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Research Update is published by the Butler Center for Research to share significant scientific findings from the field of addiction treatment research.

Trends and Patterns in Cannabis Use across Different Age Groups

Introduction

As of May 2022, 19 U.S. states and the District of Columbia have legalized nonmedical cannabis use, while an additional 17 states have legalized adult medical use.[1, 2] The diffusion of cannabis legalization across the U.S. has been coupled with an ever-evolving cannabis market in regards to modes of use, as well as potential increases in cannabis-related disparities and co-use of cannabis and other substances.[3-8] Complex patterns of cannabis use have emerged in recent years, with different trends occurring among adults, young adults, and adolescents. These trends and patterns have made cannabis use a critical area of focus for public health and substance use treatment and research.

Trends in the Prevalence of Cannabis Use

According to multiple nationally representative surveys, cannabis use has increased among U.S. adults. Monitoring the Future (MTF) data show that, among adults between 35 and 50, past-year cannabis use significantly increased between 2020 and 2021, subsequently reaching the highest prevalence of past-year use the MTF adult study has ever documented.[9] All available nationally representative data indicate that not only has cannabis use been increasing among adults, it has been increasing for over a decade. Specifically, MTF data from 2011 to 2021 indicate that cannabis use nearly doubled in the past 10 years.[9]

Past Year and Past 30-Day Cannabis Use, Adults Ages 35 to 50

	2011	2021
Past-Year Cannabis Use	12.6%	24.9%
Past 30-Day Cannabis Use	7.4%	15.8%

Source: Monitoring the Future (2022)

Data from the National Survey on Drug Use and Health (NSDUH) and the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) similarly show that past-year as well as daily (or near-daily) cannabis use among U.S. adults aged 18 and older has increased since approximately 2000.[2, 5, 10, 11] Although there are mixed results according to different surveys,[12] there are also signs that cannabis use disorder (CUD) is increasing among U.S. adults,[2, 13, 14, 15] with the most definitive information being rooted in medical record data.[2, 15]

Since approximately 2005, cannabis use has increased among U.S. young adults between the ages of 19 and 30.[9] In 2021, cannabis use in the past year and past 30 days among young adults reached the highest levels ever recorded since 1988.[9]

Past Year and Past 30-Day Cannabis Use, Adults Ages 19 to 30

	2005	2021
Past-Year Cannabis Use	26.7%	42.6%
Past 30-Day Cannabis Use	15.1%	28.5%

Source: Monitoring the Future (2022)

In terms of frequency of use, trends indicate that daily and nondaily cannabis use has increased among young adults, with a markedly sharp increase in near-daily use between 2019 and 2021.[9]

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THE HAZELDEN BETTY FORD FOUNDATION EXPERIENCE

The Hazelden Betty Ford Foundation helps individuals, families and communities affected by addiction. Hazelden Betty Ford addresses cannabis misuse and addiction in both their inpatient and outpatient settings. Cannabis misuse and addiction are treated with evidence-based therapies such as Twelve Step facilitation, cognitive-behavioral therapy and motivational enhancement therapy, among others, depending on individual needs.

FOR MORE INFORMATION

About Medical Cannabis

Medical cannabis is a term for derivatives of the Cannabis sativa plant that are used to ease symptoms caused by certain medical conditions. While every state has laws dictating the use of medical marijuana, more than two thirds of U.S. states and the District of Columbia have actually legalized it for medical treatments. The FDA has not approved the cannabis plant for any medical use but has approved medical cannabis for the treatment of two rare and severe forms of epilepsy, Dravet syndrome and Lennox-Gastaut syndrome. The FDA has also approved Marinol and Syndros, which contain dronabinol (synthetic THC), and Cesamet, which contains nabilone (a synthetic substance similar to THC) which are used to treat nausea and vomiting caused by cancer chemotherapy and to treat loss of appetite and weight loss in people with HIV/AIDS.[48, 49]

However, whether consuming cannabis in any form has therapeutic benefits that outweigh its health risks is still an open question that science has not resolved.[48] There is still considerable controversy in the scientific community around a variety of concerns: the plant species to be used; the medical conditions that can be treated, and consequently, the efficacy and safety of use; the routes of administration; the methods of preparation; the type and dosage of cannabinoids to be used; and the active molecules of interest. The results of currently completed and internationally published studies are inconclusive and often contradictory.[50] It is important to understand what is known about both the adverse health effects and the potential therapeutic benefits linked to cannabis.

