

# Positive results of a short pain management program for functioning and healthcare use in patients with chronic low back pain



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RD&E

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## BACKGROUND and AIMS

Chronic Low Back Pain (CLBP) is one of the most common disabling conditions with high healthcare costs. The intervention of RealHealth\_NL is a short, intensive pain management program based on cognitive behavioral principles. As yet, the long term effect of the intervention on functioning, pain and health care use have not been studied.

*Aims of this study:* (1) to evaluate changes over time in functionality, pain, and quality of life and (2) to describe the change in healthcare use of patients before and 2 years after they followed the RealHealth\_NL program.

## METHODS Patients & Intervention

- 107 patients with CLBP referred to an orthopedic spine surgeon were included.
- Main inclusion criteria: CLBP ≥ 6 months, age 18-65 years, no indication for surgical or other invasive pain intervention.
- RealHealth\_NL program: a 2-week residential training consisting of 100 hrs of cognitive behavioral training, including physical activities and education.

## METHODS Design & Outcomes

- A consecutive cohort study was conducted with assessments at baseline, last day of 2-week program, 1 month, 1, and at 2-year follow-up (fu).
- Outcomes: functioning (RMDQ), pain (NRS) and quality of life (SF36). In addition, at baseline and at 2-year fu indicators of healthcare use were measured: pain medication, visits healthcare providers.
- Analyses: Changes over time on RMDQ, NRS and SF36 (PCS, MCS) using Repeated Measures MANOVA. Effect sizes were computed and percentages clinical relevant improvement. Percentages of work participation are determined at baseline and at follow-up.

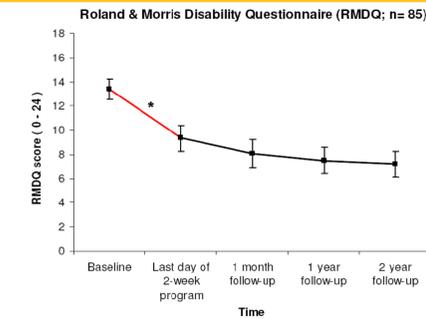


Fig. 1: RMDQ mean (SD) scores. \*  $F_{(1,84)} = 79.01$ ,  $p < 0.001$ ;  $R^2 = 0.59$

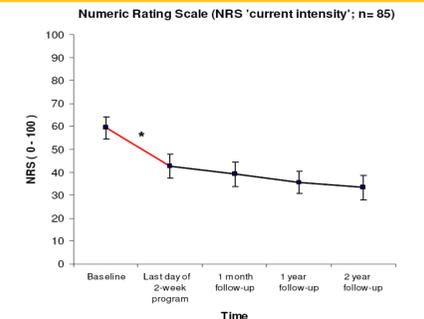


Fig. 2: NRS mean (SD) scores. \*  $F_{(1,84)} = 47.01$ ,  $p < 0.001$ ;  $R^2 = 0.41$

## RESULTS Outcomes and Clinical Relevance

- Statistical improvement after the program in mean scores for RMDQ, NRS, SF36 physical [PCS] and mental component scale [MCS] is maintained at 2 year fu (Fig.1&2; Table 1).
- Clinical relevance & Effect sizes:  
RMDQ : 64.7% (n = 56) (MCID 5 points; Smeets et al., 2008)  
SF36PCS : 74.1% (n = 63) (MCID 10 points; FDA)  
RMDQ Cohens' d = 1.6; SF36PCS Cohens' d = 1.4
- Healthcare use decreased: at baseline all patients consulted a General Practitioner (GP) and a Medical Specialist (MS) at least once. At 2 year fu 23 (27%) reported to have consulted their GP once and 14 (17%) consulted a MS in the previous year. In the year before baseline 80 (94%) visited Physical Therapist (PT) and 13 (15%) a Psychologist. At 2 year fu 32 (38%) visited a PT and 1 (1%) a PS. Medication use decreased (Fig.3).
- Work participation increased to 81% (n=69) at 2 year follow-up versus 68% (n=57) at baseline.

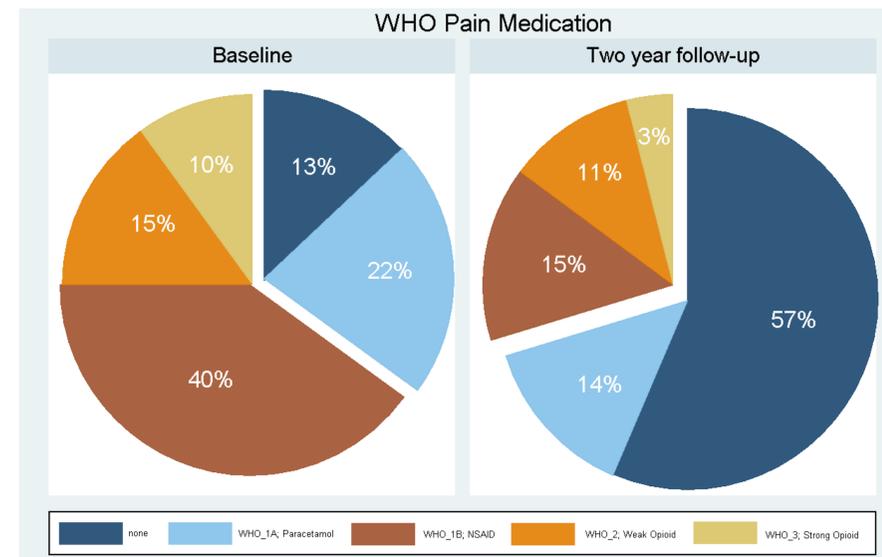


Fig.3: Pie chart for pain medication use; in accordance with the World Health Organisation (WHO) analgesic ladder. Blue pies: none-light category and Brown pies: moderate-severe category.

## RESULTS Demographics

- Complete datasets were available of 85 patients (79%): age 43 yrs (SD 8.4 yrs), ♀ n = 50 (59%).
- Mean duration of CLBP complaints 12 yrs (SD 11.3 yrs) and 29% (n=25) had previous surgery.

## CONCLUSION

Patients who participated in this short, intensive program improved in functioning and experienced less CLBP. The clinical relevant results were maintained two years later. In addition, healthcare use decreased substantially and most of the patients are at work.

	Baseline	Last day 2-wk program	1 month follow-up	1 year follow-up	2 year follow-up	Baseline vs 2 yr $F_{(1,84)}$ ( $R^2$ )
RMDQ	13.4 (4.0)	9.3 (4.9)	8.1 (5.4)	7.5 (5.0)	7.2 (5.0)	123.1* (0.59)
SF36 PCS	40.9 (13.3)	50.8 (15.5)	64.4 (20.1)	64.6 (17.8)	65.9 (20.6)	130.3* (0.61)
SF36 MCS	59.3 (15.0)	62.4 (13.9)	70.5 (13.3)	70.9 (15.2)	71.9 (17.1)	35.6* (0.30)
NRS	58.2 (22.5)	39.2 (22.6)	37.3 (23.7)	35.9 (23.4)	35.0 (27.5)	57.9* (0.57)

\*  $p < 0.001$

Table 1: Mean (SD) over time and time effects ( $R^2$ ) for all outcome measures.