THE EFFECTIVENESS OF AN AMBULATORY PHYSIOTHERAPY TREATMENT PROGRAM ON PAIN AND FUNCTIONAL OUTCOME MEASURES IN PATIENTS WITH LOW BACK PAIN

Alfuth M.¹, Welsink D.W.²

¹Niederrhein University of Applied Sciences, Faculty of Health Care, Krefeld, Germany
²medicoreha Welsink Rehabilitation GmbH, Neuss, Germany

Introduction
About 85% of all humans suffer from low back pain (LBP) at least once in their lifetime (Woolf & Pfleger 2003). Multimodal treatment programs are recommended in the rehabilitation of LBP (Moseley 2002, van Middelkoop et al. 2011). Rehabilitation institutions are increasingly asked to demonstrate the effectiveness of their intensive combined physiotherapy services.

Purpose
To demonstrate the outcomes of an ambulatory physiotherapy treatment program within the "Integrierte Versorgung Rücken" in patients with LBP.

Participants
From August 2012 to May 2014, 98 patients with LBP met the inclusion criteria and participated in this study. Following a per-protocol analysis, 85 patients were analyzed:
- 55 women, 30 men
- Mean age = 52.3 (SD 12.3) years
- Mean height = 172.0 (SD 0.1) cm
- Mean body mass = 77.6 (SD 14.8) kg
- Mean BMI = 26.0 (SD 3.8) kg/m²
- Symptom-duration < 12 weeks = 68%
- Symptom-duration > 12 weeks = 32%

Methods
Treatment program:
In the 6 month ambulatory program, patients were treated with a combination of treatment modalities including exercise therapy, manual therapy and behavioral education with regard to their individual needs. Treatment took place in individual and group sessions 2-3 days weekly.

Results
Before treatment, pain at rest was rated at a median of 4.0, after 3 months at 1.0, and after 6 months at 0.0 (p< 0.01; d=1.0). Pain during physical activity decreased from a median of 5.5 before treatment, to 3.0 after 3 months, and to 2.0 after 6 months (p< 0.001; d=1.4). RMDQ-scores were reduced from a median of 7.0 at baseline, to 4.0 after 3 months, and to 3.0 after 6 months (p< 0.001; d=1.0). Relative change for pain at rest was 59.9%, for pain during activity 55.9% and for RMDQ-score 48.7%.

Discussion & Conclusions
Patients who were treated with the treatment program showed a clinically relevant reduction of pain and disability. Increased trunk muscle strength and flexibility did not correlate with reduced pain and disability.

Recommendations
The presentation of results of physiotherapy treatment programs is strongly needed to assure health insurance providers of the success of offered services.

Outcome Measures:
- Pain [Numeric Rating Scale (0-10)]
- Disability [Roland-Morris-Disability Questionnaire (RMDQ; 0-24)]

Statistical Analysis:
To evaluate pain and disability changes, Friedman tests (p< 0.05) and Wilcoxon signed-rank tests (p< 0.05) with post hoc Bonferroni correction for pairwise comparisons were conducted using SPSS 21.0. To evaluate strength and flexibility changes, paired t-tests (p< 0.05) were conducted. Effect sizes (Cohen’s d) and relative changes (mean of individual differences) between pre and post measurements were calculated. Spearman’s rho was used to determine correlations between outcome measures.

Flexion measurements revealed a significant increase in maximal strength from a mean of 133.7 Nm at baseline to 156.0 Nm after 6 months (p< 0.001; d=0.3). For extension, a significant increase from 235.5 Nm to 278.3 Nm was found (p< 0.001; d=0.4).

References

Acknowledgements

Ethical Approval:
Ethis-Kommission des Deutschen Verbands für Physiotherapie an der Physio-Akademie gGmbH, Wremen, Germany.
Presented at the WCPT Congress 2015, Singapore

Contact details
martin.alfuth@hs-niederrhein.de
www.hs-niederrhein.de