial demands on the health care system and its personnel.

At present New Zealand has no management guidelines for people living with OA (Larmer, Reay, Aubert, & Kersten, 2014). However, current international clinical guidelines advocate conservative management of OA prior to considering medication or surgery (Dean & Hansen, 2012; Fransen & McConnell, 2008; Merashly & Uthman, 2012; Van Manen, Nace, & Mont, 2012; Zhang et al., 2008). It has been argued that to reduce the burden of OA, safe and effective health services involving a range of conservative management options across a multidisciplinary team are required (Larmer et al., 2014). Despite the recommendations of many of the previously referenced guidelines, internationally clinicians continue to focus on the provision of medication and surgery (Hunter & Lo, 2009). The referral of patients to conservative management programmes has been poor (Chevalier, Marre, de Butler, & Hercek, 2004; Cottrell, Roddy, & Foster, 2010). Furthermore, low levels of engagement (Poitras et al., 2010) and limited long-term adherence (Pisters et al., 2010) hinder the success of these programmes. Research indicates a similar practice in New Zealand (Reid, Potts, Burnett, & Konings, 2014).

There is limited research that explores the sequence and nature of treatment people receive following their diagnosis of OA (Brand, Ackerman, Bohensky, & Bennell, 2013; Brand et al., 2014; Reid et al., 2014; Smythe, Larmer, & McNair, 2012). Additionally, much of this research has been undertaken in countries, such as Australia (Reid et al., 2014), where people diagnosed with OA have access to publicly funded rehabilitation prior to surgery. Until recently no such funded options have been available in New Zealand. In 2016 the Ministry of Health initiated the Mobility Action Programme where 17 small pilot projects were offered across New Zealand (Ministry of Health, 2017). Therefore accessibility of treatment is likely to differ from that of other countries and may also differ to existing recommended clinical guidelines, such as those developed by Zhang et al. (2008)

Therefore, the aim of this study was to explore and trace the sequence and nature of treatment options available to people living with OA of the hip and/or knee in New Zealand. The results of this study would inform a larger survey about the availability and access of treatment options for people living with OA of the hip and/or knee joint within New Zealand.

METHODS

Study Design

This study used a qualitative descriptive methodology and data were analysed using thematic analysis. Thematic analysis identifies, analyses and reports ideas within the data (Braun & Clarke, 2006). This method avoids highly interpretive, abstract, and conceptual analysis, instead focusing on a description of the key issues and/or themes (Sandelowski, 2000). It was anticipated that this study methodology would allow the researchers to identify and report the sequence and nature of treatment options available to and utilised by people living with OA of the hip and/or knee joint in New Zealand.

Participants

Twenty-three people took part in the study. The inclusion criteria were: people over 18 years of age; living in New Zealand with a physician-confirmed diagnosis of OA of the hip and/or knee joint(s). Participants were also required to have a good command of the English language to be able to participate in the interviews.

Data Collection

The Auckland University of Technology Ethics Committee (AUTEC 15/371) approved the study. The study was based at the North Campus, Auckland University of Technology (AUT), Auckland. Participants were recruited by advertising at the AUT Akoranga Integrated Health Clinic, by an email sent to Arthritis New Zealand members, or by word of mouth. The advertisement informed people to contact the student researcher (JGG) if they wished to participate. When potential participants contacted JGG they were provided with the study information sheet. Those who still wished to participate signed the consent form and completed the demographic and disease characteristics questionnaire.

Data were collected by way of a face-to-face individual semi-structured interview that was conducted and digitally recorded by JGG. Interviews were conducted between December 2015 and January 2016 at a location suitable to participants, with them electing either the AUT North Campus or their home. Interviews took up to 160 minutes in duration, were conducted in a conversational style, were guided by the interview schedule (see Table 1) and aimed to invite stories about particular events and moments regarding treatment for OA. The interview schedule was developed from current literature describing best practice clinical management of OA (Zhang et al., 2008; Fransen & McConnell, 2008).

