

Title of the paper:

The feasibility of a community-university based physiotherapy programme for stroke patients for student learning and patient care.

A short title:

Community-University Stroke Rehabilitation

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Abstract

Introduction

There is a need for long term community physiotherapy based stroke care. An innovative pilot scheme involving students contribute to achieve this – benefiting both students and patients.

Methods

This report considers the use and value of an innovative pilot programme which provided community stroke rehabilitation utilising student volunteers. Eight students, 4 stroke patients and 1 carer completed a post pilot project scheme.

Results

Three themes; (1) The Value of the Programme (2) The Outcomes from the Programme (3) Development of the Programme. Key benefits for students included the long-term interaction with patients in a friendly and secure environment that focussed upon patient care and practice of clinical skills with formative, rather than summative assessment. The key benefit for the patients was the supported long term nature of the programme.

Conclusion

There is an urgent need to consider an extended version of this project that is able to adapt to the needs of the patient and student and consider the value (educational, economical and clinical) of such a programme long-term.



Introduction

Stroke is the largest cause of adult disability in the UK and a leading cause of mortality, exerting a high cost to country and individual (Feigin et al., 2003; Mooney, 2010). Rehabilitation is required for the majority of stroke survivors in order to achieve the best possible outcome (National Institute of Neurological Disorders and Stroke, 2010). Recommendations of between 6 -12 weeks have been suggested for acute care; but it is acknowledged that rehabilitation can continue as long as improvements in function are observed (Hack et al., 2003). However, it is noted that support provision for patients leaving hospital rehabilitation services and long-term community supported care for stroke patients - needs improving (Mooney, 2010).

A recent report by the Stroke Association and Chartered Society of Physiotherapy (Benveniste et al., 2010), involving 1160 stroke patients and physiotherapy staff, identified that limited provision of community care and a greater personalisation of the physiotherapy service was needed. The report also noted that these requirements may not be met due to a lack of available resources. In a survey (Rimmer et al., 2008) of 83 adults who suffered a stroke, the most common barrier faced by patients was identified as the cost of exercising (fitness centres) (61%) and the least common barriers included motivational barriers, such as lack of time (11%) and lack of interest (16%). These findings are recognised in other neurological populations, highlighting that high costs and poor access to care are central barriers to physical activity (Elsworth et al., 2009; Rimmer et al., 2004; Vanner et al., 2008). Thus, the available evidence suggests that a long term cost effective solution must be considered if service provision for stroke patients is to engage with the needs of this willing population. A key provider of such a service needs to be physiotherapists, since physiotherapists have an important role to play in specialist exercise prescription (e.g., Priestley, 2011).

However, in order to be cost effective pragmatic research may need to look at volunteers to support rehabilitation and this may be most suited to student physiotherapists. Within the UK physiotherapy courses could provide a large natural source of clinically trained individuals highly suited to provide rehabilitation for patients who have suffered a stroke. Volunteering for a novel service would likely benefit the student, for instance, within the pressurised environment of a clinical internship (time spent during training within clinical settings) students may not be able to develop a positive and valued therapeutic relationship with a patient. In addition, the limitation of time (i.e., the time allocated for a patient during inpatient care and the time allocated to the internship) as well as the context of the clinical internship, (i.e., the continual process of assessment across the course) may impact and limit clinical experiences of providing good patient care. Given the findings of appalling patient care identified in the Francis report (2013) and the loss of empathy¹ following training within BSc physiotherapy students improving patient care experiences is essential (Soundy et al., 2010). Finally, a novel clinical experience may be associated with additional benefits for the student e.g., peer learning (Ladyshevsky, 2006).

In summary, research has identified clear barriers and needs in stroke care provision and the experience of physiotherapy students during their internships. It is clear that within the UK there is a need for a cost-effective, expertise-led, community based service to provide long-term care for stroke patients. In addition to this there is an urgent need for research to examine an alternative form of clinical experience for physiotherapy students, that emphasises the importance of patient centred care, whilst remove the constraints imposed by the clinical internships.

¹ Clinical empathy (Dasgupta & Charon, 2004) is defined as having three main components: (1) cognitive component or the ability to understand another's feelings or perspective (2) behavioural component, the ability to convey that understanding (3) emotive component, the ability to subjectively share or experience another's feelings or psychological state.



The aims of this pilot programme were to understand the benefits of an innovative stroke rehabilitation service for both students and patients alike. The objectives were to; (a) establish the feasibility of a long-term, community-university intervention for stroke patients (b) consider the value of the programme for students and patients in their own words (c) identify how the experience varied from other forms of rehabilitation and if/how the programme should be continued and developed.

