A group exercise programme for people at risk from type II diabetes run as a physiotherapy student clinical placement is beneficial: a qualitative study

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ABSTRACT

The physiological benefits of exercise in type II diabetes are well established. This qualitative study evaluated the perceived benefits of a group exercise and education programme for the management of type II diabetes and its role in the development of skills and knowledge for undergraduate physiotherapy students. Class participants included 10 adults with, or at high risk of developing, type II diabetes and 3 family members attending a 12-week group exercise programme and 20 supervised undergraduate physiotherapy students assisting the class as part of their clinical training. Data were collected using focus groups and in-depth interviews, the transcripts of which were thematically analysed. Class participants' perceptions of benefits included increased motivation, a sense of community and acceptance within the class, and the need for further diabetes education. Perceived gains for students were improved communication skills, opportunity to apply knowledge, and the benefits of peer learning. Findings highlighted the benefits of a community based programme for increasing motivation to exercise and the importance of early diabetes education. Undergraduate physiotherapy students benefited from the clinical experience, especially in developing their communication skills and consolidating knowledge.

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INTRODUCTION

Diabetes mellitus is a metabolic disorder characterised by chronic hyperglycaemia that occurs due to ineffective insulin action (Thomas et al 2006, World Health Organisation 2011). More than 220 million people worldwide suffer from diabetes, a number estimated to double by 2030 (Praet 2009, World Health Organisation 2011). Type II diabetes accounts for 90% of all cases of diabetes worldwide (World Health Organisation 2011), and is the most common form of diabetes in New Zealand (Anderson et al 2001, Diabetes New Zealand 2008).

The prevalence of diabetes in New Zealand and other developed countries is inversely related to socioeconomic status (Joshy et al 2009). This association is attributed to higher rates of risk factors such as obesity, poor diet, sedentary lifestyle, and smoking found in lower socioeconomic groups (Joshy et al 2009). People of Māori and Pacific Island descent in New Zealand have a higher prevalence of these risk factors compared to Europeans irrespective of socioeconomic status (Joshy and Simmons 2006). In 2002-2003 6.2% of Māori living in New Zealand had type II diabetes, compared to only 2.4% in non-Māori (Maori Health 2010).

Type II diabetes is accompanied by a variety of long-term complications which can significantly affect disease management. These complications include micro-vascular problems such as retinopathy, nephropathy and neuropathy, as well as an increased risk of cardiovascular disease (Ismail 2009, Thomas et al 2006). In addition, there is a high occurrence of depression among those with type II diabetes; depression is twice as common in people with diabetes compared to the general population (Ismail 2009). Interventions therefore must aim to not only treat diabetes but also address the associated complications.

Exercise, along with diet modificaton and pharmacological interventions, plays a major role in improving glycaemic control and preventing associated complications (Joslin 1959, Murphy et al 1999). By promoting a healthly lifestyle of a balanced diet

and regular exercise, the progression of type II diabetes can be delayed or even prevented (Joshy et al 2009). A meta-analysis by Thomas et al (2006) investigated the efficacy of exercise in type II diabetes in 14 randomised controlled trials (n=377). Exercise interventions ranged in duration from eight weeks to twelve months and significantly (statistically and clinically) improved glycaemic control, demonstrated by a decrease in glycelated haemoglobin of 0.6% (-0.6 %HbA1c, 95% confidence interval 0.9 to -0.3; $p<0.05$). Recent studies have drawn similar conclusions, emphasising the significant role of exercise in managing diabetes (Korkiakangas et al 2011, Praet 2009, Zisser et al 2011).

Exercise can also influence the mental health and general well-being of people with diabetes (Zanuso et al 2009). Type II diabetes significantly reduces Health Related Quality of Life (HRQOL) (Kaplan et al 1989, Koopmanschap 2002, Malik 2000, Ocel et al 2003). Zanuso and colleagues (2009) suggest the first step towards improving HRQOL is to motivate patients to change their physical activity habits, however lack of motivation in people with type II diabetes has been identified as a major barrier to self-management (Korkiakangas et al 2011, Ryan and Deci 2000, Shigaki et al 2010). Finding ways to motivate those with diabetes, who often lead sedentary lifestyles, to exercise more is challenging (Korkiakangas et al 2011).

