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Patients with rotator cuff tendinopathy can successfully self-manage, but with certain caveats: a qualitative study

Chris Littlewood BHSc (Hons), MSc ([a]) * Corresponding author

a. School of Health & Related Research, University of Sheffield, Regent Court, 30 Regent Street, Sheffield, S1 4DA, UK.

E-mail: c.littlewood@sheffield.ac.uk

Tel: +44 114 222 0888/ Fax: +44 114 272 4095

Peter Malliaras PhD ([b])

b. Centre for Sports and Exercise Medicine, Queen Mary, University of London, Mile End Hospital, London, UK.

E-mail: p.malliaras@qmul.ac.uk

Sue Mawson PhD ([c])

c. Director of the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research & Care (CLAHRC) for South Yorkshire. Sheffield Teaching Hospitals, 11 Broomfield Road, Sheffield, S10 2SE, UK

E-mail: s.mawson@sheffield.ac.uk

Stephen May PhD ([d])

d. Faculty of Health & Wellbeing, Sheffield Hallam University, Sheffield, S10 2BP, UK.

E-mail: s.may@shu.ac.uk

Stephen Walters PhD ([a])

E-mail: s.j.walters@sheffield.ac.uk

Abstract

Objectives: Evidence has emerged supporting the value of loaded exercises for rotator cuff tendinopathy but there are barriers that might prevent implementation of this intervention in the real-world. The purpose of this study was to explore these potential barriers with participants involved in a pilot randomised controlled trial (RCT) investigating a self-managed loaded exercise intervention.
Design: A qualitative study within the framework of a mixed methods design. Data was collected using individual interviews and analysed using the framework method.
Setting: One private physiotherapy clinic in northern England.
Participants: Six patients and two physiotherapists were purposively sampled from those allocated to the self-managed exercise group within the RCT.
Results: Three themes were generated: 1) Expectations and preferences, 2) Characteristics of an unsuccessful outcome, 3) Characteristics of a successful outcome. Most patients expressed expectations contrary to the philosophy of a self-managed approach. But this did not serve as a barrier when the intervention was offered within a positive and supporting environment where patients understood the reasons for undertaking the exercise, effectively self-monitored and engaged with pro-active follow-up. An early and appreciable response to therapy was also a key factor influencing continuing engagement with the exercise programme.
Conclusion: With certain caveats including the need to recognise and respond to individual characteristics, implement effective knowledge translation strategies and the need to engage with appropriately timed pro-active follow-up, the potential to implement programmes of self-managed loaded exercise for patients with rotator cuff tendinopathy in the real-world and in further research studies appears feasible but challenging.

Keywords: rotator cuff, tendinopathy, qualitative research, self-management

Word count: 3 237

Introduction

Over recent years evidence has emerged supporting the value of loaded exercises for the treatment of tendinopathy and more recently this has been applied to the rotator cuff [1–3]. However, such exercises are frequently painful to perform, require the patient to take responsibility for their management, and such exercise prescription does not align with the clinical reasoning processes of many physiotherapists [4]. Thus, although there is emerging empirical evidence to support this approach there are real and significant barriers that might serve to prevent implementation in the real world [5].

This paper presents a qualitative investigation of these potential barriers that was undertaken alongside a pilot randomised controlled trial (RCT) designed to compare a self-managed loaded exercise programme versus usual physiotherapy treatment for rotator cuff tendinopathy [6,7].

Methods

Design

A qualitative study was undertaken within the framework of a mixed methods research design.

Setting

One private physiotherapy clinic in West Yorkshire, northern England.

Participants

A purposive sample of patients complaining of shoulder pain attributable to rotator cuff tendinopathy was recruited from the twelve patients who undertook a programme of self-managed loaded exercise within the pilot RCT. Patients were selected by the chief investigator (CL) to gain maximum variation in terms of age, gender and clinical outcome, as determined by change in Shoulder Pain and Disability Index (SPADI) from baseline to three month follow-up. As there were only two physiotherapists involved in the delivery of the intervention both were eligible for inclusion.

