

## Physiotherapists' perceptions of problematic musculoskeletal soft tissue disorders

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## ABSTRACT

Despite a growing body of research, many common musculoskeletal disorders remain resistant to existing management strategies, causing long-term pain and disability. Whilst arthritic and spinal problems have been prioritised for research, several soft tissue disorders may be equally burdensome for individuals and difficult to treat successfully. Identification of the most problematic disorders could help service managers and researchers focus on these and improve outcomes of their treatment. In this exploratory study, the views of clinicians on the most problematic soft tissue disorders were sought using a postal questionnaire survey and telephone interviews with practising physiotherapists. The questionnaire was sent to 193 experienced musculoskeletal physiotherapists working in NHS and private clinics in southeast England. The response rate was 48%. The top three problematic disorders were identified as frozen shoulder, plantar fasciitis and tennis elbow. Subsequent interviews with 20 respondents indicated that inadequate differential diagnosis, triaging and differences in therapeutic practice may account for some of the observed variation in outcomes. A greater focus on these disorders and issues by both clinicians and the research community is warranted.

Key words: musculoskeletal disorders; physiotherapy; therapist perceptions; research priorities.

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## INTRODUCTION

Musculoskeletal disorders are sources of considerable pain and disability, and can impose major costs on those affected, on health service providers and on society at large (European Commission, 2003). International reports have identified rheumatoid arthritis, osteoarthritis, osteoporosis and spinal disorders as the most burdensome conditions (European Commission, 2003, World Health Organisation, 2003, European Bone and Joint Health Strategies Project, 2004). Their findings and recommendations may inform the agendas of the research community and their funders. However, other musculoskeletal disorders may be severely debilitating for individuals and unresponsive to existing treatment options. Work- and sports-related soft-tissue disorders - such as tendinopathies and carpal tunnel syndrome - have been identified as significant and growing problems (Jones et al., 1996, Picavet and Hazes, 2003, Staal et al., 2007). A recent pan-European report (European Bone and Joint Health Strategies Project, 2004) emphasised the need for more detailed research into such disorders. Their prevalence, impact on those affected and the inadequacy of existing treatment strategies have been identified as indicators of the burden they impose on the individual and society (European Commission, 2003, World Health Organisation, 2003, European Bone and Joint Health Strategies Project, 2004). Data on these factors can help formulate research priorities and identify areas of clinical practice that may be improved.

Health surveys and clinical trials can provide relevant evidence, but the views of clinicians involved in the management of these disorders also require investigation. Strategies for improving musculoskeletal health recognise that the awareness and perceptions of health professionals is key in improving outcomes (Akesson and Woolf, 2007, Rowe and McDaid, 2007). Practice may vary considerably between therapists, even where the evidence base is sufficient to provide robust treatment guidelines (Eve et al., 1996, Swinkels et al., 2005, van der Wees et al., 2007). In some cases this may be due to a failure to take account of the opinions and daily experience of clinicians

(Eve et al., 1996). An appreciation of their perspectives and priorities may help in focussing researcher and drawing up treatment recommendations that are seen as relevant to clinical practice.

The aims of the study were to:

- rank common disorders by clinicians' opinions of the problems they impose on patients and their recalcitrance to treatment;
- identify some of the issues that may need to be addressed to improve outcomes in the management of these disorders

The factors identified in the reports cited above – prevalence, impact on those affected and the inadequacy of existing treatment strategies – were used to formulate criteria for evaluate these disorders. Hence study participants were asked to rank disorders according to how commonly they were seen in practice, the severity of problems they cause to the patient, and their recalcitrance to treatment. The questions posed by the study were: which are the common musculoskeletal disorders that are currently proving most problematic for patients and most difficult to treat successfully; and what are the clinical issues that may impede their successful management? Answers to these questions could help in the formulation of research priorities by focussing on the most problematic areas.

## STUDY DESCRIPTION

### Design

A postal questionnaire was used to obtain quantitative data on clinicians opinions. This was followed by telephone interviews with a sub-sample of respondents to gather richer data on perceptions of treating the three most problematic disorders. Approval for the study was obtained from the

investigators' institutional Ethics Committee, and written or oral consent was obtained from all participants.

