The Ability to Delay Gratification, Impulsivity & Self-Control in Obese & Healthy-Weight Children

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Results Cont’

Table 1 – Significant and Marginal t-Tests

<table>
<thead>
<tr>
<th></th>
<th>HW</th>
<th>OB</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIS Motor Impulsiveness</td>
<td>13.55</td>
<td>17.07</td>
<td>-3.486</td>
<td>0.002</td>
</tr>
<tr>
<td>BIS Cognitive Instability</td>
<td>6</td>
<td>7</td>
<td>-1.895</td>
<td>0.068</td>
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<tr>
<td>BIS Attentional Impulsiveness</td>
<td>15.76</td>
<td>18.36</td>
<td>-2.032</td>
<td>0.051</td>
</tr>
<tr>
<td>BIS Non-Planning Impulsiveness</td>
<td>25.03</td>
<td>28.79</td>
<td>-2.232</td>
<td>0.034</td>
</tr>
<tr>
<td>Self-Control Scale</td>
<td>90.7</td>
<td>100.7</td>
<td>-1.882</td>
<td>0.07</td>
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</tbody>
</table>

Introduction

• The ability to delay gratification, impulsivity, and self-control are overlapping constructs commonly assessed in children.
• Research has been mixed regarding the ability of obese and healthy weight children to delay gratification.
• This study assessed obese and healthy weight children’s self-reported ability to delay gratification of monetary rewards and compared this with self-control and impulsivity measures.

Methods

• As part of a neuroimaging study, 17 healthy weight (MBMz = -0.003; MZile = 49.97) and 14 obese (MBMz = -2.280; MZile = 98.19) completed the following measures:
  • Kirby Delay-Discounting Rate Monetary Choice Questionnaire (MCQ) – MCQ is a 27 item questionnaire asking participants if they would prefer smaller, immediate rewards, or larger delayed rewards from which a discounting rate is calculated.
  • Barratt Impulsivity Scale (BIS) – BIS is a 30-item, 4-point (i.e., “rarely” to “always”) self-report questionnaire measuring general impulsiveness on subscales including motor impulsiveness, cognitive instability, attentional impulsiveness, and non-planning impulsiveness.
  • Brief Self-Control Scale (SCS) - SCS is a 13 item, 5-point likert scale measuring several types of control (i.e., control over thoughts, emotional control, impulse control, performance regulation, and habit breaking).

Procedure

• Independent sample t-tests were conducted to examine potential differences between weight groups in delay discounting, impulsivity, and self-control scores.
• Spearman’s correlations were conducted to evaluate the relationship between delay discounting and impulsivity, and self-control scores.

Analyses

• Given the exploratory nature of this study, analyses did not correct for multiple tests.
• These measures were not specifically developed for children
• Children of this age may have difficulty evaluating and differentiating monetary rewards presented in the measure.

Limitations

• Generalizability is limited due to sample size.
• Future research including pediatric participants should consider developing a modified version of the MCQ with adjusted scenarios, and potentially food rewards instead of monetary rewards.
• The role of impulsivity and self-control in pediatric obesity should continue to be evaluated as it may have important treatment implications.

Discussion

• Obesity was associated with less child-reported self-control and more child-reported impulsivity.
• The ability to delay gratification for monetary rewards was not related to weight group, reported impulsivity, or reported self control.