Initial recruitment to the pilot RCT included the procedure for gaining informed consent for taking part in a future related qualitative investigation. CL contacted patients by phone or e-mail to ask whether they would be willing to participate. If their response was favourable then a convenient time to undertake an interview was scheduled at the patient's home or physiotherapy clinic.

Data collection

Interviews were directed by semi-structured topic guides (Appendices 1 and 2), recorded using a digital voice recorder and transcribed verbatim. All interviews were conducted by CL. The participants were aware that CL was a researcher undertaking the study and also a physiotherapist by background.

Data Analysis

The qualitative data were analysed independently by CL using the framework method of analysis [8]. The framework method has been developed specifically for applied research in which the objectives of the investigation are set *a* priori [9]. Analysis began with data familiarisation which underpinned the development of a thematic framework. The framework formed the basis upon which key issues and themes were developed and by which the data were examined. Subsequently the data were indexed according to the framework before a charting process took place; where the data were organised according to the defined thematic framework. Finally the charts were used to define concepts and find associations to provide explanations for the findings [8,9]. The analysis was subsequently checked with reference to the original transcripts and verified by another researcher (PM) which did not result in significant amendment.

Results

Eight participants were recruited; six patients and two physiotherapists. Three of the patients were male (50%), age range was 51 to 74 years (mean 64.7 years) and the change in SPADI score ranged from +3.1, indicating worse status, to -42.3, indicating improved status, (mean change -19.7). Both of the physiotherapists were female, each with greater than 20 years of experience working as physiotherapists in a variety of settings.

Three main themes were generated: 1) Expectations and preferences, 2) Characteristics of a successful outcome, 3) Characteristics of an unsuccessful outcome. Successful treatment

outcome was determined by change in SPADI where a 10 point change is regarded as a minimal clinical important difference and hence was used as a cut-off point with greater change representing better outcome.

1) Expectations and preferences

The self-managed exercise programme required that patients took responsibility for the management of their condition and although they returned to the physiotherapist for follow-up, the focus of this return was to facilitate self-managed behaviour not to offer hands-on care [7]. However, at the outset it was evident that most of the patients expected physiotherapy to be therapist-led and include 'hands-on' intervention:

'I expected a bit of a pummel actually and a bit of a tug about and somebody to go and make it all feel better.' (ID 18)

This expectation was aligned to how the physiotherapists viewed their role:

'I am very, very hands-on normally.' (T2)

The patients' expectations appeared to be largely informed by previous experiences of physiotherapy. Prior to recruitment to the pilot RCT, patients were informed that they had an equal chance of being randomised to the self-managed exercise or usual physiotherapy treatment arm. However, when patients were allocated to undertake self-managed exercise these prior expectations appeared to contribute to resentful demoralisation:

'I was quite sceptical I have to say when I went and we drew the envelope and it was, you've got, you know, self I thought ohh…that's not gonna do anything…I literally walked down the stairs of (the physiotherapy clinic thinking what av I signed up for!?' (ID 29)

This perspective was in keeping with the experience of the physiotherapists:

'…there were a few crestfallen faces when they got the self-managed side of it.' (T2)

The clear exception to this was one patient who had previously received extensive physiotherapy, incorporating a range of therapist-led interventions, without benefit and entered the trial hoping to be randomised to the self-managed exercise intervention:

'…exercises erm I think that worked much better than periodic injections and err weekly physiotherapy.' (ID 15)

However, for the majority of patients and the physiotherapists it was clear that their expectations and preferences did not align with the philosophy of self-management.

2) Characteristics of an unsuccessful outcome

It would be reasonable to expect that where expectations are not met treatment outcome would be compromised. In this situation, this was not always the case and a more complex relationship between expectations and outcome arose. In addition to reporting alternative expectations of physiotherapy, patients regarded as having an unsuccessful outcome also expressed concerns about the nature of their problem and whether self-managed exercise was an adequate intervention. Additionally, the patients described the role of the physiotherapist which, in some situations, seemed to compound the negative nature of their prior beliefs:

'… well I think (physiotherapist) felt more or less straight away that it was unfortunate that I'd drawn the short straw in terms of that…' (ID 37)