### Participants

Musculoskeletal physiotherapists were selected as the population of interest because they encounter many of the common soft tissue disorders in their practice. A convenience sample of experienced musculoskeletal physiotherapists was identified from a database of NHS physiotherapy services and private practices, which is used to provide clinical placements for physiotherapy students in the Southeast of England. The database aims to include all NHS services in the region. A total of 193 outpatient musculoskeletal clinics were identified, and the questionnaire was sent to a named contact at each clinic. The covering letter stated the inclusion criteria: that respondents must be physiotherapists registered with the UK Health Professions Council, and have a minimum of 2 years' full time equivalent experience treating musculoskeletal disorders. Following analysis of responses to rank the disorders, all responders who had chosen the top three problematic disorders were invited to participate in a follow-up telephone interview.

### Instruments

A questionnaire was designed specifically for the study. A range of orthopaedic and musculoskeletal text books and epidemiological papers was consulted (Cunningham and Kelsey, 1984, Hertling and Kessler, 1996, Dandy and Edwards, 2003, Walker-Bone et al., 2004, Huisstede et al., 2006) to identify the most common soft tissue disorders. Spinal problems, arthritides and specifically neural and bone disorders were excluded. A draft questionnaire was drawn up and modified following peer-review, before being piloted with ten randomly-selected clinicians from the sample. They were asked them to complete it and identify any difficulties with its interpretation and completion. Six responses were

received with no problems reported. The questionnaire was judged fit for purpose and sent to the rest of the sample. Illustrative content from the questionnaire is given in the appendix.

For the follow-up interviews, a semi-structured format was used. Several opening questions were chosen to address relevant areas (see table 1), and these were followed by appropriate subsidiary questions to explore respondent's opinions in more detail. After piloting with an experienced musculoskeletal physiotherapist, this interview format was deemed suitable and adopted.

Interviews lasted approximately 20 minutes and were digitally recorded for subsequent analysis, in which recordings were audited for common themes and areas of divergence.

TABLE 1. Opening questions used in telephone interviews
Are some presentations of these disorders less responsive to treatment than others?
What management strategies do you typically adopt?
What factors do you find limit their successful management?

## RESULTS

### Survey

93 completed questionnaires were returned, representing a response rate of 48%. The mean experience of respondents in musculoskeletal physiotherapy was 10.7 ( $\pm$  7.5) full-time equivalent years. Figure 1 shows the proportion of the sample that identified each disorder as problematic in terms of the three chosen criteria. The top three disorders - frozen shoulder, plantar fasciitis and tennis elbow - were each chosen by more than 55% of respondents. The various tendinopathies were the mostly commonly cited disorders: 97% of respondents chose at least one tendinopathy.

Figure 1: proportion of respondents identifying top 10 problematic disorders

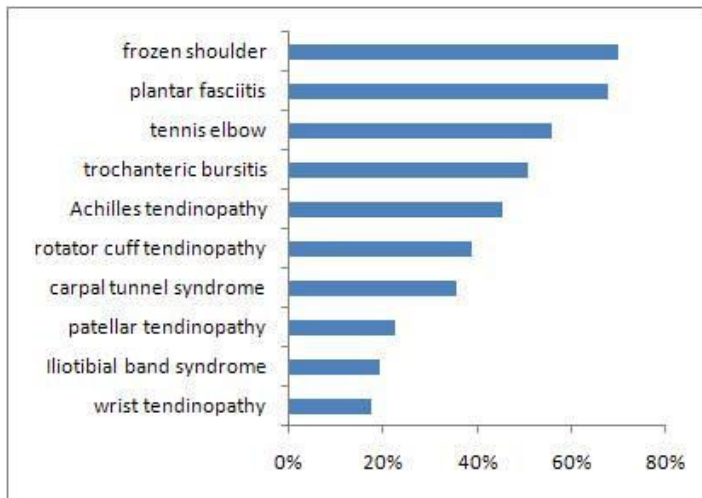
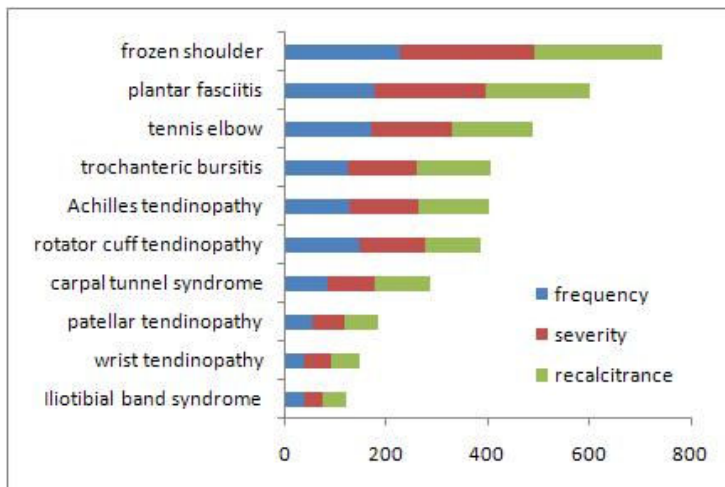