Methods

Participants

Eight students (2 male, 6 female) responded to a request to complete the questionnaire (5 beginning their third year of study, 3 beginning their second year of study). Four stroke patients (all identified as having ischemic strokes) and 1 carer (wife of a patient) completed the questionnaire. Participants were recruited from the local Stroke Association.

Environment

The programme was undertaken at a private, university based fitness facility (10m x 7 m; hall). The facility had basic aerobic stations (1 treadmill, 1 bike, 2 spinners), and machine and free weight stations. There was a separate area used for balance and stretching, together with access to a larger hall (20m x 12m). This space was paid for by the charity Action After Stroke.

The Pilot Programme - Pre-Programme

Before the programme began the Stroke Association in Birmingham were contacted, this acted as a gateway to other contacts and service users. The primary investigator went to local groups on several occasions to talk individually to members about the programme. Following this, patients and all students (from year 1 through to year 3) undertaking a BSc physiotherapy degree were contacted by email, phone or letter on several occasions during the end of the 2012 summer semester to volunteer for the programme starting in the 2012 autumn semester.

The Pilot Programme - The Programme

The structure and design of the programme was largely based on an unpublished PhD study (Soundy, 2007) which utilised a charity to provide exercise rehabilitation for individuals who had suffered a stroke. This research provided the basis for how the pilot programme would run. The current programme provided three 45 minutes sessions which took place on a Wednesday afternoon (between 12.30-14.00); a slot that meant students would not be in lectures.

One week before the start of term, the student volunteers were provided with an induction to the programme. This included an introduction by the primary investigator, and training from a GP referral exercise instructor and from a neurological physiotherapist. The primary author then matched patients that volunteered with students for the first session. The matching resulted in patients having either one-to-one or two-to-one support, and was done primarily to ensure that where possible a final year (year 3) student could act to lead the session and have students in years 1 and 2 to support. For some patients three-to-one support was offered, this was primarily for the first year students in order to observe and develop clinical skills. During the first session, the students performed an assessment of the patient, along with a personalised exercise programme that was supported by both the fitness instructor and the neurological physiotherapist



Qualitative Questionnaire

A questionnaire (Appendix A) was developed by the primary author. The content of the questionnaire utilised 2 nominal questions considering enjoyment and future attendance and utilised 7 open ended questions to consider 5 domains of interest (pre-programme expectations, perceived value of the project, experience of the programme, comparisons to previous care and future improvements). It was important for the purpose of the project to capture both patient, carer and students views and determine the feasibility of a long-term community-university programme.

Ethics

The study was also viewed and approved by the Department of Physiotherapy ethics committee which approves student projects (Ref: DPEC 20 14).

Analysis

Qualitative content analysis that utilised a frequency tally to support the analysis was undertaken (Mays and Pope, 2006). Given the focus and need to evaluate the programme, using a frequency count was deemed appropriate. The primary author initially tabulated the responses to each question, shortening the responses given, whilst maintaining the original meaning or quote. The original table used is available upon request from the first author. A second author (CA) verified this process. Subsequently the primary author created a thematic structure was created based around four main findings/themes relating to the programme. This was determined by the frequency and content of the comments made by the participants as well as the questions used for evaluation. The four themes were; (1) The Value of the Programme (2) The Outcomes from the Programme (3) The Timing of the Programme (4) The Development of the Programme. The responses were then arranged under each of these themes and labelled with sub-themes and, where necessary, codes. Theme 3 was subsequently incorporated into themes 1 and 4 where the data was better placed.

Results

The results are reported below in three themes; (1) The Value of the Programme (2) The Outcomes from the Programme (3) Development of the programme.

(1) The Value of the Programme

Primary values identified by the students included: (1) The value of working independently and being autonomous with patients; (2) The value of having more time to know the patient better; (3) The value of working with other students and sharing, or learning from other students, particularly those with more clinical experience (comment mainly identified by the second year students).

Students valued the programme's focus on patient care, individual care giving and the reduced pressure of not having a case load of patients. They felt it that it was a friendly and secure environment. The programme also gave students the chance to practice clinical skills with formative, rather, than summative assessment from university educators.

For the patient, the most noticeable value was having access to a long-term care solution that was comparable to other care services previously received. Patients identified that rehabilitation following National Health Service care was limited. Patients also identified that they enjoyed



spending time with students in a one-to-one/two-to-one context, and acknowledged that they were helping each of them in progressing their clinical skills.

