



Full length article

The association between regular marijuana use and adult mental health outcomes



Katarina Guttmannova^{c,*}, Rick Kosterman^a, Helene R. White^b, Jennifer A. Bailey^a,
Jungeun Olivia Lee^d, Marina Epstein^a, Tiffany M. Jones^a, J. David Hawkins^a

^a Social Development Research Group, School of Social Work, University of Washington, 9725 3rd Ave NE, Suite 401, Seattle, WA 98115, USA

^b Center of Alcohol Studies, Rutgers – The State University of New Jersey, 607 Allison Rd., Piscataway, NJ 08854, USA

^c Center for the Study of Health and Risk Behaviors, Department of Psychiatry and Behavioral Sciences, School of Medicine, University of Washington, Box 354944, Seattle, WA 98195-4944, USA

^d School of Social Work, University of Southern California, 1150 S. Olive Street, Suite 1400, Los Angeles, CA 90015, USA

ARTICLE INFO

Keywords:

Regular marijuana use
Cannabis
Persistence
Adult mental health

ABSTRACT

Objective: The present study is a prospective examination of the relationship between regular marijuana use from adolescence through young adulthood and mental health outcomes at age 33.

Methods: Data came from a gender-balanced, ethnically diverse longitudinal panel of 808 participants from Seattle, Washington. Outcomes included symptom counts for six mental health disorders. Regular marijuana use was tracked during adolescence and young adulthood. Regression analyses controlled for demographics and early environment, behaviors, and individual risk factors.

Results: Nonusers of marijuana reported fewer symptoms of alcohol use disorder, nicotine dependence, and generalized anxiety disorder than any category of marijuana users. More persistent regular marijuana use in young adulthood was positively related to more symptoms of cannabis use disorder, alcohol use disorder, and nicotine dependence at age 33.

Conclusions: Findings highlight the importance of avoiding regular marijuana use, especially chronic use in young adulthood. Comprehensive prevention and intervention efforts focusing on marijuana and other substance use might be particularly important in the context of recent legalization of recreational marijuana use in Washington and other U.S. states.

1. Introduction

Marijuana is the third most frequently used substance—after tobacco and alcohol—that causes addiction (Caulkins, 2016; Compton et al., 2004). However, evidence from prospective studies regarding the long-term effects of regular marijuana use on other psychiatric disorders remains limited and mixed. The present study uses data from a longitudinal project to examine the relationship between regular marijuana use from age 14–30 and mental health outcomes at age 33.

There is some evidence that heavy and persistent marijuana use is associated with negative long-term health consequences, including cognitive deficits and physical and mental health problems (for reviews, see Hall, 2015; Volkow et al., 2014). These associations are most salient for substance use disorders, with more frequent marijuana use predicting higher likelihood and more symptoms of drug use disorder (e.g.,

Hall and Degenhardt, 2009). However, reports of the association between marijuana use and other mental health disorders, such as depression and anxiety, are more mixed (for reviews, see Crippa et al., 2009; Hall, 2015; Lev-Ran et al., 2014; Moore et al., 2007; Yurasek and Hadley, 2016). Specifically, while there is some evidence that heavy (i.e., at least weekly) marijuana use predicts increased likelihood of developing depression when compared to occasional use and nonuse (Lev-Ran et al., 2014), the mechanisms that account for this association are unclear and longitudinal studies that account for confounding factors are needed (Crippa et al., 2009; Hall, 2015; Lev-Ran et al., 2014; Yurasek and Hadley, 2016).

Adolescent marijuana use has a special prominence in studies examining the adverse effects of marijuana use. Regular marijuana use by adolescents has been associated with comorbid use of other substances and an increased risk of later drug abuse and dependence (e.g., Chen

* Corresponding author at: University of Washington, Department of Psychiatry and Behavioral Sciences, School of Medicine, Center for the Study of Health and Risk Behaviors, 1100 NE 45th St, Suite 300, Box 354944, Seattle, WA 98105, USA.