Figure 2 plots the sums of points allocated by all respondents for the top 10 disorders. Charting by total points gives more weight to disorders that were chosen by more respondents. A plot of mean scores would give undue weight to disorders that few respondents reported as problematic. Ranking disorders by points on each criterion places them in a similar order to that of figure 2, the main exception being rotator cuff tendinopathy, which ranks fourth in terms of frequency of presentation.

Figure 2: individual and combined scores for frequency of presentation, severity and recalcitrance to treatment of top 10 disorders.



Frozen shoulder, plantar fasciitis and tennis elbow are the most problematic disorders in terms of the proportion of respondents voting for them, and of the combined scores of respondents for frequency of presentation, severity of symptoms and recalcitrance to treatment. A number of factors might account for the observed recalcitrance: existing therapies may be insufficiently effective in dealing with these particular disorders; they may be less effective with particular subsets of those affected; or best practice may not be implemented in the management strategies adopted by clinicians. These questions were addressed in the interviews that followed.

### Interviews

Of the 26 questionnaire respondents whose selected problematic disorders included the top three from the whole sample, 20 agreed to follow-up interviews. Their mean experience in musculoskeletal physiotherapy was  $13.3 \pm 7.9$  years. Responses are summarised in Table 2.



TABLE 2.

Clinician opinions and experience with the top 3 problematic disorders.

Frozen shoulder	Plantar fasciitis	Tennis elbow
<i>Less responsive presentations</i>		
<ul style="list-style-type: none"> <li>In painful phase, only symptomatic relief seen as possible. (Minority said could prepare for later impact on quality of life)</li> <li>In stiff phase, disorder seen as virtually impervious to treatment by most interviewees</li> </ul>	<ul style="list-style-type: none"> <li>Chronic phase</li> </ul>	<ul style="list-style-type: none"> <li>Chronic phase</li> </ul>
<i>Management strategies commonly adopted with each disorder</i>		
<ul style="list-style-type: none"> <li>Painful phase – refer for injection, scapular setting, education &amp; advice, reassurance that it will get better; use of electrotherapy (TENS) &amp; acupuncture for pain</li> <li>Stiff phase - for most therapists, see once or twice to show self-management, stretches; for some, soft tissue release, muscle balance, scapular tracking, joint mobilisation, sustained joint glides</li> <li>Treat co-factors such as spinal, muscular, neural problems</li> </ul>	<ul style="list-style-type: none"> <li>Exercise (especially stretching)</li> <li>Cryotherapy</li> <li>Trigger points</li> <li>Addressing problems higher up (e.g core stability)</li> <li>Electrotherapy (most commonly ultrasound)</li> <li>Lifestyle, work adaptation</li> <li>Education about disorder</li> <li>Treat co-factors such as muscular, neural problems</li> <li>Refer for corticosteroid injection</li> <li>Refer to podiatry for more expert biomechanical assessment – often big improvement after orthotics sorted</li> </ul>	<ul style="list-style-type: none"> <li>Cryotherapy</li> <li>Taping, strapping</li> <li>Home exercises, stretch and strengthening (especially eccentric)</li> <li>Manual therapy (deep frictions, massage, mobilisations with movement)</li> <li>Electrotherapy (most commonly ultrasound)</li> <li>Lifestyle, work adaptation</li> <li>Education about disorder</li> <li>Treat co-factors such as spinal, neural problems</li> <li>Refer for corticosteroid Injection</li> </ul>
<i>Factors thought to limit successful management of the disorder</i>		
<ul style="list-style-type: none"> <li>Inadequate differential diagnosis leading to inappropriate management</li> <li>Some felt could have more impact if saw patients more; others thought resources not an issue</li> <li>Only seen when already in chronic phase</li> <li>Age-related degeneration may limit response to therapy</li> <li>Therapist tendency not to look deeper for related problems.</li> </ul>	<ul style="list-style-type: none"> <li>Focus on symptoms rather than causes</li> <li>Difficulty identifying and addressing all contributory factors</li> <li>Centralisation of pain in chronic cases</li> <li>Lack of biomechanics skills of clinician</li> <li>If referred to podiatrist, attention may not be given to neurodynamics or muscle balance work</li> <li>Contributory co-morbidities e.g. Diabetes</li> </ul>	<ul style="list-style-type: none"> <li>Inadequate differential diagnosis leading to inappropriate management</li> <li>Difficulty identifying and addressing all contributory factors</li> <li>Only seen when already in chronic phase – seen as a low priority by referring GPs.</li> <li>Centralisation of pain in chronic cases</li> <li>Tendency to re-injure: difficult to get patients to rest the area or change work patterns / lifestyle</li> <li>Contributory co-morbidities e.g. Diabetes</li> <li>Psychosocial contribution</li> </ul>

