

The Association between Anxious Thoughts in Pregnancy and Heart Rate Variability

#004

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Objectives:

To explore the association between perinatal anxiety symptoms and physiological measurements of heart rate variability (HRV) and electrodermal activity (EDA).

Methods:

We followed pregnant women with and without anxiety (N=95) from the second trimester until 6 months postpartum, with baseline psychiatric diagnosis determined by the Structured Clinical Interview for DSM-IV Diagnoses and symptoms tracked by psychological scales at each visit. A subset of participants (N=54) completed a pregnancy-specific Stroop task at third trimester, and we measured baseline, in-stressor, and recovery HRV (2.5-5 minutes each). We used an integrated BioPac™ system for data collection and cleaning. We used mixed effects models to analyze HRV (measured as the root mean square of successive differences between normal heartbeats) and scales in RStudio.

Results:

The sample was predominantly white and high income. Mean age was 33, mean gestational age was 34 weeks, and mean BMI was 25.9. When controlling for age, gestational age, and BMI, lower HRV at T3 was associated with worse sleep (Pittsburgh Sleep Quality Index, $p = 0.016$), higher trait anxiety (Spielberg Trait Anxiety Scale, $p = 0.049$), and higher subjective stress (Perceived Stress Scale, $p = 0.049$). Psychiatric diagnosis was not related to HRV.

Conclusions:

Our findings demonstrate that, in this small sample, trait anxiety and subjective perceptions of stress and poor sleep were related to physiological differences in late pregnancy, while psychiatric diagnosis was not. Longitudinal studies with a larger population may help to determine clinical applications of these findings.