Table 1: Interview schedule

Interview Questions
• When were you diagnosed with osteoarthritis, and who made the diagnosis?
• What advice were you given at the time of the diagnosis?
• Were you referred to any other health services for your arthritis?
• Were you referred to any non-health providers for your OA (such as green prescription)?
• Have you sought treatment for your OA on your own?
• What things have you trialled or done to manage your OA?
• What things have been useful?
• What things have not been useful?
• Where did you get your information? Health professionals, friends, websites, books, or other sources.
• What was the order in which you trialled the different interventions for your OA?
• Do you take, or have you taken, any medications or supplements for your OA?

Following the completion of the interviews all paper forms were scanned, converted to PDF files and stored electronically. The original forms were destroyed. Digital recordings were securely electronically stored. Interviews were transcribed verbatim and checked for accuracy by JJ and CP. Identifiable features of the transcriptions were removed for participant confidentiality, and participants were allocated a participant number for coding. Data were then analysed.

Data Analysis

Demographic data were analysed using descriptive statistics. The interview analyses followed the six phases outlined by

Braun and Clarke (2006). The phases are familiarisation of the data, generating initial codes, searching for themes, reviewing themes, defining and naming the themes, and producing the report. Two of the researchers (JJ and CP) independently reviewed the transcripts and coded sentences that contained meaningful incidents relating to the research question. From the interview data, themes were identified and the relevant participant quotes were used to illustrate them.

FINDINGS

Participants' demographic and arthritis characteristics

As can be seen in Table 2 the majority of the participants were female, and were over the age of 50 years. Most participants took some form of analgesia and/or anti-inflammatory medication for their arthritis. In addition, 17 participants were retired, the remaining six were engaged in relatively sedentary roles. The participants' highest education level ranged from completion of high school through to postgraduate education. Seventeen participants either had already had one or more surgical interventions for their OA or were planning to do so.

Table 2: Participants' demographic and disease characteristics

Variable	n = 23
Age (years) mean (range)	70.3 (52 – 86)
Female	20
Male	3
Reported use of analgesia, *n* (%)	15 (65)
Reported use of anti-inflammatories, *n* (%)	17 (74)
Symptom duration (years)	0.5 - 30
Symptom duration since diagnosis (years)	0.5 - 22

Interview Findings

Three themes were identified in the data that related to the sequence and nature of treatment options available to people with hip and/or knee OA in New Zealand. The themes were called: General Practitioner as initial contact; lack of a clear treatment pathway; inconsistent provision of information. Within each of the themes a number of distinctive notions were recognised. Each of the three themes and the associated notions are explained and supported by participant quotes from the data.

Theme 1: General Practitioner as initial contact.

This theme highlights that participants utilise their General Practitioner (GP) as their initial and primary health care provider for OA management advice. Also associated with this theme and detailed are the range of management strategies participants reported using following contact with their GP.

Once participants made the decision to seek medical attention, 19 of them chose their general practitioner (GP) as their first point of contact. *'I was having difficulty getting upstairs so I went to the doctor'* (Participant 15).

Frequently, the GP made the diagnosis of hip and/or knee OA through X-ray findings, which was then followed by a specialist referral, commonly to an orthopaedic surgeon or a rheumatologist. *'I got really really sore calves and sore knees… and I was all swollen up so I went to my GP...so he sent me for X-rays and a referral to a hospital in the rheumatology department'* (Participant 5).

Conservative management strategies were suggested in a number of different situations. These were if there was no referral to a specialist, prior to and/or following specialist referral; and sometimes by the specialist. If conservative management was indicated by the specialist, participants were referred back to the GP, who then became the primary point of contact for their OA management. The typical conservative approach was the use of either analgesic or anti-inflammatory medications, and a self-management programme, which participants undertook on their own. Self-management strategies included trials of over the counter medications and/or supplements, use of heat or ice packs and/or exercise. *'I've just started on* [glucosamine]*, the doctor has just suggested it'* (Participant 22). '[GPs] *do like to give a lot of pain killers… I suppose you go in there and that's what they can do, but they don't recommend, if he did recommend the exercise I would've went* (Participant 16).

However, only a small number of participants indicated that they were advised by their GP to exercise and/or to reduce their weight. '[Advice was given] *to keep active, probably to keep an eye on my weight and things like that'* (Participant 17). *'And that's what came out of the initial discussion with the GP really was to build up the muscles around the joint so that the joints are less impacted'* (Participant 12). A greater number of participants did not report receiving advice from their GP about exercise, staying active, and/or seeking advice from an appropriately qualified health provider, such as a physiotherapist. *'The GP never mentioned anything about exercise or a physio'* (Participant 16).

