

Ketamine

Greater Manchester: Testing and Research on Emergent and New Drugs



GM TRENDS



TREND FOCUS: Ketamine

Introduction

This Trend Focus Report is focused on the increasing use of **ketamine** and associated harms by young people in Greater Manchester. It highlights key reported changes in use from this year's GMTRENDS that include increased **ketamine** use by younger, school-aged children; changing patterns of use beyond a 'club drug' to wider settings and motivations for use; increases in the number of young people/young adults presenting to services for treatment (many with **ketamine** as their primary substance), incorporating mental health and urological needs.

Context

Recreational users of **ketamine** report a variety of altered perceptual and cognitive effects, including auditory and visual hallucinations, enhanced colour vision, a sense of timelessness, out-of-body experiences, feelings of weightlessness and euphoria, increased empathy, escapism from reality, overall well-being, and even heightened creativity and energy. A strong enough dose may lead users to experiencing the dissociative 'K-hole' state, which can be both sought out or feared, depending on a user's motivations. Additionally, users may face potential health problems, confusion, impaired memory, psychological distress like anxiety and paranoia, and the development of tolerance if used over a sustained period of time (Dillon et al., 2003).

Ketamine has been a controlled substance under the 1971 Misuse of Drugs Act since 2006, when it was initially classified as a Class C substance. In 2014, it was reclassified as a Class B substance. This reclassification was in response to concerns about the harms of long-

term use and aimed to reduce the increasing recreational use of **ketamine**. It followed an Advisory Council on the Misuse of Drugs (ACMD) review of **ketamine** use and harms (ACMD, 2013). This review highlighted growing evidence and concern associated with **ketamine** misuse and chronic toxicity including bladder and other renal tract damage. However, over the last decade since this 2014 reclassification, its use in the UK has steadily increased, to 3.8% of 16–24-year-olds in 2022–2023 (ONS (1), 2023). This was an increase from 3.2% in 2019–2020 (pre-COVID) and 0.8% 2012–13, the year before the reclassification (ONS (1), 2023). Furthermore, it is important to note that the current methodology of this national household survey excludes some significant groups, including over 1.5 million students living away from home, and hence, is almost certainly an under-representation of the number of young people using **ketamine** within this age group. The heightened prevalence of **ketamine** despite these legislative changes highlights the ineffectiveness of UK drug policy that aims to prevent young people from using **ketamine** (Holland, 2020).

These year-on-year increases in self-reported past year use are reflected in similar rises in national treatment data. The latest available data for 2022/23, reported that 5.8% (719) of young people in treatment in England said they had a problem with ketamine, an increase from 4.5% (512) during 2021–2022 (OHID (1), 2024), representing more than a 5-fold increase (OHID (2), 2023). In the past year alone (2022–23), this figure has increased by 43%, from 1,551 in 2021–22.

Motivations for use

First synthesised in the 1960s for its anaesthesia purposes, **ketamine's** 'strong psychotomimetic effects'¹ (Kokane et.al, 2020) led to the substance becoming popular amongst those involved in the party, club, and rave scenes in recent decades. Indeed, most of the existing literature on its recreational use has tended to focus on **ketamine** in a clubbing/party context (Hashimoto et.al, 2020), that is often used for its 'intense psychedelic experiences' (Vari, 2022). More recently, there has been a growing body of literature on the use of **ketamine** in a medical context, in reference to its 'psychotherapeutic potential' (Walsh et.al, 2021) as treatment for depression and other mental health related issues. **Ketamine's** associated with clubbing has led it to come under the category of 'club drug' (see Abdulrahim and Bowden-Jones, 2015). The Global Drug Survey (2022) found that **ketamine** is one of the most prominent club drugs. The survey found that of those who go clubbing more than four times a week, one in five (20%) reporting using **ketamine** (GDS, 2022: 8). The Global Drug Survey also found that **ketamine** is most prevalent amongst people who prefer music genres such as *Techno* (31%), *Drum and Base* (24%), and *Trance* (23%). Considering its association with clubbing and electronic music scenes, it could reasonably have been assumed that its use would have declined during COVID. However, the statistics of adults seeking treatment for **ketamine** use, at the time of the COVID-19 pandemic, where night-time economy venues, raves etc. were closed, indicates use outside of a clubbing/party context. For example, Sekeris et.al (2023:7) explain continued use during COVID as "an escape from the stressors of life".

Research Context

Over two-fifths (42%) of the 132 professional who completed this year's GMTRENDS survey, stated that they work with people who use **ketamine** and of those, nearly two-thirds (63%) noted there had been an increase in use amongst the populations that they work with. The Greater Manchester areas with the highest percentage of professionals working with people who use **ketamine** who reported

increased use were Manchester (74%) and Bolton (69%), followed by Stockport (56%). As illustrated below, these reports of increased **ketamine** use in the professional survey were typically in relation to young people.

"18-28-year-olds more regularly disclose use of ketamine - care leavers/college/Uni students." (Occupation not stated, Bolton)

"Many more individuals reporting ketamine use and it's becoming more prevalent in young people's services too." (Operations Manager, Bolton and Wigan)

"Definitely within young people there are a lot more reports of ketamine use." (Operations Manager, Adult Substance Use Service, Wigan and Leigh)

As we entered the key professional informant interview stage of the research, **ketamine** was often mentioned as the main substance of concern, particularly by those key professionals who worked in young people's substance use services. Many of these professionals working with young people indicated that **ketamine** was the substance they would want to see focused on for this year's Trend Focus.

"So right now, they are my two main concerns, the THC vapes and the ketamine. And it is just in the past two months, honestly, it has just shot up. It's come out of nowhere, it's random." (Substance Misuse Advocacy Worker, Trafford & Salford)

"Definitely ketamine. It feels like kind of something that is more popular amongst young people. Prior to this year, and I've been in this role for five years, I had never heard of a young person using ketamine . . . but recently, I've seen and heard ketamine use being quite prevalent with the young people we see and work with." (Senior Practitioner, Young Person Complex Safeguarding Team, Stockport)

The reported local increase in young people and adults seeking treatment for their **ketamine** use reflected the increased use and numbers in treatment at a national level (see above). One

1. A drug is said to be psychotomimetic when its actions mimic signs and symptoms characteristic of psychosis, including perceptual abnormalities (illusions and hallucinations), delusional beliefs and feelings, disorganization of thoughts and speech, and altered perceptions of self (such as dissociation).

specific trend that was repeatedly observed, was the increasing number of young people accessing treatment for **ketamine** who are under 18.

“Looking at numbers now [...] in the first quarter of the year we have double the number of young people under 18 than last year.” (Service Manager, Young Person’s Substance Use Service, Manchester)

“Early Break has experienced an increase in the younger population using ketamine. [...] Ketamine use younger from age 13-14.” (Operations Director, Young People and Families Service, Bolton, Bury, Oldham, Rochdale, Salford, Trafford)

It was suggested that there are higher numbers of young people that use **ketamine** in treatment than the recorded data indicates as these young people often present as polysubstance users and due to **ketamine** not being the young person’s primary, secondary, or tertiary substance, their **ketamine** use is not captured by the National Drug Treatment Monitoring System.

“You do hear a lot of them that have tried it. It may not be their number one substance they use but they talk about trying it and liking the feeling of it, which is obviously concerning.” (Exploitation Worker, Young Person Substance Use Service, Manchester)

However, some young person substance use professionals noted an increase in young people presenting with **ketamine** as their primary substance.

“If I look at my caseload at the moment, I’ve got seven where ketamine is the presenting substance . . . from 28, so a quarter of my caseload.” (Stockport Family Drugs and Alcohol Family Worker)

“Primary substance is ketamine, nothing else is problematic.” (Young Adult Treatment Service Transition Worker, Manchester)

“We have had quite an increase in people reporting ketamine as a primary drug of choice, and cocaine as well. [...] and definitely the people I’m working with that are using it [ketamine] are using it daily.” (LGBT+ Recovery Manager, Greater Manchester)

These professional reports of increased **ketamine** use were supported in this year’s young person survey. There was a significant increase in the number of young people reporting **ketamine** use this year, with one in six (16%) of the 400 young people who completed the online survey reporting past year use compared to approximately one in 20 (6%) last year. Additionally, of the respondents that reported using **ketamine** in the last year, two-fifths (41%) indicated that they used more. Therefore, we made the decision to focus on **ketamine** use amongst young people as one of the two trend focus studies for this year.

Through conducting interviewing with 22 young people who have used **ketamine** in the past year, this trend focus sets out to explore the motivations for the increased prevalence of **ketamine** use amongst young people across Greater Manchester. It also seeks to investigate the potential harms associated with its use and young people’s knowledge and experiences of existing harms and available support. Based on these findings, we make recommendations that centre around reducing further harms associated with **ketamine** use, including promoting awareness, developing treatment protocols and enhancing existing referral pathways and the tiered treatment service response.

Data Collection

Further data collection for this Ketamine Trend Focus Report has involved conducting 22 interviews with young people (aged 14 – 24) in Greater Manchester who have used ketamine in the past year, to provide further insight, including establishing the motivations for use, better understanding the related harms and market information. We also spoke to the Safeguarding Lead for a Salford high school where several young people were known to have used **ketamine** and been referred into treatment. These interviews took place between January and March 2024, either online (*Microsoft Teams* or *Zoom*) or face-to-face. Interviews were digitally recorded and transcribed.

In addition, we requested: i) current **ketamine** related treatment data from local young person substance use services and ii) case studies,

to enable us to further our understanding of the scale of treatment need and the type of presentations, support needs and outcomes. The data requested included demographic information such as age and gender, the length of time and frequency of an individual's use of **ketamine**, the amounts used, substances used with **ketamine**, treatment response (e.g. Tier Two, Three, or Four), population information (e.g., whether they had mental health needs, NEET, in contact with youth justice services, neurodiversity, CSE, CCE, LAC etc.), and any relevant additional information such as contact with urology, detox or rehab and outcomes. We received data from seven of the 10 local authority areas that totalled 77 young people, and five case studies. Table 1 below presents data from each of the seven (out of a possible 10) Greater Manchester areas who responded to our data request. It includes the numbers (and percentages) of young people in contact with services for their use of **ketamine** in the reporting quarter Jan to April 2024.

Table 1
Young people currently in contact with treatment services for ketamine use by local authority area.

GM Area	Number	Percentage
Bolton	19	24.7%
Bury	10	13%
Manchester	11	14.3%
Oldham	3	3.9%
Salford	9	11.7%
Stockport	6	7.8%
Trafford	19	24.7%

Where data is missing from some GMCA areas, this is because there were currently no young people in contact with treatment services in that area for ketamine. However, we know from speaking to other services and professionals that young ketamine users are presenting in other parts of children's services in some of those areas. This highlights a need to develop professional training and improve existing pathways.

Treatment Needs

The analysis of the 77 young people currently in treatment in seven of the 10 Greater Manchester areas revealed that one in five (20%) were in Tier Two treatment, over two thirds (71%) in Tier Three response and the remaining 9% in Tier Four - either going through or preparing for rehab or detox².

Tier Two

Eleven of the young people were in Tier Two, and they were fairly split between gender - six males (55%) and five females (45%). All of those in Tier Two response were aged 18 or younger. Three young people in Tier Two treatment reported mental health issues. The most popular substances used with **ketamine** were **alcohol** (45%), **cannabis** (27%), **cocaine** (18%), **MDMA** (18%), and **nitrous oxide** (9%).

Tier Three

Of the 39 young people in Tier Three treatment, almost two-thirds (59%) of them were male and over half (51%) of these reported using **ketamine** at least once a week, with a third (31%) reporting using more than twice a week. Only three of those in Tier Three reported daily **ketamine** use. They ranged in age from 13 to 25. One in five (22%) reported mental health issues. The most popular substances used with **ketamine** of those in Tier Three treatment were **cannabis** (82%), **MDMA** (31%), **alcohol** (28%), **cocaine** (26%), and **nitrous oxide** (13%). Other substances used with **ketamine** include **oxycodone**, **diazepam**, and other **benzodiazepines**. Two (5%) used **THC vapes** with **ketamine**. Half of those in contact with urology are in Tier Three treatment.

Tier Four

Of the five young people in Tier Four treatment, 80% were male, and 20% female. The youngest was aged 19. All these young people reported daily **ketamine** use. Only one of those in Tier Four treatment did not use **ketamine** with any other substance.

² The national drug and alcohol treatment system identifies the level and different types of drugs and alcohol treatment, based on a four-tier structure. Tier One 'Universal Provision' i.e., Police, Housing, Primary Care, A & E Walk-in centres and Education. Tier Two 'Low threshold substance misuse specialist interventions' i.e., drop-in centres, harm reduction and injecting equipment exchange, assertive outreach, specific advice and information services. Tier Three 'Care planned interventions' including substitute prescribing, psychodynamic interventions, and recovery support. Tier Four 'Inpatient treatment' services offer more intensive and specialised programmes including detoxification, recovery programmes and rehabilitation.

However, all the remaining young people in Tier Four treatment (80%) used **ketamine** with **cocaine**, and none used **cannabis**. This would suggest that the combined use of **ketamine** and **cocaine** increases the likelihood of needing Tier Four intervention. Four out of five have had contact with urology, with the remaining young person currently waiting for a referral.

Therefore, it appears that although the numbers presenting to specialist young people's substance use services are not as high as traditional substances such as **alcohol** and **cannabis**, the impact of regular and prolonged use of **ketamine** on an individual's health and treatment needs can be significant. In these circumstances there is a requirement for a clinical assessment and treatment need with a wider assessment for a referral to specialist services such as urology and detoxification.