(2) The Outcomes from the Programme

The environment of the programme was well suited to promote peer learning as students had protected time to develop their clinical skills. Students highly valued the interactions, including, getting to know the patient well and developing trust and rapport, as well as gaining important clinical skills, such as clinical reasoning and documentation. This likely reflected the improvement in confidence in their clinical skills along with the ability to cope with challenges presented by the patient.

Patients identified improvements in their conditions following the process. Patients, in a similar way to students, highlighted an increase in confidence about engaging with their disabilities, as well as an increase in motivation and hope for the future that the pilot programme had given them. Students realised an improvement in their self-efficacy with relation to rehabilitation care and patients an increase in physical function.

(3) Development of the Programme

Students identified that being able to undertake this programme before an internship was valuable as it increased their confidence for the placement. Students also highlighted the value of undertaking the programme alongside a specific module and felt that this should be developed in the future. It was considered most important that first year students were able to shadow and observe these sessions prior to going out on placement. In addition to the confidence it would give, students suggested that linking with other cohorts was important to develop clinical skills.

Other changes detailed by students included having more sessions, utilising evening time for sessions and introducing a portfolio of notes made by students. Patients identified the importance of greater accessibility to the programme for wheelchair users, as well as the opportunity for a long-term programme.



Table 1 Themes from Student and Patient Feedback on Pilot Program

Theme	Sub-theme	Code	Summary Findings
The Value of Programme	Value to Student	Autonomy	Value of working with a patient independently (n=6, Q3S1-S4/S6-S8) Being more autonomous (n=2, Q8S5/S6)
		Working with other students	Value of working with older student (n=3, Q3 S5, Q5S3, Q7S8) or other students to observe/find out what they do (n=2, Q3S7, Q6 S4)
		Knowing the patient	Better understanding of patient (n=1, S5Q7) Time to know patient better (n=3, Q8S1/S4/S5) Better relationship and trust (n=3, Q4S8, Q8S1/S2)
		Being able to observe improvement	See improvement and monitor changes week to week (n=1, Q8S2)
		Being able to tailor sessions	Patient received tailored session for individuals needs (n=2, Q4S4,S8)
		Timing of Program	Working with a patient alongside a neurological module has been educational (n=3, Q5S1/S4/S6)
	Context or nature of program	Informal	Informal nature (n=1, Q4 S2)
		Less pressurised	less pressure more relaxed without being marked (n=2, Q4S3/S4) No pressure from educator monitoring or critiquing (n=3, Q8S3,S6,S7).
		Not limited to a set time period	Extra time allocated to patient was beneficial (n=3, Q8S1-S2,S8) Not limited to 6 weeks, following a patient further (n=2, Q8S3,S7) don't have patients either side (n=1, Q8S6)
	Value to patient	Enjoyment for patient	Patient feeling more comfortable doing the exercises (n=1, Q8S1)
		Support following NHS care	Support for patient after NHS rehabilitation stopped (n=1, Q3C1) Little rehabilitation on NHS after first two years (n=1, Q3P1) Rehabilitation for myself (n=1, Q3P1) After NHS rehabilitation has finished – there is need for a long term solution this project is vital (n=4, Q5P1,P3,P4 / Q4C1)
		Program supports students	Training for students (n=1, Q3P1) Nice to know that we can help others [student] (n=1, Q8P3).
		Enjoyment of working with students	Enjoyed working with younger people and students (n=2, Q3C1,P4) Working with younger people and students helps give him determination (n=1, Q8C1) Good to be with younger people (n=1, Q8P1 /Q6C1)
		Comparison to NHS and other care	As good as NHS physiotherapy (n=1, Q8P3) Support with fine movements and dexterity (great so far) (n=1, Q8C1) More strenuous than other group sessions (n=1, P4)
		Outcome for patient	Observed patient improvement and progress (n=3, Q3S2/S4/S8). Improvement and progress of patient (n=3, Q7 S2-S4) – surprised by extent (n=1, Q7S4) Difference with progress of patient (n=1, Q3C1) Helped in all areas, patient feels proud of achievements (n=1/Q7C1)