Theme 2: lack of a clear treatment pathway.

Theme 2 focused on the plethora of treatments offered to participants over time for their hip and/or knee OA. Participants reported that remaining active was important for them, and that they had discovered this themselves without advice from a health practitioner. Some participants also indicated that they were not given a specific exercise prescription. *'No particular exercise but yes keep active and if you don't use it you lose it sort of thing and that really encourages me to keep pushing* [staying active] *you know'* (Participant 23). *'I just feel as though I need to keep moving, I don't want to lose any mobility'* (Participant 9).

Another notion identified that participants were commonly referring themselves to both recommended and alternative health care providers within the community. Participants described engaging with physiotherapists, chiropractors and osteopaths but also naturopaths, acupuncturists, practitioners of traditional Chinese Medicine, and massage therapists in an attempt to seek effective treatment for their OA. *'So we did the clay therapy …., I've always taken magnesium for my joints and my asthma, and a bit of this and a drop of that'* (Participant 5).

The data showed that participants were using trial and error methods to determine the best treatments for their OA, which included the use of over-the-counter supplements. *'Yeah well I went on glucosamine after I'd been to Arthritis New Zealand meetings people were talking about glucosamine…I sort of thought, I'm prepared to try anything so I've been on it for quite a while'* (Participant 9). *'I did take of course I should tell you is fish oil and glucosamine every day, with these things about what helps you never know because if you hadn't taken it you have no way of knowing'* (Participant 12).

Theme 3: inconsistent information provided.

Theme 3 revealed that there is no consistent information provided to individuals with hip and/or knee OA. The notions revealed that people initially believe that their OA symptoms are age-related, until they find out otherwise; that they seek information from a variety of sometimes conflicting sources, including health professionals and the internet; and that they consider they have received inadequate information/education regarding treatment options, with the exception of surgery.

Prior to diagnosis, participants described putting up with their OA with frequent reports of delaying engagement with health services. *'Just terribly painful, I couldn't get up the stairs and everyone would say to me go and get it seen* [to], *it was getting worse and the pain was getting unbearable'* (Participant 15). A number of participants indicated that they delayed contacting their GP due to a belief that their condition was not severe enough or because they associated their symptoms as general aches and pains.

> *I had a bit of trouble identifying the fact that my knees were bad enough to be operated on. So I had trouble with my knees for [20 years] until finally one actually stopped working and I was out shopping and it just stopped with incredible pain, you know, and from that time on I had to walk with a stick. At that stage I started making noises about what was wrong with my knee you know* (Participant 1).

The second identified notion indicated that some participants were receiving differing advice regarding the management of their condition from health professionals. *'I have great faith in my GP but it's really hard… the consultant saying one thing and the GP saying something else'* (Participant 5).

The third identified notion related to the sources participants reported using to find out about their condition. A number of participants reported using the internet and finding it useful.

> *I get on the internet, I do a lot of reading, I pick up every bit of research that I can in magazines or journals or on the internet to see what might help and try and integrate it into my life if I can.* (Participant 6).

Finally, participants reported that they felt they had not received sufficient information/education about treatment and support options for people with OA, other than to have surgery.

> *…in a lot of ways we haven't had a lot of support or information about what you can and can't do, you know like yes you've got arthritis, you just get on with it type thing, it's not like there are groups to go to or some sort of exercises or other ways of relieving you know…even before the surgeries, when we knew* [I] *had the knee arthritis and when we knew* [I] *was going to need replacements and things like that, the lack of information on what we could or couldn't do, or where you could go to get things to make life easier was pretty much non-existent* (Participant 8).

DISCUSSION

The primary aim of this study was to explore and trace the sequence and nature of treatment options available to people living with OA of the hip and/or knee in New Zealand. The information provided by the participants fell into three themes, namely: General Practitioner as initial contact; lack of a clear treatment pathway; inconsistent provision of information. Beyond these initial observations, the findings from this study appear to highlight two issues impacting the management of OA in New Zealand. First the participants' delay in seeking health provider input regarding their OA may be due to an absence of education and information about the disorder. Second there appeared to be a lack of a clear and consistent treatment pathway for OA in New Zealand, despite the availability of evidence-based guidelines. The strengths and limitations of this study are outlined and then the implications and recommendations for both research and clinical practice are presented.

