A behavioural-oriented graded activity program reduced the number of days absent from work because of low back pain

Synopsis


Question Is a behavioural-oriented graded activity program more effective than usual care in reducing sick leave and improving functional status in employees absent from work due to low back pain. Design Randomised controlled trial. Setting Occupational health services department of an airline company in the Netherlands. Patients 134 workers absent from work because of nonspecific low back pain and low back pain symptoms with a minimum duration of four weeks in succession. Interventions The participants attended 1-hour graded exercise sessions twice per week until they returned completely to regular work or until the maximum therapy duration of three months was reached. Physiotherapists trained specifically to treat patients with low back pain according to behavioural principles supervised the sessions. Maximal performance was assessed for each exercise separately, and was used as a baseline value for specifying a gradually progressive exercise scheme. The primary goal of the physical exercises was not to improve physical performance but to make the disabled worker aware that it was safe to move and to be physically active. The usual care group received the usual guidance and advice. Other types of treatment were not required. Outcomes Number of days on sick leave because of low back pain, functional status (Roland Disability Questionnaire), and severity of pain (11-point numerical scale). Result In the first 50 days after randomisation, the rate of return to work was similar in both groups [hazard ratio 1.0 (95% CI 0.6 to 1.8, \( p > 0.2 \)]. For the period from 50 days after randomisation there was a difference in favour of the graded activity group [hazard ratio 1.9 (95% CI 1.2 to 3.2, \( p = 0.009 \)]. For pain and functional status there were little or no differences between the groups. Conclusion For patients with low back pain, graded activity was more effective than usual care in reducing the length of sick leave.

Commentary

Low back pain (LBP) is common in the general population, affecting more than 50 percent of people at some stage in their lives. Especially in the western world, there is concern about the proportion and socioeconomic consequences of work incapacity from LBP. Trials on ‘what works’ to reduce the length of sick leave are therefore welcome among practitioners and policy makers as well, especially when presenting such encouraging results as the present study by Staal and colleagues. The trial is elegantly designed and the intervention seems relevant, and to some degree tailored to the individual worker and work place. An example taken from the study was a participant who reported back problems while lifting and moving suitcases from a luggage wagon into an aeroplane. He was given an exercise to practise lifting and moving suitcases with a certain number of repetitions. This concept can be applied easily to other work tasks and settings.

In Nordic countries there is a tradition of ‘on the job cooperation’ between the sick listed employee, the employer, and the occupational health service. One way of facilitating graded activity of good quality could be to arrange for an on the job meeting with the persons involved, in order to make a plan for the graded activity program. Relevant persons could be the employee with LBP, a representative from the employer, the physiotherapist giving the exercise treatment, and a physiotherapist from within the occupational health team, if such a team exists. In the study by Lindström et al (1992), the graded activity program was carried out at the work place (automobile industry), which also reduced the absence from work compared to traditional care.

Nursing sick and elderly patients is a heavy task. A Scandinavian concept has been developed using the knowledge of transfer and movement assistance. This concept, when used, is introduced to the whole ward; including those with and without LBP in order to prevent LBP and other musculoskeletal problems. There is training on how to position and move the body while transferring the patient, how to perform the transfer, and what aids to use in order to make the shifting easier. For the approach to be effective it is vital that the employer supports and enhances the concept. It is necessary to spend time learning, practising, and reinforcing the altered way of working. Further, it is essential that there is continuous and systematic follow up. However, the effects of the concept have not yet been evaluated.

There are many professions where one would think that such an approach could be useful. Further studies would need to be done in order to gain more knowledge concerning behavioural-oriented graded activity.

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Reference

Taping reduces pain and disability in patients with knee osteoarthritis

Synopsis


**Question** Is taping of the knee effective in improving pain and disability in patients with osteoarthritis of the knee?

**Design** Randomised controlled trial. **Setting** University and private practices in Melbourne, Australia. **Patients** Volunteers who responded to advertisements in local newspapers. Inclusion criteria were symptoms of knee osteoarthritis as defined by the American College of Rheumatology. Exclusion criteria included allergy to tape, history of joint replacement, symptoms or signs suggestive of another cause of knee pain, physiotherapy/steroid injection/surgery for the knee (previous six months), body mass index > 38 (owing to difficulties of taping the knee effectively), history of knee taping, and fragile skin around the knee. Patients were randomised into therapeutic tape (n = 29), control tape (n = 29) or no tape (n = 29) groups. **Interventions** Therapeutic tape provided medial glide, medial tilt, and anteroposterior tilt to the patella and either unloaded the infrapatellar fat pad or the pes anserinus. Hypoallergenic undertape was applied beneath the rigid tape to prevent irritation of the skin. The control tape was hypoallergenic tape alone, laid over the same areas of skin as the therapeutic tape. The tapes were worn for three weeks and reapplied weekly. Participants allocated to the no tape group received no intervention. **Outcomes** Primary outcomes were pain on movement and pain on worst activity measured on a 0–10 cm scale, and participant perceived rating of change. Secondary outcomes included the pain subscale of the WOMAC osteoarthritis index, the knee pain scale, and the bodily pain domain of the SF-36. All outcomes were assessed at three and six weeks. **Main results** The therapeutic tape group reported greater pain reduction than the other two groups, e.g. at six weeks the mean difference (95% CI) for therapeutic tape versus no tape was 2.4 (1.1 to 3.7) for pain on worst activity. Intervention was significantly associated (p = 0.000) with change in pain at three weeks: 73% (21/29) of the therapeutic tape group reported improvement compared with 49% (14/29) of the control tape group, and 10% (3/29) of the no tape group. Significantly greater improvement was observed on most secondary outcomes in the therapeutic tape group compared with the no tape group. **Conclusion** Therapeutic knee taping is an effective treatment option for the management of pain and disability in patients with knee osteoarthritis.

Commentary

Hinman and colleagues did a study by the book; their RCT followed all recommendations of the CONSORT statement. So it can be concluded that taping for three weeks is effective in the short term in patients with osteoarthritis. Despite this positive result one critical remark should be made. Hinman and colleagues found immediately after the intervention a significantly greater reduction in pain in the therapeutic tape group than in the control tape group. Differences between the therapeutic and the control tape group were small for secondary outcome measures, such as physical functioning, but not statistically significant. At three weeks follow up both tape groups showed significant improvements from baseline compared with the no tape group. These findings suggest that part of the positive effect of taping can be explained by a placebo effect.

The findings of the study raise new research questions. The study included volunteers from the community who responded to advertisements. Apart from the classification criteria for osteoarthritis the main inclusion criterion was knee pain. The authors do not provide an explanation for the relief of pain as a result of taping. It might be interesting to know whether taping is more effective in specific subgroups of patients, for instance in patients with malalignment or patients with severe loss of cartilage. It is likely that unloading by taping is particularly effective in those patients. In the trial by Hinman et al the tape was reapplied weekly by skilled physiotherapists. So far, taping is not a common part of a self-management strategy. It might be worthwhile to teach patients to apply the tape themselves in periods of (severe) pain. Quilty and colleagues did a study on the efficacy of taping combined with quadriceps exercises over a 10 week period in patients with knee osteoarthritis (Quilty et al 2003). In those ten weeks, patients were taught to exercise and to apply tape. In this trial the positive effect on pain and muscle strength lasted for five months (until ten weeks after the intervention period), after 12 months there were no differences found between the control and the experimental group. These findings suggest that taping as well as exercises require involvement of a physical therapist in the long-term. A relevant future research question in the field of taping is to focus on an efficient balance between the role of the physiotherapist and the role of the patient.

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Reference