# EDITORIAL

# 'Legal highs' and other 'club drugs': why the song and dance?

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**Summary** Patterns of drug use are changing, with an increase in the use of a new group of psychoactive substances known as 'club drugs'. Comprising both legal and illegal drugs, many club drugs can be purchased online, increasing their availability. The harmful consequences are now emerging and include severe affective and psychotic symptoms as well as physical symptoms such as ketamine-induced ulcerative cystitis. Psychiatrists need to consider club drugs as a precipitating factor for psychiatric presentation. This editorial will describe the more common substances and their effects.

**Declaration of interest** None.

With a new legal psychoactive substance being detected almost every week,[1] there has been growing concern from clinicians and policy makers about the physical and psychiatric harms of 'club drugs'.[2–4] Club drugs are psychoactive substances predominately used at dance venues, festivals and house parties which consist of established illegal drugs (e.g. ketamine, MDMA (3,4-methylenedioxy-N-methamphetamine)), currently legal drugs (so-called 'legal highs', for example Benzo Fury, NRG-3) and drugs which have been banned after a period of legal sale (e.g. mephedrone, methoxetamine).

One in five 16- to 24-year-olds are estimated to have used an illicit drug in the past year and one in ten have used an illicit drug in the past month.[5] The most commonly consumed substances are cannabis, powder cocaine, MDMA and mephedrone. Although use of MDMA and, more recently, cocaine is falling, other club drug use is increasing in young people. It is estimated that 220 000 16- to 24-year-olds used mephedrone and 117 000 used ketamine in the past year.[5]

Online purchasing of club drugs, with the promise of next-day postal delivery, has rapidly developed as a method of sale. The number of European online distributors has expanded from 314 sites in 2010 to 690 in 2011.[1] Promoted online as legal and safe, it has been suggested that club drugs may be attracting a younger, possibly drug-naive audience.

Regulators fighting manufactures and distributors of legal high substances has turned into a 'cat and mouse' game. Following the ban of a substance, an alternative chemical is rapidly marketed, often with only minor changes to the chemical structure. This has led to much debate about the best way to regulate this market and subsequently enforce the law. The Advisory Council on Misuse of Drugs (ACMD) has the unenviable role of advising UK government on the potential risks of new psychoactive substances during an unprecedented expansion in available compounds. Suggested approaches include the current UK temporary class drug order, a 12 months' ban during which risk is assessed (Police Reform and Social Responsibility Act 2011). Other proposals include consumer legislation targeting online drug distributors,[6] an 'Analogue Act' similar to the US Controlled Substances Analogue Enforcement Act 1986, in which groups of similar chemicals come under the same legislation,[7] or a full review of the classification system.

## Who uses club drugs?

The profile of a club drug user is still emerging, but appears to be different from the common stereotype of a 'drug user'. Early evidence suggests that club drug users are younger, more likely to be working and better socially networked.[8] There appear to be at least three overlapping groups including students, those who identify themselves as 'clubbers' and lesbian, gay, bisexual and transgender (LGBT) communities.[9] There is also a small group of individuals, often self-titled 'psychonauts' (not to be confused with the video game), who experiment with new drugs as they emerge and provide detailed, 'real-time' online narratives of their experiences to inform other users. Often with high levels of knowledge of chemistry and psychopharmacology, psychonauts may describe their drug use as a quest for extraordinary and spiritual experiences.

## Club drugs and harm

It is estimated that 1 million people used club drugs in the UK in 2010/2011,[5] with 6500 presenting for treatment.[8] The number of new club drugs such as cathinones, piperazines, ketamine and GHB (gamma-hydroxybutrate) mentioned on

coroners' certificates has steadily increased from 7 in 2005 to 70 in 2010.[10] National analysis of people engaging in treatment with community drug services has shown a similarly modest but increasing demand for help for a variety of club drugs.[8]

There are a number of reasons why the harm related to club drugs is currently underestimated. First, club drug users report a reluctance to attend drug services which they believe to be primarily for heroin and crack (cocaine) users and which they perceive as having poor knowledge about club drugs and the context of use. Second, many users may be unaware what substance(s) they have consumed, often only knowing the brand name or simply describing ingestion of a 'white powder'. This is a significant obstacle to understanding the relationship between a particular substance and the harm it causes. Third, it may take a period of use before the harmful consequences of newly emerging drugs develop. Finally, club drug users present to various points of the healthcare system. Individuals with acute intoxication and withdrawal symptoms are more likely to present to emergency departments, whereas those with chronic physical, psychiatric and associated harms may present to sexual health clinics, mental health services, urology departments or primary care rather than drug services. This complicates the analysis of information across complex systems.

Harm depends on a number of factors including the characteristics of the particular substance (e.g. potential toxicity), pattern of use (e.g. length of use and dose), interaction with other substances (polysubstance misuse) and user characteristics (e.g. pre-existing health problems). The potential for physiological dependence is still emerging and will vary from drug to drug.

The most commonly used club drugs and associated harms are described below.

## Ketamine (K, ket)

Ketamine is an anaesthetic developed in the 1960s. It is still present in many hospitals where it is valued for its short half-life. Illicit ketamine use results in euphoria, hallucinations, sensory distortions and a range of dissociative experiences. Users sometimes describe vivid 'out of body' episodes as the 'K-hole'. Usually bought as a white powder and snorted ('bumped'), the effects are short-acting and repeated dosing is common.