This narrative from the patient perspective was in concordance with opinion expressed by one of the physiotherapists, where it can be seen that prior beliefs might impact upon their role in this environment:

'I think there are some clients who from interviewing them, doing the examination, that you get an idea of whether they would be compliant and appropriate, and others you just think it's totally inappropriate and a waste of time.' (T1)

Despite these adverse factors, all patients reported that they initially engaged with the self-managed exercise programme. However, a key barrier to on-going engagement appeared to be a lack of an early and appreciable response to the therapy:

'…I think that when you find that they're not making a great deal of improvement, you're less inclined to erm continue it.' (ID 37)

Conversely, when the symptoms improved to a certain point, although not resolved, the impetus to continue was also challenged:

'…I would continue if it was still badly hurting…' (ID 13)

Despite our initial concerns that pain provoked whilst undertaking the exercise programme might serve as a barrier, this wasn't a significant concern that was expressed by the patients during the individual interviews. Also, patients did not express any anxiety about what the pain response meant in terms of tissue damage.

'… I suppose you expect to have a little bit of pain but erm I certainly wasn't worrying about any long-term erm, erm problems.' (ID 37)

This perspective wasn't shared by one of the physiotherapists:

'…but they weren't sold by that idea. They didn't like the idea of that.' (T1)

The self-managed exercise programme was designed to be progressive. This requires that the patients understand how to progress the exercise when indicated or regress if necessary. Following some early reported benefit from the exercise programme, one patient indicated subsequent difficulty as the symptoms failed to respond as the programme progressed. Despite this, they did not consider regressing the programme or seeking advice, indicating an external locus of control as a potential barrier:

'I just followed whatever the next one was……I just kept thinking I'll be glad when I go back and I might have something to do a bit easier or something. (ID 17)

The self-managed exercise programme was also designed to facilitate engagement in terms of minimal time needed to undertake and master the exercise. Despite this, some patients still expressed concern about attributes of the intervention:

'…at first it seemed like a big task to do, because it was an additional thing to do through the day.' (ID 18)

Unexpectedly, disquiet was expressed about the simplicity of the intervention and hence its lack of potential effectiveness:

'…to cap it all it's such a simple exercise...I just came out thinking waste of time.' (ID 29)

In summary, a range of factors can be identified which might be associated with an unsuccessful clinical outcome and hence serve as a barrier to implementation in the real

world. These factors are wide ranging and include the role of prior beliefs, the role of the physiotherapist, attributes of the intervention, response to therapy and personal attributes, but they do not seem to act in isolation. Instead there appears to be a complex interplay between them which ultimately might impact upon the therapeutic response and experience.

3) Characteristics of a successful outcome

Although patients who regarded themselves as having a satisfactory experience still reported pre-treatment expectations not aligned with a self-managed exercise approach, prior beliefs about the source and nature of their problem were not expressed during the interviews. One patient reflected upon a prior experience in a different way:

'I'd experienced a year and a half of physiotherapy and it brought about a relatively limited improvement.' (ID 15)

Also, the influence of the physiotherapist was framed in a more positive way:

'… she explained it very well and said what the aim was and that if it did hurt what to do……I could ring her if I had problems, and she was very responsive, she rang me back the same day and said what to do…I felt very comfortable, very confident.' (ID 18)

In addition to the support offered by the physiotherapist, one patient recognised the role of their partner in providing feedback and stimulating further engagement with the self-managed exercise programme during times when progress was slow:

'My (partner) erm kept saying to me that (they) thought that I was complaining a lot less as time went on. I didn't feel that but she assured me that I was' (ID 15)

The need for on-going support to facilitate successful engagement was also recognised by the physiotherapists. Patients also described personal traits that indicated self-efficacious individuals who took control of the programme:

'…while I was waiting for the kettle to boil, I would do it…' (ID 29)

'…I kept my diary and I always wrote why I'd not done it so that I could think to myself well how can I fit that in then?' (ID 18)

Other personal attributes were also described:

'…I was driven to get rid of this pain really, so I thought I'm going to give this a really good go and do it properly.' (ID 18)

