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Effects of Rocking on Attention and Arousal

Jonathan Lubeck
Thomas Jefferson University, jonathan.lubeck@jefferson.edu

Roseann C. Schaaf, PhD, OTR/L, FAOTA
Thomas Jefferson University, Roseann.Schaaf@jefferson.edu

Rachel L. Dumont, MS, OTS
Thomas Jefferson University, rachel.dumont@jefferson.edu

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Jonathan Lubeck, Roseann C. Schaaf, PhD., OTR/L, FAOTA*,
Rachel L. Dumont, MS, OTR/L

(*) indicates primary project advisor

Introduction: Difficulties regulating attention and arousal underlie common developmental conditions and impact performance in academic and work tasks. Sensory-based activities such as sitting in a rocker chair may help regulate attention and arousal by providing sensory stimulation. This pilot study assessed autonomic nervous system activity (ANS) while seated in a specially designed rocking chair providing vestibular sensation during a performance task.

Methods: Thirty-four adults (aged 20-35 years) were randomized to either a rocker chair (Virco Zuma, n = 17) or static chair (n =17) while performing cognitive tasks in a counterbalanced design. ANS measures of skin conductance level (SCL) and respiratory sinus arrhythmia (RSA) were taken at 3-minute periods at baseline, performance, and recovery to assess sympathetic and parasympathetic activation respectively.

Results: For the group using the stationary chair first, sympathetic activity increased from baseline to task (p=.000) and baseline to recovery (p=.002). Likewise with the Zuma chair first group, sympathetic activity increased from baseline to task (p=.000) and baseline to recovery (p=.000). For the Zuma chair group only, sympathetic activity decreased from task to recovery (p=.000). RSA did not have any statistically significant changes for either group.

Discussion: While these findings were not consistent with the hypothesis that chair type impacts a change in ANS during performance, only the Zuma chair first group had a significant decrease in sympathetic activity from task to recovery. This suggests that using a rocker chair may help decrease arousal level after the task. Further research with larger samples sizes and longer duration tasks is needed to further validate this finding.