Do State Liberalized Marijuana Policies Affect Adolescent Marijuana and Alcohol Use?
A State-Level Analysis

A Dissertation Presented to
the Faculty of The Heller School for Social Policy and Management Brandeis University
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It is well documented that substance use is a serious health problem in the U.S., contributing to more morbidity and mortality than any other preventable health disorder. Adolescent substance use is currently at highly concerning levels. Alcohol and marijuana are the most used substances in this cohort.

Any change in the legality of marijuana or state-level marijuana policy (MP) may affect the prevalence of marijuana use in adolescents, as well as alcohol and marijuana and alcohol co-use. Since 1972, eighteen states have passed varying policies marijuana decriminalizing small amounts of marijuana for recreational use. Since 1996, twenty-three states and the District of Columbia have implemented policies that effectively allow patients to use marijuana for medicinal purposes. Since 2012, voters in four states as well as in the District of Columbia (DC) passed ballot initiatives to legalize small amounts of marijuana for recreational use.

This study evaluates varying intrapersonal, interpersonal, and environmental factors that influence adolescent substance use behaviors using the Social Ecologic, Social Cognitive, Economic, and Gateway Theories. This quasi-experiment study uses state-level, Youth Risk Behavior Surveillance System (YRBS) data to employ a 45-state (group), pseudo-panel design with nonequivalent control groups to assess adolescent marijuana, alcohol, and co-use amidst changes in varying state-level Marijuana Policies (MPs) from 1991 to 2011. State-level MP variables were constructed and pooled with individual level YRBS data. A series of logistic regression models were conducted to assess associations between adolescent substance use and varying MP(s) and medical marijuana policy components.

This study’s analyses demonstrate that: (1) states with MP(s) have higher rates of adolescent marijuana use, and (2) varying MP(s) and more liberal medical marijuana components are associated with: (a) greater probabilities of adolescents reporting marijuana use, heavy marijuana use, and co-use, and (b) a decreased probability of alcohol use in comparison to states without MP(s) and more liberal medical marijuana policy components. These findings provide new insight on how MP(s) may be affecting adolescent substance use. It is critically important that states with MP(s) and those proposing MPs prepare for unintended consequences of these policies in regards to adolescent public health and public safety.
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