Korkiakangas et al (2011) identified the role of both intrinsic and extrinsic motivators for exercise in type II diabetics. Intrinsic motivation, where action is driven by personal satisfaction and pleasure, is shown to be more influential in exercise maintenance than extrinsic motivation, in which action is driven by reward and the avoidance of consequences (Everson et al 2002, Ryan and Deci 2000). Education alone is seldom sufficient to motivate people with diabetes to become more active (Korkiakangas et al 2011); a multimodal approach is required. The Canadian Aerobic and Resistance Exercise in Diabetes (CARED) study, which explored the exercise and environmental preferences of 244 individuals with type II diabetes, identified a preference for engaging in physical activity with others as well as a focus on recreational activities (Forbes et al 2010).

In 2008, the University of Otago's School of Physiotherapy, in conjunction with Diabetes Otago, developed a community-based exercise and education programme for people with, or at a high risk of, developing type II diabetes. In line with the New Zealand Health Strategy (Simmons et al 1998) the programme aimed to help reduce the impact of diabetes for participants. Due to the high prevalence of diabetes in Māori and Pacific Island populations, the programme was developed with cultural sensitivity and a whānau (family) approach to health care in mind, and supporting whānau were invited to attend. Recognising the correlation between low socioeconomic status and type II diabetes (Joshy et al 2009), the programme was made free of charge. The programme also provided a valuable learning environment for under-graduate physiotherapy students. Clinical experience early in the clinical training of health professionals increases student confidence with patient interactions, increases motivation for learning, and facilitates application of learnt knowledge (Kilminster and Jolly 2000).

The programme was held in a community based gymnasium and comprised a half hour group education session (Table 1) followed by a 40 minute exercise session held weekly over 12 weeks. Following the exercise session programme participants had the opportunity to socialise. Supervision of the programme was provided by a Māori and Pacific Community Liaison Nurse, two registered physiotherapists, and groups of second year and fourth year physiotherapy students.

The registered supervising physiotherapists and the fourth year students prescribed individualised exercise routines for each programme participant that included 20 minutes each of cardiovascular exercise and resistance training. The second year students had little clinical experience prior to this clinical placement. They attended the placement for three weeks and worked one-on-one with the programme participants, assisting and motivating them. The fourth year students attended the programme for the 12-week duration and in addition to exercise prescription, they provided supervision and administrative support for programme participants and peer learning support for the second year students.

The role of the nurse was to facilitate the education sessions, monitor blood pressure and blood glucose levels of the programme participants, discuss with programme participants any health concerns they had and arrange follow-up health visits as necessary, discuss medication compliance and issues surrounding this, and facilitate links between the participants and their General Practitioners, encouraging such things as the person's Diabetes Annual Review.

This paper reports on a qualitative study that explored the benefits of the programme, specifically:

A The perceptions of the participants with diabetes of the benefits of the programme.

B Whether the students assisting on the programme perceived it to be beneficial in developing: (i) understanding and awareness of community health issues and the role of physiotherapy in community health care, and (ii) physiotherapy skills.

Ethical approval for this study was gained from the Lower South Regional Ethics Committee (reference number LRS/09/04/EXP). All participants provided signed informed consent.

(A) EXPLORING THE PERCEPTIONS OF PARTICIPANTS WITH DIABETES

METHOD

Participants

Twenty people with or at high risk of developing type II diabetes were attending the programme at the time of the study and were invited to participate. Participants were referred to the programme by general practitioners (GPs), Diabetes Otago, and by word of mouth from current or past participants. All participants had medical clearance from their GP prior to attending. Of these 20 individuals, 13 (aged between 38 and 89 years) consented to participate and were interviewed. These 13 participants were from the following ethnic groups; four New Zealand European, four Māori, three Pacific Islanders and two Chinese. Five participants had diabetes, all but one of whom had type II diabetes. Five participants were at high risk of developing type II diabetes and the remaining three people attending the classes did so solely to support family members in the programme.

