Title of article: Getting fit for practice: an innovative paediatric clinical placement provided physiotherapy students opportunities for skill development

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ABSTRACT

Objectives: Negative attitudes to disability among physiotherapy students in paediatric placements might be addressed by providing clinical placement opportunities for students early in their course. The aim of this qualitative research study was to explore what physiotherapy students reported learning from an innovative paediatric placement option.

Design: Qualitative research with in-depth interviews.

Participants: Seventeen first and second year physiotherapy students (15 women, 2 men; mean age 19.9 (SD 1.4) years) who took part in the clinical education experience.

Interventions: The experience comprised a student-led progressive resistance training programme performed twice a week for 10 weeks at a community gymnasium with an adolescent with Down syndrome.

Methods: In-depth interviews were completed after the 10-week programme and were audio-recorded, transcribed verbatim and independently coded by two researchers. Data were analysed using thematic analysis.

Results: Two themes emerged from the data, one about being a student mentor and the second about skill development and application. The physiotherapy students indicated the programme was a challenging yet rewarding experience, and that they gained an increased appreciation of disability. They reported developing and applying a range of communication, professional and physiotherapy specific skills.

Conclusions: The results suggest that the clinical experience provided physiotherapy students with opportunities for learning clinical skills, learning generic professional skills, and understanding disability in young people. Many of the learning outcomes identified by the participating students align with desired graduate capabilities and required professional competencies.
INTRODUCTION

The attitudes of physiotherapy students towards people with disability are not as positive as practising physiotherapists [1], or occupational therapy students [2-3]. Given the importance of disability in paediatric rehabilitation [4], negative attitudes of physiotherapy students could be problematic in paediatric placements. Negative attitudes of health professionals are a barrier to exercise for people with disability [5-6], may reduce the effectiveness of interventions [7] and influence areas of speciality in which physiotherapists practice.

Student attitudes towards disability might be addressed by providing clinical placement opportunities for students. Physiotherapy employers identified a lack of paediatric and disability experience among recent graduates [8]. This may be due to difficulty in obtaining paediatric student placements. A lack of exposure to paediatrics during undergraduate training is a problem as a student’s clinical experience may be a more powerful influence on their future career than university coursework or job availability [9].

To explore the influence of experience on attitudes towards disability, we designed a placement where physiotherapy students were exposed to disability early in their course. We matched each student with an adolescent with Down syndrome and arranged for both to complete an exercise programme [10]. Adolescents with Down syndrome are typically sedentary, and often do not participate in recommended levels of physical activity [11]. This places them at risk of obesity [12] and Type II diabetes [13] and, therefore, they are an ideal group to encourage to exercise.

We undertook the following study to explore the self-reported learning outcomes of physiotherapy students. The research question was:
What did physiotherapy students report they learnt from participating in a paediatric clinical placement with young people with disability?

**METHOD**

**Design**

The framework used to underpin this qualitative study was phenomenology. Phenomenology is the study of “the lived experience” [14], where events are described from the perspective of the person experiencing them [15]. We aimed to understand the experiences of physiotherapy students who volunteered to take part in a paediatric experience requiring them to exercise with adolescents with Down syndrome. Ethics approval was obtained from the University Human Ethics Committee, and all participants gave written informed consent prior to their participation.

**Participants**

Participants were first or second year physiotherapy students. They were ‘mentors’ as they too had to complete the exercise programme, and to encourage equality in the relationship between the students and the adolescents. The adolescents with Down syndrome were recruited to participate in a randomised controlled trial on the effects of a progressive resistance training programme and comprised 12 boys and 5 girls (mean age 15.8 years (SD1.6)) [10]. The students and adolescents were matched based on where they lived and, in some cases on gender.

The students were enrolled in the undergraduate physiotherapy programme at La Trobe University, Melbourne, Australia, a four-year Bachelor of Physiotherapy degree programme. During the first two years, the students studied biological, medical and behavioural sciences,
the theory and application of basic physiotherapy techniques and two paediatric subjects (one on child development and another on common paediatric conditions). The students also completed two one-week clinical observation placements.

