THE EFFECT OF A MODERN NEUROSCIENCE APPROACH ON PSYCHOLOGICAL CORRELATES IN PATIENTS WITH CHRONIC WHIPLASH ASSOCIATED DISORDERS: A STUDY PROTOCOL

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**Background**
- Pain related catastrophizing - identified as a prognostic factor and associated with continuation of pain, disability, and lowered treatment outcomes in patients with acute whiplash injury.
- In patients with chronic Whiplash Associated Disorders (WAD), pain related fear, anxiety and maladaptive illness perceptions likely contribute to poor clinical outcomes.
- Therapeutic pain neuroscience education can diminish catastrophic thinking and is supposedly a crucial prerequisite for exercise interventions.
- A modern neuroscience approach might address psychological correlates and improve treatment- and patient outcomes in patients with chronic WAD.

**Aims**
The study aims to examine:
- The effectiveness of a modern neuroscience approach versus evidence based physiotherapy for reducing pain catastrophizing, pain related fear, anxiety and distress, and negative illness perceptions in patients with chronic WAD.

**Expected hypothesis**
We hypothesize, that in patients with chronic WAD, a modern neuroscience approach will greatly reduce:
- Pain catastrophizing
- Pain related fear
- Negative illness perceptions
- Anxiety and distress

**Methods**
- RCT study of 120 chronic WAD patients.
- Experimental treatment = modern neuroscience approach (pain education in combination with cognition-targeted and exposure-based exercises).
- Control treatment = evidence based physiotherapy (neck school and exercise therapy).
- Assessed at baseline: Pain catastrophizing, pain related fear, anxiety and illness perceptions by using Dutch translations of the Pain Catastrophizing Scale (PCS), Impact of Event Scale Revised (IES-R), Pain Anxiety Symptoms Scale (PASS-20) and Illness Perception Questionnaire Revised (IPQ-R).
- Follow-up assessments are performed post-treatment (after 18 sessions), six months and twelve months post-treatment.

**Key Words:** Whiplash associated disorders; Pain neuroscience education; Pain catastrophizing; Pain related fear; Illness perceptions; Anxiety

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