Pain Response and Threshold Differences Among Intercollegiate Male Athletes

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Pain and injury are often a consequence of sports play. In addition, the likelihood of experiencing pain and injury increases as physical contact among athletes increases. Research has shown that previous experience with pain has a desensitizing effect on pain threshold and tolerance. Such a desensitizing effect may be more prevalent among athletes in contact sports than among athletes in noncontact sports. The present study assessed pain threshold and tolerance among 128 intercollegiate male athletes participating in a variety of contact and noncontact sports. Participants were members of an intercollegiate lacrosse, soccer, basketball, track, or swimming team. They underwent a cold pressor pain test (3 °C water bath), during which they rated their level of pain every 30 sec. In addition, pain tolerance (total time the athletes allowed themselves to experience the painful stimuli) was measured. Several psychological variables, including level of aggressiveness, were also assessed. Athletes participating in contact sports rated their pain as less severe and had a greater pain tolerance time than athletes of noncontact sports. Physical and temporal demand, and level of frustration, were lower for high-contact sports. Level of aggressiveness was greater in the high-contact sports; however, an analysis of covariance using aggressiveness as the covariate did not alter the outcomes of the pain threshold and tolerance measures. These results provide support for the role of physical contact on desensitizing athletes to pain.

The Processes of Change and Physical Activity: Three-Step Validation in a Sample of Adolescents

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Few studies have validated the construct validity of the processes of change in the physical activity domain, even though they are conceived as the core constructs of the transtheoretical model (TTM). Furthermore, only one study to our knowledge has investigated the processes of change in adolescents. The purpose of this study was to examine the physical activity processes of change in a sample of adolescents using novel three-step confirmatory validation procedures. This included validation of: (1) the item-level aggregation of processes constructs, (2) the higher order structure of aggregation, and (3) the differences in processes scores across the stages of change. Participants, 284 high school students ages 15 to 17, completed measures of the physical activity processes of change and stage of physical activity behavior. Results using structural equation modeling identified the processes of dramatic relief, helping relationships, environmental reevaluation, and self-reevaluation as having acceptable item level measurement properties, $p < .01$, while social liberation was particularly poor. Distinct process structures were a better fit of the observed data than any aggregated behavioral or experiential structure, $p < .01$, though the distinct processes model still possessed problematic factor complexity as evidenced by poor omnibus model fit, χ^2 (314, $N = 284$) = 686.84, $p < .001$; RMSEA = .06; CFI = .90. Finally, validation tests of the processes of change across stage of change using discriminant functional analysis and univariate F-tests supported counter-conditioning as the critical process of physical activity change in adolescents, $p < .01$, and found no support for the experiential processes. Changes to TTM theory and measurement were suggested, as well as practical implications for physical activity intervention strategies.