



PARENT'S CROSS-SYSTEM AUTONOMIC REGULATION (CSAR) PREDICTS FEWER RESTRICTIVE BEHAVIORS



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Introduction

- Autonomic Nervous System (ANS) is comprised of the *Parasympathetic Nervous System (PNS)* and the *Sympathetic Nervous System (SNS)*
- Parents' appropriate ANS reactivity to stress and their children's needs supports positive responsive parenting behaviors that impact children's social and emotional development^{1,2}
- Most research examines SNS and PNS branches separately, limiting insights into their joint functioning³
- Cross-System Autonomic Regulation (CSAR)
 - Z-scored PNS + Z-scored SNS
 - PNS = Respiratory Sinus Arrhythmia (RSA)
 - SNS = Electrodermal Activity (EDA)
 - ↑ CSAR = more joint activation
 - ↓ CSAR = less joint activation
- Previous work suggests that high coactivation during stress → fewer negative parenting behaviors⁴**
- CSAR is a strong predictor of parenting traits (e.g. negativity)^{5,6}

Current Study

Does CSAR during "rest" vs. during "stress" differentially predict nurturing and restrictive parenting behaviors?

Methods

Participant N: 150 parents of inhibited children

Measures



CSAR_{rest}
 $\text{avg}([z\text{RSA}_{\text{Vid1}} + z\text{EDA}_{\text{Vid1}}] + [z\text{RSA}_{\text{Vid2}} + z\text{EDA}_{\text{Vid2}}] + [z\text{RSA}_{\text{Vid3}} + z\text{EDA}_{\text{Vid3}}])$

CSAR_{stress}
 $\text{avg}([z\text{RSA}_{\text{clown}} + z\text{EDA}_{\text{clown}}] + [z\text{RSA}_{\text{kids}} + z\text{EDA}_{\text{kids}}] + [z\text{RSA}_{\text{intro}} + z\text{EDA}_{\text{intro}}])$

Nurturing + Restrictive parenting behaviors
 Parent-reported Child Rearing Practices Report (CRPR)⁷

