ABSTRACT

John Garcia: Does Physical Activity Predict Evening Anxiety Levels in Overweight/Obese Adults?
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Background: Over 10.8% of adults in the United States (U.S.) experience symptoms of anxiety (Terlizzi & Schiller, 2021). However, research indicates that as little as 20-40 minutes of aerobic physical activity (PA) can boost mood and improve anxiety levels for several hours (Mikkelsen et al., 2017). To our knowledge, there are no existing studies that examine the daily associations between PA and anxiety; therefore, we examined the association of daily engagement in PA and evening anxiety levels. We hypothesized that greater engagement in daily PA would be associated with lower evening anxiety. Based on our extensive literature search there are no studies that examine the daily associations between PA and anxiety. *Methods*: Participants (*N*=46) were fitted and trained on how to wear a research-grade accelerometer to measure PA and complete a twice-daily phone-based survey to measure self-reported PA and anxiety over a 21-day period. A two-level multi-level model examined the within- and between-person associations between daily PA participation and evening anxiety, controlling for day of the week, biological sex at birth, and morning anxiety. *Results*: We found a significant between-person effect of self-reported, moderate-to-vigorous physical activity (MVPA) minutes predicting evening and total evening anxiety, where greater MVPA predicted lower evening and total evening anxiety. We also found a significant between-person effect of self-reported total PA predicting evening anxiety, where greater total PA predicted lower evening anxiety. We did not find any significant within-person effects of device-based or self-reported PA predicting evening anxiety. *Conclusion*: This is the first study to research PA and anxiety at the within and between-person level. Our findings suggest that self-reported PA predicts evening anxiety at the between-

person level but not at the within-person level. Our findings are important because they can help inform health professionals address population anxiety and lay the groundwork for future research to implement PA plans to enhance population anxiety management.