The Role of Respiratory Sinus Arrhythmia in the Association Between Internalizing Difficulties and Aggression in Preadolescence.

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Introduction

Baseline (resting) levels of RSA are thought to reflect greater tonic parasympathetic influences on the heart indices an individual’s ability to flexibly modulate their heart rate in response to environmental demands.

According to Porges polyvagal theory, minimal change in RSA from baseline to stimulus (i.e., low RSA reactivity) is associated with an inflexible physiologic system decreasing the organism’s capability to self-regulate. Conversely, more variation and flexibility in changes in RSA have been associated with better physical health and emotional stability. Thus, it has been proposed that higher levels of RSA reactivity provide the ability to modulate arousal and regulate emotions accordingly and may decrease the prevalence of externalizing behavioral problems such as reactive or relational aggression.

Discussion

As shown in Figure 1, hierarchical regression analyses revealed that Internalizing is positively associated with Aggression, especially for girls with low (-1 SD) RSA reactivity ($\beta = 1.00, p = .005$); there was no effect for boys.

These findings contribute to the literature that high RSA reactivity provides a buffer against the association of aggression with internalizing problems but suggest that gender neutral stimuli may be better suited to examine sex differences.

For girls with internalizing and externalizing difficulties, it is unknown if minimal change in RSA during conditions is a cause or consequence of these detrimental behaviors, but it does appear that these interactions may be sex specific.

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