Clinical Experience Programme

Each student and adolescent pair completed a 10-week, twice a week progressive resistance training programme at their local community gymnasium, training according to guidelines for resistance training [16-17]. The training programme is described in detail elsewhere [10]. The research team selected the gymnasium and liaised with gymnasium staff and students. All costs for gymnasium facilities were paid by research funding. Programme organisation was facilitated by the researchers’ previous experience in organising community-based exercise programmes for people with disability.

Students completed 2-hours of training on programme content and progression, motivational and teaching strategies, and use of the gymnasium equipment. Students included the programme as part of their professional clinical experience. The students kept a log book documenting the programme. Each student had contact with the researchers every three weeks to ensure the programme was proceeding as planned.

In-depth Interviews

After the programme, each student took part in an in-depth interview recorded using an Mp3 recording device. The interviewer was a physiotherapist experienced in conducting interviews and known to the participants as an academic staff member at the university. This allowed the interviewer to quickly establish rapport with the participants. The interviewer had no other contact with the students as part of the study. The interview began with a general question on
the student’s experience and progressed to questions that explored their perceptions of learning outcomes (Appendix). Open-ended questions were asked to allow the interviewer to establish the topic to be discussed without suggesting how the student was to respond [15]. Follow-up questions were used to get a student to elaborate on a response, to clarify any potential confusion about a response, or to expand a line of thought.

**Data Analysis**

Interviews were transcribed verbatim and data examined using thematic analysis [15]. This ensured the themes were derived from the data and were not preconceived. Transcripts were read several times by two researchers (AB, NS) independently to identify emerging concepts. NVivo software (Version 7, QSR international) was used to assist coding. After coding, through a consensus process, like concepts were grouped into subthemes, and these were drawn together to form themes. When the final list of themes was agreed, the transcripts were re-read to ensure no relevant aspect of these themes had been overlooked.

**Rigour and Trustworthiness**

Research rigour was evaluated against the criteria of credibility, transferability, and dependability [15]. Credibility was enhanced as 17 out of a possible 19 eligible students participated, data were triangulated through multiple sources (face-to-face meetings, e-mail correspondence, exercise log books), more than one researcher coded the data and member checking of the initial themes generated by the researchers was completed (participant validation). Transferability was improved by using ‘rich thick description’, whereby direct verbatim quotations were included. Each participant was assigned a synonym to protect their identity.
Dependability was enhanced through the choice of methodological framework, using methods of data collection consistent with the research aims, and establishing coherent links between the data and reported findings through member checking [15]. Transcripts were sent to participants, who were asked to comment if they were a true reflection of their thoughts [18]. Two participants made minor changes to the text of their transcript to improve clarity and one participant provided an answer to a question they had been unable to answer during the interview.

RESULTS

Interviews were completed with 17 physiotherapy students (15 women, 2 men; mean age 19.9 years (SD 1.4)). Two students did not participate; one declined the opportunity and one was unavailable. Ninety percent (198/220 sessions) of the scheduled training sessions were completed. Missed sessions were due to illness of the adolescent with Down syndrome or vacation time [10]. The key themes identified during the data analysis are presented in Table 1.

Theme 1: Being a Student Mentor

A rewarding experience

Overall, the students perceived the programme as beneficial. They discussed how it contributed to their personal growth, gave them confidence and affirmed their career choice.

“It was a really good thing to do, helped me grow sort of as a person” (Eileen)

“It confirmed in my mind what I’m doing is what I want to be doing ....” (Bridget)

“I feel more confident going into clinic” (Angela)
The students indicated the relationship they established with the adolescents ranged from enjoying each other’s company, to forming a bond, to the development of a friendship, to acting as a role model.

“I think that [name of adolescent] and I built up a pretty good rapport. Most of the time we weren’t really talking about doing our exercise, we were just chatting away about life and our interests.” (Frank)

A challenging experience

The students liked the simplicity of the programme as it allowed them to concentrate on implementation, but they characterised the overall experience as challenging.

