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CANNABIS USE, ABUSE AND DEPENDENCE AND PANIC SYMPTOMS, ATTACKS AND DISORDER IN ADOLESCENTS AND YOUNG ADULTS

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BACKGROUND

• Previous research suggests that panic and anxiety disorders and substance use disorders co-occur

• The relationship between panic disorder and cannabis use, abuse and dependence is not well characterized in adolescents and young adults
OBJECTIVE

• To examine the relationships between cannabis use, abuse and dependence and panic symptoms/attacks/disorder in adolescents and young adults
METHODS: Subjects

Twins as Parents (TAP) study (2000-present)

• Fathers
  – 910 twin fathers sampled from the Vietnam Era Twin Registry with at least 1 child 12-28 yrs old in 2000
  – Twin pairs either concordant or discordant for psychoactive substance use disorders (primarily MJ A/D). Controls were unaffected twin pairs
  – 725 (80%) responded to diagnostic telephone interview

• Mothers
  – 601 eligible biological and/or rearing mothers with consent from twin
  – 428 (71%) responded to diagnostic telephone interview

• Offspring
  – 986 eligible offspring with consent from father and/or mother
  – 832 (84%) responded to diagnostic telephone interview
METHODS: Assessment

Offspring report:

- Lifetime DSM-IV cannabis use, abuse and dependence
- Lifetime DSM-IV:
  - Panic Disorder
    - Panic Attack
    - Panic Symptoms
MEASURES:

- **Symptoms of a Panic Attack**
  - Developed abruptly and peaked w/in 10 min:
    1. Heart palpitations
    2. Sweating
    3. Trembling/shaking
    4. Shortness of breath
    5. Choking feeling
    6. Chest Pain
    7. Nausea/abdominal pain
    8. Dizzy/lightheaded
    9. Derealization/depersonalization
    10. Fear of losing control
    11. Fear of dying
    12. Paresthesias
    13. Chills/hot flushes
MEASURES: DSM-IV Panic Attack and Panic Disorder

• Full DSM-IV criteria for panic attack (PA)
  – *Discrete period of intense fear or discomfort, in which 4 or more symptoms developed abruptly and reached a peak within 10 minutes*

• Full DSM-IV criteria for panic disorder (PD)
  – *Recurrent unexpected panic attacks, at least one attack followed by one month of: either persistent concern, worry, change in behavior*
MEASURES: Cannabis Use

• Among all respondents:
  – Ever used
  – Regular use ($\geq 6$ times in life)
  – Current use (past 12 months)
  – DSM-IV cannabis abuse/dependence

• Among users only:
  – Regular use ($\geq 6$ times in life)
  – Current use (past 12 months)
  – DSM-IV cannabis abuse/dependence
  – Lifetime quantity
METHODS: Data Analysis

• Measures of Association:
  – Chi-square
  – Odds Ratio (OR)
# RESULTS

Table 1: Number of panic attack symptoms reported by level of cannabis use. NOTE: values with the same superscripts differ significantly from one another (\(p \leq 0.05\))

<table>
<thead>
<tr>
<th></th>
<th>None (n=612)</th>
<th>1-3 (n=78)</th>
<th>4+ (n=143)</th>
<th>(X^2) p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever used</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular use*</td>
<td>51.8%(^{ab})</td>
<td>64.1%(^{a})</td>
<td>69.9%(^{b})</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Current use**</td>
<td>36.9%(^{ab})</td>
<td>48.7%(^{a})</td>
<td>50.4%(^{b})</td>
<td>0.004</td>
</tr>
<tr>
<td>Among users only:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular use*</td>
<td>71.5%</td>
<td>76.0%</td>
<td>72.0%</td>
<td>0.789</td>
</tr>
<tr>
<td>Current use**</td>
<td>22.1%</td>
<td>12.0%</td>
<td>26.0%</td>
<td>0.145</td>
</tr>
</tbody>
</table>

*\(\geq 6\) times

**within the past 12 months
Table 2: Offspring meeting DSM-IV criteria for panic attack by level of cannabis use

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=95)</td>
<td>(n=742)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever use</td>
<td>78.5%</td>
<td>53.2%</td>
<td>3.21</td>
<td>1.91-5.37</td>
</tr>
<tr>
<td>Regular use*</td>
<td>54.8%</td>
<td>38.5%</td>
<td>1.94</td>
<td>1.26-2.99</td>
</tr>
<tr>
<td>Current use**</td>
<td>19.4%</td>
<td>11.4%</td>
<td>1.87</td>
<td>1.07-3.29</td>
</tr>
<tr>
<td>Among users only:</td>
<td>(n=73)</td>
<td>(n=394)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular use*</td>
<td>69.9%</td>
<td>72.3%</td>
<td>0.87</td>
<td>0.51-1.53</td>
</tr>
<tr>
<td>Current use**</td>
<td>24.7%</td>
<td>21.3%</td>
<td>1.21</td>
<td>0.67-2.17</td>
</tr>
</tbody>
</table>

*≥ 6 times
**within the past 12 months
Table 3: Offspring meeting 3-level DSM-IV panic disorder criteria by level of cannabis use. NOTE: values with the same superscripts differ significantly from one another (p≤.01)

<table>
<thead>
<tr>
<th></th>
<th>No Diagnosis</th>
<th>Panic Attack</th>
<th>Panic Disorder</th>
<th>X² p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=742</td>
<td>n=70</td>
<td>n=24</td>
<td></td>
</tr>
<tr>
<td>Ever use</td>
<td>53.2%&lt;sup&gt;a&lt;/sup&gt;</td>
<td>81.2%&lt;sup&gt;a&lt;/sup&gt;</td>
<td>70.8%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Regular use*</td>
<td>38.5%&lt;sup&gt;a&lt;/sup&gt;</td>
<td>55.1%&lt;sup&gt;a&lt;/sup&gt;</td>
<td>54.2%</td>
<td>0.010</td>
</tr>
<tr>
<td>Abuse/dependence</td>
<td>21.0%&lt;sup&gt;a&lt;/sup&gt;</td>
<td>34.8%&lt;sup&gt;a&lt;/sup&gt;</td>
<td>33.3%</td>
<td>0.013</td>
</tr>
<tr>
<td>Among users only:</td>
<td>n=394</td>
<td>n=56</td>
<td>n=17</td>
<td></td>
</tr>
<tr>
<td>Regular use*</td>
<td>72.3</td>
<td>67.9</td>
<td>76.5</td>
<td>.717</td>
</tr>
<tr>
<td>Abuse/dependence</td>
<td>39.3</td>
<td>42.9</td>
<td>47.1</td>
<td>.736</td>
</tr>
</tbody>
</table>

*≥ 6 times
Figure 1: Lifetime quantity/number times used cannabis by 3-level DSM-IV PD diagnosis

Prevalence

No Diagnosis | Panic Attack | Panic Disorder

1-5 times (n=131) | 6-10 times (n=47) | 11-20 times (n=50) | 21-39 times (n=30) | 40+ times (n=138)

P > 0.05
CONCLUSIONS

• Panic symptoms, attack and disorder are associated with cannabis use but not regular use, current use or abuse/dependence among cannabis users

• Further research is needed to:
  – Adjust for the paternal drug use history (environment and genetics), age and gender
  – Derive multivariate models to determine which other psychiatric and substance use disorders contribute to the panic/cannabis use relationship
  – Examine temporal relationship between panic and cannabis use