Several common themes emerged from the interviews:

- Meeting the patient when the disorder had already become chronic was seen as a problem with all three disorders. Whether due to a delay in the patient seeking help, low priority being attached to the referral by a GP, or long waiting lists, chronicity was commonly seen as a major obstacle to managing the disorder effectively.
- Poor or non-response to treatment was seen as sometimes arising from inadequate assessment or misdiagnosis. This was particularly observed in the first stage of frozen shoulder, when limitation of movement might not follow a capsular pattern and pain could be impossible to localise. Less experienced clinicians were judged by some respondents as prone to treat frozen shoulder as a rotator cuff lesion and so exacerbate the problem. Unrecognised neural involvement in all 3 disorders was suggested by some as accounting for their apparent recalcitrance.
- A range of management strategies are commonly employed, but the disorders were often found to be slow to resolve. Many respondents felt they followed a natural course that was resistant to therapeutic modification. Some admitted that they had developed a defeatist attitude to the most recalcitrant disorders, and might tell patients early on not to expect much improvement from therapy. A minority expressed a concern about therapists continuing to treat when there is no reasonable expectation of improvement.
- Clinical practices varied, with some clinicians adopting a much more interventionist approach than others. Most respondents concluded that hands-on physiotherapy is not appropriate for frozen shoulder, particularly in its early phases. A significant minority disagreed with this standpoint, claiming that interventions in both phases could lessen symptoms and improve function. A difference in opinion was also apparent in accounts of treating plantar fasciitis - some therapists claimed excellent success rates and expressed surprise that others found the disorder recalcitrant.

- Some interviewees were specialist practitioners with particular skills relevant to these disorders, such as biomechanics analysis; others had many years of general experience, but admitted to lacking specialist knowledge that might change their practice. Referral to other specialist services was mentioned in some cases. With plantar fasciitis, referral to podiatry services for biomechanical assessment was described, but a concern also expressed that immediate referral might deny the patient access to skills particular to physiotherapists.

## DISCUSSION

The survey identifies the soft tissue disorders that clinicians presently find particularly challenging to manage, and the interviews provide some insights into potential contributory factors. Since frozen shoulder, plantar fasciitis and tennis elbow appear to be the disorders that clinicians find particularly problematic, directing research into the more effective management of these particular disorders may be warranted. Comments made in the interviews suggest that several lines of enquiry may be valuable, drawing on both clinical research and service reviews.

Differential diagnosis and identification of concurrent pathologies are recognised in the literature as significant issues for all three disorders (Neviaser and Neviaser, 1987, Bamji et al., 1996, Vicenzino and Wright, 1996, Singh et al., 1997, Cornwall and McPoil, 1999, Nirschl and Ashman, 2003).

Improving existing skills in this area, for example by in-service training on their diagnosis, could be helpful. Studies evaluating the sensitivity and specificity of diagnostic tests for these disorders are required. At the same time more reliable diagnostic tools might be developed for use in the clinical setting. For instance, in the cases of tennis elbow and plantar fasciitis, the extent of pathological tissue changes observed with diagnostic ultrasound in the laboratory may correlate with common clinical tests.