“It challenged me…. at first it was a lot harder to break the barriers, but then once we became good friends it was really quite good” (Mary)

The central challenges articulated were getting to know how to run the programme (for example, how to teach the exercises, mentor and motivate the adolescents) and having to confront multiple new problems simultaneously. Reports of these challenges were more frequent in the student accounts describing the early part of the programme.

The reported amount of effort required throughout the programme varied and was illustrated by the students in terms of their constant attention to keep the adolescent motivated. One student expressed that they had to be ‘very patient’. Many students went on to comment that they were required to input less effort when the adolescent was more engaged. Other factors such as the compliance of the adolescent, whether the student held a part-time job, training during the university examination period and the availability of transport were associated with greater reported effort.

Getting to know an adolescent with a disability
The students stated they enjoyed the experience of getting to know someone with disability. Those who had not previously known a person with disability expressed how this experience had positively changed their perception of disability.

“I’m probably not as judgemental as I might have been in the past, now I know a bit more about people with a disability” (Eileen)

**Theme 2: Skill Development and Application**

*Developing communication skills*

The consensus was that the programme helped students develop communication skills, including interacting with the adolescents and their families, building rapport, giving clear instructions, avoiding jargon, rephrasing instructions and modifying their communication styles.

“Explanations of how to do things clearly and simply, less jargon” (Eileen)

Two specific communication skills the students reported they learnt were how to motivate someone during exercise, and how to teach an exercise programme. Examples of strategies the students described using were: making the programme fun, setting goals, ‘spotting’ the adolescent, being enthusiastic, giving positive feedback, using humour, developing a routine, competition, and starting the training with harder exercises and progressing to easier ones.

Students reported being flexible in their approaches and tailoring their strategies to the adolescent was helpful.

“How to motivate someone and to make it seem like not so much of a chore and to make it seem more fun. I got better at motivating her…” (Claire)

The students provided examples of giving clear instructions on how to perform an exercise. Some students spoke of their surprise at how much skill was required to carry out this seemingly simple task. They indicated that they supplemented verbal explanations with handling skills.
“I got to learn how to teach someone an exercise that they were struggling with which I think is quite, well I found it quite hard, so trying to work out ways, you had to really think of all these different ways to try and change what he was doing and try to teach him” (Joanne)

Developing and practising professional physiotherapy skills

The opportunity to develop and practise generic professional skills and specific skills related to exercise training was articulated by the students as a valuable outcome of the programme. Examples of the generic professional skills the students said they developed were leadership skills, managing professional relationships, organisational skills, patience, a ‘duty-of-care’ towards the adolescent, and ‘being a professional’.

“Networking with [name of adolescent] and his family, the people at the gym, people doing the research study, other kids who participate as peer mentors” (Julia)

Examples of specific skills related to exercise training the students believed they developed included how to perform and progress strength training, determining the appropriate dosage and modifying the exercises, how to use exercise equipment, how to ‘spot’ someone, and correct posture while exercising.

“I learnt how to properly strength train. I learnt how to use the equipment. I had never actually been to a gym before and now I get the jist of it” (Emily)

Other skills the students considered they developed were: understanding the complexity of disability, working with children, knowing what gymnasium facilities were available and problem solving strategies. They talked about their enjoyment of the experience of applying knowledge they had learnt in the classroom. They believed their learning outcomes differed from those of attending classes; they acquired theoretical knowledge in class but gained practical know how during the programme.

“Getting an idea of what it is like to work with kids and how they may differ from adults” (Lisa)

“Having the opportunity to be hands on with someone and get those skills interacting” (Angela)
DISCUSSION

The students perceived the programme as a rewarding and challenging experience that resulted in greater understanding of disability. These self-reported attitudinal learning outcomes are consistent with the quantitative data we have previously published [19]. The process of getting to know an adolescent with Down syndrome appeared to challenge the students to confront and reconsider their ideas of disability. There is evidence that physiotherapy student attitudes towards people with disability are not as positive as those of practising physiotherapists [1], or of occupational therapy students [2-3]. Changing their attitudes towards disability is a worthwhile outcome as negative attitudes of health professionals can act as a barrier to exercise for people with disability [5-6] and may reduce the effectiveness of other health interventions [7]. What remains unclear is whether experiences like we described will lead to greater numbers of physiotherapists working in paediatrics and disability. Students’ clinical experiences have been suggested as a major influencing factor on their future clinical speciality [9]. However, longitudinal studies are required to determine whether clinical experiences can increase recruitment into physiotherapy specialities.

