The long-term effect of multidisciplinary back training: a systematic review

van Geen J W, Edelaar M J, Janssen M, van Eijk J Th

CRD summary
The authors concluded that multidisciplinary back training has a long-term positive effect on work status in people with non-specific chronic low back pain, but the evidence for a positive impact on quality of life is limited. Given the absence of statistical data and the methodological weaknesses of the included studies, the reliability of the authors’ conclusions is unclear.

Authors’ objectives
To assess the long-term effects of multidisciplinary back training on work participation of people with non-specific chronic low back pain (CLBP), and to determine the influence of training intensity on outcomes.

Searching
MEDLINE, EMBASE, the Cochrane Controlled Trials Register and PsycLIT were searched until April 2003. The references of systematic reviews and retrieved RCTs were screened and relevant journals were searched manually. Experts in the field were contacted and citations were tracked.

Study selection
Study designs of evaluations included in the review
Studies of randomised controlled trials (RCTs) with a follow-up of at least 1 year were eligible for inclusion. The duration of follow-up in the included studies ranged from 1 to 5 years.

Specific interventions included in the review
Studies of multi-disciplinary back pain training were eligible for inclusion. For the purpose of the study, multidisciplinary back training was defined as a physical intervention and at least one other psychological, behavioural, educational or social intervention. The interventions were categorised as either high intensity (over 30 hours’ training a week) or low intensity (less than 30 hours’ training a week). The number of elements included in the interventions ranged from two to four. The control treatments ranged from no treatment to low-intensity multidisciplinary back training.

Participants included in the review
Studies of people aged 18 to 65 years experiencing restrictions due to non-specific CLBP were eligible for inclusion. The time since onset of CLBP ranged from 12 weeks to more than 2 years. The participants varied in their degree of incapacity from CLBP.

Outcomes assessed in the review
Studies measuring work participation, experienced pain, functional status or quality of life were eligible for inclusion. The primary outcome was work participation, as measured by ability to work, days of sick leave, or percentage of full return to work. The secondary outcomes were pain, functional status and quality of life. The measures used for these outcomes varied between studies.

How were decisions on the relevance of primary studies made?
Three reviewers independently selected studies for the review.

Assessment of study quality
Two reviewers independently assessed the quality of the included studies. Any disagreements were resolved by consensus, with the arbitration of a third reviewer if necessary. The ‘Criteria list for methodological quality assessment’ of the Cochrane Back Review Group was used to assess methodological quality. This 18-item checklist assesses inclusion criteria, randomisation, blinding, relevant outcome measures, withdrawals, intention-to-treat analysis, control for cointerventions and similarity of the groups. Each item was accorded a score of one or zero. Studies scoring above the median quality score were categorised as high quality, while those scoring below the median were categorised as low.
quality.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The data extracted appear to have been number of intervention sessions and main outcomes of the study. However, no statistical data or p-values were reported in the review.

Methods of synthesis
How were the studies combined?
The results were combined in a narrative and further details were tabulated.

How were differences between studies investigated?
Differences between the studies were evident from the tables and the text. The narrative differentiated between the results from high- and low-quality studies.

Results of the review
Ten RCTs (n=1,958) were included.

Five studies scored 11 or 12 out of 18 and were categorised as high quality.

Three of the four high-quality studies that measured work status showed a positive impact of multidisciplinary back training as measured by number of sick leave days, ability to work, or percentage of full return to work. In two of these studies the high-intensity intervention was superior to either control treatment or the low-intensity intervention. In the third study, the low-intensity intervention was significantly better than the high-intensity intervention.

In six of the seven studies that measured pain or functional status, multidisciplinary back training had no significantly effect on these outcomes. Two high-quality studies measured quality of life: one found a positive impact of the high-intensity intervention on quality of life, while the other found no significant difference between the intervention and control groups.

No statistical data or p-values were provided for any of the outcomes.

Authors’ conclusions
Multidisciplinary back training has a positive impact on work participation of people with CLBP. The evidence for a positive effect on quality of life is limited. Intensity of treatment is not associated with treatment effectiveness.

CRD commentary
The review question and inclusion criteria were clear. Three relevant databases, as well as additional sources, were searched. Efforts were made to identify unpublished material, but it was unclear whether language restrictions were applied, which might have resulted in important data being omitted. There was insufficient information on the study selection and data extraction processes to rule out the possibility of error and bias.

Two reviewers independently assessed the quality of the studies; results of this assessment were used to inform the results and conclusions. However, even studies categorised as high quality showed limitations because of a lack of blinding, lack of comparability between groups, failure to use intention-to-treat analysis and failure to control for cointerventions. There was considerable clinical heterogeneity between the studies, thus the decision to use a narrative synthesis was appropriate. However, the absence of any statistical information or p-values means that no conclusions can be drawn about the size of effects observed and their significance. Given the heterogeneity and methodological limitations of the included studies, as well as the absence of statistical data, it is difficult to assess the reliability of the authors’ conclusions.

Implications of the review for practice and research
Practice: The authors appear to state that a cost-effectiveness analysis of multidisciplinary back training is needed to
determine whether the savings in terms of increased work participation justify the costs of implementation.

Research: The authors stated that further research should be carried out with clearer definitions of CLBP, intensity of treatment and multidisciplinary back training.

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