E-mail addresses: kg27@uw.edu (K. Guttmannova), rickk@uw.edu (R. Kosterman), hewhite@smithers.rutgers.edu (H.R. White), jabailey@uw.edu (J.A. Bailey), lee363@usc.edu (J.O. Lee), marinaep@uw.edu (M. Epstein), tjones03@uw.edu (T.M. Jones), jdh@uw.edu (J.D. Hawkins).

<http://dx.doi.org/10.1016/j.drugalcdep.2017.06.016>

Received 10 October 2016; Received in revised form 10 June 2017; Accepted 11 June 2017

Available online 18 July 2017

0376-8716/ © 2017 Elsevier B.V. All rights reserved.

et al., 2005; Perkonig et al., 2008; Winters and Lee, 2008). Whereas this association might be attributable to the persistence of use or prolonged exposure to marijuana, some researchers have hypothesized that this association may be due to the drug's effects on the developing brain and neurocognitive functioning of adolescents (for reviews see, e.g., Jacobus et al., 2009; Lisdahl et al., 2014). The association between adolescent marijuana use and other outcomes, including lower academic achievement and educational attainment (e.g., Lynskey and Hall, 2000; Lynskey et al., 2003; Maggs et al., 2015; Silins et al., 2015; Stiby et al., 2015), executive functioning (e.g., Fontes et al., 2011), and interference with the successful transition into adulthood (Brook et al., 2002; Fergusson and Boden, 2008; Lynskey and Hall, 2000; Scholes-Balog et al., 2016), has also been reported. However, there is some recent evidence from twin studies that suggests the association between adolescent marijuana use and deficits in cognitive functioning and academic outcomes may be due to common risk factors, such as other substance use (Mokrysz et al., 2016) and family environment (Jackson et al., 2016).

Indeed, many of the existing studies have been limited in their ability to rule out alternate explanations for the associations between marijuana use and negative outcomes because they lack data on pre-marijuana use functioning or other relevant controls that can confound the relationship between marijuana use and later outcomes. Prospective indicators of early psychopathology should be controlled in models assessing the link between subsequent marijuana use and later psychopathology to account for preexisting vulnerability and selection effects (Griffith-Lending et al., 2013; Lev-Ran et al., 2014). In fact, some studies have found that once common risk factors such as childhood behavior problems, socioeconomic disadvantage, life stressors, and deviant peers were accounted for, there was no significant association between marijuana use and later psychopathology, such as depression (e.g., Bechtold et al., 2015; Manrique-Garcia et al., 2012).

In addition, there is considerable variability in individual patterns of marijuana use over the course of adolescence and adulthood. This variability pertains to both timing and frequency of use. Many users initiate in adolescence, and some progress from occasional to persistent regular use (Substance Abuse and Mental Health Services Administration, 2013), but the associations between different developmental patterns of regular marijuana use over time and mental health outcomes are not well understood (Bechtold et al., 2015). A recent examination of trajectories of marijuana use from adolescence into adulthood using the present sample examined bivariate relationships between four identified patterns of marijuana users (chronic, adolescence-limited, late-onset, and nonusers) and a host of correlates at different developmental periods (Epstein et al., 2015). That study found mean differences in mental health outcomes at age 33; in general, chronic marijuana users had more symptoms of cannabis, alcohol, and tobacco use disorders than other types of users, and more symptoms of anxiety disorder than nonusers of marijuana. However, these analyses were by design descriptive and did not control for potential confounders beyond demographics, thus limiting interpretation of the unique role of marijuana use on subsequent outcomes.