Our results indicate that physiotherapy students who participated in this paediatric placement perceived they had an opportunity to learn and apply generic professional skills and physiotherapy specific skills. Some of these skills are well defined (how to correctly increase the dosage of an exercise), however, other are less tangible, (developing a sense of professional responsibility). Although physiotherapy student education is primarily focused on developing clinical competencies, a secondary focus is developing generic skills including independent learning, responsibility towards other people, personal skills and problem solving.
abilities [20-21]. This mix of skills, values and attitudes is akin to professional socialisation [22].

The participants considered they developed their communication skills. High-level communication skills are an essential part of physiotherapy practice [23]. Competent physiotherapists use effective communication skills, are sensitive to individual needs and adjust their communication accordingly, establish and maintain rapport with the client, and use medical terminology appropriately [23]. Our participants provided examples of implementing this range of skills. They also reported developing ‘soft skills’ including professionalism, organisational and time-management skills, self-confidence and a willingness to learn. These ‘soft skills’ are considered integral to graduate employability [24] and their acquisition by the students was notable in light of concerns of the increasing gap between graduate capabilities and the demands of the work environment [24]. Several learning outcomes identified by the students align with desired graduate attributes, for example, awareness of social issues and their impact on health and the community [25].

Physiotherapy specific competencies are ideally learnt in the clinical environment [26]. However, with an increasing number of physiotherapy programmes training increasing numbers of students, it has become difficult to obtain placements for students, especially paediatric placements. The traditional view that placements should be undertaken in acute hospitals does not allow for the fact that the acute care sector does not provide exposure to people with conditions that are commonly managed by physiotherapists in the community. The results of this study suggest that students developed generic and professional skills from this type of placement and gained experiences different to those gained from the existing university curriculum. This initial evidence indicates that alternate avenues are available for
students to learn professional skills and might be considered by Schools of Physiotherapy as an option for clinical education, both in paediatrics and other areas of practice.

This clinical experience model encompassed several important characteristics. It was feasible and the adherence rate was high. The participants commended its simplicity, yet valued the challenges posed; the experience was ‘hard but not too hard’ [27]. This is important as a task that is perceived by students to be ‘just easy enough for maximal effort to lead to success’ maximises the effort they expend on it [28]. Implementing the programme required minimal administrative support, although it is likely the processes involved were facilitated by the researchers’ experience in community based exercise programmes. The costs were relatively low and it is anticipated that they may be less than the cost of a traditional clinical placement. The programme involved no direct supervision, but parallel off-site mentoring and allowed the students to self-regulate the development of their skills. Self-regulated learning is an effective learning style [29] and those who use this style are reported to be more persistent, resourceful, confident, and higher achievers [30].

There are a number of limitations to this study. It is possible that the interviewer being known to the students may have led to issues of researcher influence or respondent bias. However, as part of the consent process it was made clear there was no pressure on the students to participate. As a form of triangulation, their interview data were compared with their exercise diaries and email correspondence and found to be consistent. Peer examination and member checking also minimised possible bias. A second limitation is that the student participants volunteered to take part in the programme knowing the considerable time commitment. It is possible they were positively inclined to professional development and to working with people with disability and so possessed an inherent ‘readiness to change’. Finally, the results
do not address whether this learning opportunity made the students more enthusiastic about specialising in paediatrics. Future studies could explore this question.

