

Management of upper limb disorders and the biopsychosocial model

Prepared by the **University of Huddersfield,**
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Management of upper limb disorders and the biopsychosocial model

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This review, using a best evidence synthesis, examined the evidence on management strategies for work-relevant upper limb disorders and established the extent to which the biopsychosocial model can be applied. Articles were found through systematic searching of electronic databases together with citation tracking. Information from included articles was extracted into evidence tables. Themes were identified and the information synthesised into high level evidence statements, which were distilled into key messages. The main results are presented in thematic sections covering classification/diagnosis, epidemiology, associations/risks, and management/treatment, focusing on return to work and taking account of distinctions between non-specific complaints and specific diagnoses.

Neither medical treatment nor ergonomic workplace interventions alone offer an optimal solution; rather, multimodal interventions show considerable promise, particularly for vocational outcomes. Early return to work, or work retention, is an important goal for most cases and may be facilitated, where necessary, by transitional work arrangements. The emergent evidence indicates that successful management strategies require all the players to be onside and acting in a coordinated fashion; this requires engaging employers and workers to participate.

The biopsychosocial model applies: biological considerations should not be ignored, but it is psychosocial factors that are important for vocational and disability outcomes. Implementation of interventions that address the full range of psychosocial issues will require a cultural shift in the way the relationship between upper limb complaints and work is conceived and handled. A number of evidence-based messages emerged, which can contribute to the needed cultural shift.

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EXECUTIVE SUMMARY

BACKGROUND

The study started from the recognition that upper limb disorders are experienced by most people, predominantly during working age: in that sense they can be considered to be common health problems. Although there is evidence that common health problems in general are characterised by a strong association with psychosocial factors, it is uncertain to what extent that holds true for upper limb disorders in particular.

The Health & Safety Executive acknowledges that not all work-relevant upper limb disorders can be prevented, and therefore has an interest in determining whether there are effective methods for managing cases, with particular focus on the suitability of a biopsychosocial approach, to help reduce the working days lost to musculoskeletal problems. This review aimed to provide an evidence-base for that question.

METHODS

The methodology was a 'best evidence synthesis': summarising the available literature and drawing conclusions about the balance of evidence, based on its quality, quantity and consistency. A systematic search of major electronic databases was undertaken using appropriate keywords to retrieve articles pertaining to the development and management of upper limb disorders. In addition citation tracking was undertaken, together with searches of personal databases and the Internet. Each article for inclusion ($n \sim 200$) was read and summarised; the original authors' main findings were extracted, checked, and entered into evidence tables. Themes were identified from the evidence tables and the information was synthesised into high level evidence statements and linked to the supporting evidence, which was graded to reflect the level of support. Finally, the retrieved material was then distilled into a number of key messages related to the aim of the project.

FINDINGS

The main results are presented in thematic sections covering classification/diagnosis, epidemiology, associations/risks, and management/treatment, focusing on return to work and taking account of distinctions between non-specific complaints and specific diagnoses. As well as high level evidence statements, the main evidence themes are discussed in narrative format to further develop the ideas and put them into context, with particular reference to a biopsychosocial framework.

There is considerable uncertainty over classification and diagnosis for upper limb disorders; the inconsistent terminology impacts on studies of their epidemiology, treatment, and management. Upper limb disorders are commonly experienced irrespective of work and can lead to difficulty undertaking everyday tasks; this applies to specific diagnoses as well as non-specific complaints. Work has a limited overall role in the primary causation of ULDs, yet the symptoms are frequently work-relevant (some work tasks will be difficult for people experiencing upper limb symptoms, and may sometimes provoke symptoms that may otherwise not materialize). Management of cases shows more promise than attempts at primary prevention.

Neither medical treatment nor ergonomic workplace interventions alone offer an optimal solution; rather, multimodal interventions show considerable promise, particularly for vocational outcomes. Some specific diagnoses may require specific biomedical treatments, but the components of supplementary interventions directed at securing sustained return to work seem to be shared with regional pain disorders. Early return to work, or work retention, is an important goal for most cases and may be facilitated, where necessary, by transitional work arrangements. The emergent

evidence indicates that successful management strategies require all the players to be onside and acting in a coordinated fashion, in order to overcome obstacles to recovery and return to work.

INTERPRETATION

The biopsychosocial model is certainly appropriate to understand the phenomenon of work-relevant upper limb disorders, and has important implications for their management. Biological considerations should not be ignored, particularly for initial treatment of cases with specific diagnoses, but it is psychosocial factors that are important when developing and implementing work retention and return to work interventions. Work is beneficial and people need to be helped and encouraged to remain in, or return to, work. This is true both for non-specific upper limb complaints and specific diagnoses. Interventions and management strategies need to be capable of addressing psychosocial issues, when required. This requires a cultural shift in the way the relationship between upper limb complaints and work is conceived and handled. Educational strategies aimed at employers, workers, and the public are likely to be the most useful method to achieve this.

