Physiotherapy and basic headache research: Why using a pre-post design?
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Background
In physiotherapy, headache-research is often limited to instantaneous cross-sectional measurements of e.g. cervical mobility. However, a longitudinal task might affect baseline outcomes. Understanding the influence of the latter on headache features is relevant to develop preventive guidelines. Materials and methods
Design. A pre-post design was set up to compare Pressure Pain Thresholds (PPT) and maximal active cervical range of motion (CROM) before (pre-test) and after (post-test) a writing task between 18 females with headache (23.2±1.7 years) and 18 matched controls (23.6±2.2 years). Criteria. Headache-group inclusion-criteria were: females between 18-30 years, meeting the diagnostic criteria of episodic tension-type headache according to the International Headache Society, headache provoked by posture. Exclusion-criteria: pregnancy, physiotherapy to headache.

Results
At baseline only maximal active flexion CROM differed significantly (p=0.022) between groups with lower values in the Headache-group. From pre-to post-test the Headache-group compared to the Control-group showed a significant: 1) PPT reduction vs. an increase in the Control-group in the anterior temporal left and right (p=0.0299; p=0.0051) and the upper trapezius right (p=0.0237) and 2) larger drop in maximal active extension CROM (p=0.012) (Headache-group: post 59.65°±8.19; pre 69.59°±6.28 vs Control-group: post 67.39°±6.96; pre 71.85°±10.85).

Conclusion
In the Headache-group the performance of a simple writing task decreased PPT and maximal active CROM. These results are closely related with sensitization. Physiotherapists should be aware that baseline characteristics of patients with headache and healthy controls are comparable. However, the baseline headache profile can be influenced by a task performance. Longitudinal designs could therefore be relevant to evaluate factors contributing to headache.

Keywords: Headache, pre-post design, writing task.