Scatterplots

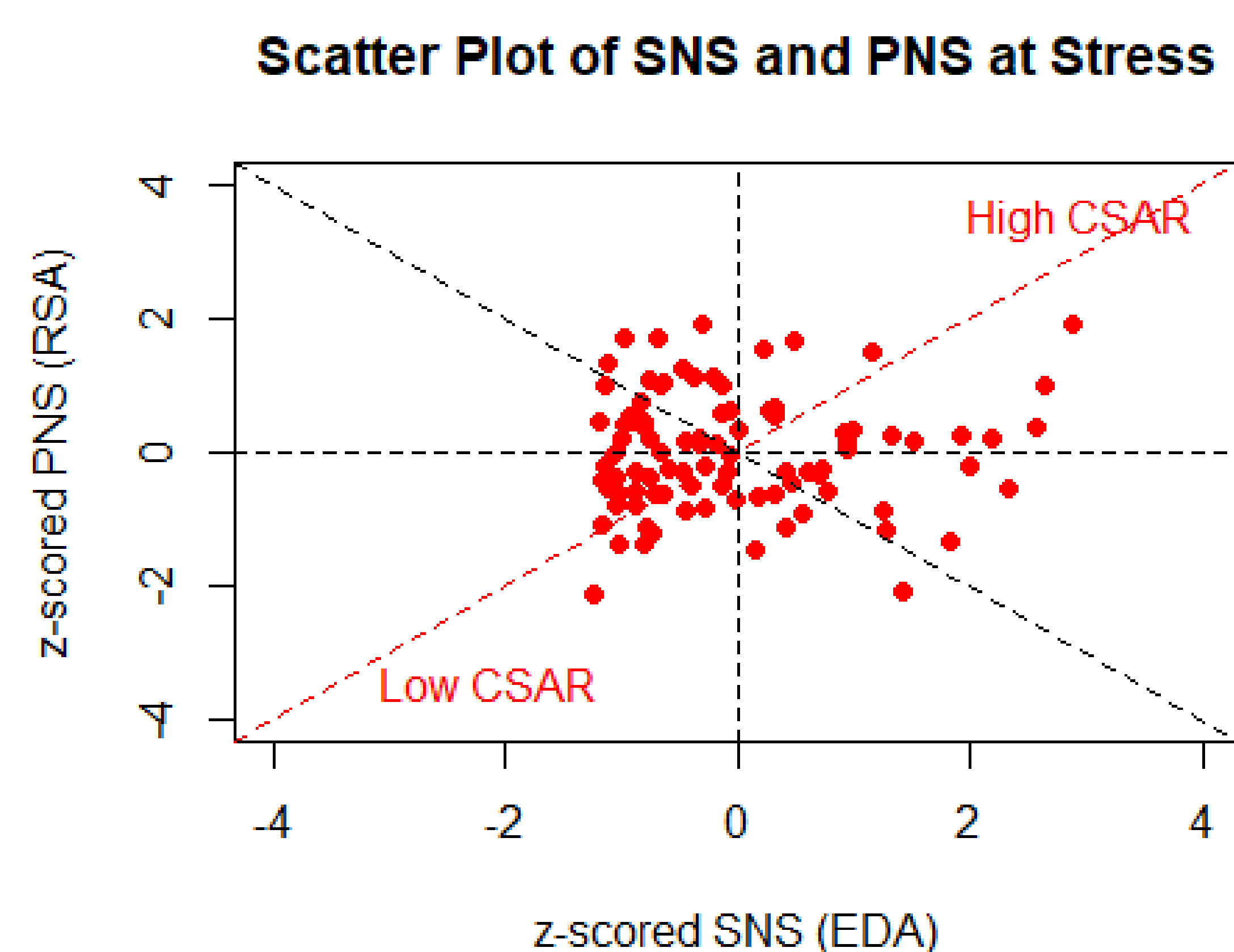


Figure 1. Scatterplot of averaged CSAR during stress

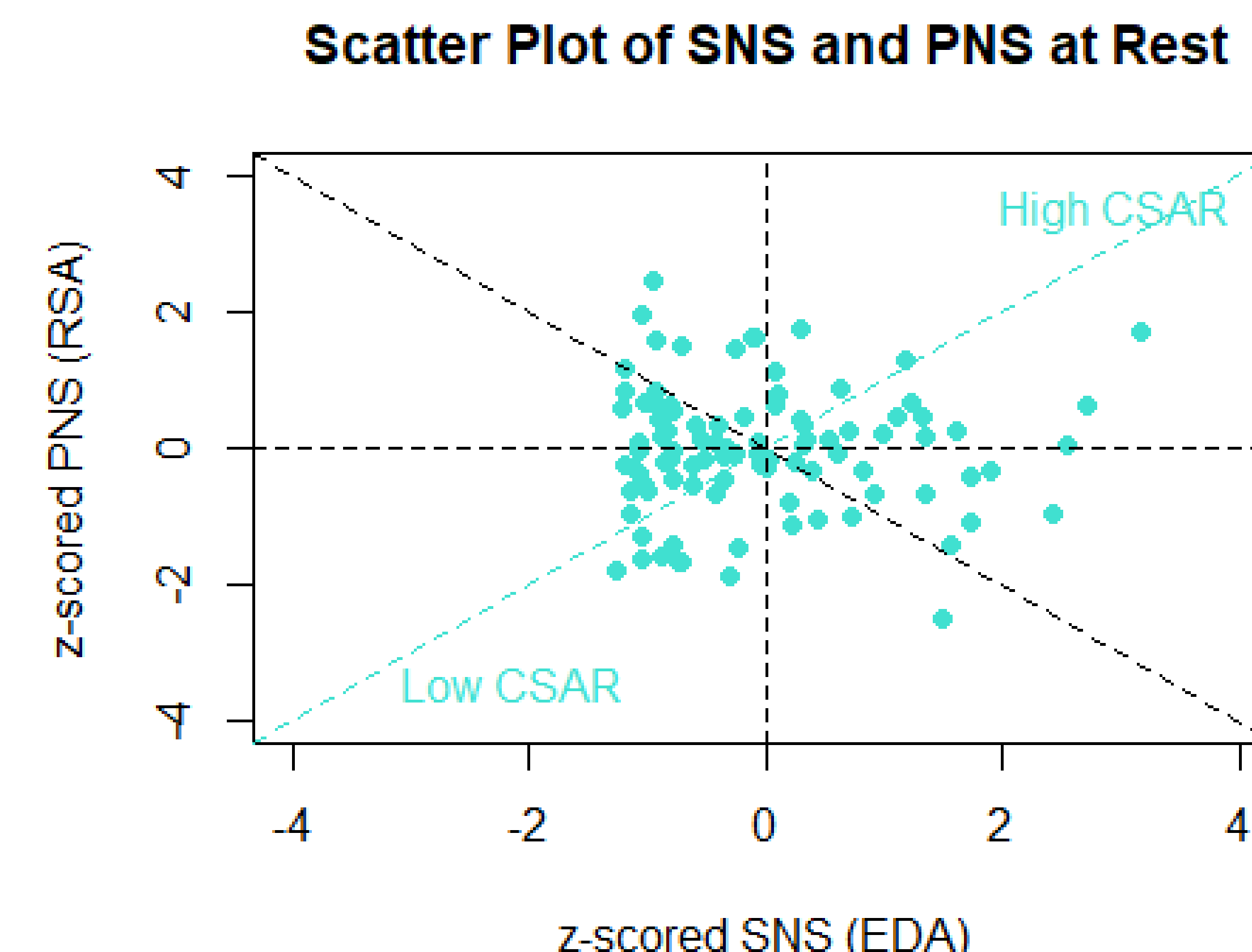


Figure 2. Scatterplot of averaged CSAR during rest

Results

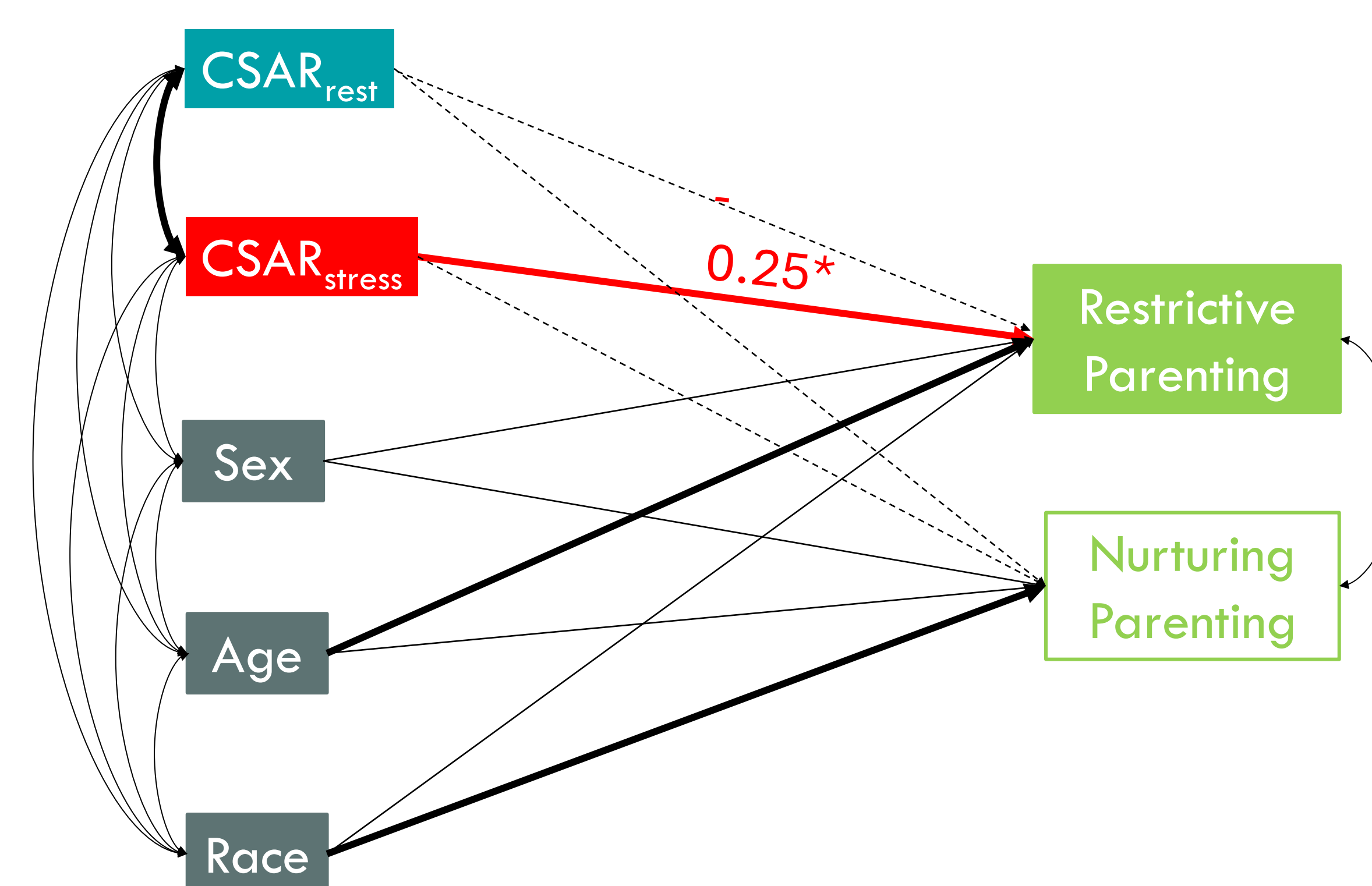


Figure 3. Results of path model demonstrating the association between CSAR and parenting

- CSAR_{rest} → Nurturing Parenting (n.s.)
- CSAR_{rest} → Restrictive Parenting (n.s.)
- CSAR_{stress} → Nurturing Parenting (n.s.)
- CSAR_{stress} → Restrictive Parenting ($b = -.25, p = .04$)**
- During stress, CSAR was negatively associated with restrictive parenting behaviors
 - High co-activating SNS and PNS during stressors supports parenting behaviors that are not as restrictive
 - Low co-inhibition SNS and PNS during stressors is associated with more restrictive parenting behaviors

Limitations & Future Direction

Limitations

- Participants mostly highly educated mothers
- Parents watched inhibited child complete stressor
- CSAR does not provide insight into dominance of one branch over the other

Future Directions

- Examine association using stressful task for parents
- Examine associations with other measures of PNS and SNS
- Use other parenting behavior measures (e.g., observations)
- Examine joint ANS functioning changes across stress and recovery