Respondents find tennis elbow and plantar fasciitis more recalcitrant once they have become chronic. Therefore outcomes may improve if higher priority is assigned to them in the triaging process. Referral guidelines may need to be revised accordingly.

Differences in opinion about the efficacy of physiotherapy were apparent amongst the interviewees. This may in part be due to differences in practice rather than the inherent recalcitrance of these disorders. Therapy departments that have more success managing these disorders might consider what they can do to inform others of their strategies. More detailed research should identify variations in practice and outcomes in the treatment of these specific disorders. Despite the many management strategies advocated in the literature, there remains uncertainty about which interventions are most appropriate at each phase of the disorders' natural histories, and for different patient sub-groups. Systematic reviews of treatments for these disorders have criticised the quality of published research (Cleland and Durall, 2002, Struijs et al., 2002, Buchbinder et al., 2006, Wood et al., 2006).

The choice of physiotherapists as the target population meant that the views of other clinicians were not sought. Disorders regarded by physiotherapists as recalcitrant might respond more readily to treatment by other health professionals, as evidenced by successful outcomes following referrals to podiatry reported by some respondents. This underscores the value of interdisciplinary research and collaboration in their management, as recently proposed for frozen shoulder (Morrissey, 2007).

#### Study limitations

A number of potential limitations in this study can be identified. The questionnaire return rate of 48% is at the lower end of rates typical for research published in medical journals (Asch et al., 1997). Ethical approval for the study was granted on condition that reminders were not sent, as the questionnaires may have been passed on to other clinicians. A higher rate might have been achieved

if this condition had not been imposed. The questionnaire was created specifically for this survey and its reliability has not been established. However the survey was intended to be exploratory rather than definitive in nature, drawing attention to disorders and opinions that require further investigation.

## CONCLUSIONS

This exploratory study has identified several soft tissue musculoskeletal disorders that are particularly problematic for both patients and clinicians. Its findings may be helpful in several respects. Service managers may be challenged to focus resources more specifically on these particular disorders, which have been identified by frontline clinicians as in need of more effective management. The research community may be encouraged to develop more effective diagnostic techniques and to audit clinical practice for variations in treatments and outcomes with these disorders. Finally, where clinicians are obtaining relatively good outcomes with these disorders they may publicise their experience and contribute to the development and dissemination of best practice guidelines. These responses may enhance the service and improve the outcomes of treatment offered to those suffering with these debilitating and costly disorders.

KEY POINTS
<ul style="list-style-type: none"><li>• Frozen shoulder, plantar fasciitis and tennis elbow are seen by physiotherapists as particularly problematic disorders to treat</li><li>• Issues of diagnosis, triaging and differences in management approaches may be contributing to the apparent recalcitrance of these disorders</li><li>• More resources dedicated to service reviews and research concerned with effective assessment and multidisciplinary management of these disorders is warranted.</li></ul>

## QUESTIONNAIRE: TREATING SOFT TISSUE LESIONS

The aim of this questionnaire is to establish which are the common soft tissue disorders that physiotherapists find most resistant to treatment. Some of the most common are listed here.

Rotator cuff tendinopathy	Trochanteric bursitis	ACL / PCL lesion
Frozen shoulder	Hamstring tendinopathy	Knee bursitis
Bicipital tendinopathy	Adductor tendinopathy	Patellar tendinopathy
Tennis elbow	Quadriceps tendinopathy	Knee cysts
Golfer's elbow	ITB syndrome	Achilles tendinopathy
Wrist tendinopathy	MCL / LCL lesion	Ankle ligament lesion
Carpal tunnel syndrome		Plantar fasciitis

1. In the table below, list 5 or more conditions from this list that you find particularly resistant to treatment, i.e. signs and symptoms change little or slowly with treatment.
2. Grade each condition in your list according to how commonly you see it, its impact on the patient, and its resistance to treatment. 1= least and 5 = most. An example is given.
3. Be more specific about the position or nature of the lesion if you wish. An example is given
4. If you wish, you may add conditions that do not appear on the list above. However do not include back pain, neural or arthritic conditions.

Conditions that I find most resistant to treatment	Seen commonly in my practice	Severity of impact on patient	Resistant to treatment
<i>e.g Wrist tendinopathy (de Quervain's)</i>	3	2	4


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