Table 1: Outline of education sessions

Week 1	Introduction	Introductions by physiotherapists, Māori and Pacific Island liaison nurse and 4th year physiotherapy students, participant introductions and outline of the programme.
Week 2	Goals and values	Discussion on the importance of goal setting and individual participant goal setting for the programme.
Week 3	Participant experiences	Talk by a previous member of the class.
Week 4	Why exercise keeps me well	Understanding differing types of exercise, benefits of exercise and the importance of exercise in diabetes management.
Week 5	Exercise to do at home	Exercising with resistance exercise bands.
Week 6	Review / Feedback	Halfway through programme, revise at goals and plans, and how rest of programme could be improved.
Week 7	Nutrition	Talk by a dietician on food choices and food labelling with regards to heart health and diabetes management.
Week 8	Managing your diabetes	Talk by diabetes nurse specialist on development and management of diabetes.
Week 9	Keeping your heart healthy	Talk by the Māori and Pacific Island liaison nurse on understanding the effects of high blood pressure and cholesterol and how to reduce these.
Week 10	Using medications	Talk by community pharmacist on understanding the importance of adhering to prescriptions.
Week 11	Nutrition	Talk by dietician on cooking, recipes, food costs and budgeting.
Week 12	Shared lunch and evaluation of programme	

Table 2: Question Schedule

Question schedule used in the focus groups of programme participants:
1. Why did you agree to attend this exercise programme?
2. What do you think of the exercise programme?
3. What was good about it?
4. What didn't you like about the programme?
5. What did you expect from the exercise programme?
6. What benefits have you got from coming to the programme?
7. Have you change what you normally do during a day since starting this programme?
8. What would stop you from exercising on a regular basis?
9. What changes would you make to this programme?
10. Would you recommend this programme to others?
Question schedule used in the focus groups/interviews of student participants:
What did you find beneficial/enjoy the most in this clinical setting?
What skills did you gain/learn from this clinical setting?
Were your expectations consistent / inconsistent with this clinical placement?
What were the challenges for you on this clinical placement? What were the surprises?
What changes would you most like to see to enhance your clinical experience?
What role do you see community groups playing in addressing primary health concerns?
Has this placement changed your perceptions of living with a chronic condition, such as diabetes?

Data Collection and Analysis

Data were gathered using focus group discussions as this method is particularly sensitive to cultural variables and is frequently used when working with ethnic minorities (Youdas et al 2008). One researcher facilitated two focus groups (n=7, 8 respectively). To ensure familiarity and trust, the Māori and Pacific Island liaison nurse and one of the registered physiotherapists were present at the focus groups in a supportive role. At the start of each focus group each person present introduced themselves and shared a short personal background (an important tradition known as a mihi in the Māori language). This allowed members of the group to feel comfortable with one another and with exchanging thoughts and ideas. Open-ended questioning was then employed to encourage open discussion. The question schedule can be seen in Table 2. The focus group discussions were audio-recorded and the audio-recordings fully transcribed.

Data were analysed using the General Inductive Approach (Thomas 2006). In this process, each transcription was read carefully and analysed separately by four researchers. Themes pertinent to the study's research questions were identified, compared and discussed between the researchers. These themes were then verified with the programme physiotherapist and one of the researchers not involved in the initial analysis.

FINDINGS

Three themes deemed most important in regards to the programme were identified; *a sense of community, increased motivation, and the importance of education.* These themes are discussed below, illustrated with quotes taken directly from the transcripts. Quotes are referenced using 'P' followed by a number that corresponds to the focus group.

A sense of community

Participants felt it was the encouragement, the non-judgmental approach, and the friendly atmosphere they experienced within the class that most influenced their continued attendance. Many participants had felt a level of isolation or loneliness due to their disease. Exercising in a group surrounded by those in similar situations in a warm environment reduced this feeling of isolation and made participants feel accepted. *"Thank you for just accepting me as I am …. at least I know that I'm not on my own"* (P1).

