

Does restoration of sagittal cervical alignment improve cervicogenic headache pain and disability: A 2-year pilot randomized controlled trial

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Abstract

Background

To investigate the feasibility and effect of a multimodal program for improving chronic cervicogenic headache (CGH) via the addition of sagittal cervical spine alignment correction.

Design

Pilot, parallel-group, randomized controlled trial.

Participants

60 patients with CGH, straightening of the cervical lordosis, and forward head posture (FHP) were randomly assigned using permuted-block randomization either to a control (n = 30) or an experimental group (n = 30).

Interventions

Subjects in both groups received a multimodal program where the denneroll cervical spine extension traction orthotic was added to the experimental group only. Feasibility was assessed through recruitment rate, compliance rate, adherence rate, safety, and global satisfaction in addition to clinical outcome measures: FHP distance, cervical lordosis, headache frequency, headache disability inventory (HDI), headache impact

test-6 (HIT-6), and daily defined dose (DDD). Evaluations were performed at: baseline, 10 weeks, 1 year follow up, and 2-year follow up. The assessor was blind to group allocation for all measured outcomes.

Results

The recruitment rate was 60%, 78 % out of them completed the entire study. The recruited participants complied with 98% of the required visits. No adverse events were recorded and greater overall satisfaction with the interventions was reported. Greater improvements were found for the experimental group's cervical lordosis ($f = 259.9, P < .001$) and FHP ($f = 142.5, P < .001$). At 10 weeks, both groups showed equal improvements in CGH outcomes: headache frequency ($P = 0.07$), HDI ($P = 0.07$), HIT-6 ($P = .2$), and DDD ($P = .3$). In contrast, at the 1-year and 2-year follow up, between group differences were found for all CGH outcomes, $P < .00$, indicating greater improvement in the experimental group.

Conclusion

The results indicated feasibility for recruitment rate, compliance rate, exercise session adherence, safety, and global satisfaction. At 1-year and 2-year follow-up, the addition of the denneroll orthotic device revealed positive influence on CGH management outcomes.