

Can a Targeted Pre-Exercise Education Intervention Enhance the Exercise Induced Hypoalgesia (EIH) Response in Individuals With Knee Osteoarthritis (OA)?

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Prior research indicates that individuals with knee osteoarthritis (OA) exhibit more variable exercise induced hypoalgesia (EIH) that can lead to flares in pain, adversely affect exercise adherence and limit exercise related pain relief. Recent evidence in a healthy pain-free population has shown that explicit education about the pain-relieving effects of exercise can enhance the subsequent EIH response, but this has yet to be examined in an OA population. This study examined whether positive pre-exercise education leads to a greater EIH response in people with knee OA, compared to neutral pre-exercise education. A double-blind randomised controlled trial was undertaken with a parallel design involving 42 participants, randomly allocated into two groups - positive pre-exercise education (n=21) and neutral pre-exercise education (n=21). Each group received two 1-on-1 education sessions by a postgraduate qualified physiotherapist, 24-72hrs apart. OA-related and exercise-related beliefs were evaluated pre and post-education. Following this, a standardised bout of isometric resistance exercise was performed and pre-post exercise change in pressure pain thresholds, resting knee pain and knee pain during stepping were measured by a blinded assessor. Two step ANCOVAs using linear regression were utilised to assess between group differences in outcomes. There was a significant difference in the change in exercise-related ($p = 0.004$) but not OA-related beliefs ($p = 0.195$) post intervention, in favour of the positive education group. However, the pre-post exercise change in pressure pain thresholds, resting pain and pain during stepping were not different between groups (all $p < 0.561$). Despite successfully modifying exercise related beliefs compared to neutral pre-exercise education, positive pre-exercise education did not enhance the EIH response in people with knee OA. Higher dose interventions may be required to successfully modify OA-related beliefs.

Keywords

Knee osteoarthritis; exercise induced hypoalgesia; rehabilitation ; education