

## **ABSTRACT**

**Background:** Psychotropic substance misuse is a rapidly growing problem among young people in Hong Kong. Ketamine has been the most commonly abused substance among the young people in recent years. However, information on the occurrence of substance use disorders and comorbid mental disorders among community-dwelling young ketamine users who are not receiving psychiatric service is limited.

**Objectives:** (1) To describe the demographic characteristics and pattern of ketamine use among young people receiving NGO service for substance use. (2) To examine the frequency of comorbid mental disorders in the young ketamine users. (3) To examine the severity of depressive and anxiety symptoms in the young ketamine users. (4) To explore the clinical correlates of psychiatric comorbidities in the young ketamine users.

**Hypotheses:** (1) Ketamine users with dependence have more psychiatric comorbidities than those with ketamine abuse only. (2) Polydrug ketamine users have more psychiatric comorbidities than those with pure ketamine abuse. (3) Severity of depressive symptoms correlated with the reported dose of ketamine consumption.

**Methods:** This cross-sectional study examined a group of 120 (age range: 14–24 years) ketamine users recruited from four NGOs' outreach teams. The subjects were assessed by a multi-disciplinary outreach clinical team that accepted referrals from social workers of the NGOs which provided service for substance use problems. Subjects

completed both self-report instruments and face-to-face interviews with experienced psychiatrists. The self-report assessment covered types and frequency of substance use, the Beck Depression Inventory (BDI) and Hospital Anxiety and Depression Scale (HADS). Life time history of substance use disorder (SUD) and other mental disorders were assessed by using the Chinese version of the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

**Result:** Most of the subjects (91.6%) met the criteria of substance use disorders and the majority of them were polydrug ketamine users (79.2%). Cocaine (53.3%) and methamphetamines (39.2%) were the two most commonly abused substances in addition to ketamine. 43.3% of subjects were diagnosed to have other mental disorders including substance-induced psychotic disorder (19.2%), substance-induced mood disorder (9.2%), major depressive disorder (18.3%) and anxiety disorders (11.7%). 73.3% of the subjects were found to have mild to severe depression as screened by the Beck Depression Inventory. Depressive symptom scores correlated positively with the frequency and reported amount of ketamine used per week. Ketamine dependence (versus ketamine abuse), polydrug ketamine abuse and parental mental illness increased the risk of comorbid mental disorders among subjects with SUD.

**Conclusions:** Psychiatric co-morbidities and depressive symptoms were common in

young ketamine users attending a non-psychiatric substance use service in the community. Psychiatric morbidity could be screened via a collaborative network involving NGO workers and outreach psychiatrists.

**Keywords:** ketamine; substance abuse disorder; comorbidity