

GNYACSM Original Research Abstract

Effects of Electrical Exercise and Affect on Self-Reported Anxiety in those with Spinal Cord Injury

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ABSTRACT

Those who have incurred a spinal cord injury (SCI) have severe and immediate changes to their lifestyle. Those with SCI have reported reduced levels of positive affect and no change in negative affect compared to controls. Also, those with SCI may have reduced opportunities for engaging in meaningful exercise either due to mobility or equipment access limitations. **PURPOSE:** The purpose of this study was to assess the chronic engagement of home-based electrical stimulation exercise (ESE) on self-reported anxiety and positive and negative affect. **METHODS:** 9 individuals with ASIA A or B SCI were recruited for this study. Participants were mailed exercise equipment (PowerDot) and remotely instructed on its use. On day one, the subjects completed the General Anxiety Disorder - 7 (GAD-7) and Positive and Negative Affect Scale (PANAS). Starting on day 6, the subjects completed neuromuscular electrical stimulation exercise (NMES) of the quadriceps and the hamstrings for 20 minutes each, totaling 40 minutes. The subjects continued to exercise five days per week for four weeks. The GAD-7 and PANAS were assessed immediately before and after exercise on days 6, 15, and 25. **RESULTS:** There was no main effect of time on self-reported anxiety ($F(6,50) = 0.13, p = 0.99$). A linear regression revealed a significant overall effect of PANAS on GAD-7 ($F(3,52) = 28.2, p \leq 0.0001, R^2 = 0.62$). Positive affect was not significantly correlated with GAD ($\beta = 0.049, CI [-0.16, 0.26], p = 0.66$) while Negative Affect was ($\beta = 0.60, CI [0.25, 0.95], p = 0.001$). **CONCLUSION:** Engaging in home-based electrical exercise did not significantly reduce self-reported anxiety. Interestingly, negative affect has a positive correlation with self-reported anxiety, while positive affect shows no correlation.