Participants also expressed that within the class they felt a sense of community between themselves, staff, and students that was very encouraging. *"…it is a social group where it doesn't matter what exercise you are doing you know everyone's going to encourage you in some way or another"* (P1). Participants valued the new friendships that were formed within the exercise class and appreciated having something to look forward to every week. The sense of community experienced among participants enabled them to openly discuss their condition and their perceived barriers to exercise participation with each other, students, and staff, without fear of judgement. *"We're just like a family, just talk freely"* (P2).

Participants acknowledged a dislike for exercising in a normal gym setting, where those around them are usually much younger and fitter. In the programme however, participants were comfortable exercising with others with the same condition, experiencing the same daily struggles. *"It's not so much lycra... and probably being a bit older I don't kinda feel out of place here"* (P1).

Increased motivation

Lack of motivation was identified as a barrier to exercise by most participants prior to participating in the programme. Participants acknowledged how difficult it is to get motivated without the support of others. *"The motivations just not the same, well there isn't any when you're trying to do it on your, your own"* (P1).This highlighted the significant role the social aspect of the programme played in increasing adherence to exercise. "*If you are just on your own, live on your own and you've got no [motivation]... what's the point"* (P1). Participants were motivated by each other, the health professionals, and the physiotherapy students present. "*You've given us the drive to do something*" (P1).

Many participants also shared their personal struggles with conditions such as depression and the significant affect it had on their ability to self-manage. *"Cause there's nothing worse than being bloody depressed and you stay in bed all bloody day with the blankets over your head"* (P1). It became evident how much the participants relied on the programme for motivation and how deeply they valued the opportunity. *"I'm affected by depression and I find that it's been great having this to come to because it's something positive to look forward to every week"* (P1). They also reported higher levels of energy as the weeks progressed, which improved their ability to manage their disease. *"… I don't sleep during the day now'"* (P2).

An increase in motivation and energy carried over to their lives outside the programme, with many identifying an increased 'motivation for life'. *"It makes [me] more motivated to just get off my behind"* (P2). As a result of participating in the programme, many participants expressed an increased desire to initiate positive life style changes. These changes included seeking employment, exercising independently, and participating more fully in social settings, tasks that previously seemed too difficult. *"Finding too that I'm actually doing things that I've been sort of looking at for a while*" (P1).

The importance of education

There was a positive response to the educational component of the programme. Participants reported an increase in their understanding of diabetes and how diet and exercise could be modified to enable self-management. "*They just make you a bit more aware of why we do things.....how it going to benefit us as people*" (P1). In particular participants responded well to the dietary education sessions. *"Makes people think a little bit about what they are eating and what effects it's having on their.... systems"* (P1). Having the freedom to discuss ideas amongst themselves and qualified health professionals helped to facilitate their understanding and gave them confidence to implement healthy lifestyle changes.

Participants expressed a lack of education regarding diabetes prior to diagnosis. *"…there's no education prior to getting it…"* (P2). In addition they believed that the progress of their diabetes may have been prevented if they had received education earlier in their disease process. *"Why couldn't that have happened*

years ago, I wouldn't be the person I am today" (P1). It was evident that even those who had been diagnosed for a long period of time still lacked knowledge about their condition.

DISCUSSION

Participants perceived the programme to be beneficial. Specifically, they greatly valued the strong sense of community that developed within the class which encouraged their attendance. The friendly and supportive staff and students played a significant role in creating a place in which participants felt comfortable. The important intra-participant support was further enhanced by participants shared understanding of living with diabetes. The development of new friendships was found to positively influence attendance.

A supportive environment encouraging adherence to exercise interventions has been highlighted in previous studies. Courneya and McAuley (1995) reported that attendees of an aerobics programme said they were more likely to adhere to the programme if they felt supported. In a study by Murphy et al (1999) participants valued the opportunity to be part of a group of people with the same disease, providing them an opportunity to learn from each other as well as from the health professionals. These participants reported feeling more comfortable exercising with other people who faced similar challenges. In the current study, the supportive environment was enhanced by inviting whānau to attend, which was valued by participants and further encouraged their attendance.

