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Effects of Rave Drug use on Cognitive Functioning

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**BACKGROUND**

- MDMA/Ecstasy, also known as “rave” or “party” drugs have become popular amongst young adults
- Little is known or confirmed about the effects of MDMA/Ecstasy
- Studies have shown evidence in favor of deficits in executive functioning that is linked to the use of the drug
- Depressive symptoms could be related to MDMA/Ecstasy use, but exploration as to how is required
- Age could be a potential contributor to worsening deficits in executive functioning
- This study aimed to explore these variables and if there is an relationship between these variables

**STUDY DESIGN AND PROCEDURE**

- Participants were recruited via social media outreach and on Clark University’s campus (n = 31)
- Consenting participants took an online survey to self report on the measures
- Data was scored accordingly, and mean scores were determined
- A correlational analysis was run to determine a relationship between:
  - Substance involvement and depression
  - Substance involvement and executive functioning
  - Substance involvement, age, and executive functioning with the covariate of depression

**MEASURES**

- There were 5 measures used to assess the variables:
  - **Substance Involvement Screening Test** was used to determine MDMA/Ecstasy use history
  - **CES-D[A]** was used to determine self-reported depressive symptoms
  - **DEX** and **Webexec** were used to assess self-reported deficits in executive functioning
  - **Barratt Impulsiveness Scale** was used as a control measure for impulsiveness

**RESULTS**

- Results indicated that there was a significant positive correlation between MDMA/Ecstasy use and executive functioning
  - Based on scoring methods, it was revealed that use of rave drugs is correlated to deficits in executive functioning
  - Participants who were involved with the consumption of MDMA/Ecstasy showed deficits in executive functioning, as well as a relationship with depression
  - Hypothesis regarding negative effects of MDMA/Ecstasy use on executive functioning was supported

**TABLES**

**Table 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Substance Involvement</td>
<td>1.00</td>
<td>2.08</td>
</tr>
<tr>
<td>2. CES-D[A]</td>
<td>23.93</td>
<td>14.80</td>
</tr>
<tr>
<td>3. DEX</td>
<td>25.65</td>
<td>21.86</td>
</tr>
<tr>
<td>4. Webexec</td>
<td>12.03</td>
<td>4.61</td>
</tr>
<tr>
<td>5. Barratt</td>
<td>62.33</td>
<td>10.37</td>
</tr>
<tr>
<td>6. Age in Years</td>
<td>21.58</td>
<td>2.85</td>
</tr>
</tbody>
</table>

**Table 2**

<table>
<thead>
<tr>
<th>Measures</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Substance Involvement</td>
<td>-</td>
<td>.409*</td>
<td>.546**</td>
<td>.416*</td>
<td>.452*</td>
<td>.551**</td>
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<tr>
<td>2. CES-D[A]</td>
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<td>-</td>
<td>.825**</td>
<td>.654**</td>
<td>.637**</td>
<td>- .043</td>
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<tr>
<td>3. DEX</td>
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<td>-</td>
<td>-</td>
<td>.798**</td>
<td>.814**</td>
<td>- .039</td>
</tr>
<tr>
<td>4. Webexec</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.751**</td>
<td>- .057</td>
</tr>
<tr>
<td>5. Barratt</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.189</td>
</tr>
<tr>
<td>6. Age in Years</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**DISCUSSION**

- The hypothesis of the study was supported by the results
- Limitations:
  - Small participant pool
  - Measures were all self-report
- The results were significant, and are a support to previous literatures that touch upon the negative effects of MDMA/Ecstasy use