For more information, visit NIDA's research on cannabis.

NIDA.NIH.gov/Research-Topics/Marijuana/NIDA-Research-Cannabis-Cannabinoids

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Even though cannabis use among adolescents remains the most prevalent form of drug use and has increased in the past decade,[16, 17] cannabis use in general has declined among adolescents in recent years.[16]

- Between 2020 and 2021, past-year cannabis use significantly declined by 6.7 percentage points.
- Between 2020 and 2021, past 30-day cannabis use also significantly declined by 3.6 percentage points, as did daily cannabis use.

Cannabis use is increasing among adults, and it is sharply increasing among young adults. Importantly, there have been marked increases in daily or near-daily use among these two age groups. However, cannabis use has declined among adolescents.

Modes of Cannabis Use

In terms of different modes of cannabis use, leaf/combustible cannabis use remains the most common mode in the U.S., but other modes are increasing in prevalence.[3] In fact, the most dramatic increases in cannabis use prevalence among U.S. adults have been found for emerging modes such as edible and vaping modes.[3, 6, 18, 19] Other modes of consumption include dabbing and drinking.[20] These emerging patterns are not limited to U.S. adults. Among young adults and adolescents, leaf/combustible cannabis use remains prevalent; however, vaping, synthetic, and edible cannabis use have become increasingly common.[3, 9]

> High potency products have emerged in the market that are frequently used with vaping devices and that have more deleterious effects on the brain, and particularly developing brains among young adults.[21]

One of the most pronounced trends in cannabis use is the marked increase in cannabis vaping among young adults in the past five years.[9] The rise in cannabis vaping is important for multiple reasons, but a primary concern associated with this increased prevalence is that high potency products have emerged in the market that are frequently used with vaping devices and that have more deleterious effects on the brain, and particularly developing brains among young adults.[21] Leaf/combustible cannabis use remains relatively common among young adults, but cannabis vaping markedly increased in 2018 and 2019, and the prevalence of cannabis vaping among U.S. young adults is now stably high, with 18.7% reporting past-year cannabis vaping and 12.4% reporting past 30-day cannabis vaping.[9]

Among adolescents, cannabis vaping, which is the most common mode aside from leaf/combustible use among adolescents, started to increase from approximately 2017 to 2020.[16] Past-year cannabis vaping among adolescents increased from 7% in 2017 to 16% in 2020.[16] However, it is important to highlight that past-year cannabis vaping among adolescents declined between 2020 and 2021 by 4.7 percentage points,[16] perhaps in relation to the COVID-19 pandemic.[23]

Disparities in Cannabis Use

For U.S. adults, the increasing prevalence of cannabis use is not occurring uniformly across the entire population. Marked disparities in cannabis use, and increases in cannabis use, have emerged among certain subgroups in recent years,[2, 24-26] and particularly males and adults who live in urban areas.[9, 22] These disparities exist for any and daily cannabis use.[2, 9] Moreover, cannabis use prevalence is markedly higher among U.S. adults who are experiencing mental health issues such as depression.[11, 25] Recent increases in cannabis use are disproportionately occurring among those who experience mental health problems.[11, 25, 27] Consequently, disparities in cannabis use according to mental health appear to be worsening over time. This disparity in cannabis use associated with mental health is especially marked in states with legalized nonmedical cannabis.[25] Depression, anxiety, and psychological distress are strongly associated with any and regular cannabis use, as well as cannabis use disorder.[11, 28-30] It is difficult to disentangle the directionality of the mental health-cannabis use relationship, but it is clear that mental health problems, such as untreated depression, are linked to emerging cannabis-related disparities.

Cannabis use is also increasing more rapidly among male, urban, and non-college student young adults,[2, 24] as well as young adults with depression, anxiety, and other psychological distress.[11, 17] More young adults are also using cannabis as a form of coping.[25]

Cannabis-related disparities also exist among adolescents. Typically, adolescent males have higher prevalence of cannabis use than females, but in 2021 females reported slightly higher cannabis use.[16] Cannabis use is also higher among adolescents who report lower socioeconomic status (SES) compared to their higher SES peers.[16, 31] Cannabis use is also higher among adolescents with mental health issues, such as depression.[17] There are minimal to no differences in past-year cannabis use across race/ethnicity among adolescents;[16] however, White adolescents tend to have higher prevalence of cannabis vaping than their non-White peers.[16]