KEY MESSAGES

A number of evidence-based messages have been distilled, which should contribute to the needed cultural shift. Whilst these points apply to the whole range of players involved (population/workers; employers; health professionals; unions; lawyers; media; policy makers; enforcers), transforming them into suitable material for various purposes and media requires assimilating the detail contained in the text and evidence tables.

CONCEPT MESSAGES

Upper limb symptoms are a common experience - although symptoms are often triggered by physical stress (minor injury), recovery and return to full activities can be expected: activity is usually helpful: prolonged rest is not.

Work is not the predominant cause - although some work will be difficult or impossible for a while, that does not mean the work is unsafe: most people can stay at work (sometimes using temporary adjustments), but absence is appropriate when job demands cannot be tolerated.

Early return to work is important - it contributes to the recovery process and will usually do no harm; facilitating work retention and return to work requires support from workplace and healthcare

All players onside is fundamental - sharing goals, beliefs and a commitment to coordinated action.

PROCESS MESSAGES

Promote self-management – give evidence-based information and advice - adopt a can-do approach, focusing on recovery rather than what's happened.

Intervene using stepped care approach - treatment only if required (beware detrimental labels and over-medicalisation); encourage and support early activity; avoid prolonged rest; focus on participation, including work.

Encourage early return to work - stay in touch with absent worker; use case management principles; focus on what worker can do rather than what they can't; provide transitional work arrangements (only if required, and time-limited).

Endeavour to make work comfortable and accommodating - assess and control significant risks; ensure physical demands are within normal capabilities, but don't rely on ergonomics alone; accommodating cases shows more promise than prevention.

Overcome obstacles - principles of rehabilitation should be applied early: focus on tackling biopsychosocial obstacles to participation - all players communicating openly and acting together, avoiding blame and conflict.

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Table A4. Individual studies of particular relevance

Table A4. Individual studies of particular relevance				
Authors	Study type	Topic	ULD condition	Key findings (<i>Reviewers' comments in italic</i>)
(Abásolo et al. 2005)	RCT	Work disability	Regional MSDs	<p>A health system program to reduce work disability related to musculoskeletal disorders</p> <p>Large RCT with n=7805 control and 5272 intervention subjects with episodes of MSD-related temporary work disability in two health Madrid districts, with 4-year follow-up. The control group received standard primary care management, with referral to specialised care if needed. The intervention group received a specific program, administered by rheumatologists, in which care was delivered during regular visits and included 3 main elements: education, protocol-based clinical management, and performing medical administrative duties (such as writing prescriptions, and sick notes). The intervention consisted of avoidance of bed rest, early mobilisation, avoidance of splints, stretching exercises, ergonomic training, provision of educational booklets, and suggestions for optimal levels of physical activity. Return to work was never forced. Specific protocols for regional MSD's were created, including ones for shoulder, and arm and hand. The exact proportion of cases with upper limb disorders was not reported, but non-spine problems appear to have been about 50% of total cases. Temporary work disability, long-term work disability, and costs were significantly decreased in the intervention group. The net economic benefit was €11 for each euro spent. Furthermore, patients in the intervention group were significantly more satisfied. <i>(This study illustrates the potential benefit from considering work disability due to MSD's to be a relevant health problem worthy of intervention. The personal and financial impact of such problems may be mitigated by participating in a similar programme that combines patient education with protocol-driven early rehabilitation based on biopsychosocial principles, although this was not explicitly stated by the authors).</i></p>
(Adams & de C Williams 2003)	Mixed cross-sectional survey, and retrospective case series	RTW	Chronic upper limb pain	<p>What affects return to work for graduates of a pain management program with chronic upper limb pain?</p> <p>The authors observed that chronic upper limb pain often causes work loss, yet rates for RTW after attending a (biopsychosocial) pain management programme are disappointingly low. The study aimed to identify factors relevant to RTW in sample of 103 patients with chronic upper limb pain. Data were collected by telephone interview. Data (writing and typing speed, self-efficacy, catastrophising, medication use, and adherence to pain management techniques 1-month after programme) was also available from before and after treatment. They reported that 55 individuals were working or in training after the programme, whereas 54 had been in the 3 months before. There were changes in employment status: 30 participants improved their work status, 10 reduced it, and 61 remained stable. Higher self-efficacy, lower catastrophising, faster writing speed, and less medication use significantly predicted RTW. Use of pain management strategies, and typing speed, did not. The authors suggested that non-workers may be characterised as</p>