Findings

The destigmatisation of ketamine

Several key professionals that we interviewed noted that **ketamine** appears to have become more socially acceptable than in previous years. Two professionals also suggested that **ketamine** is now more socially acceptable than **cocaine** amongst the young people that they work with.

"I think we have been getting a few more referrals in and they say, 'Oh no I don't do cocaine, I do ketamine'! Like it's more socially acceptable, like cocaine is like a dirty drug." (Exploitation Worker, Young Person Substance Use Service, Manchester)

In line with key professional reports of changing attitudes to ketamine use, several of the young people that we interviewed recounted how when they were younger, **ketamine** had a reputation as a 'dirty drug', but they all went on to note that this perception had changed.

"I always used to think ketamine was a really dirty drug, it had a really bad rep when I was 16." (24-year-old female, Manchester)

"When I was younger ketamine was always seen as a dirty drug, normal people do mandy [MDMA] and coke while sketchy people use ket. Now it's seen more acceptable because you don't have the comedown, you don't gurn, you can eat and sleep on it." (22-year-old female, Trafford)

"To be honest, I didn't use ket until I came to uni. It always had a bit of a bad rep but when I came to Manchester it just seems like everyone was using it and there was no judgement or stigma to it." (21-year-old male, Manchester)

The popularity of **ketamine** use amongst university students is well documented (see for example, Foster, Stevenson, and Akram, 2023; Nash, 2017) and is discussed further in later sections. The reports that **ketamine** is more socially acceptable are noteworthy as previously, **ketamine** use was often viewed negatively, originally due to being mis-sold as **MDMA** in **ecstasy** pills (see Shewan and Dalgarno, 1996), its negative connotations in reference to its veterinary use as a horse tranquilliser, exemplified by the *Talk to Frank ketamine 'Just say neigh'* campaign, and the view that its use in club setting was spoiling the 'loved-up' **ecstasy** vibe that was synonymous with the early 'rave' and 1990s dance music scene. One potential explanation for its increasing acceptance is the growing body of research evidence to emerge over the past two decades that small ('subanesthetic doses') of **ketamine** can have swift and sustained antidepressant effects and therapeutic benefits for a range of psychiatric conditions (see Walsh et al., 2022 for a systemic review). This has led to a more positive narrative in UK media to emerge in recent years. This destigmatisation of **ketamine** that we have outlined above may partly explain why many professionals discussed an increase in use amongst those under 18.

Ketamine use amongst younger age groups

The ACMD review of **ketamine** noted that UK population surveys indicate that **ketamine** use is more common amongst young adults in the 20–24 age group (ACMD, 2013). However, in

3. An anaesthetic induction dose of ketamine typically ranges from 1 mg/kg to 4.5 mg/kg, averaging 2 mg/kg. A subanaesthetic dose is recommended to be less than 0.5mg/kg and in clinical trials is often administered at 0.2mg/kg or 0.3mg/kg (see for example, Zou et al., 2021).

our research, it was frequently reported by professionals that young people appear to be experimenting with **ketamine** at an earlier age (typically from age 14 upwards). This was most mentioned by professionals working in the Trafford and Salford areas.

“There is a bit of an epidemic at a school I’m working in at the minute.” (Substance Misuse Advocacy Worker, Trafford & Salford)

“In the past year, we have had one young person go through detox. Another young person preparing to go through detox for just ketamine use.” (Young Person Substance Use Service, Team Leader, Salford and Trafford)

As part of this *Ketamine Trend Focus*, we contacted this school’s Safeguarding Lead for further information. They discussed the mental and physical health harms that these young ketamine users had experienced.

“Ketamine is a problem in the school. [. . .] Two lads that we have proven they’ve used ketamine while at school, they’re having intensive therapy. [. . .] One 16-year-old lad was having issues with ketamine, had the stomach cramps and he had to be kept off school with mental health issues while he was detoxing.” (School Safeguarding Lead, Salford)

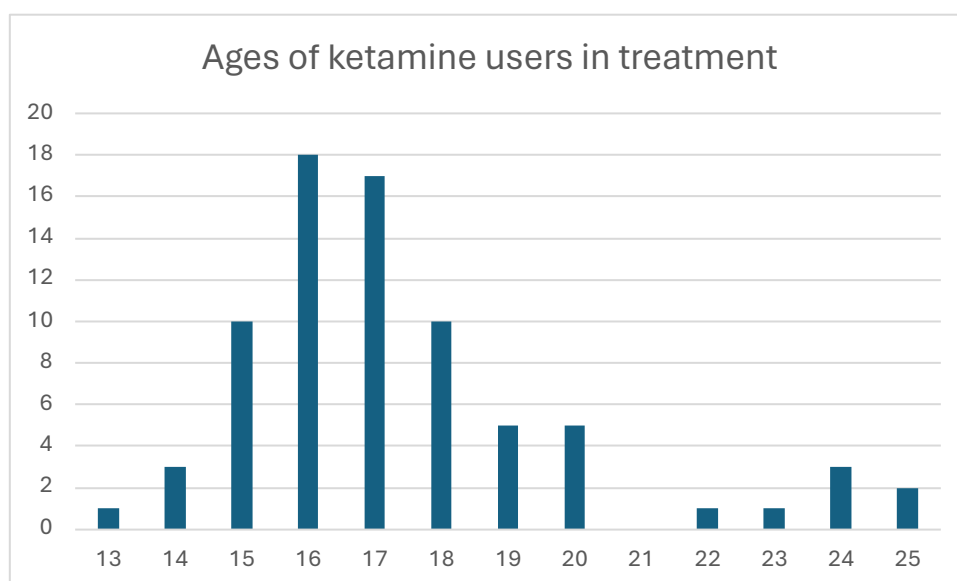
Indeed, we spoke to several school aged children for this *Ketamine Trend Focus* who

had used **ketamine** aged between 14 and 16. The analysis of treatment data of young people currently in treatment further supports these professional concerns. The data provided from young person’s drug treatment services covering seven of the 10 Greater Manchester areas are **illustrated in bar chart 1 below**. It highlights the clustering of young people accessing treatment for **ketamine** use between the ages of 15 to 18 (55/77, 71%).

Almost two-thirds (64%, n=49) of those young people in treatment are under the age of 18. Two-fifths (42%) were school-aged (13 to 16), almost a quarter (23%) were aged 16, and one fifth (22%) were aged 17. Of the 49 that are under 18-years-old, over half (27, 55%) reported using at least once a week. Four (15%) of the 27 under 18s that use ketamine at least once a week reported issues with their mental health, including anxiety and depression. All four were male. Just under three-fifths of those under 18 in treatment (57%) were male, and over two-fifths (43%) were female. Of the male respondents, almost two-thirds (61%) of them use ketamine at least once a week. A similar percentage (62%, n=13) of females aged under-18 reported using **ketamine** at least once a week.

In addition to consistent professional reports of increased use amongst a younger age group, there was also professional consensus that the younger users were reporting using more than had traditionally been the case.

Bar chart 1: A bar chart showing the ages of ketamine users in treatment



"We have noticed that with the younger clients, they seem to be doing a lot more ketamine." (Team Leader, Assertive Outreach, Salford, and Trafford)

"We are getting much higher levels of use. To the point that . . . normally with drug use if a young person stops straight off outright - great! Whereas with ket at the moment, we've had a couple of young people who we've had to be like. . . we wouldn't advise you to stop immediately. [. . .] The young person we are currently preparing for detox. . . she has been using between four and six grams of ketamine a day." (Young Person Substance Use Service, Team Leader, Salford and Trafford)

As illustrated above, this increasing trend of ketamine being used at a younger age and in larger amounts is resulting in the onset of **ketamine** related harms developing at an earlier age.

"She is under investigation at the hospital for cysts in her bladder [. . .]" **Interviewer:** *"And that's at 17? Yeah 17. . . she's been using on and off since she was 12."* (Senior Practitioners Young Person Complex Safeguarding Team, Stockport)

"Her urology symptoms. . . I mean she is having a hospital admission once every three or four weeks... She now experiences tooth pain when she gets high. And like one of her nostrils, she can't get high from either. So, she has had to have a referral into ears, nose, and throat alongside her urology referral. She's only 18." (Young Person Substance Use Service, Team Leader, Salford and Trafford).

Ketamine use amongst university students

In addition to an increase in use amongst school age children, it was also common for professionals to discuss the popularity of **ketamine** amongst university students.

"Ketamine use at student halls is noted. I hear from CGL and the university that ketamine is being used more frequently." (Service Lead, Dual Diagnosis Liaison Service, Manchester)

"In terms of females, we are getting a lot of females where ketamine is their primary drug of choice, and cocaine, that is a big

one with females as well. [. . .] The women I am seeing using ket are like younger women, early 20s, often students . . ." (LGBT+ Recovery Manager, Greater Manchester)

This local perspective appears consistent with the national picture. A recent study of substance use amongst UK undergraduate students reported that ketamine was as equally prevalent as **cocaine**, **nitrous oxide**, and **MDMA**, with one in eight (13.1%) students reporting past month use and a quarter (24.5%) past year use (Foster, Stevenson and Akram, 2023). The popularity of **ketamine** amongst university students is captured below.

"I first used ketamine around the first year of uni, . . . I was around 18 actually maybe 19... freshers week, a whole group full of different people, flat parties, I think a lot of people who were in the later years of uni brought their drug dealer friends, and then it got passed around like this person was there and it was a new thing back then like I hadn't even heard of it until I went to uni it wasn't even on my cards as something people did." (24-year-old male, Salford)

The initiation into **ketamine** use at university highlights the need for awareness raising, harm reduction advice and appropriate access to substance use services for the large number of Greater Manchester university students.

The same interviewee went on to note that it is easy for the use of **ketamine** to slip into more frequent use during university.

"I would say I use it less now than before, but I think it's 'cause I was a student with no real responsibilities so like it could have been a random Wednesday night and we'd just be like 'let's get a bag in'." (24-year-old male, Salford)

Indeed, two of the five case studies provided by local services (see case studies four and five) involve two current university students – both 19-year-old females.

Motivations for use

Through the interviews with key professionals and young people, several motivating factors for this apparent increase in popularity and use emerged.

Affordability

Compared to other substances such as cocaine or **MDMA**, **ketamine** was often discussed as a relatively affordable substance. Corkery (2021) state that street prices vary but one gram of **ketamine** can be bought for between £10-£30. Media reports also suggest the price of **ketamine** is lowering, with one article reporting digital markets are reducing the cost of a kilo of **ketamine** from £8,000 to £5,000 in 2022 (Daly, 2022). Cheaper prices at wholesale mean the substance can be sold for a lower price. Many key professionals and young people who use **ketamine** consistently noted the cost of **ketamine** is comparatively lower than **cocaine**, suggesting the substance is much more accessible for school aged children who may not be able to afford to purchase cocaine or **MDMA**.

"Cocaine, they [young people] don't use it so much as it is quite expensive, but they are using ketamine as it is very, very affordable."
(Substance Misuse Advocacy Worker, Trafford & Salford)

"If you compared it to like, two [grams] for 80 [pound] which is for coke, or 30 [pound] for a g [of ketamine] which you could split with someone else and still have a very good night, that ends up being the motivating factor to me." (24-year-old male, Salford)

". . . for me I would say cost effectiveness, I know it sounds a bit silly but like that is way cheaper than me going on a night out and getting drink after drink after drink."
(23-year-old male, Salford)

In their seminal study of ketamine use in the UK - 'It's the most fun you can have for twenty quid' - Moore and Measham (2008) suggest that the increase in ketamine popularity in the 2000s was because it was cheap (£20 a gram) and provided a new experience for ecstasy users. We found that over 15 years on, the price per gram has remained around the same.

"So, if I wanted to buy, like, a gram, it would be 20 quid." (18-year-old female, Bury)

"You could get it for as low as ten [pound] a gram." (18-year-old male, Trafford)

The affordability of **ketamine**, especially for school aged young people who would often

discuss 'chipping in' to buy it, was often mentioned as a key factor in choosing **ketamine** over other drugs.

"I think we would all pitch in to be honest, it was cheap enough for us to get to be honest" (18-year-old male, Trafford)

"So in the park I just used to put money towards it. . ." (16-year-old male (2), Salford)

As with all substances, the greater the quantity bought, the cheaper the substance becomes (per gram).

"Depending how well you know the dealer, maybe it would be two [grams] for 50 and that's probs' quite standard. Dealers are more able to put a deal on it than the likes of coke which I feel has just gone up and up like even over the past five years I feel like it's so much more." (24-year-old male, Salford)

"The first time I used it properly was a New Years Eve party and me and my partner at the time got a two-gram bag because it was so cheap, and we were racking up lines for everyone." Interviewer: *"When you're saying you got two grams cheap what were you paying for that? £40 for two grams."*
(24-year-old female, Manchester)

"So, if I wanted to buy, like, a gram, it would be 20 quid. But [...] I would buy it in, like, 10 grams and that would be, like, significantly cheaper than what you would expect. . . but probably 70 or 80 pounds for 10 grams of ket." (18-year-old female, Bury)

"It's got cheaper since I started. So if you're getting three and a half grams, its 50 quid, seven could be 70-90, and then an ounce, so 28 grams, I'd pay 200 quid. But I mean, you can get 18oz for 1800 quid, so you can get, however many grams that is, 28 grams, 18 ounces. So yeah, you know, gets cheaper and cheaper [the larger quantities purchased]."
(24-year-old male, Stockport)

The economic benefit of buying in bulk can pose challenges for young person substance use service professionals when developing reduction plans with young people.