A consistent finding in the data was that participants delayed consultation with their GP until such a time that their osteoarthritis was detrimentally affecting their activities of daily living. This is not a new finding in research exploring what influences people with OA to consult their GP (Bedson, Mottram, Thomas, & Peat, 2007; Thorstensson, Gooberman-Hill, Adamson, Williams, & Dieppe, 2009). It is common for people in the older age group to consult their GP for pain relief and to delay consultation regarding joint pain as this is seen as a normal part of the ageing process (Sanders, Donovan, & Dieppe, 2002). Widespread education of the ageing population in New Zealand regarding OA symptom identification and management recommendations may help to address the misconception that joint pain is an inevitable part of the ageing process and may support individuals to seek medical care earlier in the disease process.

The lack of a clear and consistent treatment pathway resulted in every participant experiencing different advice and treatment options for their OA. Some participants undertook self-management strategies whereas others only used pharmacological strategies. Pouli, Das Nair, Lincoln, and Walsh (2014) found that the beliefs of individuals with knee joint OA influenced their use of medication with them feeling reliant on it for pain relief, while still looking for alternative methods to assist with pain. The participants in our study utilised trial and error to explore treatments for their OA, which may have been due to the influence of their belief systems on their decision(s) about which OA treatments they chose to use, and is consistent with the findings by Pouli et al. (2014). This is despite the recommendations provided in the Osteoarthritis Research International (OARSI) guidelines stating that effective management of hip or knee OA requires a combination of pharmacological and non-pharmacological modalities (Zhang et al., 2008). The recommended modalities include education, referral to a physiotherapist, muscle strengthening and weight reduction. These modalities are integral in the treatment of OA and can be implemented by a number of different health professionals. This study and others have found that in spite of participants not specifically being advised to exercise a large number of them were aware of the importance of exercise and remaining active (Grime, Richardson, & Ong, 2010; Morden, Jinks, & Ong, 2011). A review of 17 guidelines found exercise and education to be the strongest recommended non-surgical and non-pharmacological management strategies for OA (Larmer et al., 2014). Therefore, a clear treatment pathway, incorporating both exercise and education, for both people with OA and health practitioners to follow may help to instigate an evidence-based multidisciplinary approach to OA management in New Zealand.

Study strengths and limitations

This study had two strengths. The first was the use of a qualitative methodology that resulted in the collection of rich data that explored the phenomena of interest in some depth. The second was that our sample of 23 people had a broad range of different experiences of treatment for their OA. This study had two limitations. First the sample were purposively recruited within Auckland and therefore the findings may not be applicable to all people with hip and/or knee OA across New Zealand. Second, the majority of participants were recruited through their association with Arthritis New Zealand, therefore the knowledge and experiences of these people may differ from people without connections to Arthritis New Zealand.

Implications and recommendations for research and clinical practice

Future service development for individuals with hip and/or knee OA may benefit from the inclusion of a clear management pathway that could start with the GP as the first point of contact but also incorporate other healthcare providers in a clear cohesive manner. Information could be provided for people living with OA that identify health professionals with expertise in conservative management strategies, such as exercise therapy and education, as the first point of contact. Funding options must also be considered for people with OA in New Zealand to access evidence-based treatment modalities.

This management pathway may also benefit from addressing the management of OA from a long term condition perspective with an emphasis on continuity of care between multiple health practitioners, rather than episodic consultation. Based on the findings of our study there is a need for the implementation of a co-ordinated evidence-based multidisciplinary approach for the care of individuals with hip and/or knee joint OA in New Zealand. This approach should start with multi-disciplinary conservative management in which there is communication between health providers, including but not limited to GPs, physiotherapists, dietitians, rheumatologists, psychologists for pain management, and orthopaedic surgeons. This approach was suggested by Hunter (2011) for Australian clinicians, and is appropriate for the New Zealand context, and in line with OARSI recommendations (Zhang et al., 2008).

