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Respiratory Sinus Arrhythmia Reactivity in Adolescents: Gender Differences and Implications for Friendship Quality

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Friendships are important relationships during adolescence but little research considers interrelations between physiological functioning and friendship functioning (Murray-Close et al., 2013). Respiratory sinus arrhythmia (RSA) reactivity indexes changes in parasympathetic nervous system activity and has important implications for functioning in close relationships (Porges 2001; 2009). Decreases in RSA in response to stressors is thought to reflect adaptive regulation (Beauchaine, 2001). Although research has not examined RSA reactivity in relation to adolescent friendships, one study found that adults who were primed to think about friendships demonstrated greater RSA reactivity to stress when they had high quality friendships (Carlisle et. al, 2012). The current study considers the effects of positive and negative friendship quality on adolescents' RSA reactivity during friendship interactions. Data collection is ongoing. Participants are same-gender friend dyads in 8th, 9th, and 10th grades. The adolescents completed the 18-item Friendship Quality Questionnaire (Rose 2002 revision of Parker and Asher 1993) which assesses positive friendship qualities (e.g., trust) and negative friendship qualities (e.g., conflict). The adolescents also engaged in a 3-minute resting baseline task and a problem talk interaction task with their friends while linked to physiological sensors monitoring heart rate, respiration. RSA reactivity will be computed by taking the difference between the average RSA during the resting task and the interaction task. We expect to find that greater levels of friendship quality will be related to greater RSA reactivity (i.e., decreases in RSA relative to resting conditions). Gender differences will also be tested. Given that previous research has found stronger links between friendships and adjustment for girls (Demir and Urberg, 2004), we hypothesize that there will be stronger links between friendship quality and RSA reactivity for girls than boys.

Previous studies have examined RSA and its relationship to adolescent friendships and found that priming new relationships with positivity was associated with significant RSA decreases during stress. This implies that existing relationships with positive friendship quality could have similar effects on RSA reactivity and provide an indicator of how adolescent friendships impact physical and emotional health.