

# Psychiatric comorbidity and cognitive dysfunction in primarily Ketamine users- a closer look

## *Executive summary*

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The objective of this study was to evaluate the long-term effects of ketamine on both the cognition and psychological well-being of youths in Hong Kong.

A total of 300 participants were recruited for this study from December 2009 to December 2011. Participants were divided into three groups, each comprising 100 participants: primarily ketamine users, poly-ketamine users, and health controls. Psychiatric assessments included screening with self-rating questionnaires and face-to-face interviews. All of the participants completed a detailed cognitive battery that covered general intelligence, verbal memory, visual memory, executive function, motor speed, and language.

Participants in the primarily ketamine group predominantly used ketamine, whereas participants in the poly-ketamine group also frequently used cocaine and ice. The most common psychiatric disorder in both ketamine groups was depressive disorder. Participants in the ketamine groups scored poorly on most of the cognitive tests administered compared to the health control group in univariate analyses. After adjustments for age, sex, education, and BDI scores, the verbal and visual memory of participants remained impaired in both ketamine groups compared to the health control group. Recent use of ketamine in the previous month was independently related to memory impairment in the primarily ketamine group. The subgroup analyses of primarily ketamine users revealed significant impairment of verbal memory, visual memory, motor speed, and some executive function indexes in current users, but not in ex-ketamine users. This suggests a reversibility of the cognitive influence of ketamine. Moreover, current ketamine users had a higher BDI score than the other two groups. However, both ex- and current poly-ketamine users showed similar memory impairments compared to the health control group.

In conclusion, ketamine use alone and its use in combination with other psychotropic drugs are associated with deficits in memory and executive function. The observed memory impairment of ketamine users is mainly relevant in relation to recent ketamine use, with current primarily ketamine users presenting with more severe memory problems than poly-ketamine users. However, cognitive impairment improved in primarily ketamine users after abstinence from ketamine use, which was not the case with poly-ketamine users. In addition to cognitive function deficits, more than half of ketamine users suffer from depressive disorder. This study's findings are helpful in treating ketamine abuse because they reinforce the benefits of abstinence from drug use. An additional investigation that includes a longitudinal study is required to determine the reversibility of the effects of ketamine because the mechanism of this reversibility remains unclear.