'I'm used to exercise and I know that repeated exercise improves strength and mobility.' (ID 15)

In some circumstances the physiotherapists felt able to identify patients who they expected would successfully engage with the self-managed exercise programme:

'…I think it's a certain type of person where you're going to be able to have success with a regime of exercises and no hands-on, I would say… People who were very positive about life… they were usually quite outgoing, quite confident in themselves and quite determined.' (T1)

However, despite these inherent individual traits, one patient reflected upon a previous episode of physiotherapy when engagement with a prescribed exercise programme was limited:

'I didn't do them...I don't know - because I thought they were doing it for me. So I came back with the booklet but I didn't do them. I thought oh well, I'm going back next week.' (ID 18)

Other attributes of the intervention which facilitated engagement were also recognised. Whereas some patients had found aspects of the intervention difficult to implement, those patients who reported a successful outcome detailed different experiences:

'…with it being such an easy exercise it…became part of a routine …I would do, it was short, short and sweet. So it wasn't a case of having to find time to do it, it just naturally fell into a little sort of routine that I have.' (ID 29)

With reference to the exercise diary which is used as a key component of the programme as a means of self-monitoring, one patient reflected:

'…I stuck the sheet that I was given on the fridge so it was there in the kitchen to remind me every day.' (ID 29)

Additionally, with regards to the pro-active follow-up by the physiotherapist, another patient recognised:

'…I knew I was seeing (physiotherapist) on those regular appointments; it was every four weeks wasn't it? So because I knew I was seeing her, I didn't want to go to her and say I've not done it. So that was a motivator to me…' (ID 18)

Importantly, despite initial feelings of demoralisation, patients experienced a favourable therapeutic response that persuaded them of the potential value of the programme to them:

'…when I started seeing the results…I was so pleased with it that that motivated me on more and more to keep going.' (ID 18)

'…it just carried on improving erm and it made me realise how weak the arm was …I was quite pleased that it came on so quickly.' (ID 29)

Also, patients expressed an interesting opinion regarding pain and exercise:

'…if it's not hurting it's not helping…' (ID 13)

In summary, for some patients, expectations of what constitutes useful physiotherapy did not serve as a barrier to satisfactory treatment outcome with a self-managed exercise programme. This held true when the programme was offered within a positive and supporting environment where patients understood the reasons for undertaking the exercise and had means to self-monitor and return for pro-active follow-up. Response to therapy appeared to be a key factor influencing engagement. Individual traits, including self-efficacy, also appeared to play an important role in facilitating successful self-managed behaviour.

Discussion

The primary aim of this study was to explore participant experience and barriers that might serve to prevent implementation of the self-managed exercise intervention. Despite most patients expressing expectations of physiotherapy contrary to the philosophy of self-management, this did not serve as a barrier to successful treatment outcome when the intervention was offered within a positive and supporting environment where patients

understood the reasons for undertaking the exercise, effectively self-monitored and engaged with pro-active follow-up. Additionally, an early and appreciable response to therapy appears to have been a key factor influencing continuing engagement with the exercise programme.

Within the context of this study, most patients expressed discontent when randomised to the self-managed exercise arm of the pilot RCT; a phenomenon recognised in other areas of research as resentful demoralisation [10]. The importance of recognising patient preferences and meeting patient expectations as a means of improving treatment outcome is not a new phenomenon. The influence of expectations in clinical practice has long been recognised and patient preference trials have been developed for evaluation in research settings [10]. In this context, if a self-managed intervention is to be successfully implemented, the relevance of expectations needs to be recognised and pro-actively addressed through open discussion.

Interestingly, despite negative initial feelings, the patients reported that they still engaged with the intervention, in terms of adhering to the exercise programme. However, a key feature of continuing engagement appeared to be an early and appreciable therapeutic response. Where this did not happen, the motivation of some patients waned. This is a concern because worthwhile response to therapeutic exercise is generally expected to take time [11]. This highlights the need for educational strategies to foster more realistic expectations of prognosis but also indicates that pro-active follow-ups by the physiotherapists, in the form of a telephone call or clinic appointment, should be offered.