Future research can be directed to capturing a more comprehensive picture of what is occurring in New Zealand regarding the sequence and nature of treatments for OA of the hip and/or knee joint(s). This information could be obtained through the development and implementation of a survey to gather a large number of responses. The results of this survey may in turn assist in the development of future policy regarding OA management in New Zealand.

CONCLUSION

The main finding from this study is that there is no clear and consistent pathway for the management of OA of the hip and/or knee in New Zealand. This has had a resultant effect of a diverse range of conservative management strategies being used in a trial and error manner, in spite of the availability of evidence-based guidelines for OA management. GPs are typically the first point of contact that individuals with OA seek treatment from, and are also often the primary point of contact for their OA management. However, participants reported conflicting information from different health practitioners and there is a need for widespread education regarding OA symptom identification and management recommendations. These findings can be used to guide the development of a clear long term condition management pathway with the GP as the first point of contact, along with the inclusion of other health professionals in a cohesive and multidisciplinary manner to ensure continuity of care. Future research should be directed to the development and implementation of a survey to gather a large number of responses thereby obtaining a more encompassing evaluation of the sequence and nature of treatment options for hip and/or knee OA in New Zealand. In turn, this survey can further guide a treatment pathway and other future policy regarding hip and/or knee OA management in New Zealand.

KEY POINTS

1. There is no clear and consistent pathway for the management of hip and/or knee osteoarthritis in New Zealand.
2. General practitioners are typically the first point of contact that people consult for the treatment of their osteoarthritis.
3. The information provided by health professionals, including physiotherapists, should be consistent and in line with the international guidelines for the management of osteoarthritis.
4. Defined pathways need to be developed for the management of osteoarthritis of the hip and/or knee, with general practitioners being the primary care givers, along with the inclusion of health professionals who have the relevant treatment expertise.

DISCLOSURES

The authors declare no conflicts of interest. Arthritis New Zealand funded this research as a Summer Studentship for Jasmin Jolly in 2015 and 2016.

PERMISSIONS

Ethical approval was granted by Auckland University of Technology Ethics Committee (AUTEC 15/371).

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Management of Chronic Conditions in the Foot and Lower Leg

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Chronic conditions in the foot and lower leg are quite debilitating and difficult to treat because of the complex interaction of various factors responsible for onset and progression of these conditions. The aim of this book is to provide a comprehensive overview of these musculoskeletal conditions. This book has been written from a clinical point of view and provides an insight into the common conditions of the foot and lower leg, such as osteoarthritis of the ankle joint, rheumatic diseases, gout, forefoot entities, rear foot entities, Achilles tendon, stress fracture, and cerebral palsy as separate chapters.

Each chapter introduces the reader to the condition, starting with prevalence, then anatomy, associated impairments and predisposing factors. Quality of life is really important while exploring the influences of a condition on a person's life. Information related to quality of life and health related quality of life has been presented for each condition through the patient-reported outcomes or from the qualitative study results, which adds to the depth to understand the patients' perspectives about their condition. Special tests have been described along with the limitations in the applicability of the tests. The role of investigatory procedures in clinical diagnosis and decision making has been nicely explained, along with the reliability and validity of the procedure. The management of each condition has been discussed through a multidisciplinary approach. Management strategies include the role played by different approaches; for instance pharmacological, physical, surgical strategies, patient education and manual techniques and lifestyle strategies. These strategies have been explained as different lines of treatment in a stepwise manner. A future directions section is at the end of each chapter and cites the current research in the area; it is therefore very interesting for researchers to highlight the knowledge gaps. Invited commentary from the experts is also included and highlights the contemporary trends being followed in the clinical practice.

All the chapters flow well and provide relevant information to the clinician required for differential diagnosis and finally helping to develop the clinical decision making skills. The most exciting part of this book is reading the recent research in a summarised way along with the conflicting research results. Although biomechanics has been explained in different sections of the book, evidence related to overuse injuries is absent. In particular, the effects of different shoes or barefoot conditions during ambulatory activities on overuse injuries. This is a highly debated topic, but is an important modifiable factor, which can potentially help minimise overuse injuries. Nevertheless, this book is a fantastic resource for clinicians, undergraduate and post-graduate physiotherapists and would be a useful addition in your library.

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