Management of musculoskeletal pain

Why is the information on cost effectiveness of interventions to manage neck and upper limb symptoms still lacking, while all stakeholders would benefit from this information?

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High quality studies that evaluate cost-effective interventions in neck and upper extremity musculoskeletal conditions are needed

There is general consensus on the widespread and multifactorial nature of musculoskeletal pain in modern society. The costs to society and to companies, which stem from lost productivity and reduced performance among affected workers, are high. This in turn has encouraged certain interventions, such as ergonomic work place adaptations or training, to be widely applied. One would expect, given this combination of a common problem, high costs and widely applied interventions, that there would be ample knowledge among employees and employers about the most effective and even the most cost-effective solutions. Unfortunately, this is not the case. Although still limited, the knowledge on effective prevention and return to work for workers with low back pain has improved greatly in the past few years. But comparable evidence for neck and upper limb symptoms is still largely absent in 2007. In my view that is a missed opportunity. If workers, employers and occupational health experts are to spend time, energy and money on prevention of these problems, they had better spend it on effective measures or spend it not at all. This is in the interests of all stakeholders.

In order to reach a soundly based and robust conclusion on effectiveness of these interventions, multiple high-quality studies are needed that evaluate effectiveness in a sufficiently comparable way. The fact that such studies are only rarely available can at least be partly attributed to the lack of discipline and expertise of the researchers in the field to conduct methodologically sound evaluation studies. Another important reason is an apparent lack of investment by stakeholders in high-quality research. They also should appreciate that would be best to spend their money on high-quality evaluation studies that yield informative results or not to spend it at all. Although, one should also realise that even effective interventions will contribute to a solution of the problem when they are targeted towards fairly strong and prevalent risk factors (or a combination of such factors), ie those with a large attributable fraction. Interventions aimed at reducing sick leave and enhancing return to work should focus on the major prognostic factors and obstacles for work resumption. When it is clear which factors should be targeted and in which worker groups, then there is much to gain by developing the evidence base on the most cost-effective interventions.

In this context, it is encouraging that most of the available high-quality studies are recent ones. It is also important that the available evidence, although scarce, is adequately summarised. This will inspire future researchers to conduct studies that meet the necessary quality criteria and direct future research towards the most promising interventions. In the meanwhile, the available scarce evidence is at least accessible for practical use. Therefore papers, as described in this issue by Boocock *et al*,[1] that systematically summarise the evidence on effectiveness of interventions for the prevention and management of neck or upper extremity conditions, fulfil a great need **(*see page 291*)**. This paper concerns a systematic review on the effectiveness of intervention studies undertaken between 1999 and 2004. In excess of 5000 articles were identified, of which 31 studies met the review inclusion criteria. For certain interventions I will give an impression of the state of the evidence. These examples come mostly from the office work setting, since a comparable systematic review with the same objectives (restricted to computer workers) was published by Brewer *et al* in 2006.[2] That review also identified 7313 articles which were reduced to 31 studies on the basis of content and quality.

Both reviews report moderate evidence for a positive effect of alternative pointing devices, although the two pointing devices evaluated are very different. For each of these devices separately the evidence is thus still scarce. However, both reviews emphasise the potential for the beneficial effect of alternative pointing devices. For alternative keyboards, the Boocock review concludes that there is moderate evidence for a positive effect. The Brewer review concludes that the evidence is mixed, based on the same studies. For an adjustable chair, both these reviews conclude that there is insufficient evidence of a positive effect due to lack of multiple high-quality studies. Clearly, more high-quality evaluation studies (ie, randomised controlled trials) of alternative pointing devices, keyboards or adjustable chairs are required. Such studies are fairly easy to conduct, and it is a pity that, of such widely applied interventions so few data on cost-effectiveness are available.

There is also inconclusive evidence on the effectiveness of workplace adjustments for prevention of neck and upper limb symptoms because the studies that evaluate these interventions are of low quality or just single high-quality studies. Workplace adjustments that are established in a participatory way with involvement of all stakeholders are shown to be effective in enhancing return to work for workers with low back pain.[3 4] However, these interventions have not been applied for workers off work with neck and upper limb symptoms, although there is no reason to assume that it would be any different. Also for the effect of training, such as strength training, coordination or flexibility, the evidence is not well established since Boobock's review concluded that there was some evidence based on three studies and Brewer *et al* concluded that the evidence in an office population is insufficient since only one study in that setting was conducted. Convincing evidence to support the benefits of organisational interventions was found to be lacking. We recently reached the same conclusion that there is a great need for additional high-quality trials before any conclusions on effectiveness of bio-behavioural interventions for reduction of neck and upper limb problems can be made.[5] Of course those types of interventions are more difficult to evaluate in a randomised controlled trial, but the research on enhancing return to work after low back pain shows that it can be done. Based on (patho)physiological models, the introduction of variation and rest breaks have a high potential for

prevention of problems of the neck and upper limb. Unfortunately, this is not universally reflected in the results of intervention studies according to both reviews. Brewer *et al* concluded that there was mixed evidence about the effect of breaks in an office setting. Boocock *et al* concluded that there was some evidence that multiple interventions including exercise and for instance rest breaks can have positive effects in workers with neck or upper extremity conditions.

It is a pity to conclude that no single or multidimensional strategy for intervention to improve musculoskeletal health is supported by a strong level of evidence. Policy recommendations or guidelines should be based on strong levels of evidence, which require consistent findings from a number of high-quality studies. These are simply not available. However, for several intervention categories, one or two additional high-quality studies would alter this situation and make more definitive conclusions possible. Several of the well-conducted, randomised controlled trials show that such studies can be done. These interventions may stimulate other researchers to conduct additional high-quality trials and, in addition, stimulate stakeholders such as funding agencies, policy makers and employers to invest in such studies. Hardly any of the reviewed studies conducted a sound cost-effectiveness evaluation of the applied interventions. This is most regrettable since that would provide even better guidance for sensible action.

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ECHO

Downsizing really is bad for workers' mental health

Please visit the *Occupational and Environmental Medicine* website [www.occenvmed.com] for a link to the full text of this article.

Downsizing at work might be expected to erode mental health, but only now has it been confirmed. Policymakers, employers, and occupational therapists must take note of its heavy burden on those affected and on society.

Rate ratios of prescriptions for psychotropic drugs—indicating poor mental health—were significantly higher for men who lost or left their job after downsizing (1.64) and even those who retained their jobs (1.49) than those on a reference group who did not experience downsizing. This was true for women but less pronounced. The effect was greater by occupational state, with rate ratios of 1.87 for non-manual and 1.70 for manual male workers after downsizing and 2.16 for manual workers who lost or left their job in consequence. Only non-manual female workers still employed after downsizing seemed similarly affected (rate ratio 1.20). What underlies these results—changes in work after downsizing or a general difference in the meaning of work to men and women—is unclear.

The prospective study, part of an ongoing cohort study, examined prescriptions for psychotropic drugs during 1994–2000 among local government workers in four Finnish cities, during a major national recession in 1991–3, when unemployment rose to 17%. Among the 26 682 workers aged 19–62 years, 22 382 kept their jobs, of whom 4783 worked in groups that were greatly downsized, and 4271 lost or left their jobs. The national register provided data on prescriptions linked to personal identity number.

Observational studies relying on self reported data have hinted at similar findings.

▲ Kivimäki M, *et al*. *Journal of Epidemiology and Community Health* 2007;**61**:154-158.