BACK TO ONESELF
– Sensory Motor Learning –
applied in patients with nonspecific chronic low back pain.

AKADEMISK AVHANDLING

För avläggande av medicine doktorsexamen
Vid Sahlgrenska Akademin vid Göteborgs universitet

Avhandlingen kommer att offentligen försvaras
i hörsalen Arvid Carlsson, Academicum, Medicinaregatan 3
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Avhandlingen baseras på följande delarbeten:

I.   Schön-Ohlsson Christina, Willén Jan, Johnels Bo. **Optoelectronic movement analysis to measure motor performance in patients with chronic low back pain: test of reliability**. J Rehabil Med 2006;38(6):360-7.

II.   Schön-Ohlsson Christina, Willén Jan, Johnels Bo. **Sensory motor learning in patients with chronic low back pain: a prospective pilot study using optoelectronic movement analysis**. Spine 2005;30(17):E509-16.

III. Schön-Ohlsson Christina, Willén Jan, Räisänen Christine, Johnels Bo, Willén Carin. **Rehabilitation of patients with nonspecific chronic low back pain: a qualitative study of patients' experiences of Sensory Motor Learning intervention**. Manuscript submitted.

IV.   Schön-Ohlsson Christina, Willén Jan, Rydén Lisbeth, Willén Carin, Hane Monica. **Using focus groups to compare how patients with nonspecific chronic low back pain express their experiences of sensory-motor learning and exercise therapy interventions; a randomized, qualitative study.** Manuscript

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Göteborg, Sweden, 2010

ABSTRACT

Back pain is an endemic problem affecting one in five adults every year. Even though only 10 % of all cases of back pain become chronic it is one of the largest health problems in industrialized societies. The term nonspecific chronic low back pain (NSCLBP) refers to cases in which neither the persistent pain symptoms nor the related physical dysfunction are related to structural impairment or disease. NSCLBP accounts for 80 % of cases of chronic low back pain.

The overall purpose of this thesis was to generate knowledge in order to evaluate the Sensory Motor Learning (SML) intervention when applied in patients with NSCLBP. To achieve the purpose the conceptual framework behind the SML intervention was outlined and the investigation implemented through four separate studies.

Patients with NSCLBP who previously had not been helped by any treatment and who were not expected to be helped by spinal surgery participated in the studies.

Study I investigated if the optoelectronic Posturo-Locomotion-Manipulation (PLM) test was a valid and reliable measurement tool, able to objectively assess the quality of a dynamic goal directed action in freely moving patients with NSCLBP. Study II evaluated how the SML intervention influenced movement capacity in patients with NSCLBP as assessed by the PLM test. Study III used individual interviews to evaluate how the SML intervention influenced the patients regarding their subjective, cognitive perspectives. Study IV was designed as a qualitative randomized clinical trial using focus groups to compare how two comparable groups of NSCLBP patients expressed their experiences from two different interventions based on different conceptual frameworks; SML and exercise therapy (ET).

The result showed the PLM test to be a valid and reliable outcome measure. Compared with an age and gender matched control group without back pain, the NSCLBP patients' performance was significantly less efficient before the SML intervention. After the intervention there were no differences between the movement capacity of the patient group and the control group. The results were maintained after one year. The patients described that they had learned to reduce pain, to diminish psychological distress and to improve physical ability. Major differences were indentified when comparing how the two patient groups with NSCLBP experienced SML and ET. The patients in the SML group expressed that they had learned to trust in themselves and now felt able to handle their low back pain themselves. This was in contrast to the patients in the ET group who expressed insecurity and dependence on advice from back-pain experts.

Based on the results; a hypothesis was generated stating that SML– an embodied, empathic, therapeutic approach to health behaviour change - enables patients with NSCLBP to increase control over back pain and promotes health by guiding them – back to oneself – implying that patients learn to rely on themselves and their bodily awareness. The hypothesis was based on the fact that the patients' felt able to handle their low back pain themselves and their subjectively experienced positive physical and psychological changes coincided with objectively assessed improvements in movement capacity.

Key words: Chronic nonspecific low back pain, Sensory Motor Learning, SML, Posturo-Locomotion-Manipulation (PLM) test, Qualitative method, Focus group study, Health promotion, Feldenkrais method, Exercise therapy.