Harmful effects include the risk of acute intoxication during which sensation to pain is reduced, making the user vulnerable to accidents and injury. Long-term harms include dependence, as well as physical symptoms. The most frequently described is 'ketamine bladder', a ketamine-induced ulcerative cystitis of the bladder lining causing dysuria, polyuria and haematuria.[11] As the pain worsens, the user finds that re-dosing with ketamine results in short-term relief, leading to a pattern of escalating ketamine use and increasing pain. There have been a number of cases of dependent ketamine users requiring reconstructive surgery or bladder removal. Given the escalating concern regarding ketamine-induced ulcerative cystitis,[11] it is important that psychiatrists routinely ask patients using ketamine about urological symptoms. Other physical effects include 'K-cramps', severe, transient abdominal pain, which may be related to ketamine's effect on the biliary tract.[12]

## GHB/GBL (G)

Gamma-hydroxybutrate (GHB) and the pro-drug gamma-butyrolactone (GBL) are industrial solvents bought by users as a clear, colourless liquid. Small doses of only a few millilitres are pipetted into a non-alcoholic drink. Once consumed, the effects have been described as similar to alcohol and include disinhibition, ataxia, euphoria and increased libido. These effects are short acting, with users often taking multiple 'shots'.

Overdose is a significant risk due to the narrow dose range between desired effect and coma. Use of GHB/GBL can quickly lead to severe dependence, with some individuals dosing every few hours 'round the clock' to prevent the onset of withdrawal symptoms. These include a rapid onset of agitation, sweating and tremor, which can develop into an acute delirium.[13] The symptoms closely resemble an alcohol-related delirium tremens but typically with a much more rapid onset. Medically assisted detoxification is usually required and this should only be undertaken by clinicians with sufficient experience. Medical services should be available in case acute medical management of withdrawal symptoms is required.

## Mephedrone (M-Cat, drone, bubble)

Mephedrone is a synthetic stimulant related to cathinone, an ephedrine-like monoamine alkaloid. It is unrelated to methadone, an opioid used for the treatment of heroin dependence. Usually sold as a white powder, it is consumed by snorting or by wrapping a dose in cigarette paper and swallowing ('bombing'). More recently there have been reports of intravenous use.[14] Effects include euphoria, alertness and increased energy. Initially marketed as a legal alternative to illicit stimulants, mephedrone became very popular, with levels of use in under-24-year-olds estimated to be similar to cocaine. Banned in 2010, it has remained popular in many parts of the UK.[14]

Harms include the direct effects of intoxication such as tachycardia, agitation and chest pain. Intense, rapidly fluctuating psychotic symptoms, including persecutory thinking and auditory hallucinations are seen both during intoxication and several days post-ingestion. Although generally self-limiting, the symptoms may lead to presentation to emergency departments and mental health services.

## Legal highs

Within the umbrella term 'legal high', there are numerous chemical groups including piperazines, cathinones, phenethylamines, tryptamines and synthetic cannabinoids. Most are produced as white powders and sold in sealed foil packaging under brand names such as Benzo Fury, High Beams or 'research chemicals'. The brand names can cause confusion, for example Benzo Fury (1-benzofuran-6-ylpropan-2-amine) is a stimulant and unrelated to benzodiazepines. Test purchasing suggests that the constituents of



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a particular brand change regularly and that both legal and illegal chemicals may be present.

The health harms of the numerous different legal highs are poorly understood and many of the chemical constituents have yet to be identified. There are case reports of harms including psychotic symptoms, delirium and death.

Synthetic cannabinoids (e.g. Spice, K2) are natural herbs sprayed with synthetic cannabinoid agonists, such as cannabicyclohexanol, to mimic the effects of tetrahydrocannabinol (delta-9-THC) found in herbal cannabis. Synthetic cannabinoids are typically smoked in a joint in the same way as herbal cannabis. The effects are unpredictable, with reports of a range of physical and psychiatric complications including tachycardia, vomiting and psychotic symptoms.

## Discussion

Emerging club drug use presents challenges for clinicians across a range of settings including substance misuse units, accident and emergency departments, sexual health clinics and acute psychiatric services. It is not yet clear whether evidence-based treatments, successful for heroin and alcohol misuse, will also be effective for club drug problems. Research is complicated by the large number of emerging new substances, in a population in which polysubstance use is typical. National clinical guidelines, based on available evidence, would assist services in standardising current treatment approaches, but would require regular updating as evidence emerges. The National Poisons Information Service (NPIS) manages TOXBASE (www.toxbase.org), a clinical toxicology database for health professionals, and this may be the best place to hold information relating to the acute management of emerging substances.

To be seen as credible, drug service staff need to be properly trained to detect, assess and manage club drugs use. Across the UK, a small number of specialist club drug clinics have been successfully established, demonstrating that if appropriately designed services are provided, users will engage. Some of these innovative models include joint working with sexual health services, LGBT-specific services and in the case of ketamine, urologists.

The psychiatric consequences of club drug use are now emerging; however, little is still known about their impact on pre-existing mental health problems and even less about the potential interaction with prescribed medications. Mental health staff should enquire about club drugs as part of routine drug and alcohol assessment and be aware that these patients may not fit the stereotype of a drug misuser. Urine drug testing will generally be unhelpful as many club drugs are undetectable on standard urine drug screens. This emphasises the importance of good clinical assessment and of asking the right questions. These questions legitimately extend to asking about bladder function and online drug purchasing.

Problematic use of club drugs is a rapidly developing phenomenon necessitating a timely response. Increasing awareness, improving clinical assessment and developing treatment pathways are the next steps in tackling this new challenge.

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