Background

- The human heart does not beat like a steady clock

  → At rest the heart beats slower but less regularly (HR is lower whereas HRV is higher) – this means the parasympathetic nervous system is active

  → In response to stress the heart beats faster but more regularly (HR is higher whereas HRV is lower) – this indicates an active sympathetic nervous system

Method

HR and HRV were measured using Actiheart heart rate monitors and software (Version 4) during stress and non-stress conditions in 25 clinically anxious and 25 non-anxious, age- and gender-matched, 7-12 year olds.

Results

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

- Significant main effect of tasks, such that HR increases in response to stress and decreases during non-stress conditions – regardless of group

Discussion

The results suggest that anxious and non-anxious children do not differ in their parasympathetic and sympathetic activity, as measured by HRV and HR at baseline and in response to stress. This shows that anxious children show a different pattern of physiology compared to anxious adults who evidence diminished parasympathetic activity¹. The findings of this study suggest that reduced HRV might therefore be the result of chronically maintained anxiety rather than a causal factor in its development.

References


Acknowledgments

- Berkshire Child Anxiety Clinic