ADVERSE CHILDHOOD EXPERIENCE SCORES AND HABITUATION TO STRESS

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Introduction

- Adverse childhood experiences (ACEs) are traumatic events that occur during the first 18 years of life.
- ACEs are quite prevalent and each ACEs item experienced increases the risk of mental and physical health problems (Felitti et al., 2019).
- Our goal was to examine the relationship between ACEs and habituation to stress while considering the effects of different numbers of reported ACEs.

Methods

Participants
- N = 280, (100% Female, 69.4% Caucasian, 16.9% Hispanic or Latino)
- Completed the protocol twice
- Upon completion, answered the ACEs Questionnaire.

ADAPTATION
- 10-minute period where the participant sat comfortably with all equipment attached.
- Designed to allow for the participant to adapt to the room and equipment.

BASELINE
- 10-minute period where the participant sat silently and still
- Heart rate was measured every 2 minutes.

PASAT
- The participant completed the 4-minute PASAT, a mental arithmetic stress task.
- Heart rate was measured every 1 minute.

Figures and Results

<table>
<thead>
<tr>
<th>Number of ACEs Reported</th>
<th>Participant Percentage</th>
</tr>
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<tbody>
<tr>
<td>0</td>
<td>40.1%</td>
</tr>
<tr>
<td>1-2</td>
<td>43.0%</td>
</tr>
<tr>
<td>3+</td>
<td>25.9%</td>
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</tbody>
</table>

Table 1: Participant breakdown by ACE Scores

Graph 1: Mean (standard error) Heart Rate (HR) Reactivity at Stress Task 1 and Stress Task 2.

Reactivity = mean stress – mean baseline.

- Mixed design ANOVAs with group (ACEs group) as between subjects and time (HR reactivity time 1, HR reactivity Time 2) as within indicated a significant difference for the:
  - Main effect of time, F(1,277) = 185.27, p <.001, etasq = .401,
  - Main effect of group, F(2, 277) = 4.23, p = .016, etasq = .030
  - Time x Group interaction, F(2,277) = 3.89, p = .022, etasq = -.022

Contact Information

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Conclusion

- The group with 1-2 ACEs exhibited less habituation to repeated stress. This heightened physiological response may stem from infrequent exposure to stressful events.
- The group with 3+ ACEs exhibited a lower cardiovascular reactivity to all stress tasks, suggesting the repeated exposure to adverse events has blunted their physiological response to stress.
- The results of this study suggests a relationship exists between the number of ACEs an individual has and their cardiovascular reactivity to stress, particularly to repeated stress.
- Future research should further explore whether the different physiological responses seen are associated with the type of adverse event experienced.
- Further research could also explore resiliency factors that may mitigate these exaggerated or blunted responses to stress.

References