An important theme identified by participants was the value they placed on a community group programme as opposed to individual activity. A study reporting on barriers to diabetes management in New Zealand European and Polynesian people identified that Māori and Pacific Islanders were more than twice as likely to report the lack of community–based diabetes services as a barrier than New Zealand Europeans (Simmons et al 1998). In addition, many reported they did not have a clinic that they could identify as their 'own'. The formation of the current community- based programme provided a service that was easily accessible and culturally appropriate for this population.

A lack of motivation is a major barrier to diabetes self-management (Korkiakangas et al 2011, Ryan and Deci 2000, Shigaki et al 2010, Simmons et al 1998). A number of participants expressed a difficulty in finding the motivation required to exercise prior to attending the programme. This lack of motivation was compounded by feelings of depression and insufficient support. Depression is a common co-morbidity known to be twice as prevalent in those with diabetes (Anderson et al 2001) and was an obvious barrier to exercise and self-management in the current study. As such, the importance of addressing co-morbidities that may become barriers to self-management in patients with diabetes must be recognised (Korkiakangas et al 2011). The current programme used a multimodal approach to reduce these barriers by incorporating an exercise intervention with an educational component, with constant support and encouragement from health professionals and fellow participants. Enabling participants to work at their own level and do activities they enjoy with the support and advice from health professionals was found to help reduce the stress associated with progressing from a more sedentary to active life style, a finding that is borne out in the literature (Koopmanschap 2002).

Other barriers to diabetes care for Māori and Pacific Islanders include a resistance to change, lack of community based services, and inadequate diabetes education or knowledge (Simmons et al 1998). The current study revealed the importance of education in type II diabetes management. Participants reported the education component of the programme to be effective in increasing their motivation. This was in contrast to the lack of education reported before diagnosis. They felt a focus on educating those who are at high risk of developing the disease may be successful in reducing the prevalence of diabetes. Iliffe and Mitchley (1994) reported that discussions with general health practitioners were predominantly about smoking, weight, and diet as opposed to exercise. This lack of early education about the benefits of exercise is clearly an area that warrants further investigation and has clinical implications for health professionals working with this population.

The importance of family and friends in supporting patients with diabetes necessitates a greater emphasis on educating these support people alongside the participants themselves. Meeting the education needs of family and friends may minimise the barriers their lack of understanding may create for those with diabetes. It may also help facilitate their adoption and prioritisation of healthy lifestyle changes.

(B) EXPLORING THE PERCEPTIONS OF THE STUDENTS

METHOD

Participants

A total of 22 second-year physiotherapy students and two fourth-year physiotherapy students were eligible and consented to participate; of these, 18 second-year students and both fourth-year students were included. Four second-year students consented, but could not attend the scheduled focus groups due to time constraints. The second-year students comprised 5 males and 13 females and both fourth year students were male. The students were from the following ethnic groups; New Zealand Europeans (n=13), Chinese (n=2), Māori (n=1), Filipino (n=1) and Dutch (n=1).

Data Collection and Analysis

Data from the second year physiotherapy students were gathered using three focus group discussions (n=4, 7, 7 respectively), each of one hour duration. As there were only two fourth year students involved, data were collected from these students via individual in-depth interviews. The focus groups and the interviews were all facilitated by one of the researchers who had no student connection. The focus groups and interviews were audio-recorded and the audio-recordings fully transcribed. Data were analysed using the General Inductive Approach (Thomas 2006) as described above in the programme participant section.

FINDINGS

Three common themes were identified which incorporated the most valuable experiences gained from the programme; *communication with real people, learning from each other,*

and *putting learning into practice,* and are discussed below, exemplified with quotes taken directly from the transcripts. Quotes are referenced with a 'S2' followed by the corresponding group for second year students and 'S4' followed by the student number for fourth year students.

Communication with real people

The second year students enjoyed the opportunity of interacting with patients for the first time and found this to be the most beneficial aspect of attending this placement. *"I quite liked the patient interaction; it was something new for us"* (S2, group1). The students also appreciated the chance to communicate with people of a different culture to their own. *"I thought it was quite cool learning how to interact with someone of a different culture, there were lots of Māori and Pacific Islanders there"* (S2, group 1).