Research has suggested that it may be regular use—i.e., weekly or more frequent use in adolescence (e.g., Silins et al., 2015) and 4+ times per week in adulthood (e.g., Cerdá et al., 2016) – and its persistence over time rather than occasional use that relates more consistently to negative outcomes (Cerdá et al., 2016; Meier et al., 2012). Over the past two decades, the majority of U.S. states loosened their laws related to marijuana and legalized medical marijuana use (e.g., Cambron et al., 2017), and eight states have recently (since 2012) also passed recreational marijuana laws (RML) legalizing recreational marijuana use for adults. Recent nationwide studies have reported that medical marijuana law (MML) implementation was associated with increases in perceived availability of marijuana and the prevalence of marijuana use among adults in all age groups (Mauro et al., 2017a). MML implementation has also predicted decreases in perceived harm from regular use of

marijuana among adults (e.g., Mauro et al., 2017b). While comprehensive studies evaluating the effect of RML implementation on marijuana-related risk factors and adult use are only beginning, it is possible that the continued loosening of the legal and normative context related to recreational marijuana may result in increases in the prevalence of any (or non-regular) use as well as regular use and its persistence over time among adults (e.g., Caulkins, 2017; Caulkins et al., 2012; Pacula et al., 2014). Thus, understanding the relationship between marijuana use (i.e., its different patterns, such as non-regular compared to regular marijuana use, and its persistence in adulthood) and negative consequences, such as mental health problems, is of urgent public health importance.

Although previous studies that have examined mental health outcomes of long-term marijuana use have focused on empirically derived, probabilistic patterns of use over time (e.g., Bechtold et al., 2015; Epstein et al., 2015), they have not focused specifically on *regular* use defined by specific a priori criteria. Furthermore, studies of the effects of *persistent regular* marijuana use (defined here as a 5-level variable distinguishing between no use, no regular use, and regular use in 1 through 3 or more assessment points), have been limited to neuropsychological decline (e.g., Meier et al., 2012) and economic and social problems (Cerdá et al., 2016) later in adulthood.

This study distinguished between adolescent and adult onset of regular use and its persistence, as well as the non-regular use of marijuana when examining the associations between marijuana use and mental health outcomes. Our research questions were: (1) How do specific patterns of adolescent and young adult regular marijuana use relate to mental health outcomes at age 33? and (2) Is there a relationship between persistence of regular marijuana use in young adulthood and mental health outcomes at age 33? We hypothesized that adolescent onset of regular marijuana use that persists into adulthood will be associated with the worst mental health outcomes at age 33, and that adult regular users will have worse outcomes when compared to those who do not use marijuana regularly and those who abstain from use. Furthermore, we hypothesized that greater persistence of regular marijuana use in young adulthood will predict worse mental health outcomes at age 33. In order to reduce the potential for reversed causation, we included childhood internalizing and externalizing behavior problems as markers of early psychopathology among the control variables. All models also included early behavioral inhibition and disinhibition as markers of the propensity to engage in risky behavior, as well as demographic controls and socioeconomic disadvantage. Models that examined substance use outcomes also controlled for adolescent use of that substance.

2. Methods

2.1. Sample

Data came from The Seattle Social Development Project, a longitudinal study that followed 808 youth from elementary school to adulthood to understand prosocial and antisocial development across the lifespan. In the fall of 1985, all 1053 fifth-grade students in 18 Seattle public elementary schools serving high-crime areas were invited to participate in the study; 808 (77%) of the eligible students and their parents consented to participate in the longitudinal study. Consenting participants were assessed in the fall of 1985 and spring of 1986. Thereafter, they were surveyed annually through 10th grade, again in the 12th grade, and then every 3 years until age 33. The annual retention rate was relatively high; 92% (n = 721) of those still living (784 participants) completed the age 33 assessment in 2008. There were few differences between those who participated at the age 33 assessment and those who did not. Those who participated were more likely to be female, less likely to be eligible for free or reduced price lunch in childhood, less likely to be Black, and reported lower levels of childhood internalizing and externalizing behavior problems. These

Download English Version:

<https://daneshyari.com/en/article/5119937>

Download Persian Version:

<https://daneshyari.com/article/5119937>

[Daneshyari.com](https://daneshyari.com)