

Concurrent use of alcohol and marijuana among drivers increases risk of fatal crashes

June 13, 2017

Use of marijuana in combination with alcohol by drivers is especially dangerous, according to a latest study conducted at Columbia University's Mailman School of Public Health. Drivers who used alcohol, marijuana, or both were significantly more likely to be responsible for causing fatal two-vehicle crashes compared to drivers who were involved in the same crashes but used neither of the substances. The findings are published in the journal, *Annals of Epidemiology*.

"The risk of crash initiation from concurrent use of alcohol and marijuana among drivers increases by more than fivefold when compared with drivers who used neither of the substances," said Guohua Li, MD, DrPH, professor of Epidemiology at the Mailman School of Public Health. The study also indicates that when used in isolation, alcohol and marijuana increase crash culpability by 437 percent and 62 percent, respectively.

The researchers analyzed data for 14,742 fatal two-vehicle crashes between 1993 and 2014 recorded in the Fatality Analysis Reporting System, a database containing information on crashes that resulted in at least one fatality within 30 days and that occurred on U.S. public roads. Included in the study were 14,742 drivers who were responsible for causing the fatal crashes and 14,742 non-culpable drivers who were involved in the same crashes. Crashes involving single vehicles, more than two vehicles, commercial trucks, and two-vehicle crashes in which both drivers were responsible were excluded from the analysis.

Drivers who were responsible for the crashes were significantly more likely than non-culpable drivers to test positive for alcohol (28 percent vs. 10 percent), marijuana (10 percent vs. 6 percent), and both alcohol and marijuana (4 percent vs. 1 percent). Drivers who tested positive for alcohol, marijuana, or both were more likely than those who tested negative to be male, aged 25 to 44 years, and to have had a positive crash and violation history within the previous three years.

The three most common driving errors that led to these fatal crashes were

failure to keep in proper lane (43 percent), failure to yield right of way (22 percent), and speeding (21 percent).

Since the mid-1990s, the prevalence of marijuana detected in fatally injured drivers has increased markedly. During the same time period, 28 states and the District of Columbia have enacted legislation to decriminalize marijuana for medical use, including eight states that have further decriminalized possession of small amounts for adult recreational use. Although toxicological testing data indicate a continuing increase in marijuana use among drivers, a positive test does not necessarily infer marijuana-induced impairment.

"While alcohol-impaired driving remains a leading cause of traffic fatalities in the United States, driving under the influence of marijuana and other drugs has become more prevalent in the past two decades," said Dr. Li, who is also the founding director of Columbia University's Center for Injury Epidemiology and Prevention. "Countermeasures targeting both drunk driving and drugged driving are needed to improve traffic safety."

Source:

Columbia University's Mailman School of Public Health
