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Medical Marijuana Laws and Teen Marijuana Use

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These last couple years, the amount of attention that's been given to medical marijuana has been huge. And when I've done focus groups with high school students in states where medical marijuana is legal, they say "Well, if it's called medicine and it's given to patients by caregivers, then that's really the wrong message for us as high school students."

—R. Gil Kerlikowske, Former Director of the Office of National Drug Control Policy

Medical marijuana is popular with the general public. A recent Gallup poll found that 70 percent of Americans say they favor making marijuana legally available for doctors to prescribe in order to reduce pain and suffering (Mendes 2010).

Given this level of support, it could be viewed as surprising that approximately half of the states still have not legalized medical marijuana. Opponents of medical marijuana, however, have employed a number of arguments, several of which focus on marijuana use by teenagers. For instance, Montana state senator Jeff Essmann was quoted in 2011 as saying, "The number one goal is to reduce access and availability to the young people of this state that are being sent an incorrect message that this is an acceptable product for them to be using" (Florio 2011).

In an effort to combat youth marijuana use, John Walsh, the U.S. Attorney for Colorado, recently sent letters to medical marijuana dispensaries located within 1,000 feet of schools asking them to relocate or close. Walsh cited figures from the Colorado Department of Education "showing" that drug-related school suspensions, expulsions, and law enforcement referrals increased dramatically from 2008 through 2011 (Ingold 2012), and he was quoted as saying that many school districts in Colorado "have seen a dramatic increase in student abuse of marijuana, with resulting student suspensions and discipline" (McCrimmon and Jones 2012). Melinda Haag, the U.S. Attorney for the Northern California district, has targeted dispensaries located within 1,000 feet of schools, parks, and playgrounds, arguing that marijuana serves as a gateway drug and that, because "brains are not fully developed until your mid 20s," youth are particularly susceptible to its effects (Brooks 2012). Local law enforcement authorities have also asserted a connection between medical marijuana legalization and marijuana use by teenagers. For instance, Tim O'Connell, the Deputy Police Chief in Billings, Montana, was quoted by Uken (2012) as saying, "We are definitely seeing an increase in the schools, and it's definitely related to bad legislation. . . . We can thank the passage of legalizing marijuana."

Editor, Jeffrey Miron, Harvard University and Cato Institute

Despite these strong concerns and claims about the impact of medical marijuana laws (MMLs) on teen marijuana use, only two previous studies have examined the relationship between medical marijuana laws and marijuana use among minors. Drawing on data from the National Survey on Drug Use and Health (NSDUH) for the years 2002 through 2007, Wall et al. (2011) found that rates of marijuana use among 12- through 17-year-olds were higher in states that had legalized medical marijuana than in states that had not, but noted that "in the years prior to MML passage, there was already a higher prevalence of use and lower perceptions of risk" in states that had legalized medical marijuana (p. 714). Drawing on NSDUH data for the years 2002 through 2009, Harper et al. (2012) found that legalization was associated with a small *reduction* in the rate of marijuana use among 12- through 17-year-olds.

Our research examines the relationship between MMLs and marijuana consumption among high school students, using data from the national and state Youth Risky Behavior Surveys (YRBS) for the years 1993 through 2011. These data cover a period when 16 states, including Alaska, California, Maine, Oregon, and Washington, legalized medical marijuana. The NSDUH did not provide information on substance use at the state level prior to 1999. As a consequence, neither Wall et al. (2011) nor Harper et al. (2012) had information on substance use among 12- through 17-year-olds in these states before legalization occurred.

Another advantage to the YRBS data is that they contain information on the behavior and characteristics of individuals, allowing us to examine the relationship between MMLs and marijuana use by age and gender. With two exceptions (Khatapoush and Hallfors 2004; Cerdá et al. 2012), previous studies in this area have relied on aggregate data, despite the fact that the choice to smoke marijuana is made at the individual level. Finally, the YRBS data contain information on marijuana use and availability at school. These outcomes are of special interest given the current efforts in California and Colorado to close dispensaries operating near schools.

Our results suggest that the legalization of medical marijuana is not accompanied by increases in marijuana use among high school students. Specifically, our preferred estimates suggest that MMLs cause small (but statistically insignificant) reductions in marijuana use by high school students. The implied impact of legalizing medical marijuana on the probability of use in the past 30 days is no larger than 0.8 percentage points.

In comparison, based on nationally representative data from Monitoring the Future, marijuana use in the past 30 days among 12th graders increased by 4.3 percentage points from 2006 to 2011 (Johnston et al. 2011); based on national YRBS data, marijuana use among high school students increased by 3.4 percentage points from 2007 to 2011. One potential explanation for this pattern of results is that legalization allows suppliers to sell to adults with some assurance of not being prosecuted, while selling marijuana to a minor is still a risky proposition even with the legalization of medical marijuana.

In addition to analyzing data from the YRBS, we conduct two complementary analyses. The first uses data from the National Longitudinal Survey of Youth 1997 (NLSY97). The behavior of NLSY97 respondents can be observed over time, allowing for the estimation of models that control for unobserved heterogeneity at the individual level. The second uses data from the Treatment Episode Data Set (TEDS), which contains information from drug treatment providers on patients who reported using marijuana before being admitted. These analyses provide further evidence that youth marijuana consumption does not increase with the legalization of medical marijuana.

Although our estimates do not lend support to the often-voiced argument that legalization leads to increased consumption of marijuana among teenagers, it is important to note that our study has at least one limitation: the YRBS data are only available through 2011 and the TEDS data are only available through 2009. In the past few years, several states have seen dramatic changes to the market for medical marijuana. For instance, as a result of Drug Enforcement Agency raids, the number of providers in Montana has plummeted. As future waves of the YRBS are released, researchers will be in a position to update our estimates and explore whether these changes have affected the behavior of teenagers.

NOTE

This Research Brief is based on D. Mark Anderson, Benjamin Hansen, and Daniel I. Rees (2014), http://www.nber.org/papers/w20332.

All works cited are provided therein.