Adolescent Cannabis Use, Depression, and Anxiety in LGB Youth

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The associations between cannabis, depression and anxiety in heterosexual and sexual minority adolescents
Introduction

- Cannabis is widely used by adolescents in Canada and the United States
  - 17.5% of Canadian youth 15-17 year-olds used in the past year\(^1\)

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Introduction

- Cannabis use is associated with depression and anxiety\(^2-5\)
  - Directionality unclear: spurious cooccurrence or precedence?

- Depression and anxiety often collapsed as “internalizing symptoms”
  - But some evidence for differential associations\(^3,6-8\)

- LGBTQ2+ youth and adults present higher rates of comorbidity between cannabis use, depression, and anxiety\(^9,10\)
  - Little evidence on the nature of this relationship
Research Questions

1. What are the potential bidirectional relationships between cannabis, depression, and anxiety across ages 13, 15, and 17 years?

2. Do these relationships differ by sexual minority status?
Method: Sample & Measures

- **Sample**
  - 1548 adolescents living in Quebec, Canada
  - Followed yearly or biennially from age 5 months
  - Representative sample

- **Measures**
  
  **13, 15, 15 years:**
  - Cannabis frequency of use in the last 12 months
  - Depressive symptomology in the last 12 months
  - Anxiety symptomology in the last 12 months

  **15 and/or 17 years:**
  - Sexual orientation

- **Control variables:**
  - Mother’s age at child’s birth and university attainment to represent SES
  - Sex
  - Other substance use: alcohol, cigarettes, other drugs
Method: Analytical Procedure

- Structural equation modeling in Mplus using a cross-lagged model
  - Model 1: Cannabis, depression, anxiety + SES, sex as controls
  - Model 2: Model 1 + other substance use
  - Models 3 & 4: Multigroup analysis of heterosexual and sexual minority youth
### Results: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables at age 13</th>
<th>Heteros M</th>
<th>Heteros SD</th>
<th>Minorities M</th>
<th>Minorities SD</th>
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Results: Models 1 & 2

Model 1: cannabis, depression, anxiety (controls: SES, sex)

Chi-square: 65.233, Df: 24 | RMSEA: 0.034 (90% CI: 0.024/0.043) | CFI: 0.989
TLI: 0.972 | SRMR: 0.023

Full model: cannabis, depression, anxiety (controls: SES, sex, alcohol, cigarettes, other drug use)

Chi-square: 214.821, DF: 84 | RMSEA: 0.032 (90% CI: 0.027/0.037) | CFI: 0.970
TLI: 0.949 | SRMR: 0.026
Key Results

- Positive cross-lagged associations exist in the base model (Model 1)
  - Cannabis 13 $\rightarrow$ Depression 15
  - Depression 15 $\rightarrow$ Cannabis 17
  - Cannabis 15 $\rightarrow$ Anxiety 17

- But these become non-significant when accounting for other drug use

- However, looking a bit closer at sexual orientation...
Results – Models 3 & 4

Model 3 - heterosexuals:

Full model - heteros : cannabis, depression, anxiety (controls: SES, sex, alcohol, cigarette, and other drug use)

Chi-square contribution: 261.517 | RMSEA: .046 (90% CI: .040/.051) | CFI: .949
TLI: .913 | SRMR: .030

Model 4 – sexual minorities:

Full model - minorities : cannabis, depression, anxiety (controls: SES, sex, alcohol, cigarette, and other drug use)

Chi-square contribution: 167.476 | RMSEA: .046 (90% CI: .040/.051) | CFI: .949
TLI: .913 | SRMR: .030
Key Results

- No significant cross-lagged associations among heterosexual teens, but

- Among sexual minority teens:
  - Strong association between depression at age 15 and cannabis use at age 17
  - Strong NEGATIVE association between anxiety at age 15 and cannabis use at age 17
Recap:
- Link between cannabis 13 and depression 15 (not cannabis-specific – gets replaced by alcohol/other drug use when included in the model)
- Links between cannabis 15 and anxiety 17 & between depression 15 and cannabis 17
  - Differential associations between cannabis/depression and cannabis/anxiety
- BUT
- These associations become non-significant when accounting for the use of alcohol, cigarettes, and other drugs
- HOWEVER
- The association between depression 15 and cannabis 17 remains in sexual minorities, who also present a negative link between anxiety 15 and 17
Discussion

This study showed that

1. There are certain bidirectional associations between cannabis, depression, and anxiety, but these are accounted for by alcohol, cigarette and other drug use.

2. Nonetheless, in sexual minority teens, depression was associated with more cannabis use even when controlling for other substance use (i.e., the effects were cannabis-specific). In this sub-sample, anxiety was associated with less cannabis use.
Implications & Conclusion

- Need for interventions that target drug use in general, especially for early onset use.
  - Movement toward skill-building, and fostering resiliency, coping skills, connectedness, and healthy school environments.
  - The legalization of nonmedical cannabis in Canada and in certain states may be a fruitful opportunity to discuss not only cannabis use, but drug use in general in adolescence.
    - Especially as a coping mechanism, which predicts problematic use

- Sexual minority adolescents should receive particular attention, as their cannabis use and depression, specifically, seem to be intimately related.
References


Thank you

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