Students were able to practise adapting their communication styles to suit different personalities, which at times was challenging. *"…you encounter so many different people and you have find a way, a different way of talking to different kinds of people"* (S2, group 3). Second year students also valued the opportunity to practise communicating in a professional manner. *"I guess like, professional as well. You're there, and you represent the School of Physiotherapy...you have to be professional"* (S2, group 1).

Both second and fourth year students acknowledged the importance of building rapport with participants. It enabled them to understand individual preferences and needs, as well as gain patient trust *"…build relationships with the patients... without the relationships you're nowhere really, you're just a person that's standing off observing"* (S4, student 1).

Learning from each other

Second year students said they were able to learn effectively from their fourth year peers and reported feeling more comfortable approaching fourth year students rather than the physiotherapists with queries. "*…he was so helpful… cause he's been through it, so he knows"* (S2, group 3). Fourth year students were also effective at relating knowledge learnt in class to people in a clinical setting. *"He [fourth year student] knows that we have done neuroanatomy so he was trying to help me link symptoms with his [participants] condition*" (S2, group 3).

By answering second year students' questions, fourth year students were able to solidify their knowledge and gain confidence in their abilities. *"I'm a student trying to learn, and I'm also trying to teach these students what to, how things work so it's definitely good, gave [me] confidence in myself....."* (S4, student 1). One fourth year described the benefit of being able to practise explaining complex ideas to others in a simplified and understandable manner. *"It helped me because I knew I had practice in giving instructions, I think I have a wee bit of difficulty giving instructions properly in English, I mean like less bookish"* (S4, student 1).

Putting learning into practice

Important to students was the use of the programme as a clinical placement; all students recognised the opportunity to apply previously learnt knowledge to the clinical setting as highly beneficial. *"I thought it was good how we could apply what we learnt in other classes to the patients who actually had the conditions that we'd been learning about"* (S2, group 1). This placement required them to draw knowledge from across the entire physiotherapy curriculum and apply it to the management of actual patients. *"It was linking our anatomy class with our rehab and clinical class. So that was really helpful*" (S2, group 3). Second year students recognised their important role of motivating patients and the opportunity to practise this skill through their three week placement. *"Its kinda good how they look up to you, you know they're motivated by the stuff you say and you know they can change their lifestyles"* (S2, group 3). In addition, they were able to practise adapting techniques to individuals with differing limitations and preferences. *"You really have to think on your feet, try something with a patient and if it doesn't work you try something else*" (S2, group 2).

Many of the second year students however reported feeling inadequately prepared for this clinical placement; they felt they lacked knowledge and were unsure of the placement expectations. *"I suppose we are there to provide structure and encourage them and get them to exercise but it wasn't' really explained to us that well at the start*" (S2, group 2). This made them feel like they were in over their heads: *"They did chuck you into the deep end quite a bit"* (S2 group 1).

Second year students noted that attending the class allowed them to understand how diabetes affects people differently both in its physical presentation and how it affects quality of life. *"Just seeing people with the actual disease in front of us and seeing how much harder it is for them, ourselves as like healthy students we don't think it will be that hard but it is"* (S2 group 2). This altered their previous misconceptions about the types of people that were affected by the disease and what personal and physical limitations these people faced.

The presence of health professionals was beneficial for both student learning and ensuring patient safety. Being able to refer to a professional increased the students' confidence when interacting with patients. [If you weren't sure you were doing the right thing] *"It was easily solved, you would just trot off to XXX and [say] I need your opinion"* (S4, student 2).

As well as learning from their supervisor and senior classmates, the second year students reported learning from the patients. Students were surprised at how much knowledge people had about their own diseases *"A lot of the time they are teaching you things as well....as a lot of them have had diabetes for years and we don't really know a lot about it compared to what they know"* (S2 group 2).

