

1-2020

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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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Recommended Citation

Lubeck, Jonathan; Schaaf, PhD, OTR/L, FAOTA, Roseann C.; and Dumont, MS, OTS, Rachel L., "Effects of Rocking on Attention and Arousal" (2020). *Phase 1*. Paper 43.

https://jdc.jefferson.edu/si_ctr_2022_phase1/43

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Effects of Rocking on Attention and Arousal

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.