"I think one of the problems we have is that when we try to get her to buy less so she uses less, she says 'well no, when you buy it

at weight, like 1.75gram, it costs less', and it works out more money if she buys it in smaller amounts. So it doesn't make a lot of difference what she pays so she might as well get the bigger amount. But then they have it, so they use it all!" (Exploitation Worker, Young Person Substance Use Service, Manchester)

Several of the young people that we interviewed supported this narrative by similarly discussing how buying in larger amounts often led to them using more than they intended.

"I think because it's cheaper than a lot of drugs, you think, 'ah I'll just get a bit more', but if you're like me, you're going to take it if you get more." (24-year-old male, Stockport)

Accessibility

Alongside its affordability, the accessibility of **ketamine** can be attributed to the continued increase in use amongst young people. A third (32%) of respondents in this year's young person's survey reported ketamine was now easier to buy. This survey finding was supported during interviews, when **ketamine** was commonly discussed as being widely accessible and available by both key professionals and young people.

"... it was just every other day, really. Because people who could sell it in school, or selling when I was out, while people could get it out and then bring it into school and stuff like that." (15-year-old male, Salford)

"... and it is just very available, isn't it? You know, out with friends in a pub and people just offer it to you so it is very easy to get hold off." (LGBT+ Recovery Manager, Greater Manchester)

The young people we spoke to mainly reported accessing **ketamine** from local dealers, although some referenced *Telegram* or the 'dark web'.

"I have known people to get it online, off the dark web, and a lot of people have been saying like they're kind of just buying the stuff off Telegram." (24-year-old male, Stockport)

"I usually get it off Telegram these days as its usually cheaper and better quality." (16-year-old male, Manchester)

As stated above and below, some young people we interviewed perceived that what was sold via digital markets was better quality.

"(online) would be better quality, it would be the same price as on the street but just better stuff" (18-year-old male, Trafford)

Lack of comedown and hangover

In addition to the low cost and easy accessibility, one of the often-stated benefits of **ketamine** over other substances was the feeling the next day, with several young people stating that they woke up feeling fresh and had a good sleep instead of waking up with a dull head or hangover after smoking **cannabis**, drinking **alcohol**, or using **cocaine** or other *stimulants*. Similar comments were made by over a quarter (6/22) of the young people we interviewed.

"A lot of the time. . . , I always felt quite good and never really got a comedown like that dreadful feeling from like MDMA, but with ket, from my own experiences, I never really felt that awful the next day." (18-year-old male, Trafford)

"Like I know I'm going to be okay the next day. I know it's not the healthiest but still." (24-year-old male, Salford)

"Another thing is the next day I'm going to feel completely fine, there's not gonna be a repercussion in that way like not even close to a hangover!" (23-year-old male, Salford)

The lack of effects the next day was also observed by a small number of professionals.

"Because you're clear and not having effects on you in the morning. You can still wake up, function at your job and all the rest of it." (Young Adult Treatment Service Transition Worker, Manchester)

4. Telegram Messenger, commonly known as Telegram, is a cloud-based, cross-platform, encrypted instant messaging service.

Changing patterns beyond use as a club drug

Ketamine emerged at the end of the 20th century as a popular party drug in nightclub and rave settings, where users sought the drug's dissociative and psychedelic effects (ACMD, 2013). Since then, its use has been a mainstay in house party culture, alongside other popular 'party drugs' (as in, substances used primarily in party settings) such as **MDMA**, **cocaine** and **nitrous oxide** (Corkery, 2021). As with other 'party drugs', the use of **ketamine** is not limited to the confines of clubs, music events and other party environments.

"If I was out or whatever it was, it could be at home, it could be out, I didn't really care what environment I was in, it was just as long as I had it." (18-year-old male, Salford)

"I just do it in my room or go to the bathroom" (16-year-old male, Salford)

In fact, several young people discussed how they preferred to use it in private rather than public settings.

"I probably use it more at home but not by much, but I've always been the sort of person who's had gatherings around their home but always with other people. [...] When I first started using ketamine, I wouldn't feel comfortable in the pub at 18/19." (24-year-old female, Stockport)

"I think with ketamine its more of a fun communal experience. [...] When I use ketamine with cannabis everyone's sat round, cosy, playing games eating food it's a very happy, silly atmosphere." (24-year-old female, Manchester)

The use of **ketamine** beyond the 'party scene' is not entirely novel (see Abdulrahim and Bowden-Jones, 2015). However, its history as "the 'club drug'" (Kleczkowska and Zaremba, 2022:261) precedes its status as a substance that is used by a wider demographic than ravers and dance-music enthusiasts. As we highlight below, we found that lots of young people use **ketamine** in a non-clubbing setting.

Settings outside of the club space

Our findings indicate that ketamine use in Greater Manchester extends beyond the club or party environment. Both professionals and young people who used **ketamine** discussed a wider range of applications, and motivations for its use beyond music events. For example, one advocacy worker noted how young people aged 14 and 15 were using **ketamine** in the toilets during school.

"They are using it at like half ten in the morning in the toilets, on a Monday or Tuesday morning." (Substance Misuse Advocacy Worker, Trafford & Salford)

For the young people we interviewed, initial use often preceded any experience of clubbing at all. When recounting their first experience of using **ketamine**, it was almost exclusively in a non-clubbing setting.

"Me and my mate were smoking a spliff in the back garden, he came, he had it on a key, . . . I had a bump of it." (15-year-old male (2), Salford)

Several school-aged children recounted how they used it in the local parks with friends.

"I would go to the park, do some ket, get on the bus, go home go sleep, still off my nut!" Interviewer: *"But you wouldn't use it at home? When I got addicted to it yeah, I would . . . I just do it in my room or go to the bathroom, keys or lines."* (16-year-old male, Salford)

"Well, I first used to do it in the parks with my mates yeah, about six of us. I was only 15. . . I was just at the park, my boy had it and I was like 'fuck it I'll do it'. Then it was like a ritual innit, we'd go there every Friday and Saturday." (16-year-old male (2), Salford)

Others discussed using **ketamine** to 'chill' with friends, often in home settings.

"The first time I ever did the ket was obviously, it was like, we were just chilling, and someone brought it in, and I was like, 'oh yeah, I'll try it'." (18-year-old male, Salford)

"I was just chilling with friends really, I weren't like in a party environment, so that's why I was a bit like confused because looking back, obviously I did develop quite a big . . . not addiction, but I used it every day." (18-year-old male, Trafford)

As illustrated above, several young people defined their use as an ‘addiction’ or feeling they needed to use it.

“When I was with mates it, it was fun, but, like, when I was on my own, it was, like I think I felt I needed to do it, instead of, like, not that I wanted to do it, but I needed to do it yeah.” (15-year-old male (3), Salford)

“If I was out or whatever it was, it could be at home, it could be out, I didn’t really care what environment I was in, it was just as long as I had it.” (18-year-old male, Salford)

The effects of **ketamine** lend themselves to other environments, noted by professional respondents in this year’s GMTRENDS study.

“I’ve got one client, and he is using ketamine in a chemsex⁵ setting and then he ended up using it just to get through the day.” (LGBT+ Recovery Manager, Greater Manchester)

The regular use of **ketamine** ‘just to get through the day’ was discussed by several professionals that we interviewed this year in reference to young people that they worked with.

The wide-ranging reported motivations we found for **ketamine** use beyond a club setting are outlined in the following section.

Changing patterns of ketamine use

This section illustrates the varied and multi-functional use of **ketamine** that contribute to its increasing popularity and in some cases, more frequent use. As we outline below, the stated motivations for using **ketamine** included to ‘chill out’, to aid sleep, to change reality to cope with boredom or loneliness or to self-medicate trauma, anxiety, and depression.

Chillout

It was noted by several professionals that for an increasing number of young people, **ketamine** is now their preferred substance to relax and switch off after a day studying or working, performing the same function of the main substances traditionally associated with young people such as **alcohol** and/or **cannabis**.

“There was like a perception that like you are either listening to house [music] and going clubbing and doing ket or a stoner, sitting in the house smoking weed but now the ones going clubbing are now working 9-5 and doing ket at night when they finish work instead of smoking weed.” (Young Person’s Substance Use Worker, Manchester)

“Rather than a glass of wine, it’s a bump of ket. [. . .] It’s a home-based substance, switching off at the end of the day. Almost checking out for a few hours and go to bed and wake up.” (Young Adult Treatment Service Transition Worker, Manchester)

Aid sleep

Five of the 22 young people we interviewed reported that they used ketamine to help them sleep.

“The majority of the time would be when I’m going out, but I have used it in the past to help with sleep.” (24-year-old male, Salford)

“It was when I did a lot of work, things were quite stressful, I hadn’t discovered sleeping tablets or anything, and I knew I had to be up early the next day so it was like ‘a little bit can’t harm me that much’, I know it’s a tranquiliser so that was my thought process behind it.” (24-year-old male (2), Salford)

The COVID effect

As outlined previously, **ketamine** has historically been categorised as a ‘club’ or ‘party’ drug. It is argued by Aronowitz et al. (2022) that due to the COVID-19 lockdowns, drug use decreased and in particular, the COVID-19 pandemic is associated with changes in the use of ‘party drugs’. The Global Drug Survey reported that in particular, the use of ‘party drugs’ decreased (Winstock et al., 2020a; Winstock et al., 2020b) as the measures to contain the spread of the virus, such as the social distancing and the closure of bars, clubs, gatherings, festivals, and other events, substantially limited the opportunity to use drugs in social, recreational settings (EMCDDA, 2020; Palamar et al., 2020). International data from Europe and North America indicate that this seemed to have particularly affected substances commonly used

5. Chemsex refers to sexual activity, mostly between men, while under the influence of drugs, often taking place with one or multiple sexual partners. The three main drugs associated with chemsex are: Crystal Meth, Mephedrone, and GHB/GBL (more commonly known as G).

in this context, such as **MDMA** and **cocaine** (EMCDDA, 2020; Palamar et al., 2020).

Wastewater analysis during the initial COVID-19 lockdown in spring 2020, found that compared to pre-pandemic levels, the markers for *stimulants* decreased substantially, e.g., **MDMA** decreased by 28%, **amphetamine** by 23%, and **cocaine** by between 6% and 25% in Austria, the Netherlands, and Spain (EMCDDA, 2020; Been et al., 2020). Several international online surveys mostly replicated these findings. For example, a large European survey during the first three months of the pandemic revealed that almost half (46%) of the 7,352 participants reported no or less drug consumption during the early pandemic (EMCDDA, 2020; Bendau et al., 2022). However, approximately a third (30%) used the same amount, and a quarter (25%) reported increased drug use. **MDMA/ecstasy** was the substance that had the largest decrease and **GHB/GBL** and dissociative drugs such as **ketamine** had the highest increase in use. Bendau et al. (2022) also found that motivations for use changed, noting a decline in social motivations and an increase in boredom as motivation for drug use. Perceiving substance use as a coping strategy during COVID was associated with elevated drug use. In our study, we found plenty of supporting evidence that COVID acted as a catalyst for increased use of **ketamine**.

"I think the major, major, major thing was that lockdown hit, and there was, like, nothing to do. So, actually, like, the dealer was the next road down from me, and he was like, the best dealer I could ever fucking imagine. And I could just go on my, like, daily walk, so that's when my [ketamine] use started to increase, because there was nothing else to do, so I was like, 'oh, I'll just go and do it, why not?'" (18-year-old female, Bury)

The same 18-year-old female went on to discuss how she currently uses *"about 40 grams in a month."*

Several other young people and professionals that we interviewed referenced COVID as a catalyst for increased use.

"During lockdown I used it [ketamine] a bit more 'cause there was fuck all to do really." (23-year-old male, Salford)

"In lockdown, we saw the searching for the K-holes. That was quite popular. But . . . that was older young people who had co-existing mental health conditions and had gone into lockdown using it." (Young Person Substance Use Service, Team Leader, Salford and Trafford).

As illustrated above, self-medicating mental health issues was another commonly stated factor in increased **ketamine** use. The following section provides further examples.

Mental health

It was suggested by professionals that **ketamine** has replaced **Xanax**⁶ as the most popular substance used by young people who are self-medicating anxiety.

"Xanax has disappeared almost [. . .] three or four years ago it was massive. There was loads knocking about, everybody was on it, and now it has gone. Ketamine has replaced that." (Young Adult Treatment Service Transition Worker, Manchester)

"Now, we are seeing the younger young people and them not primarily seeking out a K-hole [...] They are just using it to get through the day. People reporting going to jobs, going to the gym, going to school. Can't manage it without ketamine." (Young Person Substance Use Service, Team Leader, Salford and Trafford).

Young people who used ketamine confirmed these professional reports. We found that **ketamine** is frequently being used to self-medicate anxiety and depression and to relieve boredom and loneliness.

Interviewer: *"So the effects you get from ket, what would you say they were like? Less anxious, don't care as much."* (16-year-old male, Salford)

Interviewer: *"When you first started using ketamine what kind of effects were you chasing with that one? To be off my nut!"*
Interviewer: *"So would you say you were*

6. Xanax (alprazolam) is a benzodiazepine medication used to treat anxiety and panic disorders.

mainly using it for fun? Nah, I'd say to do [with] my feelings if you know what I mean? Numbness." Interviewer: *"So you were using ket more to self-medicate? Yeah."* (16-year-old male (2), Salford)

"I can struggle a bit with anxiety so I find it a bit difficult to not be on edge, so I feel like it's very good for that, so I went to a gig and I did it [took ketamine] and I ended up making friends with an adult stranger and I kept saying he was my dad and he was saying I was his son, and we just pushed our way to the front of the gig." (24-year-old male, Salford)

"It was bad! Once I did it on my own. . . it's not like I was gonna kill myself, but it's like 'wow, I'm lonely'." (16-year-old male (2), Salford)

The use of **ketamine** to alleviate the feelings on loneliness is highlighted further in case study five.

