

Traffic fatalities decline in states with medical marijuana laws

December 20 2016

States that enacted medical marijuana laws, on average, experienced reductions in traffic fatalities, according to a study by researchers at Columbia University's Mailman School of Public Health. Overall, states that passed medical marijuana laws saw an 11 percent reduction in traffic fatalities, on average, after enacting the laws, and had 26 percent lower rates of traffic fatalities compared with states without the laws. The findings are published online in the *American Journal of Public Health*.

Reductions in [traffic fatalities](#) greatly impacted those between the ages of 15 and 44 and were especially striking among those aged 25 to 44 years, a group representing a high percentage of those registered patients for [medical marijuana](#) use.

Specifically, the researchers observed an 11 percent reduction of among those aged 15 to 24 years, 12 percent for ages 25 to 44, and 9 percent for those 45 years and older. Operational dispensaries were also associated with a significant reduction in traffic fatalities in those aged 25 to 44 years at 5 percent.

Lacking was strong evidence suggesting reductions among those aged 45 years and older, which is also a group overrepresented in the population of patients registered in state medical marijuana programs. "This finding suggests that the mechanisms by which [medical marijuana laws](#) reduce traffic fatalities mostly operate in those younger adults, a group also frequently involved in alcohol-related traffic fatalities," said Julian

Santaella-Tenorio, a doctoral student in Epidemiology at the Mailman School of Public Health. In 2004 and 2013, 47 percent of fatally injured drivers with a blood alcohol content of 0.08 or greater were 25 to 44 years old.

The researchers based their findings on data for 1985-2014 from the Fatality Analysis Reporting System, a nationwide census of traffic fatalities information maintained by the National Highway Traffic Safety Administration. The association between medical [marijuana laws](#) and traffic fatalities for drivers, passengers, cyclists, and pedestrians was examined for each state enacting the laws. They also evaluated the link between marijuana dispensaries and traffic fatalities. Overall, a total of 1.22 million deaths were attributed to traffic crashes occurring in the 50 states during the study period.

Not all states with medical marijuana laws experienced reductions in traffic [fatality rates](#), and a few states actually experienced increases. In California, after an initial immediate reduction of 16 percent in traffic fatalities and in New Mexico, after an immediate post-law reduction of 17.5 percent, the laws were actually associated with gradual increases in fatality rates. "These findings provide evidence of the heterogeneity of medical marijuana laws and indicate the need for further research on the particularities of implementing the laws at the local level. It also indicates an interaction of medical marijuana laws with other aspects, such as stronger police enforcement, that may influence traffic fatality rates," noted Santaella-Tenorio.

"It is also possible that states with medical marijuana laws and lower traffic fatality rates may be related to lower levels of alcohol-impaired driving behavior in these states," noted Silvia Martins, MD, PhD, associate professor at the Mailman School and senior author. "We found evidence that [states](#) with the marijuana laws in place compared with those which did not, reported, on average, lower rates of drivers

endorsing driving after having too many drinks. We can also point to other characteristics such as the strength of [public health](#) laws related to driving, infrastructure characteristics, or the quality of health care systems, as a partial explanation for these findings."

"The evidence linking medical marijuana laws and traffic fatalities lays the groundwork for future studies on specific mechanisms," said Santaella-Tenorio. "We also expect another area of study will be the association between the laws and nonfatal traffic injuries."

Provided by Columbia University's Mailman School of Public Health

Citation: Traffic fatalities decline in states with medical marijuana laws (2016, December 20) retrieved 3 May 2024 from

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