

The Effect of Emotional Stimuli Related to Body Imbalance in Postural Control and the Phenomenological Experience of Young Healthy Adults

Authors : David Martinez-Pernia, Alvaro Rivera-Rei, Alejandro Troncoso, Gonzalo Forno, Andrea Slachevsky, David Huepe, Victoria Silva-Mack, Jorge Calderon, Mayte Vergara, Valentina Carrera

Abstract : Background: Recent theories in the field of emotions have taken the relevance of motor control beyond a system related to personal autonomy (walking, running, grooming), and integrate it into the emotional dimension. However, to our best knowledge, there are no studies that specifically investigate how emotional stimuli related to motor control modify emotional states in terms of postural control and phenomenological experience. Objective: The main aim of this work is to investigate the emotions produced by stimuli of bodily imbalance (neutral, pleasant and unpleasant) in the postural control and the phenomenological experience of young, healthy adults. Methodology: 46 healthy young people are shown emotional videos (neutral, pleasant, motor unpleasant, and non-motor unpleasant) related to the body imbalance. During the period of stimulation of each of the videos (60 seconds) the participant is standing on a force platform to collect temporal and spatial data of postural control. In addition, the electrophysiological activity of the heart and electrodermal activity is recorded. In relation to the two unpleasant conditions (motor versus non-motor), a phenomenological interview is carried out to collect the subjective experience of emotion and body perception. Results: Pleasant and unpleasant emotional videos have significant changes with respect to the neutral condition in terms of greater area, higher mean velocity, and greater mean frequency power on the anterior-posterior axis. The results obtained with respect to the electrodermal response was that the pleasurable and unpleasant conditions produced a significant increase in the phasic component with respect to the neutral condition. Regarding the electrophysiology of the heart, no significant change was found in any condition. Phenomenological experiences in the two unpleasant conditions differ in body perception and the emotional meaning of the experience. Conclusion: Emotional stimuli related to bodily imbalance produce changes in postural control, electrodermal activity, and phenomenological experience. This experimental setting could be relevant to be implemented in people with motor disorders (Parkinson, Stroke, TBI) to know how emotions affect motor control.

Keywords : body imbalance stimuli, emotion, phenomenological experience, postural control

Conference Title : ICEC 2019 : International Conference on Embodied Cognition

Conference Location : Tokyo, Japan

Conference Dates : November 11-12, 2019