The analysis of the 77 young people currently in treatment for **ketamine** use found that over a fifth (21%) have reported mental health support needs. Of these, 14 of the 17 (82%) where a mental health need was recorded were male. Two-thirds (65%) of those with mental health needs use ketamine at least once a week. Of the four (24%) that use ketamine daily and have mental health support needs, the amount of **ketamine** used per session was recorded as between one and seven grams.

Although it was evident that self-medication of mental health was a motivator for use, three interviewees reported that their regular use of **ketamine** had a negative impact on their mental health.

"It destroyed my mental health, I was, you know, I was a wreck, paranoia, anxious, depressed." (24-year-old male, Stockport)

While we received several case studies that included positive mental health interventions, the same interviewee highlighted the problems that he had encountered in accessing mental health support.

"I tried to have mental health assessments and you have to be nine months clean, and the waiting list is 15 months anyway." (24-year-old male, Stockport)

Past traumas

Several key professionals that we interviewed made links between adverse childhood experiences (ACEs)⁷ and **ketamine** use based on their experiencing of working with young people who use **ketamine**. It is frequently reported that early exposure to ACEs increases the risk of development of substance abuse disorders in young adults (see for example, Dube et al., 2003; Mersky et al., 2013; Cichcetti and Handley, 2016). The dissociative effects of **ketamine** provide a viable means of escaping traumatic memories and mental health conditions related to previous – or current – experiences of trauma. It was mentioned by several professional respondents in this year's GMTRENDS study that many of the young people that they work with who are using **ketamine** regularly and at high levels, have invariably experienced childhood trauma.

"... and I think a lot have trauma as well, due to what has happened in their life, so the kids are just turning to it [ketamine] to cope really and it's very dangerous, do you know what I mean? But again, very accessible, very affordable." (Substance Misuse Advocacy Worker, Trafford and Salford)

"... some are using it [ketamine] just to get through the day, to go to college, to go to school. The link with them is the trauma, the huge trauma that they are using it to kind of get away from. And they were using it daily." (Advocacy Worker, Young Person's Substance Use Service, Bury)

"And I've got a client and she is using it to deal with a lot of trauma. Now she was dependent on alcohol, and when she come off the alcohol, she's started using ketamine and now she sees that as preferable to the alcohol." (LGBT+ Recovery Manager, Greater Manchester)

One example we found in the analysis of treatment data involved a 25-year-old female, currently in Tier Three treatment for her use of **ketamine**. She regularly reported the use of three to seven grams of ketamine at weekends. She had experience of domestic violence, child protection services, and child sexual exploitation.

7. Adverse childhood experiences refer to a range of traumatic events that occur during childhood, including physical, emotional, or sexual abuse; physical or emotional neglect; or growing up in a household with substance abuse, mental illness, parental separation/divorce, incarceration, or domestic violence (Boullier and Blair, 2018).

Her children had been removed and it was noted that she had 'very poor mental health', and had been held under the Mental Health Act, and attempted suicide multiple times.

Specific examples of trauma and ACEs discussed by professionals included bereavement, domestic violence and being in care.

"A lot of them have had bereavements or witnessed domestic violence." (School Safeguarding Lead, Salford)

"All of them bar one has been in care, so there have been a lot of long-term traumas. One of them was using it [ketamine] just to have the confidence to participate in daily life." (Advocacy Worker (2), Young Person's Substance Use Service, Bury)

As the following interview extract illustrates, for some, their use of ketamine was clearly motivated by a desire to forget about their problems.

"I just didn't like my life, I didn't like myself, I didn't want to know what was going on, I didn't like, I thought life in general as just rubbish, boring. Interviewer: So just to kind of take you to a different place? Get me out of my own head, mate yeah, yeah, I didn't have to worry about or think about anything when I was on ket, it just solved all my problems, until it made them worse the next day. I found that, I couldn't see a way to fix anything other than using . . . And using is what makes it worse, but at the time, it's an instant fix, it makes everything better, you don't care about anything." (24-year-old male, Stockport)

The case study below of a 15-year-old male provides a clear example of how **ketamine** was used to self-medicate their poor mental health which was related to multiple adverse childhood experiences and living environment.

Case Study 1: 15-year-old male

Initially referred into his local young person's substance use service by his school in March 2023 for cannabis use. He reported that he had been using cannabis daily (0.5-2g per day) and trying other substances including ketamine, acid, nitrous oxide, and MDMA. He had an interest in drugs and would research them before taking them and would try to take them safely. He understood that his substance use would have negative implications on his physical and mental health. However, sometimes his information sources were unreliable, and this would lead to him having bad experiences. **His family also used substances, primarily heroin, cannabis, and alcohol. He was at high risk of exploitation, reporting financing his drug use by 'running' for local drug dealers and stating that he would carry a weapon for protection.** He was initially living with his dad when he came into the service. **His father was dependent on heroin** and was accessing adult treatment for opiate treatment. However, he had ongoing struggles with his heroin use and had experienced several relapses. **He described a home life that was neglectful**, and he would have to cook and clean for himself without being equipped with the skills to manage the home. This resulted in **living in squalor and presenting at school in unwashed clothes. His father's house was being used to grow cannabis and he would be expected to sell drugs to make money.** He used some of this money to fund his own substance use.

When the family dynamics became too strained, **he was thrown out of his home and lived with several other relatives before settling with his aunt. He started to use ketamine daily (two to three grams a day) after being thrown out of his home.**

He struggled with his mental health and **was not supported emotionally by his parents due to their drug use and criminality.** He understood that his deteriorating mental health was linked to his parental substance use and the stress he felt living within a chaotic family setting. **He was uncomfortable in his emotions and would take substances such as ketamine to escape his feelings or to avoid feeling sober. He would also turn to self-harm by cutting his arms and legs with a razor to relieve stress** and his emotions could become overwhelming and leave him feeling suicidal. **On several occasions, he had**

used substances and had to be hospitalised for suicidal intent. He would also experience panic attacks and anxiety.

Support and Outcomes

He was **very open to educational sessions** and was interested in the ways drugs worked and how addiction and dependency can form over time. As he was polysubstance, **education was also provided on how substances interacted with one another**. This also applied to his prescribed medications where **special consideration had to be paid as to how his SSRIs would interact with ketamine**.

He was provided with education on bladder care and urological risks of ketamine use and advised when to seek medical attention. This information was also shared with professionals around him so they could be vigilant and support him if a health need developed.

He was self-motivated to quit smoking and would track his abstinent days on his phone. With his advocacy worker, he would look at how long substances would reside in the body, and he would find accomplishment in no longer having the substance in his system. He was offered support as he approached milestone days and praised for reaching them. When he had a lapse, he was **offered emotional support** and encouraged to continue with his efforts.

He was offered multi-agency support including substance use treatment service, CAMHS and his school. The substance use service made safety plans around substances and self-harm, and he was supported by the school therapist and safeguarding team and offered DBT (dialectical behaviour therapy) from CAMHS. The substance use service liaised with other professionals and his aunt to share concerns and offer advice and support when his mental health deteriorated, and he needed taking to hospital.

Following one hospitalisation after taking 2C-B, he was offered support with the feelings that arose during his trip and explained how one's mental state before taking the drug will impact the nature of the trip and the response to it. His was informed about what makes a place safe for taking psychedelics and how to manage his mood after using them.

He was supported emotionally after he left home, and his **parents cut contact with him and**

attempted to separate him from his siblings. He lived with his aunt who supported him and offered him a safe and clean place to live. He has been supported through social services to learn cooking skills and house management. **Professionals have worked with the whole family to ensure that he is able to see his siblings who are a protective factor for him.**

He has maintained abstinence from all substances for three months. He no longer carries a weapon or is exploited into selling drugs. He is living with his aunt who is out of area and has been commuting into school. He is hoping to achieve his GCSEs and would like to go to college and university to study criminology, psychology, and sociology. He is sharing his knowledge and experiences with other young people at school to try to deter them from engaging with substances. His engagement with other services is ongoing.

Continuing to illustrate the relationship between trauma, mental health and ketamine use, the following case study further highlights the inter-relationship between ketamine use and mental health.

Case Study 2: 22-year-old male

He was referred to the service by his stepmother in December 2023. At the time, he was **residing voluntarily on a mental health ward at a private rehabilitation facility, following a life-threatening overdose of prescription medication** that he had obtained illicitly, along with ketamine use. He reported no urological issues, apart from an **inability to pass urine when under the influence of ketamine and sometimes during the days after use.**

He has a diagnosis of borderline personality disorder (BPD) and started using ketamine aged 20 after experimenting with various drugs and medications, finding ketamine the most effective in achieving the "desired effect". He also used alcohol and cannabis occasionally for similar reasons. Prior to his overdose and admission, he was **using ketamine up to seven times per week to manage his thoughts and feelings.** He describes himself as having an "all or nothing" personality, and moderation does not come easily to him, leading him to take **large amounts of ketamine - up to six or seven grams per session.**

He described life as “mundane and monotonous” and reported having had suicidal thoughts for as long as he can remember, which is indicative of his BPD diagnosis. He takes mood stabilizers for this condition and is fully compliant with his medication. **He used ketamine as his drug of choice because it took him “out of his head” and made things “more bearable”.**

Support and Outcomes

The early appointments focused on addressing his ambivalence, as he was aware of the disconnect between “what he wants and what he does”. **He engaged well with the psychosocial interventions, and he had reduced his ketamine use to approximately once per fortnight** but was still using excessively at seven grams per episode. Regular sessions took place between February 2024 and April 2024. During this period, he was abstinent from prescription drugs and ketamine and was at the point of closure, having maintained his abstinence from ketamine for two months. Relapse prevention techniques were proving successful in maintaining his motivation for abstinence.

He had thrown himself into his work and had enrolled in a degree-level course for professional development in the next academic year. He used apps to track his abstinence and financial savings, which he found transformational, as he felt more “normal” compared to his peers who were achieving life milestones. However, in April 2024, he experienced a relapse, ordering Xanax, diazepam, and ketamine to be delivered to his home. Two days later, he contacted his advocacy worker to inform them and request an appointment. Interventions focused on the “Cycle of Change” and understanding his feelings of disappointment with himself and his actions. He stated that he had purchased seven grams of ketamine, but due to taking the other substances, he suffered a “blackout” and was unsure of the exact amount he had consumed. His parents disposed of the remaining substances, which made it more difficult for him to assess the extent of his use. **His low mood led to anger, and his parents called emergency services to maintain safety.** He was taken to a police station and held in the cells until he sobered up, but he was not held under Section 136 of the Mental Health Act, which he found surprising and relieving.

He has had an appointment with his Consultant Psychiatrist, and his mood stabilisers have been

increased. He took a short period of leave from his work due to anxiety about a meeting with his employers. Currently, he is still open to services, and any plans for closure have been revised, with a review of his care plan, including a review of his bladder health care.

These two case studies have highlighted the complex and inter-relationship between **ketamine** use, ACEs and mental health. The following sections illustrate how the use of **ketamine** to self-medicate and for other functions can impact on usage patterns, shifting from a substance used occasionally when partying to more frequent, in some cases, daily use.

From occasional to frequent use

Professionals often noted the increased number of young people they work with who are using **ketamine** more frequently than occasional weekend use.

“They are hammering it. It’s not like they are just doing it at the weekend. It’s in the week for them as well. [. . .] The attitude towards it [ketamine] as well is very different [. . .] and it’s kind of, ‘it’s just what you do’. You go on a night out and you have a few bumps. But then it moves on from that into after work, after education or whatever else it is they are doing. To just switch off. They are kind of losing the ability to relax or decompress or destress after work [. . .] it is very nuanced I think . . . about looking after their own stress levels and their ability to tolerate it.” (Young Adult Treatment Service Transition Worker, Manchester)

Our analysis of local treatment data found that more than half (54%) of those in treatment were using **ketamine** regularly (either daily or regularly at weekends). Over a quarter (26%) of the 77 currently in treatment reported daily **ketamine** use. Two-thirds (65%) of these are aged 18 or over, and three-quarters (75%) of daily **ketamine** users are male. As with many substances, the risk of dependency increases with sustained use. With **ketamine** becoming more popular outside of the club and after-party scene, there exists a greater chance of continued use amongst populations once considered somewhat restrictive in their drug

use (Hopfer et al., 2006). Many of the young people we interviewed noted this risk or recounted their own experiences of increased use.

"I think the risk with ket is its accessibility, I think people could form harmful habits from its accessibility. For example, it helping with sleep, with anti-anxiety, with stress but I think people already in those positions are more at risk . . . because it's very easy to lock yourself in a room and do it." (24-year-old female, Manchester)

"I think when I first started it was like not a very common thing maybe an occasion, wasn't a common thing, but I think when I started to do it on my own by myself type of thing, it started off rarely like I'd get a gram and it would last me a few months type of thing, you know? That would be quite spaced out between [use and purchases], I wouldn't do much. Then it progressed to more like weekly or even daily kind of thing." (18-year-old male, Trafford)

Higher tolerance

An increase in frequency of use can result in a build-up of tolerance, which requires users to increase their dosage to feel the intended effects of the drug. Sassano-Higgins et al., (2016) suggest that increased doses are also required for long-term users to stave off symptoms of **ketamine** withdrawal, which can include irritability, tremulousness, restlessness, sweating, dysfunctional sleeping patterns, and intense cravings. The build-up of tolerance meant that it was common for both young people who used **ketamine** and key professionals that we interviewed to refer to young people purchasing and consuming large amounts.

