

Cannabis use is associated with depression severity and suicidality in the National Comorbidity Survey-Adolescent Supplement

Running title: Cannabis, depression, and suicidality

Brian Vu, BS, Susan Mikulich, PhD, Jian-Ping He, MS, Devika Bhatia, MD, Kathleen Ries Merikangas, PhD, Joseph Sakai, MD, Jesse D. Hinckley, MD, PhD.

Dr. Hinckley, Mr. Vu, and Dr. Sakai are with the Division of Addiction Science, Treatment & Prevention in the Department of Psychiatry at the University of Colorado School of Medicine, Aurora, CO. Dr. Mikulich is with the Department of Psychiatry at the University of Colorado School of Medicine, Aurora, CO, and the Department of Bioinformatics & Informatics, University of Colorado School of Public Health, Aurora, CO. Ms. He and Dr. Merikangas are with the Genetic Epidemiology Research Branch, Intramural Research Program at the National Institute of Mental Health, Bethesda, MD. Dr. Bhatia is with the Department of Psychiatry at the University of Colorado School of Medicine, Aurora, CO.

Corresponding author:
Jesse Hinckley, MD, PhD
13001 E. 17th Place, MS-F570
Aurora, CO 80045
Phone: +1 (303) 724-3090
Fax: +1 (303) 724-3178
jesse.hinckley@cuanschutz.edu

Key words (5 max): cannabis, adolescent, depression, suicidality

Abstract (250 words)

Objective: The aims of this study are to 1) investigate the prevalence of MDD in adolescents with lifetime cannabis use and 2) explore the association of lifetime cannabis use with MDD severity and symptomatology.

Method: Data are from the National Comorbidity Survey Replication Adolescent Supplement (n=10,123), a nationally representative survey of adolescents aged 13 to 18 years old.

Weighted logistic regression analyses were conducted, utilizing study weighting procedures and incorporating sociodemographic variables associated with lifetime cannabis use or DSM-IV MDD (age, gender, race/ethnicity, and region).

Results: Of the 2,281 adolescents reporting lifetime cannabis use, 432 (18.9%) met criteria for a lifetime diagnosis of MDD, compared to 693 (8.9%) of adolescents who never used cannabis ($p < 0.0001$). Severe depression is also more prevalent in adolescents with lifetime cannabis use (6.8% vs 1.8%, $p < 0.0001$). Adolescents with lifetime cannabis use have 2.1 times higher odds of having mild/moderate depression (aOR 95% CI 1.69, 2.53) and 3.1 times higher odds of having severe depression (aOR 95% CI 2.31, 4.75) than no depression, compared to adolescents who never used cannabis. Similarly, adolescents who used cannabis in the past 12 months had higher odds of a mild/moderate or severe depressive episode within that time, compared to adolescents who did not use cannabis (aOR 2.06 and 2.83, respectively). Among adolescents with a lifetime diagnosis of MDD, appetite ($p = 0.021$), suicidal ideation ($p = 0.0027$), and suicide attempt ($p = 0.030$) were associated with lifetime cannabis use. There were no significant differences in the prevalence of depressed mood, anhedonia, sleep, psychomotor agitation or retardation, fatigue, worthlessness, concentration, guilt, or suicide plan.

Conclusion: MDD is more prevalent among adolescents with lifetime cannabis use, with higher odds for severe MDD. Of concern, lifetime cannabis use is also associated with a higher prevalence of suicidal ideation and suicide attempt.