CONCLUSION

An innovative paediatric clinical experience with young people with disability provided physiotherapy students with opportunities for learning clinical skills, learning generic professional skills, and understanding disability. Several learning outcomes identified by the student participants align with desired graduate capabilities and required professional competencies, including effective communication skills, awareness of social issues and problem solving [23, 31].
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3 this study.
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CONFLICT OF INTEREST: The authors declare no conflicts of interest.
REFERENCES


Table 1  Question schedule to guide the interview

<table>
<thead>
<tr>
<th>Question</th>
<th>Prompts</th>
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<tbody>
<tr>
<td>As this was a novel intervention, we would like to collect your opinions about the feasibility, advantages and disadvantages of the programme:</td>
<td></td>
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<tr>
<td>• Tell me about the exercise programme</td>
<td>(Prompts: Was it different to what you imagined?)</td>
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<td>• Tell me about your experience as a peer mentor</td>
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<tr>
<td>• What did you like about the exercise programme?</td>
<td>(Prompts: What was good about the programme?)</td>
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<tr>
<td>• What didn’t you like about this exercise programme?</td>
<td>(Prompts: Tell me about the effort involved. Was it hard for you to facilitate the exercises?)</td>
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<tr>
<td>• Tell me about doing the exercise programme at the gym</td>
<td></td>
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<tr>
<td>• Tell me about any differences in how you see disability since you’ve been a student mentor</td>
<td>(Prompts: Tell me about working with an adolescent with Down syndrome; Tell me about people with intellectual disability exercising at the local gym)</td>
</tr>
<tr>
<td>• What were the outcomes of the programme for yourself?</td>
<td>(Prompts: Did you benefit from the programme? Were there any other benefits for you having taken part in this study? Have you noticed any differences in your legs or arms? Did you learn any new skills?)</td>
</tr>
<tr>
<td>• What were the outcomes of the programme for the adolescent with Down syndrome?</td>
<td>(Prompts: Did the adolescent with DS benefit from the programme?)</td>
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<tr>
<td>• Is there anything you would change about the programme?</td>
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Table 2  Learning outcomes identified by the participants

<table>
<thead>
<tr>
<th>Theme: Being a student mentor</th>
<th>Categories of coded statements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subthemes</strong></td>
<td><strong>Beneficial programme</strong></td>
</tr>
<tr>
<td>A rewarding experience</td>
<td><strong>Contributed to personal growth</strong></td>
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<td></td>
<td><strong>Increased confidence</strong></td>
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<td></td>
<td><strong>Affirmed career choice</strong></td>
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<td></td>
<td><strong>Established a relationship with an adolescent with Down syndrome</strong></td>
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<tr>
<td>A challenging experience</td>
<td><strong>Getting to know how to run the programme</strong></td>
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<td></td>
<td><strong>Confronting problems simultaneously</strong></td>
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<td><strong>Effort required</strong></td>
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<td></td>
<td><strong>Patience</strong></td>
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<td></td>
<td><strong>Time management</strong></td>
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<tr>
<td>Getting to know an adolescent with a disability</td>
<td><strong>Changed perception of disability</strong></td>
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<table>
<thead>
<tr>
<th>Theme: Skill development and application</th>
<th>Categories of coded statements</th>
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<tr>
<td><strong>Subthemes</strong></td>
<td><strong>Interacting with adolescent and family</strong></td>
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<tr>
<td>Communication skills</td>
<td><strong>Building rapport</strong></td>
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<td></td>
<td><strong>Giving instructions</strong></td>
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<td><strong>Modifying communication style</strong></td>
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<td><strong>Motivation techniques</strong></td>
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<td><strong>Teaching an exercise programme</strong></td>
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<td>Professional physiotherapy skills</td>
<td><strong>Develop and practice skills</strong></td>
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<td><strong>Leadership skills</strong></td>
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<td><strong>Managing professional relationships</strong></td>
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<td><strong>Organisational skills</strong></td>
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<td>‘Duty-of-care’</td>
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<td><strong>Skills in strength training</strong></td>
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<td><strong>Understanding disability</strong></td>
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<td><strong>Working with children</strong></td>
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<td></td>
<td><strong>Problem solving</strong></td>
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<td></td>
<td><strong>Hands-on experience</strong></td>
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