Autonomic Flexibility in Childhood Anxiety Disorders

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Background

The vagus nerve, the 10th cranial nerve, acts like a brake to the heart, responds to changes in respiration, and is associated with appropriate autonomic responding to stress. It’s activity is approximated using respiratory sinus arrhythmia.

Respiratory Sinus Arrhythmia (RSA) (respiratory induced heart rate variability): taking the natural logarithm of 12-40 Hz filtered time-sampled interbeat interval (IBI) series

Method

RSA and HR were measured using Actiheart heart rate monitors and software (Version 4) during stress and non-stress conditions in 60 clinically anxious and 30 non-anxious, age- and gender-matched, 7-12 year olds.

Results

- Significant main effect of task, such that RSA decreases in response to stress and increases during rest – regardless of group

Discussion

The results suggest that anxious and non-anxious children do not differ in RSA and HR at baseline and in response to stress. This shows that anxious children show a different pattern of physiology compared to anxious adolescents and adults who evidence diminished RSA and increased HR at rest, and a blunted response to stress. The findings of this study suggest that physiological dysregulation might therefore be the result of chronically maintained anxiety rather than a causal factor in its development.

References


Acknowledgments

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