



Vaping THC and CBD: Distinct Psychological Risks in Adolescents

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Connor, J., Hall, W., and Chan, G.C.K.

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Over 100 Cannabinoids in a Cannabis Plant

Delta-

- Psy
- Pro
- A

Cannab

- No
- Pro
- Do
- effe

> J Stud Alcohol Drugs. 2025 Aug 1. doi: 10.15288/jsad.24-00464. Online ahead of print.

Cannabis Vaping in Youth: A Systematic Review and Meta-Analysis of Risk Factors in Adolescents and Young Adults

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Gap: Limited studies differentiated between CBD and THC vaping

Abstract

Objective: The use of electronic vaporisers to deliver cannabis ('cannabis vaping') has increased rapidly among young people. This systematic review and meta-analysis aimed to summarise current evidence on the psychosocial characteristics of adolescents and young adults who vape cannabis.

Method: PubMed, PsycINFO, Scopus, and Web of Science were searched for original publications since 2003. We summarised and meta-analysed studies on adolescents (12-18 years) and young adults (19-34 years) that reported sociodemographic, mental health, and other substance use

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Abstract

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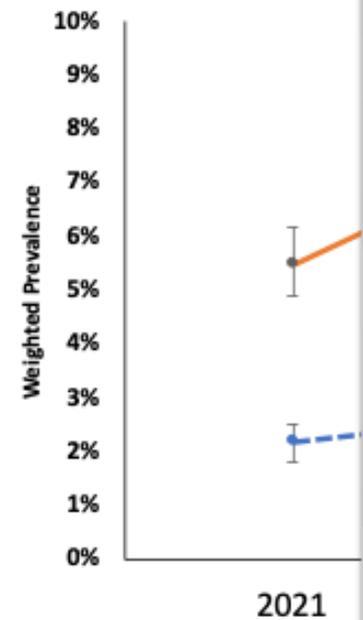
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Rising

Between 2021 and 2023, adolescent cannabis vaping prevalence rose from 2.2% to 5.5%.

By 2023, 2.55 million adolescents were using cannabis vaping products, while 999,000 adolescents were using traditional cannabis products.



U.S. Adolescent Cannabis Vaping Trend


 American Journal of Preventive Medicine
 Available online 1 July 2025, 107655
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Research Article

Adolescent Cannabis Vaping Trends (2021–2023): Delta-9-Tetrahydrocannabinol, Cannabidiol, and Synthetic Cannabinoids

[Jack Chung BApsych \(Hons\)¹](#)  , [Carmen C.W. Lim PhD¹](#), [Daniel Stjepanović PhD¹](#),
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Vaping

4%

Vaping Rate

Adolescents in 2023

9%

Vaping Rate

Adolescents in 2023

Research Design

Study Aim

To examine associations between CBD and THC vaping with mental health symptoms

Predictors:

- 1) CBD vaping only
- 2) THC vaping only
- 3) Dual vaping of CBD/ THC
- 4) No CBD/ THC vaping

Study Population

69,899 adolescents aged 11-18 (51.3% male)

Survey/ Study Design

U.S. National Youth Tobacco Survey (2021-2023)

Outcome:

Depressive Symptoms: PHQ-2

Anxiety Symptoms: GAD-2

Psychometrically validated for adolescent use (Manea et al., 2016; Richardson et al., 2010)