Prior concerns relating to pain, produced whilst exercising, as a barrier to engagement were not apparent here in relation to the patients at least. However, it was evident that patients had a level of acceptable pain response which, if exceeded, had the potential to impact negatively. When delivering the self-managed exercise intervention, physiotherapists would need to be aware of this when progressing the programme and also when working with patients to help them adapt the programme to their individual capacity which includes an understanding of how to regress the exercise but maintain engagement if the pain response becomes unacceptable.

The influence of the prior beliefs of the patients was evident but so too were the prior beliefs of the physiotherapists, which might impact upon delivery of the intervention. In a profession where therapist-led 'hands-on' intervention is regarded as a vital and central intervention [4,12], a move towards a self-managed approach represents a seismic shift which would need to be managed appropriately through, among other things, education and training relating to the theory and application of self-management.

In addition to the role of the physiotherapist, personal attributes of the patients were important, particularly self-efficacy, defined as the confidence to perform a specific task or behaviour [13]. Self-efficacious individuals were able to organise themselves and their lifestyle to incorporate the exercise programme. However, it does appear that the programme has the capacity to enhance individual self-efficacy through processes including knowledge translation, exercise/ skill acquisition, self-monitoring, goal setting, problem solving and pro-active follow-up and hence a self-managed approach in this context does not necessarily require wholly self-efficacious individuals at the outset.

Limitations

This study was conducted with eight participants recruited via their involvement in a RCT and the data were collected and analysed by one individual. Although most readers would now not judge qualitative research from the perspective of its capacity to generate data regarded as being generalisable, such a context might hamper the transferability, credibility and confirmability of the findings. However, it is reassuring to note that the patient recounted similar ideas and themes, both in the positive and negative whilst reflecting upon their experience which might actually enhance both the transferability and credibility. Furthermore, the participants were fully aware of the chief investigator's background and role in the research and in spite of this were not put off from relaying both positive and negative experiences. Finally, a transparent method of data analysis was adopted and the outcome of this was verified by a second researcher without the need for subsequent substantial amendment which does add to the confirmability of the output.

Conclusion

With certain caveats including the need to recognise individual traits, implement effective knowledge translation strategies for both patients and physiotherapists and the need to

engage with appropriately timed pro-active follow-up the potential to implement programmes of self-managed loaded exercise for patients with rotator cuff tendinopathy in the real world and in further research studies appears feasible but challenging.

Ethical approval

The protocol was approved by the School of Health and Related Research, University of Sheffield Research Ethics Committee on the 2nd December 2011 (Ref 0517/CAO) and the research was conducted according to the Declaration of Helsinki.

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Conflict of Interest Statement

The authors report no conflicts of interest.

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Appendix 1

Interview Topic Guide - Patients

Thank you for agreeing to take part in this study and thank you for agreeing to discuss your experience.

Will you begin by briefly describing your shoulder complaint, how it affected you and whether it responded to the therapy?

Your treatment largely required you to undertake exercise independently. How did you feel about this?

Is this what you expected from physiotherapy treatment?

Did you encounter any problems completing the exercises?

In addition to completing the exercises independently, I also expect that at times they could be uncomfortable to do. Again, how did you feel about this?

Did you expect the exercises to be uncomfortable?

Did the discomfort associated with the exercise concern you?

Is there anything further you would like to mention or discuss?

Thank you for taking the time to discuss your experience.

Appendix 2

Interview Topic Guide - Physiotherapists

Thank you for agreeing to take part in this study and thank you for agreeing to discuss your experience.

Will you begin by briefly describing your background and experience in relation to shoulder disorders?

As part of the study, you were asked to deliver treatment as usual and treatment according to the research protocol. Did you find that the 2 approaches were significantly different from one another?

Did you encounter any problems delivering the loaded exercise intervention? For example, any concerns about prescribing exercises that were uncomfortable or any concerns about relying on the patient to self-manage their condition?

Did the patients report any concerns to you?

If this study were to be repeated on a larger scale with other physiotherapists, would you have any further advice to offer?

Is there anything further you would like to mention or discuss?

Thank you for taking the time to discuss your experience.