"One of them is a guy who has periods of abstinence but then he goes back to it, and he goes back to it large, but he has been using for four years and at his highest he was using approximately seven grams a day every day. The young woman whose referral I took the other day, I've only got this anecdotally from her ex-partner, and he said she was doing seven or eight grams a day every day and was using throughout the day as well. The other young person who has just had an unsuccessful rehabilitation

placement, he was at five grams a day every day, but he was doing it for four or five years." (Stockport Family Drugs and Alcohol Family Worker)

Almost half of the 22 young people we interviewed discussed how their tolerance has increased, leading to larger amounts being consumed.

"When I first used to use it me and my partner used to have a gram between us, and it would last us three or four sessions and [we would] have tiny keys. [. . .] but you build up a tolerance to it very quick, it's really easy to build up a tolerance to it. [. . .] there's about six of us and we'll get through about three grams in a night." (24-year-old female, Manchester)

Interviewer: "And how much would you use? What when I started? About .7 of a gram. That would last a night when I was 16/17 yeah. But soon, I was sort of doing, getting 3.5 grams for a day when I was 17. [. . .] So I mean like, the past year, I could've been using anything from seven grams to 20 grams a day." **Interviewer: "So, at your peak then, how much were you using a day? I'd say on average, I don't know, could be anywhere from 3.5 to 20 grams a day, depends on money and you know stuff like that, an average I'd say, eight or nine [grams]."** **Interviewer: "And were you just doing lines or . . . ? No, I'd take it off my hand. So I'd have it straight off my hand, probably about a gram and a half at a time. . . I'd say on average, probably about an hour." (24-year-old male, Stockport)**

" . . . it didn't take long for it to spiral into more use 'cause obviously your tolerance grows quite quickly for it especially when you're using it so often. I would usually buy pretty big amounts . . . like I'd get a quarter [of an ounce (seven grams)]." (18-year-old male, Trafford)

Of the 15 young males that reported daily use, and disclosed how much **ketamine** they use per session, the amount ranged from one gram to seven grams. Several females also disclosed high levels of use. This increase in use amongst young people is of concern due to the health problems related to the regular use of **ketamine** over a sustained period (see Sassano-Higgins et

al., 2016). The following section outlines some of the main **ketamine** related harms that were discussed.

Ketamine related harms

"... like the pain it causes you, like the physical pain it causes, the effects that it does to your bladder, and the effects it does to your mental health and the people around you, I've lost all relationships I've had. It's been really fucking hard with my family, I've lost six or seven jobs because of it, I lost a lot of time, I lost a lot of health because of it, I isolated for years, just using on my own. [...] I looked awful, I weighed 40 kilos, I couldn't take my head off the floor, you know, just looking down at the floor, I just didn't want to be outside, I hated life." Interviewer: "So what do you weigh now? 75 [kilos] so I've almost doubled [my weight] yeah, because I wasn't eating or drinking properly." (24-year-old male, Stockport)

Bladder Damage

Sustained **ketamine** use is thought to both tear the bladder lining and set off internal bladder inflammation. Together, these effects weaken the bladder's defences and overstimulate its nerves in a way that shrinks how much urine it can comfortably hold (Yang et al., 2020). The inflamed bladder mucosa can lead to dysuria (painful urination), while some individuals also observe hematuria (blood in the urine). With heavy, long-term ketamine use, the damage escalates notably. Extensive scarring and irritation cause the bladder to shrink down in size due to compromised elasticity and capacity of the detrusor muscle (Srirangam and Mercer, 2012). Long term use of **ketamine** has been highlighted as a cause of reoccurring cystitis amongst young patients, due to ketamine's "direct destructive effect on the urothelium; irritation, urgency, and frequency" (Berteen, Mathi, Aertgeerts, 2023;88), as well as gastronomical complaints, particularly abdominal pain (often known as 'K-cramps').

In keeping with the medical literature on ketamine related harms, the most frequently discussed physical symptoms were 'K-cramps' and problems with urination, typically pain when urinating, blood in urine and frequent need to urinate.

"We have some with bladder damage, two or three cases this month with severe pains and throughout the year, we have had quite a lot. They are 16 plus; we haven't seen anybody below 16. And at university, a lot of university age, 18 to 25." (Service Manager, Young Person's Substance Use Service, Manchester)

These symptoms are leading to an increase in the number of young people being referred to urology.

"... what we are seeing, is people are using much more to excess [...] we have a number of young people who are referred to urology at the moment. (Young Person Substance Use Service, Team Leader, Salford and Trafford)

"In terms of longer term use I've got two young people on my caseload that are open to urology and both of them are going to require corrective surgery in order to be well again based on bladder issues that they have due to long-term ketamine use and I took a referral last week that we have known and she was in absolute bits saying she has to wear nappies at work in order to not raise attention to the fact that she is going to the toilet all of the time. So she is wearing adult nappy pants in order to address that, and she is a 22-year-old." (Stockport Family Drugs and Alcohol Family Worker)

"She is actually 24, but I know that she has been using it for years, I think three years. So she was daily use, and she would normally use roughly 1.75 [grams a day]. She was one of those who was using it socially but then she started to enjoy the feeling of it to the point that she would use to block out feelings and using it daily and she has been using like that for months, well over a year and now she has bladder problems that we are trying to get addressed. She knows that the bladder problems are connected but it is not stopping her." (Exploitation Worker, Young Person Substance Use Service, Manchester)

"We've got one or two who are having urology problems, and one who is having sinus issues as well." (Young Adult Treatment Service Transition Worker, Manchester)

As the above example illustrate, those young

people who were in contact with urology for **ketamine** related bladder problems, had typically reported using **ketamine** daily for two years or more and in large amounts that ranged from one gram to seven or more grams a day.

In addition to bladder damage, long-term recreational use of **ketamine** can also lead to serious damage to the kidneys and liver. The main kidney issues are papillary necrosis, where parts inside the kidneys start to die off and break down, and upper tract obstruction, where the tubes carrying urine from the kidneys to the bladder become blocked due to the kidney damage. Additionally, chronic **ketamine** use can result in an impaired liver that can no longer properly metabolise substances, regulate blood and bodily functions, or protect the body from harmful compounds (Wood et al., 2011).

“Well after a year of heavy using, sort of everyday then, I was having, passing like big blood clots in my wee, really hurt to go to the toilet, more frequently, more urgently, and blood as well. You know not, it wasn’t always, it wasn’t a lot of just blood at that time, it was more dark orange, you know. But that was just after a year of heavy using. And then, cramps as well.” Interviewer: “Yeah, and what are the cramps like? Because you hear people talking about kind of ‘K-cramps’, but how severe are the cramps? How severe? It’s the worst thing I imagine I’ll ever feel. It’s like someone has both their hands on your kidneys, twisting them and squeezing them, and someone else has their hands in your stomach, twisting and squeezing.” Interviewer: “So it’s kind of like, next level pain. It’s not something you could mistake? I couldn’t get off the floor, first week I had them. And I got them quite a lot.” (24-year-old male, Stockport)

This level of required clinical response highlights a need and an emphasis for earlier identification and intervention. However, as we outline below, we found that young people’s timely access to the necessary support was often hindered by a lack of awareness of symptoms, misinformation around available treatment options or lack of clear referral pathways.

Accessing Treatment and Support

Despite reporting acute pain caused by their use of **ketamine**, access to treatment was often delayed.

Internally, feelings of shame and stigma surrounding their own drug use may prevent young people from seeking medical assistance or disclosing their use of ketamine.

Interviewer: “So did you go to the GP or A&E or anything? I didn’t for a while, I was having them [‘K-cramps’] on and off. And then, I did go to the GP a few times, but all they could give me was Naproxen and Buscopan to start with.” Interviewer: “And did you mention you were using Ket or . . . ? I imagine I didn’t for a while, no. [. . .] they should, I mean, they should really sort of push that to get, you know, if people are [using ketamine], to get it sort of out of them.” (24-year-old male, Stockport)

Therefore, as Wood et al. (2011:1883) assert: “It is clearly vital to ask the correct questions and failure to ask about recreational drug use will result in this being overlooked in many patients.” They go on to state that: “We would urge all medical practitioners seeing patients with these symptoms to ask about recreational drug use and to consider appropriate rehabilitation and support, along with referral to a urology department with a specialized interest” (Ibid). In keeping with this advice, several substances use service professionals that we interviewed noted that GPs, medical professionals, and urologists need to ask the right questions about **ketamine** use when young people are seeking help regarding urology.

Gill et al., (2018) note that if treatment is sought out, a poor understanding of drug related issues from medical professionals can result in misdiagnosis and recurrent patient dismissal. We found local evidence to support this.

“One of my clients, she was ending up in hospital every six week or so really with stomach cramps, bladder problems and she was quite open with them really, she knew herself it was through doing too much ket, but she was quite frustrated really that she would just be sent home, then end up back there again a few weeks later.” (LGBT+ Recovery Manager, Greater Manchester)

Wood et al. (2011) suggested a strategy for evaluating patients. They state that “Early investigation must rule out UTIs and is fairly standard. Anyone who gives a history of drug

abuse should be placed in contact with a local drug support service. If ketamine is identified as a factor we strongly recommend that renal function is assessed. In addition, a CT urogram is an important investigation to understand the extent of disease.” (Wood et al., 2011: 1882-1883). Indeed, we came across two examples (both females) where GPs had misdiagnosed **ketamine** related bladder symptoms as UTIs. In one case, the interviewee stated that she was unaware of the potential links with her use of **ketamine**, and in the other case, although she thought it was potentially linked to her use of **ketamine**, this was never asked or voluntarily disclosed.

To develop a better understanding of how to identify early warning signs, we interviewed one male who was on his second residential rehab and had urological and kidney damage related to his use of **ketamine** and asked him what he perceived to be early warning signs that his **ketamine** use was beginning to impact on his health.

Interviewer: *“So thinking back then, what are some of the early signs or symptoms you had that your ketamine use was causing problems with your kidney or . . .? Backache. Not to the extreme of proper [K] cramps, but sort of, achey back, pains in your bladder, dark wee, or you know, sort of orange or dark wee.”* (24-year-old male, Stockport)

Barriers to urology

When the need for urological intervention is identified, cessation is considered essential, as continued use can exacerbate the condition. However, cessation can prove difficult due to the dependence developed by the user and the issue that one of the most effective ways of treating symptomatic pain in the short term is via **ketamine** use (Gill et al., 2018).

Interviewer: *“And when you’re saying that you were really bad and you were on the floor and in the bathroom, did you end up in A&E or anything with that or. . .? . . . Nah, just, I didn’t like hospitals, I knew that I’d go, and the hospital could do nothing for me. I’ve been to hospital a few times with it before and they can’t do anything for me.”*
Interviewer: *“When you’ve been to hospital, did you say it was ketamine? Yeah, I told*

them I’d been on ket, yeah. I’ve been laying on A&E floors, like writhing in pain crying, and you know, I was hoping with them because I was desperate for help off them . . .”
Interviewer: *“And what did they do? Well, the only thing I’ve ever had off them, like I say, is Naproxen and Buscopan, but they both take days to start helping, so I was just self-medicating because it’s not good enough to get rid of it. So ket, diazepam, and like hot water.”* (24-year-old male, Stockport)

This example of self-medicating ‘K-cramps’ with **ketamine** echoes Wood et al. (2011) who have previously highlighted the difficulties in asking patients to stop using **ketamine** when “*they feel their only way of controlling the pain is with ketamine*” (Wood et al., 2011:1883). Indeed, in relation to those who have a urological treatment need, one of the issues that professionals often highlighted is that **ketamine** helps to relieve the pain caused by long-term, regular use and therefore, perpetuates use.

“On my caseload I’ve only got one, but she is referred to the bladder clinic because she has got bladder problems and she is in excruciating pain but again, you know, even though she is in excruciating pain, they’ve got this problem with constantly needing to go to the bathroom, she still hasn’t stopped as now she is doing it to self-medicate and deal with the pain. And I feel like I’ve said it to her like 400 times, ‘you’re in the pain because you are using this’ but I think sometimes they think that you are lying, or you are trying to kill the buzz or something.”
 (Exploitation Worker, Young Person Substance Use Service, Manchester)

The (sometimes increasing) use of **ketamine** for pain management of acute pain led some professionals to suggest that those young people on primary care urology waitlists for reasons due to ketamine use should be fast-tracked up the waiting list to avoid further damage and appropriate pain management needs to be provided.

Wood et al. (2011) observed that while the urological syndrome associated with **ketamine** use is severe, “*If drug cessation is achieved it may be, at least partially, reversible.*” (Wood et al., 2011: 1883). Again, we found evidence to support this.

"It's definitely got better, yeah, to a point. Yeah, I mean, about two or three years ago I had to go to the toilet every 10 minutes, in the last year I've been able to go 40 minutes . . . Maybe a bit less, half an hour. it's got better since I've stopped using and taking my medication properly. But I might still have to wake up sort of, seven or eight times in the night to go to the toilet but the best I get is 50 minutes probably, if that, without having to go again." (24-year-old male, Stockport)

As highlighted previously, this 24-year-old male had been using **ketamine** daily for seven years and reported using seven plus grams a day (up to 20 grams a day at times). Therefore, these improvements in his bladder health are encouraging.