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		Confidence and motivation	More optimistic about continued improvement (n=1, Q3P2) Motivation to do more (n=2, Q3P3,P4) Helped patients confidence (n=1, Q3C1)
		Hope for future	Has given hope after sometime of struggling to find a way to increase recovery (n=1, Q4 P2)
		Makes exercise a possibility	Helps people to exercise which is a struggle (n=1, Q4P3)
		Hoping for more	Would like to do improve walking (n=2, Q7P2/P3) Exercises getting easier (n=1, P4)
	Benefits for student	Interaction	Communication (n=2, Q3 S1/S6) Note taking/writing (n=2, Q3 S5/S6) Understood the importance of a good rapport with the patient (n=1, Q7S7) Learnt from each other, both having input (n=1, Q7P1)
		Confidence / coping	Confidence (n=4, Q3 S1/S6, Q4S4 & S7) Coping with challenges (n=1, S2)
		Clinical skills	Clinical reasoning (n=2, Q3S6,Q7S1)
Development of the Programme	More knowledge or training	knowledge	Needed to read about condition (n=2, S2Q6, S1Q7). Would like to have read more (n=1, Q7S6)
		Further teaching session	Teaching sessions with the lecturers so can asked them about the patients (n=1, Q9S2) More training up front for year 2 students (n=1, Q9S5)
	Context of sessions	Timing or frequency of session	Evening sessions for patients (n=1, Q5S5) Having the program more frequency (n=1, Q9P3)
	Timing of Program	First student placement	Before first year clinical placement would help them with nerves and apprehension for placement (n=1, Q5S4,S7). First years could sit in on one session before their placement (n=2, Q9S2/P4)
		A clinical placement	Before clinical placement starts for timing (n=3, Q5S2,S4,S7)
		More accessible setting	Introduce portfolio of notes from each week (n=1, Q9S6) Access for wheelchair users would be beneficial (n=2, Q9P1 / Q3C1)
		Long term care needed	Having the program long term (n=1, Q9P3)
	Introducing year 1 students to assist		Having year 1 students is important to shadow and teach (n=1, Q9S4)
	Introduce portfolio of notes		Introduce portfolio of notes from each week (n=1, Q9S6)
	No change		No change (n=1, P4)



Discussion

The purpose of our pilot programme was to provide an innovative solution to long term patient care and access to additional clinical experience for students. These pilot results have illustrated many benefits for students and patients. Most notably students reported gains in their confidence and self-efficacy around treating patients mainly from being in a more independent environment where they were not under continual assessment. Similarly, patients reported improvements in their function and valued the programme because it was long term and provided them with a sense of motivation and confidence in dealing with their stroke.

Given the limited service provision and the lack of resources available in the National Health Service, this pilot study provides a potential solution to continuing community-based care for stroke patients. Developing this programme and considering its efficacy more widely would appear to be its most natural extension. Students gained clinical skills and confidence, attributing this to the independence and autonomy given by the programme, the importance and value of peer learning and the formative rather than summative assessment utilised.

Strengths and Limitations

This project was able to document patient and students views of an innovative project design to respond to a need within community-university stroke care. Being able to use individual's comments allowed a clear understanding of the perceived value of the programme from both perspectives. However, the project did not utilise any outcome measure and therefore the pilot is not able to consider the direct influence of the programme on patients' health and well-being. Another limitation is sample size and there is a need for a large-scale project to determine the effectiveness of the intervention. The questionnaire was partially designed to determine the value of the project for the charity that supported it and this meant the domains were slightly restricted, although this did allow a great deal of focus to the questions. Finally, the current programme design requires development before it can become a model for longer-term rehabilitation.

Conclusion

There is a significant need for different, innovative ideas to be utilised in an effort to provide high quality long term care for patients who have suffered a stroke and for students who need to experience different learning opportunities that emphasise patient care. The natural source of appropriately trained students from a physiotherapy department may be one way of providing this.



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Declaration of interest

The primary author is the director of the Charity that supported this programme. No other conflict of interest is declared.



Appendix A: Questionnaire

Questionnaire

1. Nominal Questions

Qa. Have you enjoyed the sessions?

Yes

No

Qb: Would you attend sessions next term?

Yes

No

2. Pre-programme Expectations

Qa: When you first came to Action After Stroke here at the University what were your hopes for the programme? What did you expect to happen?

Qb: Has the programme achieved what you expected? Can you explain why?

3. Perceived value of the Programme

Qa: On reflection, what has the value for you been in undertaking this rehabilitation process?

Qb: Is this project needed more nationally? If yes, why or what is it about it that is good?

4. Outcomes of the Programme

Qa: (*patient/carer questionnaire*). Thinking about your journey as a patient, when would you like to have taken part in this?

Q a: (*student questionnaire*). Thinking about your experience and training as a student when would you want to take part in something like this?

5. Comparisons and Development of the Programme

Q a: (*patient/carer questionnaire*). How does it compare to other care you have received?

Q a: (*student questionnaire*). How does it compare to the clinical experience you have undertaken?

Qb: What aspects would you change or how would you improve the program?