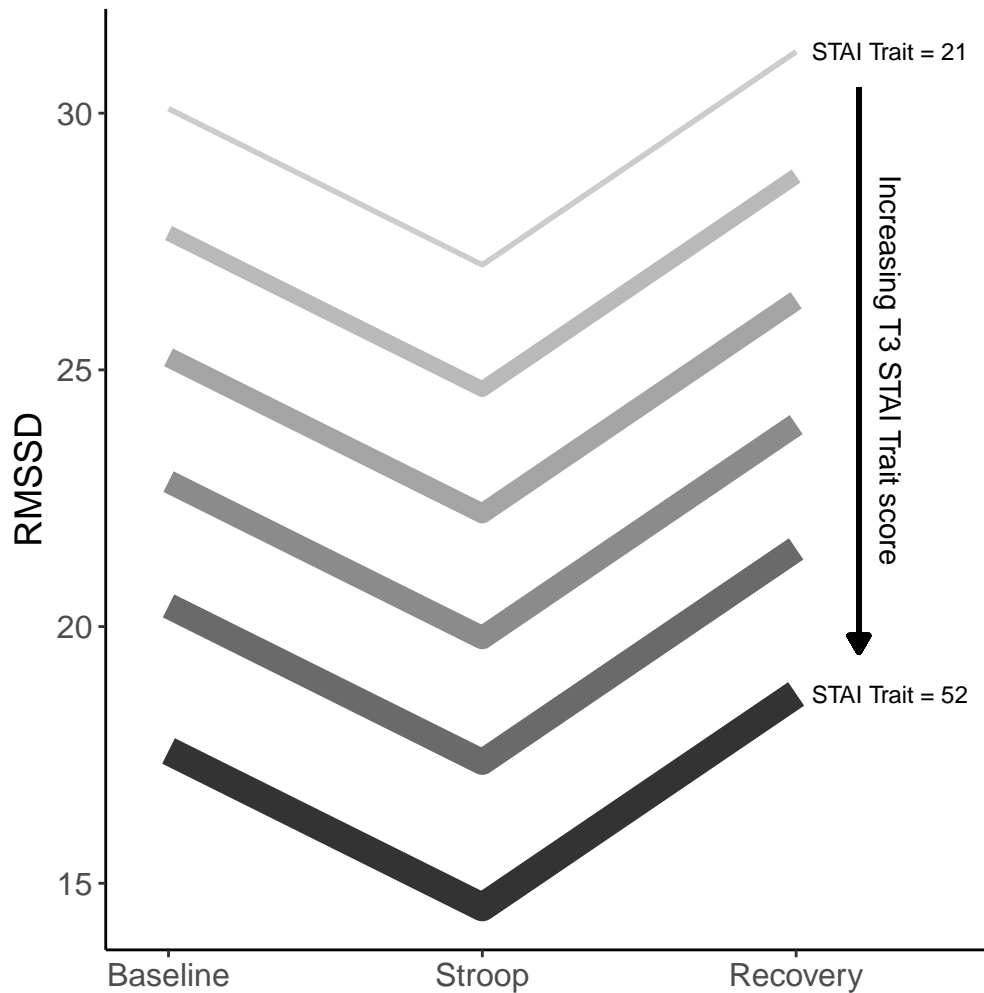
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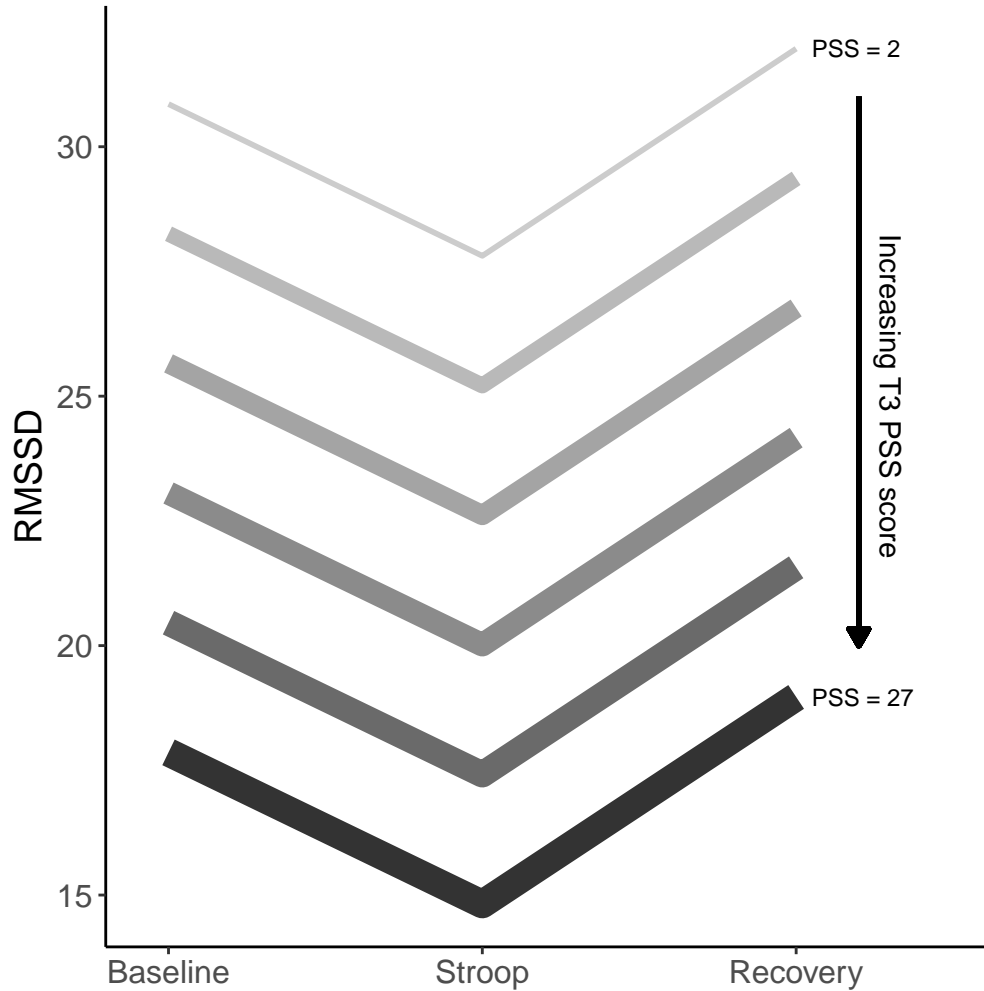
Disclosures:

None.

Predicted RMSSD vs. STAI Trait Score
Controlling for BMI, Age, & Weeks Gestation



Predicted RMSSD vs. PSS Controlling for BMI, Age, & Weeks Gestation



Predicted RMSSD vs. PSQI
Controlling for BMI, Age, & Weeks Gestation