Missed Appointments

It is also important to note that missed appointments in urology are common, as Wood et al. (2011:1883) note: *"many of this patient population have been unreliable attendees at both outpatient and investigation appointments."* This is due to the patients need to urinate frequently and pain.

"For the last two years it's been mostly at home using. But I didn't want to leave the house really, I owed some people a lot of money, I didn't want to walk about, it hurt to walk about, I had to think 'where am I going to go for a wee?' " (24-year-old male, Stockport)

Examples such as this led several professionals with experience of working with young **ketamine** users who frequently missed urology appointments stated that their **ketamine** use should be taken into consideration and highlighted a need to understand this, to be sympathetic and develop solutions, that may for example, include fast tracking and not closing cases due to missed appointments. The following case study highlights the need to be persistent when working with young people who use **ketamine**.

Case Study 3: 24-year-old male

He was referred through his GP in July 2021 but did not attend any appointments or respond to attempts at contact. Closed in September 2021 with a discharge code of "Client never attended."

In October 2021 he self-referred and was assessed as using 1.75g of ketamine insufflation daily and small amounts of alcohol. During the treatment episode, he declared the use of more alcohol and sporadic use of cocaine in conjunction with alcohol but was not seeking treatment for these. He maintained employment, which funded his continued use. His partner, also a daily ketamine user, was reported to be using adult nappies at work due to significant bladder issues, back pain, and urination problems. **In August 2022, he was placed in rehabilitation, where he stated he did not need detoxification, as he would often give up use for a few weeks at a time and reported no withdrawal symptoms.** He was subsequently discharged from the rehabilitation unit, having used ketamine within 30 minutes of arriving home and being reported as aggressive and using violent language towards staff and other residents.

In May 2023 he was self-referred through his parent, placed on a caseload and assessed in June 2023. Assessed as using 1.75g of ketamine per day, still snorting. The week prior to the assessment, he was hospitalized via the Accident and Emergency department after a deliberate overdose of prescribed Mirtazapine. He stated he would no longer consider a prescribing regime for his mental health. During the early stages of this treatment episode, he had periods of abstinence, but on relapse, would use at significant levels. He would often attend under the influence of ketamine, including using on the treatment service premises, and disclosed that he was attempting to sabotage contact. **In July, he reported changes to urination and, after one instance of using, could not urinate for over 40 minutes. He presented for key-working sessions clearly in pain, struggling to walk and interrupting sessions with trips to the toilet. He also reported deliberately missing urology appointments.** In August 2023, **funding was secured for a third placement in a rehabilitation unit, but a continued lack of engagement led to the case being closed at the end of January 2024.** Prior to closure, his GP was contacted and advised of concerns for his physical well-being. Since the closure, he has self-referred to treatment services again and requested a rehabilitation placement.

In addition to unsuccessful rehab placements, which highlight the need to carefully assess the suitability of rehab provision for this cohort, the deliberate missing of urology appointments is noteworthy.

Fear of bladder removal

One common reported reason for missing urology appointment and/or a reluctance to disclose **ketamine** use to medical professionals or access substance use treatment support was the fear of bladder removal.

"To be honest I just didn't want to know. I just kinda buried my head-in the sand as they say. I knew really that it was the ket that was causing it, so I didn't want to go to the doctors or treatment service and get told I need a [urostomy] bag." (22-year-old male, Trafford)

*"I know a bit about bladder damage and how you can lose your bladder because of it but I just try not to think about that one, you know what I mean? Interviewer: **"So if you thought you had bladder problems what would you do?"** Depends how bad I guess, but probably nothing, I don't wanna be told I'm having me bladder taken away." (18-year-old male, Manchester)*

However, we have been informed by urology professionals that they would typically be working with someone for 12 months with medication and bladder training to seek improvement before bladder replacement surgery would be considered or a urostomy bag or catheter is fitted. As Chan et al., (2022) outline, oral medications are considered first-line treatment, typically involving medications like analgesics, anti-inflammatories, and anticholinergics. If oral medications are ineffective, intravesical treatments like instilling hyaluronic acid into the bladder or hydrodistension to stretch the bladder are the next options followed. Reconstructive surgeries may be considered to improve bladder function for patients who do not respond to other treatments. There are other treatments prior to this such as intra-vesical bladder instillation to reline the bladder e.g., *Hyacyst*- a sodium Hyaluronate Solution -to stop urine leaking out of the bladder and reduces inflammation and discomfort within the bladder, which helps ease the painful symptoms.

"I had to have a hydrodistention of my bladder last year 'cause I was about to wreck it." (18-year-old female, Bury)

"... they've [urology] prescribed me something that does help my bladder now, it's like a muscle relaxant. It's called [attempts to pronounce medication name]. Something like that anyway, I don't know if you've heard of it. So that just relaxes your bladder, so it stops my bladder from spasming, and that does help. [...] I've only been given two options in the past but they said I had to be clean obviously, and that was 'you can have your bladder and your urethra stretched', so they put something in and it blows up to stretch your bladder out, and my urologist said he can take mine out, and take a bit of the bowel out and use a bit of my bowel to make a bladder. [...] but he said he wants six months sobriety before, you know, it's quite a serious surgery and he doesn't, you know, there's no point doing it if you're just going to use [ketamine] on that bladder as well." (24-year-old male, Stockport)

Seeking treatment too late

It was noted by several professionals working in young person and adult treatment that compared to other substances, they often did not see young people until they had got to crisis point and were experiencing severe physical effects related to their prolonged daily use of multiple grams of **ketamine**.

"Often by the time they access our service they are already in need of urological support and intervention. We need to be seeing them earlier." (Young Person's Substance Use Practitioner, Stockport)

The example below illustrates the severity of this young man's situation before he sought support and engaged with his local treatment provider.

*"I was 21 when I first went to Mosaic [the local young person's substance use service]." Interviewer: **"So how did you end up getting involved with Mosaic then? Because ... through lockdown my using got a lot worse and everything at home was chaos, I just, it was mental at home. And I was having cramps, and I've gone with my partner to a hotel because it's just falling apart at home, and I was just on the bathroom floor there, just throwing up bile, pissing blood on the floor, couldn't move, sniffing [ketamine] off***

8. Hydrodistention is a procedure that fills up your bladder with water.

the floor, and I just broke then, and I went to a rehab thing in Blackpool. And when I came out of there, got involved with Mosaic.”
(24-year-old male, Stockport)

Early identification and support

Accessing support early is crucial in limiting the harms caused by ketamine to the bladder, kidneys and liver. We found evidence that early intervention can lead to positive outcomes. The following two case studies involving 19-year-old females illustrate this.

The first case study is of a 19-year-old female who entered treatment suffering from severe cramps and back and abdominal pain. After receiving drugs education and following a reduction plan, she had been abstinent for six weeks at the time the case study was provided. Her urology examination found not damage to her bladder or kidneys, despite reporting that she had been using seven grams a day.

Case Study 4: 19-year-old female

She self-referred into the service, calling and asking for help. **She was crying in pain and said she was unable to manage the withdrawals, after she had decided to try and stop using ketamine without medical support.** A home visit was arranged, and **the patient appeared very unwell - pale, shaking, vomiting, and complaining of severe back and abdominal pain.** The patient reported previously being prescribed Propranolol to manage her anxiety and withdrawals, but she stated this was not very effective. **She used small amounts of ketamine throughout the day to manage the cramps and anxiety herself.**

A phone appointment with the patient's GP was initiated, and **she was prescribed a two-day course of Diazepam to manage the withdrawal symptoms.** As the patient was unable to get to the pharmacy, the Diazepam was collected for her.

The patient's background revealed that she had started using ketamine socially at the age of 16 with her peers. She had used MDMA on occasions but reported not mixing substances. **Her ketamine use had increased over two years to a point where she used up to seven grams daily.** She had a period of abstinence between November 2023 and February 2024 but relapsed when she travelled home to see her family, obtaining half

an ounce (14 grams) for £100. Her parents were unaware of her substance use, but she believed they had their suspicions due to her recent weight loss. She was a full-time university student with an active social life, playing sports and dancing. However, her ketamine use has affected this; she reported having to take a break from playing team sports and not working for a while.

Education was provided on bladder care, healthcare, and the risks associated with ketamine use.

She contacted the service later the same day, and she presented as a lot calmer but was still in considerable pain and had vomited again. She agreed for the service to contact emergency services, and a clinician called back to assess the patient over the phone. Concerned about the possibility of sepsis, the clinician advised the patient to attend the Accident and Emergency department. A taxi was organised to collect and take her to A&E. The service contacted her a couple of hours later, and the patient stated that she had not waited to be seen and had gone home as she felt a bit better. The hospital rang the next day and advised her to contact her GP to follow up. **The GP completed a urology referral, and she was seen within a couple of weeks,** with her bladder and kidneys apparently being normal.

A reduction plan was put in place, and she stopped using ketamine. She did not require any further treatment. Family and peer relationship work was completed, and she confided in her friends and her mom, who supported her. **The service is currently working on relapse prevention, and she is now six weeks into abstinence from ketamine.**

Some professionals working in Trafford and Salford have suggested the need for a 'red flag system' and a clear pathway for professionals to guide those in need of treatment for their ketamine use.

“Our staff have said that it's difficult to treat a young person [for ketamine use] because there are no pathways for young people. If they go to Pharmacies they are given strong pain killers, when they present at A&E we have young people that have just been provided repeat prescriptions on antibiotics and they don't get referred into young people drug services, unlike other areas. We have to attend GP appointments with the young person and explain about Ketamine cramps and then GP's google it in front of

the young person. They need support and training.” (Young Person’s Substance Use Treatment Service Manager, Trafford and Salford).

“Its hard to reach these young people because they are in other services and professionals are not aware. Because their ketamine use can escalate quickly and has resulted in acute and the chronic health problems for young people / young adults. I feel we need to develop red flag system, like we have with aerosol users, so that all professionals in contact with Ketamine users refer to them into treatment services.” (Young Person’s Substance Use Manager, Trafford and Salford)

The Director of Operations for a local young person’s substance use service operating in six of the 10 Greater Manchester local authority areas noted that although there are certain good practices that are being used, there is a need for a clear and consistent pathway to be followed.

“Urology have agreed that there is a need for a clear pathway into drug treatment services so that treatment interventions coincide with Urology and the client can reduce their substance use and work towards abstinence. As the chair of North West Young People & Families Substance Use Partnership group. There is some good practice emerging across different parts of the system but it needs pulling together into a prevention strategy alongside co-ordinated care pathways and treatment protocol for young ketamine users.” (Director of Operations, Young Person’s Substance Use Service, Multiple GM areas)

A manager of a young person’s substance use service also stated that GP’s lack of knowledge about ketamine use need to be addressed and they need to be trained regarding the right questions to ask to ensure that a young person’s ketamine use is identified and that they are referred to the right services.

“Staff have reported different approaches from GP’s ranging from pain management pathways, prescribing drugs such as diazepam and strong analgesics, introducing these prescription drugs are only adding to the problems. It was agreed in the Northwest group that young ketamine users should be a red flag, that directs all health and social care professionals to referred

to their local YP specialist drug treatment services, this way there can be a supported and co-ordinated approach to address ketamine use.” (Manager, Young person’s Substance Use Service, AREA)

The second case study also involves a 19-year-old female who reported using 4 grams of **ketamine** every day to self-medicate her mental health and feelings of loneliness. This provides another example of the use of **ketamine** amongst university students and highlights the need for local services to provide support to Greater Manchester’s large student population. It also illustrates how early intervention including a combination of motivational interviewing techniques, harm reduction advice, drug education, and support in identifying motivations to change can be effective, in this case, leading to a reduction in use from four grams to 0.5 grams a day.

Case Study 5: 19-year-old female

This 19-year-old female had been working consistently with an early intervention service since May 2023, after previously engaging with her local young person’s substance use service on two occasions. **She was initially referred in 2020 for Xanax and ketamine misuse after being admitted to the hospital due to an overdose on these substances.** She then worked with the early intervention service again in 2022 for ketamine use, before referring herself back in 2023 for continued ketamine use.

She reported that **she had started using ketamine to manage withdrawal symptoms from Xanax.** In 2023, she disclosed that **she was ‘sniffing’ three to four grams of ketamine every day by herself** and explained that her tolerance was very high. **She reported enjoying the ‘k-hole’ sensation that ketamine provided but stated that she could no longer achieve this effect due to her high tolerance. She also felt that she could not complete her daily tasks without using ketamine.**

She is currently studying at university and working part-time in the hospitality industry. **She reported that the long 50-mile commute to university led to her feeling isolated, as she did not make any friends, which contributed to her increased ketamine use.** However, since starting university in September 2023, she has made more friends and is feeling less isolated. Her grades have

improved, and she is motivated and interested in completing her degree and is able to talk at length about her studies and future career plans. She continues to enjoy her part-time work at a local café, which provides her with structure and a space to socialise.

She has recognised her relationship with ketamine as an 'addiction' and her dependence on it. She stated that **her main reason for using was loneliness. She has been attending weekly one-on-one sessions since March 2023, utilising motivational interviewing techniques, receiving harm reduction advice, drug education, and support in identifying her motivations to change.** Prior to engaging with the young person's treatment service, she was attending Narcotics Anonymous once a week, which has now increased to twice a week.