Analysis Method

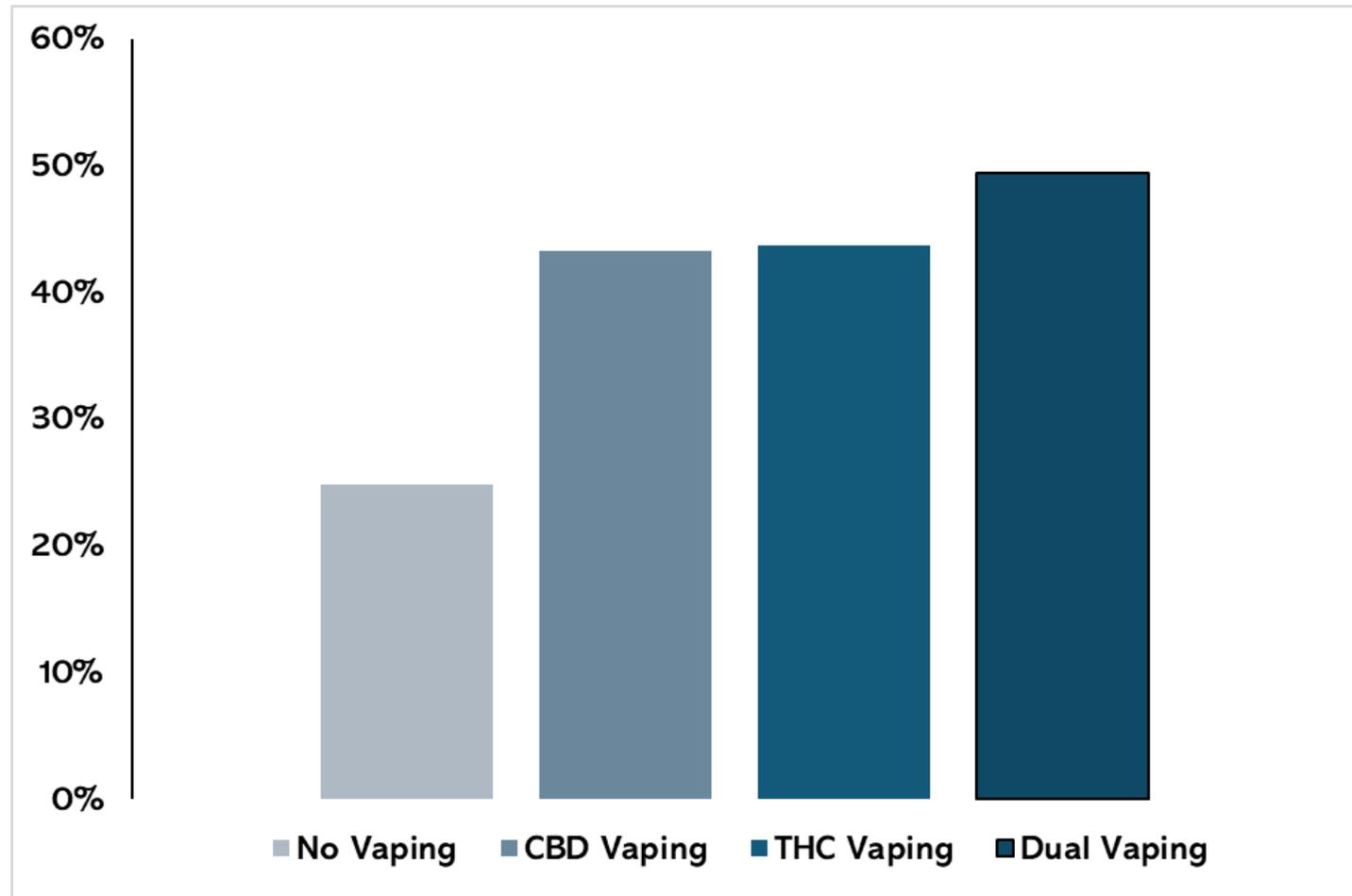
Logistic regression with multiple imputation and covariate adjustment