The one-on-one interaction with the programme participants and the responsibility given to the students made them feel more like physiotherapists. *"So even though you were a fourth year student it was good training to be actually treated as part of a shall we say, already a finished physiotherapist"* (S4, student 2). In addition, the students valued the opportunity to positively influence other peoples' lives. *"It feels good getting out there and actually trying to help someone as opposed to sitting there and learning in class. You're actually getting out and helping people and learning skills at the same time"* (S2, group 3).

DISCUSSION

Students found the programme beneficial. For many of the second year physiotherapy students, it was their first clinical

encounter and they highly valued the opportunity to develop their professional communication skills; in particular they appreciated communicating with people from different ethnic and socioeconomic backgrounds. Communicating in a professional manner with people of differing backgrounds is important in the practice of physiotherapy and this clinical setting was an ideal training ground for building such communication skills. Effective patient-centred communication increases patient understanding of chronic diseases and compliance with interventions (Kaplan et al 1989).

Second and fourth year students alike noted the importance of building relationships with programme participants. They learnt to build trust and rapport with these individuals and gained an understanding of the many individual barriers and limitations to optimum health that patients face. Because of this they were able to tailor the exercise sessions to individual goals, preferences, and limitations more effectively, thus increasing the likelihood of programme adherence. Kaplan et al (1989) reported that patients who perceive a positive relationship between themselves and their health care providers are more likely to adhere to treatment advice and to have better health outcomes.

A common theme identified was the mutually beneficial relationship between the second and fourth year students. The second years felt more confident supervised by the fourth years, as they were more comfortable approaching fourth year students with questions. This also removed the perceived negative effect on their grade that may result from asking a supervising clinician. The second years reported an affinity with the fourth years due to their shared experiences whilst acknowledging their more extensive clinical knowledge. These findings are similar to those reported by Faure (2002) in which students reported a more relaxed atmosphere in a peer learning environment. Furthermore, students demonstrated enthusiasm to use the knowledge and experience they gained during the peer learning programme. The increase in knowledge, confidence, and communication skills gained from peer teaching reported in the current study further supports findings of similar studies (Faure 2002, Ocel et al 2003, Youdas et al 2008). Peer assisted learning is a technique where there is a mutual gain in knowledge and understanding resulting from the exchange of information between students (Clarke and Feltham 1990, Walker-Bartnick 1984) and is an effective and widely used method of teaching undergraduate health professionals (Lake 1999, Ocel et al 2003, Secomb 2008).

The fourth year students benefitted from attending the programme. It provided them with the opportunity to teach patients and answer their questions, which in turn reinforced their knowledge. Students were able to practise their skills of patient education; a core competency requirement for registration as a physiotherapist in New Zealand (The Physiotherapy Board of New Zealand 2009).

This programme provided an opportunity for students to integrate their clinical knowledge into practice. In a systematic review of the effects of early clinical experience in medical education, Littlewood and colleagues (2005) state that clinical experience increases the relevance of theoretical knowledge and provides a mechanism to consolidate and integrate this knowledge. Early clinical experience was also found to provide students with insights into the social and psychological aspects of chronic disease.

CONCLUSION

The community-based group programme incorporating both exercise and educational components for people with diabetes (or at high risk of developing diabetes) was perceived to be beneficial by all. Patients felt it provided a safe and welcoming environment that motivated them to exercise and assisted them to self-manage their condition. Students reported enhanced communication skills and better integration of theory into practice. A programme that incorporates both clinical opportunities for undergraduate students as well providing a service for individuals with chronic diseases represents a viable model of health service provision. Although the findings of this study suggest that the community-based programme was successful in many ways, the key components that makes it a success still need to be defined.

This study had a number of limitations. The small population size of both programme participants and students reduces the generalisability of the findings. Participation in this study was voluntary and as such those people who chose to participate may have been more favourably disposed and portrayed a more positive response to the questions. The programme was only evaluated at completion of the first 12 weeks, longer follow-up is required to explore the long term sustainability of the programme, given that it is free and labour intensive.

KEY POINTS

- A group programme incorporating both exercise and educational components appears beneficial in assisting those with diabetes to self-manage their disease.
- Clinical experience improves student communication skills and helps to reinforce theoretical knowledge.
- Peer learning appears effective in facilitating student learning in a clinical setting.

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