She has **created a reduction plan and has been slowly tapering her ketamine usage, reducing by approximately 0.5 grams per week.** She has also been encouraged to keep a drug diary, which has helped her recognise her progress and identify barriers to change. Sessions have focused on relapse prevention and future planning, and she has identified the need to find alternative pastimes to support her recovery.

Regarding her physical health, she has experienced abdominal pains and a frequent need to urinate, which she initially did not connect to her ketamine use. Through partnership working, it was identified that her ongoing ketamine use could have 'dramatic and life-changing consequences', and **she was referred to various medical specialists, including urology and gastroenterology, to address the physical impacts of her substance use. She has also made significant progress in addressing her mental health,** which she has historically been very private about. More recently, **she has opened up to her family, friends, and treatment providers about her mental health struggles and has been signposted to counselling services and prescribed Sertraline for depression.**

This case study further highlights the relationship between ketamine and self-medication, in this case, mental health and loneliness, alongside the importance of early engagement with services and drugs education in relation to potential harms. Indeed, several young people discussed the need for more education around the potential harms

associated with **ketamine** use.

"I think because there's no sort of, it's not got the same name as, you know, sort of, the other hard drugs, so like coke, or crack or heroin or whatever, you get a lot of kids taking it, and they have no idea what it does to you." (24-year-old male, Stockport)

"To be honest I never really knew about things like bladder damage, addiction and all that. The negative stuff I used to hear growing up was about it being a bad look you know, getting 'ket-legged' and out of it when you've done a bit too much you know?" (20-year-old male, Stockport)

"I think looking back, what put me off a little bit when I was younger was the things about it being a horse tranquiliser and some people saying negative things about people who used it or when you were out, you could tell if somebody was off it on ket or at a festival all kettled up, staggering about on 'ket legs' or clinging on to a post! [laughs]. ." (22-year-old male, Manchester)

While discussion about **ketamine** related harms and harm reduction often focused on the long-term harms of prolonged and regular use, in addition, we found evidence of the importance of young people being aware of the immediate harms of use. This includes the need for them to be educated on the risks of mixing with other substances, including medication, dosing (amounts and frequency of reuse), content and purity. As we illustrate below, it was common for the young people we interviewed to report needing emergency medical attention due to the immediate effects of use.

Medical Emergencies

Almost a quarter (5/22) of the young people we interviewed reported being hospitalised related to their use of ketamine.

"So I had like a proper medical emergency because I just, I didn't know but I had just been put on some proper medication called mirtazapine⁹ and it had some mad effects with that. So I ended up with what I just thought I had ket legs, you know, you think it, but I ended up there with a GCS¹⁰ of like three, which was really low!" (18-year-old male, Salford)

9. Mirtazapine is most commonly prescribed for depression, but it can also be used for the treatment of OCD, PTSD, anxiety and to help to calm cravings and reduce drug-seeking behaviours.

10. The Glasgow Coma Scale (GCS) is a system developed by experts at the University of Glasgow in Scotland in 1974 to "score" or measure how conscious you are. It is the most used scale for measuring decreases in consciousness, including coma. It does that by giving numbered scores for how awake you are, your level of awareness and how you respond to basic instructions.

"I've just had a few lads who ended up in A & E with it recently, using it in school, getting kicked out of school. [. . .] I had a lad last week who went to hospital after doing it in school and I had a girl, I think she was 14, 15 went to A & E in the summer. She went to a house party, was drinking vodka and doing ketamine. So it's all ended quite badly for them when they've used it. Especially when they've mixed it with other substances as well." (Substance Misuse Advocacy Worker, Trafford & Salford)

"The one that I paid 10 [pound a gram] for, it weren't good, . . . I got my dad's car up to A&E and got me blood tested. It weren't actually coming up for [ketamine], what was in it." (15-year-old male, Salford)

The following section provides young people's perceptions of the current quality of ketamine together with an overview of this year's MANchester DRug Analysis and Knowledge Exchange (MANDRAKE) forensic analysis of local ketamine.

Market Insights

There was a range of views on the quality of **ketamine** with some young people suggesting that it was more potent and others of the opinion that the quality was lower than it had previously been.

"If anything for me I feel like ketamine is getting more potent over the years, but that's just my own personal experience though." (24-year-old male (2), Salford)

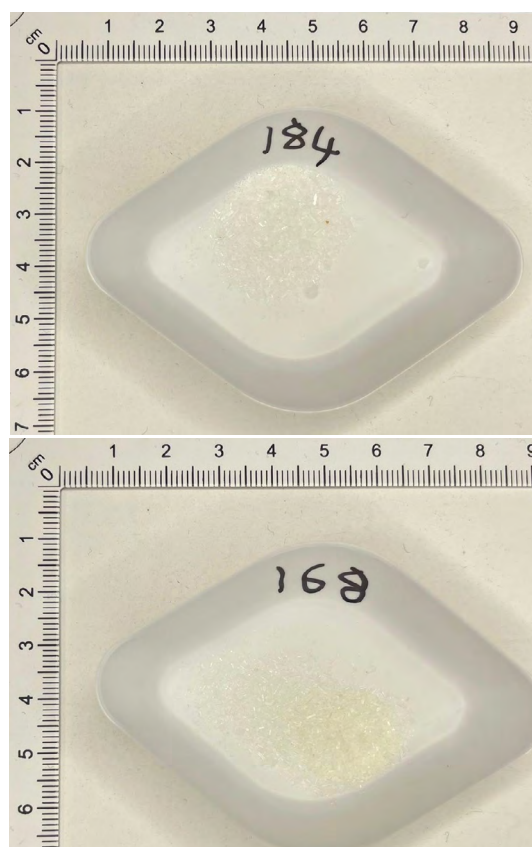
"Well from what I've heard, its nothing like it was 20 years ago, and it's hard to say, I think it's got worse in the six years I've been using it, it's got progressively worse, but that could just be my tolerance to it." (24-year-old male, Stockport)

"I'm not sure really you know. When I think to when I first started using it about four years ago now, I can remember doing little bumps and being fucked! I wouldn't even entertain the idea of a tiny line. Now, I'd say not [doing] as big as [lines of] coke but definitely a decent sized line to get anything like that kind-off buzz . . . but is that the quality or my tolerance levels? All I know is I'm having to use a lot more now to feel the same effects." (21-year-old male, Trafford)

However, as noted above, those who have been using regularly for years will have built up tolerance, so their perceptions in relation to poorer quality **ketamine** may be related to their increased tolerance to it. In this respect, the forensic analysis conducted by MANDRAKE provides a more reliable and objective indication of current quality.

During this year's MANDRAKE testing cycle, 16 **ketamine** samples were analysed. The **ketamine** purity in these samples ranged from 14% to 100% with an average purity of 57%. This is slightly higher than last year when the purity of the 14 samples of **ketamine** analysed ranged between 11% and 99% purity with an average purity of 55%. Almost half (7/16) of this year's **ketamine** samples were above 90% purity with three containing 100% **ketamine**.

The two images below provide examples of low and high purity **ketamine**. The first image marked '184' contained 98% **ketamine** while the second sample, marked '168' was only 25% **ketamine**. We discuss adulterants below. It is noteworthy that the lowest purity (14%) was found in a sample that was pink. This was found on analysis to be a mixture of **ketamine** and **caffeine**. As we highlight in the main report



in the section 'Drugs known by a nickname' there appears to be an emerging trend of pink powder being used that **MANDRAKE** forensic analysis has found to contain a wide range of content. **MANDRAKE** also analysed 186 samples of **ketamine** at the Warehouse Project between September and December 2023. Analysis revealed a wide variation in purity from three to 99%. The wide range in purity supports user reports of varying quality.

"It definitely changes in batch quality, sometimes you'll have a batch with one key and be fucked and other times you'll have 3 or 4 keys and just feel wobbly." (24-year-old female, Manchester)

"It depends really, I've got good ket of my dealer one day, so I go and order some more and the next stuff is shit! But I think a sign it is decent is if the shards are big. I don't like it either if it's already crushed into a powder when you buy it." (20-year-old male, Trafford)

It was common for people who use **ketamine** to suggest that big shards are a sign of quality.

"Normally if you have bigger shards it's going to be better." (24-year-old male, Stockport)

"You need to check the shards. If they are nice and long, then it's probably good stuff in my experience. . . I'm a bit suspicious when it's already crushed and not in shards . . . snide!" (18-year-old male, Manchester)

The same comments around big shards being an indicator of good quality were made in reference to good quality **crystal methamphetamine** in last year's adult trend focus on drugs associated with chemsex.

As highlighted above, **ketamine** that comes in powder form was often discussed as more likely to be poor quality.

"Yeah so, if its stuff like blocking your nose, as well, that's normally, like as soon as you have some it just shuts, that tends to be a sign that it's not good quality, you can get powdery stuff, and that, it gets you high but not like the feeling of ket, its different, so I don't know if that's been bashed more with

something that does have an effect on you or what." (24-year-old male, Stockport)

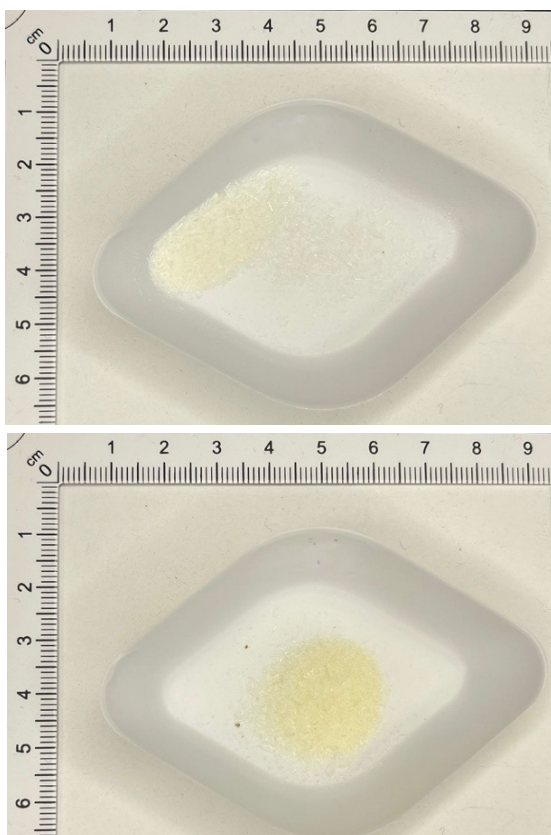
One of the most common adulterants of **ketamine** is thought to be the food additive *Monosodium glutamate* (MSG) and one experienced user of **ketamine** suggested that **ketamine** mixed with MSG has a distinctive taste to it.

"Yeah, you know, I could tell when it was [cut] just from the taste of it, and it was, I'd say it was more 60/40 that it was, 40% it had been bashed with something." **Interviewer:** *"So how, when you say you could tell, what would be like the signs that it was good or not kind of quite right in terms of the taste?"* *Well, we used to call bad ket 'gravy ket', because it had a weird taste to it, almost like a soapy taste to it, and it slides down, you could feel it sliding down your throat, so yeah, that's we always thought it's got that MSG in it."* (24-year-old male, Stockport)

The images below of MSG illustrate how the MSG shards are like shards of **ketamine**, which as noted above, are viewed by many **ketamine** users as a sign of good quality **ketamine**.



Two samples (see below images) accessed from Manchester city centre in June 2024, contained significant levels of **xylazine**, resulting in a Greater Manchester Drug Alert (see appendix).



Xylazine, is a substance used in veterinary medicine known to cause sedation, analgesia, and muscle relaxation (Sue & Hawk, 2023). **Xylazine** reduces level of consciousness while lowering heart rate and blood pressure. Human case reports have also identified decreased respiratory rate and the need for mechanical ventilation in instances of very high dose **xylazine** administration. In the UK, there have been at least 16 cases (11 fatal) reported to coroners since 2022. Although **xylazine** has been detected in a range of street drugs, UK fatalities are mainly thought to involve **heroin** adulterated with **xylazine**. It is unknown what role **xylazine** played in these deaths (Copeland, et al., 2024).

Concerns about the content of **ketamine** led several young people to suggest that when using a new batch, you should always start off slow.

"So like [start] small and slow. Because it gets you quite quick and you never know how pure it is . . . A massive key from a batch could be ten times weaker than a tiny little

key from a different batch. Like you've just got to start small and slow . . . You'll know when you feel it." (18-year-old female, Bury)

In addition to this advice around starting low and going slow, several other harm reduction strategies were discussed.

Harm Reduction Knowledge and Strategies

During the interviews with young people who used **ketamine** we asked them what harm reduction strategies they employ and what harm reduction advice they would give to others. This led to several common themes to emerge. One of the most common pieces of advice was to drink lots of water and to keep hydrated.

"Drinking loads of water, hydrate that's probably a habit everyone's developed because it's common knowledge that ket fucks up your bladder." (24-year-old female, Manchester)

"Drink a lot of water. The thing is, with drinking a lot of water, I didn't because it hurt when I went for a wee. So I didn't want to go for a wee, so I didn't drink. But when you damage your bladder, you have to go, you go anyway, sort of, whether you need a wee or not. And it hurts more when you don't have anything to pass, because you know, you're getting all sort of, clogged up in your tubes and your urethra. So, you know, I was running to the toilet sometimes and have like, a dribble, but it felt like I really needed to go. So yeah, staying hydrated, drinking a lot of water if you're using, I think that's a big thing to help your bladder. [. . .] So I've been drinking a lot of water the past couple of years, and I think that definitely helps, helped me sort of clear it, as I was using. Because if you don't, it just sits in your bladder and re-crystalises on the walls of your bladder." (24-year-old male, Stockport)

It was also common for young people to talk about crushing up the **ketamine** shards into a powder to reduce the risk of bladder damage.