Dual Use of Cannabis and Other Substances

Increases in cannabis use prevalence is disproportionately occurring among U.S. adults who use other substances such as nicotine and alcohol. More specifically, the rate of increase in cannabis use prevalence is steeper among U.S. adults who smoke cigarettes and those who drink alcohol.[14, 26] Dual use of cannabis and other substances, such as nicotine and/or alcohol, is common among adults and young adults,[32, 33] and particularly young adults aged 19–21.[33] Many young adults also now engage in simultaneous use of alcohol and cannabis,[33] and this co-use can potentially increase the risk of harmful consequences associated with the use of either substance.[34]

Among adolescents, cannabis use is higher among those who report other substance use such as nicotine and alcohol use.[31, 35, 36] For instance, nationally representative data show that dual use of cannabis and nicotine vaping is more common than e-cigarette use alone.[37-39] Yet, there are emerging trends among adolescents that demonstrate unique patterns of cannabis use and the co-use of nicotine or alcohol. Among adolescents who report lifetime cannabis use, the percentage who had never smoked a combustible cigarette grew from 11% in 2000 to 58% in 2020,[40] indicating cannabis use among adolescents who smoke cigarettes (which historically was common) has substantially declined.[40] Moreover, simultaneous use of alcohol and cannabis has declined among U.S. adolescents, with historical declines in alcohol use being the driving force behind this trend.[41] The prevalence of adolescents who reported past-year cannabis use *without* past-year alcohol use more than doubled in the last decade,[41] indicating cannabis use has increased over time despite declines in alcohol use among adolescents.

> Promoting cumulative protective factors can help adolescents and young adults cope with stress, thereby reducing the risk for cannabis vaping.

Avenues for Prevention and Treatment

Prevention of cannabis vaping among young adults and adolescents should consider the role of risk and protective factors. Protective factors are internal and external processes that increase the likelihood of resilience by contributing to a dynamic process that allows for successful adaptation to challenges or disturbances.[42, 43] Youth with more protective factors in their life are less likely to report cannabis vaping, even after adjusting for other substance use.[44] Because cumulative protective factors are associated with vaping outcomes, prevention programs should follow evidence-based practices that promote healthy development by building multiple assets, which creates an environment where youth thrive.[44] Promoting cumulative protective factors can help adolescents and young adults cope with stress, thereby reducing the risk for cannabis vaping.

A clear pattern in recent years is that cannabis *vaping*, especially among young adults and adolescents, is increasing rapidly and remains high in prevalence. With an ever-changing market of cannabis use modes that has included a rapid expansion of vaping-related products, cannabis vaping should be a central focus for prevention and treatment efforts. Vaping in general (i.e., nicotine or cannabis vaping) is markedly high among young adults and adolescents.[45, 46] Moreover, the co-use of nicotine and cannabis vaping is especially high, and this will likely remain a prevalent form of substance co-use among young adults and adolescents. As a result, treatment of cannabis use disorder should consider the role of other substance use, such as alcohol among adults and young adults, as well as nicotine use, and specifically nicotine vaping, among adolescents and young adults in treatment for CUD. Treatment of alcohol use disorder should also consider the context of increasing cannabis use, and how the co-use of cannabis and alcohol can influence the recovery process.

Finally, both prevention and treatment of cannabis use should continue to integrate the role of mental health, as trends indicate mental health plays a role in cannabis use and current trends in cannabis use.

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Conclusion

There are several key takeaways about cannabis use trends and patterns. First, cannabis use prevalence is increasing among U.S. adults and young adults, while there are moderate declines among adolescents in recent years. Second, there are emerging modes of use that are dramatically increasing, such as cannabis vaping. This has especially been the case among young adults. This increase in cannabis vaping is important not only due to the high concentration levels of THC in vaping products, but also because of e-cigarette or vaping-product use associated lung injury, which has been linked to cannabis vaping due to chemicals included in some products.[46, 47] Third, there are disparities in cannabis use and increases in cannabis use, and this is particularly the case for disparities linked to mental health. Finally, the trends and patterns in cannabis use outlined here indicate that more harmful patterns of cannabis use (i.e., frequent use, polysubstance use, using to cope) are increasing, especially among young adults. The co-use of cannabis and other substances is prevalent across multiple age groups; additionally, among adults and young adults, cannabis is most prevalent and increasing most rapidly among those who use nicotine and/or alcohol.

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