Further evidence found for causal links between cannabis and schizophrenia

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Credit: University of Bristol

People who have a greater risk of developing schizophrenia are more likely to try cannabis, according to new research, which also found a causal link between trying the drug and an increased risk of the condition.

The study from the University of Bristol comes on the back of public

health warnings issued earlier this year by scientists who voiced concerns about the increased risk of psychosis for vulnerable people who use the drug. Those warnings followed evidence to suggest an increased use of particularly high potency strains of cannabis among young people. However, experts cautioned that the risks should not be overstated given the need for greater research into links between mental health and illicit drugs.

This latest study from Bristol's School of Experimental Psychology sheds fresh light on the issue, while still cautioning that the results ought to be considered in the wider context of other contributing factors of mental health.

While some evidence was found to support hypotheses that cannabis use is a contributory factor in increasing the risk of schizophrenia, the researchers were surprised to find stronger evidence that the opposite was also likely. This adds weight to the idea that the drug may be used as a form of self-medication.

"The evidence suggested that schizophrenia risk predicts the likelihood of trying cannabis," said Dr Suzi Gage, Research Associate with the MRC Integrative Epidemiology Unit. "However, the relationship could operate in both directions. Our results don't really allow us to accurately predict the size of the effect - they're more about providing evidence that the relationship is actually causal, rather than the result of confounding or common risk factors."

The study used Mendelian Randomization (MR) techniques to examine publicly available data from genome-wide association studies. MR is a form of instrumental variable analysis, using genetic variants that predict either cannabis use risk, or risk of developing schizophrenia.

MR was used as an alternative to traditional observational epidemiology

in an attempt to account for other variants that may affect the association, given that people who choose to use cannabis are likely to be different from those who don't in lots of other ways.

Dr Gage added: "Our results use a novel method to attempt to untangle the association between cannabis and schizophrenia. While we find stronger evidence that schizophrenia risk predicts cannabis use, rather than the other way round, it doesn't rule out a causal risk of cannabis use on schizophrenia. What will be interesting is digging deeper in to the potential sub-populations of cannabis users who may be at greater risk, and getting a better handle on the impact of heavy cannabis use.

"In this study we could only look at cannabis initiation. What would really help progress this research is to use genetic variants that predict heaviness of cannabis use, as it seems that heavy cannabis use is most strongly associated with risk of schizophrenia. Once genetic variants are identified that predict heaviness of cannabis use we'll be able to do this."

More information: S. H. Gage et al. Assessing causality in associations between cannabis use and schizophrenia risk: a two-sample Mendelian randomization study, *Psychological Medicine* (2016). DOI: 10.1017/S0033291716003172

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