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Ethnic differences in pain among persons with knee osteoarthritis: What are the mediating variables?

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There are large differences between non-Hispanic white (NHW) and African American (AA) persons with knee OA in reports of clinical pain intensity. However, little is known concerning biological or psychosocial variables that may mediate these ethnic differences. I will review cross-sectional study findings reported by my colleagues at UAB and the University of Florida during the past 6 years of ethnic differences in both clinical pain and pain induced by standardized pressure, heat, and cold stimuli in the laboratory (i.e., quantitative sensory testing or QST). Specifically, we found that AA persons with knee OA, relative to their NHW counterparts, report higher levels of clinical pain intensity and higher intensity of pain in response to QST. We also found that AA persons, compared to NHW counterparts, show greater increases in pain intensity in response to repetitive heat and pressure stimuli that reflect alterations in central processing of noxious stimuli among AA individuals. I also will describe a new longitudinal study with which we aim to identify the mechanisms underlying ethnic differences in knee OA pain over a 2-year period. We are now assessing the progression and predictors of clinical pain and disability as well as altered central pain processing among AA and NHW persons with and without knee OA. Potential mediating variables include sleep disturbance, MRI imaging of brain structure and brain response to QST and new biomarkers of pain inhibition. Our findings should provide novel and important information regarding the mechanisms underlying ethnic group differences in pain.

Biography

Laurence A Bradley, PhD is Professor of Medicine in the Division of Clinical Immunology and Rheumatology at UAB School of Medicine. He has established a strong research program (143 papers, 55 chapters, 3 books) over the past 40 years concerning the interplay between biological and behavioral factors that influence persistent pain in persons with rheumatologic illnesses. With continuous support by the National Institutes of Health since 1989, his goal is to use clinical and basic science methods to enhance understanding of individual differences in persistent pain and lead to improved management of pain and related health outcomes.

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