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## Measuring blood-glucose levels to distinguish between psychological and physiological reductions in stress after drawing for 15 minutes

Aris Karagiorgakis and Kaitlin Schneider  
Black Hills State University, USA

Techniques in art therapy such as drawing are a viable method to reduce acute stress; current research findings on art's benefits however, are limited to self-reported decreases in stress. The current project investigated whether drawing can reduce physiological levels of stress by measuring participant's blood glucose levels before and after viewing arousing images and then again after drawing. It was hypothesized that if drawing significantly reduces stress, both psychologically and physiologically, then self-reports and blood glucose measures should correlate. However, if drawing only reduces stress on a psychological level, then only self-reports will show a decrease. Sixty-eight BHSU students were randomly assigned to either draw or transcribe in this 2x3 mixed factorial design ANOVA, with drawing type (drawing or transcribing) as the between-subjects factor and time stress levels measured (baseline, after arousing images, after drawing type) as the within-subjects factor. Self-report measures of stress did not correlate with blood-glucose measures ( $p > .089$ ). Both drawing and transcribing groups self-reported significantly lower stress scores after the intervention. However, those who drew reduced stress levels significantly lower than where they were at baseline, whereas those who transcribed did not return to baseline. Although neither group showed the hypothesized decrease in blood glucose levels after drawing or transcribing, the blood glucose levels of the drawing group also returned to baseline, whereas the transcription group's blood-glucose levels remained significantly higher. This pattern of results suggests drawing does impact both psychological and physiological levels of stress, but the hypothesized benefits may be delayed.

### Biography

Aris Karagiorgakis graduated with his Ph.D. in Cognitive Psychology from Claremont Graduate University, CA. Kaitlin Schneider recently graduated from Black Hills State University with her Bachelor of Science in Psychology. This line of research initially started as Kaitlin's Senior Honors Project, which eventually led the researchers to this current grant funded project.

aris.karag@bhsu.edu

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