Hypothesis

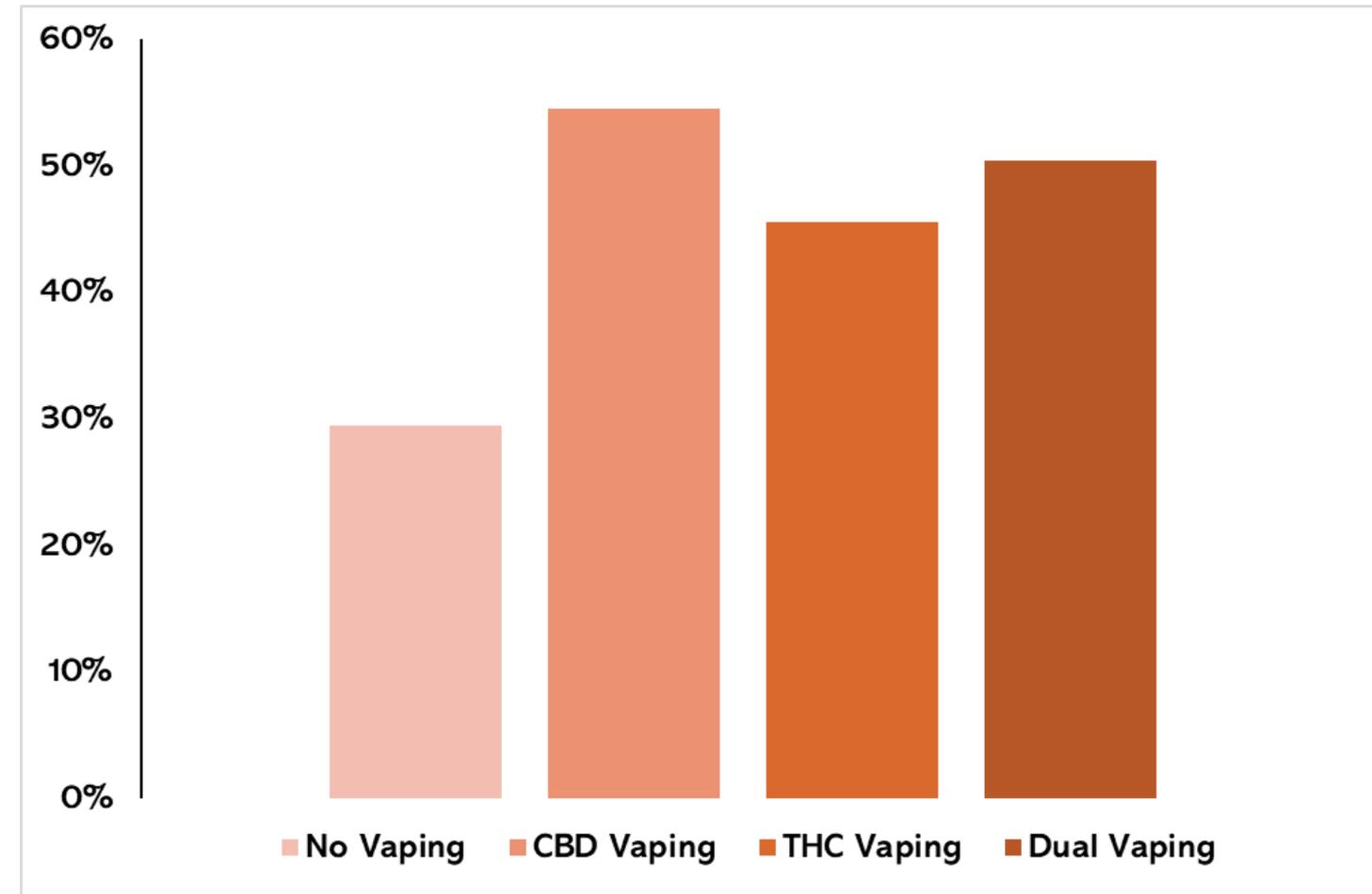
1. THC vaping may be linked with **increased** odds of depressive symptoms
2. CBD vaping may be linked with **lower** odds of anxiety symptoms

Descriptive Findings

Depressive Symptoms



Anxiety Symptoms



THC and Dual THC/CBD Vaping Linked to Depressive Symptoms

THC-Only Vaping Risk

Associated with a **40% increased** odds of **depressive** symptoms (aOR=1.40)

Dual THC/CBD Vaping Risk

Linked to a **51% increased** odds of **depressive** symptoms (aOR=1.51)

CBD and THC Vaping Linked to Anxiety Symptoms

CBD-Only Vaping Risk

Associated with a **74% increased** odds of **anxiety** symptoms (aOR=1.74)

THC-Only Vaping Risk

Linked to a **18% increased** odds of **depressive** symptoms (aOR=1.18)

CBD vs THC Vaping: Direct Comparison

1.51x Anxiety Symptoms

Among adolescents who currently vaped cannabis, vaping **CBD-only had 1.51 times greater odds of experiencing anxiety symptoms** compared to vaping THC-only.



CBD/ THC Effects - The Entourage Effect?

1

THC-Only Effects

Prolonged THC use is associated with more severe depressive symptoms (Gobbi et al., 2019; Kuhns et al., 2022; Lev-Ran et al., 2014)

2

CBD-Only Effects

Study findings contradict our hypothesis on CBD's anxiolytic effects
Complex dose-response relationship? (Elbatsh et al., 2012)

3

CBD/ THC Effects

Entourage effect where CBD's anxiolytic properties counteract anxiogenic effects of THC?
Could be dose dependent (Lichenstein, 2022; Sharpe et al., 2020)

Limitation & Implications



Limitations:



Potential reciprocal association: adolescents self-medication -> future longitudinal study design

Implications: Differentiated Effects



Importance in research/ policymaking to differentiate THC, CBD's risks for young people

Implications: Regulatory Oversight



Policies must address marketing targeting youth and the proliferation of unregulated cannabis products



References and Credits

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RESEARCH REPORT | [Full Access](#)

Cannabis vaping and mental health: The association of Δ -9-tetrahydrocannabinol and cannabidiol with anxiety and depressive symptoms—Findings from the United States National Youth Tobacco Survey (2021–2023)

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☰ SECTIONS

Abstract

Background and aim

Cannabis use is associated with psychiatric comorbidities, and the use of Δ -9-tetrahydrocannabinol (THC) and cannabidiol (CBD) produces different neurophysiological and pharmacological effects. This study estimated the strength of associations between vaping of THC and CBD with depressive and anxiety symptoms in adolescents.



📄 **Cannabis Vaping in Australia**
Today 3 pm at Pyrmont Theatre
Late Breakers Session

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