

PROGNOSTIC FACTORS OF MULTIDISCIPLINARY REHABILITATION TREATMENT OUTCOME IN PATIENTS WITH CHRONIC LOW BACK PAIN

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BACKGROUND

Non specific chronic low back pain (CLBP) is a heterogeneous problem and it is unlikely that the same treatment benefits all patients. Better insight in the prognostic factors for treatment outcome will improve treatment indication criteria.

AIM

To determine predictors of outcome of multidisciplinary rehabilitation treatment for CLBP patients.

METHODS

First, a systematic review was conducted and second, consistent predictors were validated in a prospective study. In the review, sociodemographic, physical and psychological predictors were included. Outcome was defined as activity limitation or participation restriction. Based on these results, a multivariate prognostic model was defined and tested in a randomized controlled trial of multidisciplinary rehabilitation compared to usual care. Outcome measures were the Roland and Morris Disability Questionnaire (RMDQ) and Physical and Mental Component Summary Scales (PCS/MCS), derived from the Short Form Health Survey (SF-36). Follow up measurements were done at discharge and four months after treatment.

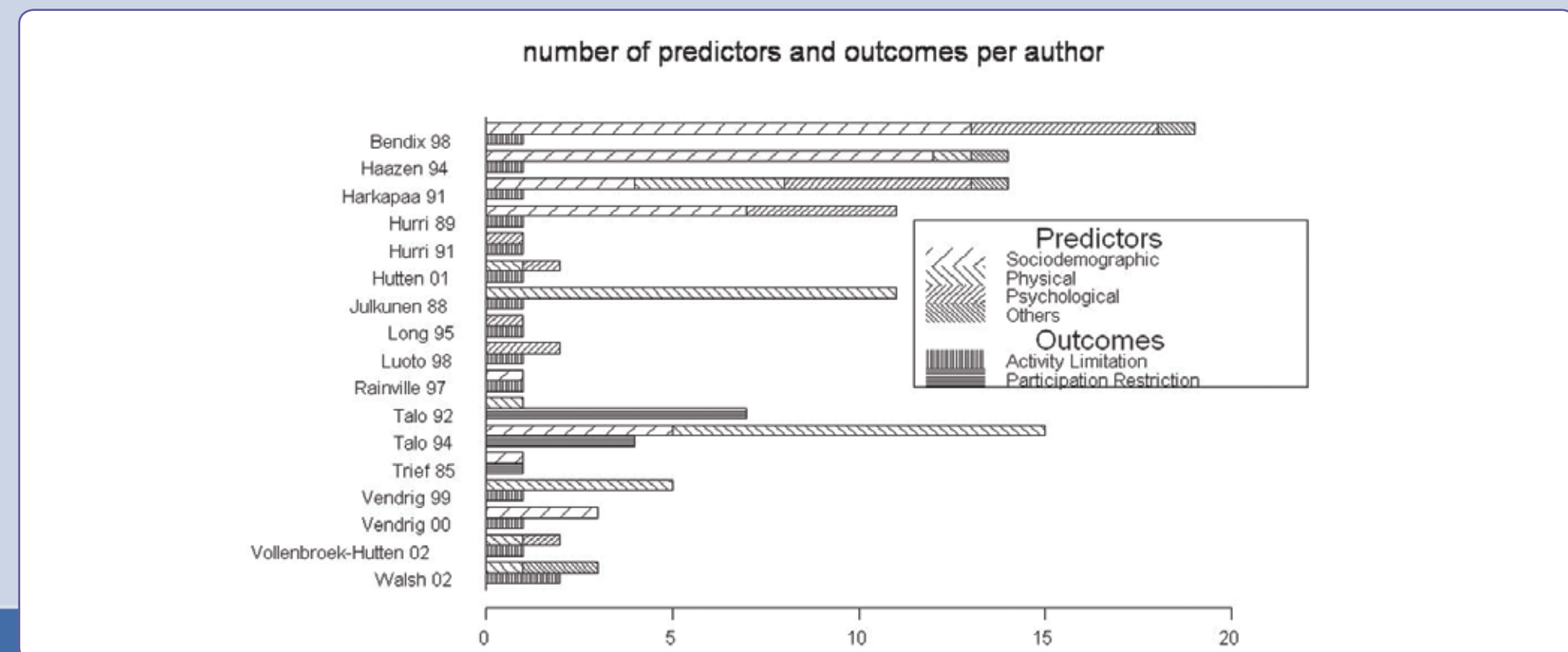


Figure 1

RESULTS

Heterogeneity in patient characteristics, predictors, treatment and outcomes among the reviewed studies seriously limited the evidence. The number of predictors and outcomes differed substantially per author (Figure 1).

Consistent evidence was found for the predictive value of pain intensity, work-related parameters and coping style for treatment outcome (Table 1).

Other sociodemographic and physical variables consistently lacked predictive value. The prognostic model showed that pain intensity, fear avoidance beliefs and depression predicted improvement after rehabilitation (Table 2).

Table 1

Systematic review: Prognostic factors with consistent predictive value for multidisciplinary rehabilitation treatment outcome

Predictors	Pain intensity (higher → worse)		Work related (positive → better)		Coping style (less active → better)	
	Scale	Scale	Scale	Scale	Scale	Scale
	VAS ¹⁾	VAS ²⁾	Satisfaction ³⁾	Functioning /adjustment ²⁾	MPI ^{4,5)}	CSS ²⁾
Outcome	ADL	MHI WHO handicap Subjective well being	Oswestry LBPQ	MHI WHO handicap Subjective well being	Pain interference ⁴⁾ Total disablement ⁴⁾ Panel: functioning ⁴⁾ RMDQ ⁵⁾	Panel: functioning MHI WHO handicap Subjective well being
Follow up	1 year	1 year	1 year	1 year	1 year ⁴⁾ Discharge ⁵⁾	1 year

1) Bendix et al. Spine, 1998; 2) Talo et al. Clin J Pain, 1994; 3) Hurri et al. Scand J Rehab Med, 1989; 4) Talo et al. Spine, 1992;

5) Vollenbroek-Hutten et al. Clin Rehabil, 2004

VAS = Visual Analogue Scale; MPI = Multidimensional Pain Inventory; CSS = Cognitive Self-Statements Scale; ADL = Activity of Daily Living; MHI = Million Handicap Index; WHO = World Health Organization; Oswestry LBPQ = Oswestry Low Back Pain Questionnaire; RMDQ = Roland and Morris Disability Questionnaire

Table 2

Prognostic study: Significant prognostic factors for multidisciplinary rehabilitation treatment outcome

Predictors	Pain intensity (VAS) (higher → better)	Depression (SCL-90 subscale depression) (higher → better)	Fear-avoidance beliefs (TSK) (higher → better)
β coefficient	0.72	-0.11	0.16
Outcome	SF-36: PCS	RMDQ	SF-36: PCS
Follow up	Discharge	Six months	Six months
R ²	2.2 %	4.9 %	2.2 %

β = regression coefficient, R² = percentage of explained variance, VAS = Visual Analogue Scale, SCL-90 = Symptom Checklist 90, TSK = Tampa scale for kinesiophobia

CONCLUSION

The predictive values of pain intensity, but not work ability or coping style, were confirmed in the prognostic study. In contrast to the review, other variables like fear-avoidance and depression showed prognostic value as well. The explained variance ranged from 18.5-43.8% depending on the length of follow-up evaluation, the treatment group and the outcome variable of interest. A generic set of predictors may be difficult to find.



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