Psychological profiles and pain characteristics of older adults with knee osteoarthritis.

OBJECTIVE: To identify psychological profiles in persons with knee osteoarthritis (OA) and to determine the relationship between these profiles and specific pain and sensory characteristics, including temporal summation and conditioned pain modulation.

METHODS: Individuals with knee OA (n = 194) completed psychological, health, and sensory assessments. Hierarchical cluster analysis was used to derive psychological profiles that were compared across several clinical pain/disability and experimental pain responses.

RESULTS: Cluster 1 had high optimism with low negative affect, pain vigilance, anger, and depression, along with the lowest self-reported pain/disability and the lowest sensitivity to mechanical, pressure, and thermal pain (P < 0.01 for all). Cluster 2 had low positive affect with high somatic reactivity, while cluster 3 showed high pain vigilance with low optimism. Clusters 2 and 3 had intermediate levels of self-reported pain/disability and cluster 3 experienced central sensitization to mechanical stimuli. Participants in cluster 3 also displayed significant pain facilitation (P < 0.05). Cluster 4 exhibited the highest pain vigilance, reactivity, negative affect, anger, and depression. These individuals experienced the highest self-reported pain/disability, including widespread pain (P <
0.001 for all). Cluster 4 was most sensitive to mechanical, pressure, and thermal stimuli, and showed significant central sensitization to mechanical and thermal stimuli (P < 0.001 for all).

**CONCLUSION:** Our findings demonstrate the existence of homogeneous psychological profiles displaying unique sets of clinical and somatosensory characteristics. Multidisciplinary treatment approaches consistent with the biopsychosocial model of pain should provide significant advantages if targeted to profiles such as those in our OA sample.

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