"I always crush it up really fine. The shards kinda stick to your bladder so you have to make sure you get rid of the shards and crush it to a fine powder." (21-year-old female, Manchester)

"Make sure you crush it properly. I use a rolling pin when it's in the bag. The shards cut the wall of your bladder and that's what cause the problems with your bladder so yeah, make sure you crush it down well, that's my top tip! [laughs]" (20-year-old male, Trafford)

However, as this interviewee who has experienced severe urological complications notes, from his own experience, this does not prevent bladder damage.

Interviewer: *"People have talked about how you've got to crush it really fine, do you think that makes any difference?"* Hmm, I don't know, possibly, but not much if it does yeah, because I've always crushed mine and it's not stopped it from doing it [damaging the bladder]. I think if it's sitting in your bladder, you know, because mine shrunk, and they said it was in the tract up to my kidneys, you know, from your kidneys into your bladder, it was on the way up there. [. . .] *it was starting to damage my tract that goes from my kidneys to my bladder."* (24-year-old male, Stockport)

A lesser discussed harm reduction technique to reduce the risk of bladder damage, discussed by two of the 22 interviewees involved spitting out any **ketamine** that you could feel going down the back of your throat, referred to here as 'drop back'.

"I've heard with ket you're supposed to spit out your drop back because it's supposed to not mess with your bladder." (24-year-old female, Manchester)

However, harm reduction practices such as these were passed on through peers rather than from reliable information sources, highlighting a need for more accessible and reliable harm reduction advice.

Nevertheless, we came across some sensible harm minimisation advice in relation to reducing the risk of taking too much **ketamine** based on young people's own experiences. Observing what the time is when you use **ketamine** and leaving suitably long gaps between re-using was discussed as a good harm reduction strategy by three of the young people we interviewed.

"I will always check my phone for the time and try and not use for at least half an hour."

I also check because you know what it's like with ket sometimes, you lose all perception of time and space. You can think it's been ages when it's only been two minutes or the other way round! So, I like to check the time like, so I have a proper grip on what is going on and how much time has gone by [laughs]." (19-year-old male, Trafford)

"I would advise for harm reduction purposes people should check the time they take the drug. [. . .] I would advise people to wait at least half an hour between keys, make sure you really crush it up, so it goes further and do baby keys. [. . .] If taking it with other drugs, especially alcohol, maybe even wait longer, wait an hour because the ket wears off and you're absolutely smashed!" (24-year-old female, Manchester)

In the following section, we highlight the common combination of **ketamine** and **cocaine**. It was often noted that mistaking a bag of **ketamine** for **cocaine**, could lead to unpleasant and unintended effects. To mitigate against this, one common strategy that interviewees reported was to clearly distinguish one from the other, for example, by marking them with a 'K' and a 'C'.

"When you go into a club or rave or whatever and do it with cocaine it's like a military operation because you have to be so on time with when you take them otherwise your whole day can be ruined! You have to label your bags for coke and ket. Just write 'C' and 'K' in sharpie on the bag in massive letters." (24-year-old female, Manchester)

As alluded to above, another common theme to emerge was around the increased risks of mixing **ketamine** with other substances. The following section details the most common polysubstance use combinations that were discussed.

Polysubstance Use

One combination that was viewed as risky by a couple of the young people we interviewed was **cocaine** and **ketamine**.

"I would assume it's much more dangerous to mix ket with cocaine than alcohol." (22-year-old female, Manchester)

Yet despite these perceived risks, it remains one of the most popular combinations.

Interviewer: “Did you always have it with other substances? Yes, 100% of the time, I’ve taken ketamine with other substances. [. . .] So the first time I took it I had had a lot of cocaine, probably about half a gram to myself.” (22-year-old female, Manchester)

The most popular substances used with **ketamine** amongst those young people in treatment that reported daily use were **alcohol** (40%), **cocaine** (35%), **cannabis** (35%), and **MDMA** (20%). The following interview extracts illustrate the way **ketamine** is used in conjunction with these substances for different desired effects and functionality.

“[I use ketamine] Sometimes on its own, sometimes when drinking, sometimes with coke. [. . .] If I’m using it with a group of people like a socialising context, I’d always use it with cocaine to balance me out so I’m not just tired and wanting a burger and to go to sleep.” (24-year-old female, Stockport)

“So if I was just having an evening in like last Sunday with a few of my mates and we’re making or ordering food I’d normally just have a few glasses of wine and some ket and we’d all get a bit giggly a bit more relaxed but we know we’re all going to be in bed by 12 whereas if I’m going out I’d normally have a bag of coke and start off with a key of ket and drink and then when I start feeling like a bit lethargic and a bit confused then I would take some coke to burst up some energy but if I take too much coke and your jaw gets tight and you’re chatting to everyone and a bit scatty like you do with coke then I’d take a few keys of ket to bring me down.” (24-year-old female, Manchester)

As noted earlier in this report, one motivation for using **ketamine** was the lack of hangover or comedown and ability to function the next day. In keeping with this, a couple of the young people that we interviewed stated they had replaced previous use of **MDMA** with **ketamine** and **cocaine** due to the fact they felt better on the days following taking **ketamine** and **cocaine** than they did after using **MDMA**. As McKetin et.al, (2014:26) note, what is commonly referred to as a ‘comedown’ can include feelings of “*dysphoria, depression, lethargy, irritability, anxiety, agitation, hyperphagia*¹¹ and

*hypersomnolence*¹².” Another stated factor in switching to **ketamine** and **cocaine** use from **MDMA** related to concerns regarding **ecstasy** content.

“I’ve gone off [ecstasy] pills to be honest . . . there is always concern about what’s in them these days and I feel like shit for two days after! But with ket now, or ket and coke, I can take it all night, get to sleep fine, and wake up the next day feeling brand new! No comedown, crack on . . .” (22-year-old male, Trafford)

The mixing or combined use of **ketamine** and **cocaine** for the desired effect was often discussed by the older interview participants.

“I think it ends up being a more fun experience using it with coke than just on its own, but it does have the advantage that if you’re too coked up and you wanna feel a bit more wavy sort of like, for me using ket everything slows down a little bit and it feels like your drunk in a way but you know its gonna wear off quicker.” (24-year-old male, Salford)

This has been a well-known popular combination for many years, known as ‘CK’ and as detailed below, often involves taking both substances concurrently, often in the same line.

Interviewer: “Do you ever do a line where you mix the coke and ket? Yeah, definitely, if we had been day drinking and had gone back to the apartment and had like bowling or a gig booked, we’d racked up a load of lines which would be mixed cause we were going harder into the night.” Interviewer: “And what kind of ratio would you do of coke to ket? 50/50.” (24-year-old female, Manchester)

In addition to achieving a particular desired effect, **ketamine** and **cocaine** were also used to counteract the effects of each other. For example, if the **cocaine** was making them feel anxious, they would have some **ketamine** or if they were feeling too ‘wonky’ or ‘spaced out’ **cocaine** would be used to ‘straighten’ them up.

“. . . more of a mix, I’d say most the time I use it on its own but if it was brought for a purpose e.g. going on a night out or go to clubs then I’d probably end up doing coke as well, sadly it’s like a flick of a switch, you

11. Hyperphagia is an intense, persistent sensation of hunger leading to excessive eating.

12. Hypersomnolence is defined as an inability to stay awake and alert during major waking episodes, resulting in periods of irrepressible need for sleep or unintended lapses into drowsiness or sleep.

get too fucked up on one, you level out [with the other], that's how I'd tend to use it."
(24-year-old male, Salford)

While the use of **ketamine** and **cocaine** together was commonly reported by the young adults that we interviewed, nobody aged 18 or younger discussed this polysubstance combination. For this age group, the combination of **cannabis** and **ketamine** was more common.

"I used to do ketamine and bongs, ket and joints together." (16-year-old male, Salford)

The effects were reported to be more hallucinogenic.

"I've used both [ketamine and cannabis] before and use the ket and then have a bong and it adds more to the feel - a bit more trippy." (18-year-old male, Trafford)

As noted previously, there is a need to educate young people on the specific effects and risks associated with mixing **ketamine** and other substances such as **alcohol**, **cannabis**, and **cocaine**.

Summary

This **Ketamine Trend Focus** has highlighted several changes in the patterns of **ketamine** use. We have illustrated how attitudes towards **ketamine** use have changed from a niche, and often stigmatised substance associated with clubbing and/or as a post-clubbing/stimulant drug use comedown/chillout drug, used by young adults to a substance that appears to be used now at a significantly younger age, and for a diverse range of motivations and functions. We have illustrated that this includes to self-medicate mental health (e.g., anxiety and depression), to alleviate boredom and loneliness, to aid sleep, chillout, and to cope with adverse childhood experiences and trauma.

This multi-functionality is leading some young people to use **ketamine** more regularly, including daily use, rather than occasional use at weekends when going clubbing or in a party setting. The increasingly regularity of use can lead to increased tolerance, resulting in daily use of one gram or (considerably) more. Many of those young people who develop daily usage patterns have (often unmet) mental health needs, including trauma, anxiety, and depression. The regular use of **ketamine** in these quantities, over a prolonged period (e.g., 12 months or more) can lead to urological, kidney and liver damage, leading to acute pain and requiring urology referral. While it is important to note that need for urology referral is typically related to daily use of large amounts (commonly self-reported use of one to seven or more grams a day) over a sustained period of a year or more commonly two years plus, we found that early intervention is key to maintaining bladder health and limiting damage to the kidney and liver. However, young people are not always aware of the risks of long-term, regular use or the early warning signs that their use may be damaging their health. Likewise, GPs and other medical professions are not always aware of these symptoms and in some cases, they are not asking young people presenting with symptoms, whether they use ketamine, resulting in misdiagnosis and missed opportunities for earlier intervention and urology referral. In response to these headline findings, we make the following recommendations.

Recommendations

“Doctors and hospitals don’t do anything for you. I think especially for them, like health professionals and then funders, it [my message] is to take it fucking serious. [...] because it destroyed my life, and it’s left its permanent marks on me. I don’t know whether it’s because it’s new or because it’s not physically addictive or whatever, but they don’t seem to take it as seriously as other usage.” (24-year-old male, Stockport)

Following on from this trend focus report on ketamine use and young people, we recommend the development of a clear tiered approach to respond to young people’s ketamine use as follows:

Tier One: Prevention

Develop a prevention strategy to include:

- Education and awareness and responses across the whole system
- Further research into young **ketamine** users understanding of harms
- Myth busting and harm reduction advice

Tier Two: Brief Interventions

Brief Interventions should be designed and agreed that focus on:

- A public health campaign
- Education and harm reduction information for professionals. This should include the identification of key professionals who are likely to come into contact with **ketamine** users
- Pathways into treatment services

Tier Three

- A review of existing treatment protocols for young **ketamine** users
- Development of psychosocial interventions
- Identification of good practice, including the use of screening tools
- The design of tier three pathways where young ketamine users may present linking to young person specialist treatment services
- Consider how young **ketamine** users can be better captured on national data sets

Tier Four

- Identify suitable inpatient detox facilities for the different age groups
- Commissioners to review their preferred providers list to account for young adults requiring rehabilitation

To identify and address bladder damage, we recommend increased access to outreach bladder scans similar to the *Fibroscan* offer for alcohol and liaison with continence nurses.

The finding that ketamine is being used to self-medicate leads us to recommend the facilitation of quicker access to mental health treatment for those who self-medicate. This should include screening (*Assist Lite*) for substance use and brief intervention delivered at point of contact with mental health services (and other services).

We also recommend the development of education, information, and training for professionals. Professional training should include developing an increased understanding of effective analgesia for those experiencing **ketamine**-related urological pain; the links between trauma, anxiety, and self-medication, including establishing better professional understanding of whether people who report self-medicating have tried to access mental health services or approached a GP, or if self-medication was to avoid having to engage.

We recommend the development of strategies that focus on early intervention and awareness raising. This should include more awareness raising that tolerance to **ketamine** builds up very quickly; that higher doses are needed to achieve the desired effects; that **ketamine** can cause incontinence, bladder, and kidney damage; and of the early urological signs and symptoms of ketamine induced harm (e.g., an increased need to urinate, passing blood, leakage of urine and pain on urination).

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KETAMINE

Adulterated with Xylazine

Several recent tests in Manchester on samples of drugs sold as ketamine have detected the presence of **xylazine**.

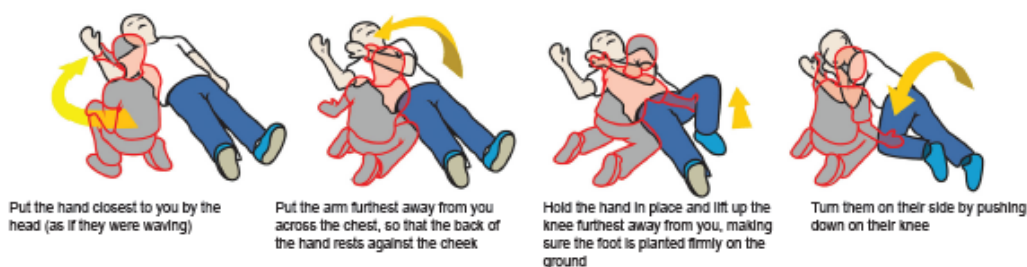
- **Xylazine** is a potent sedative used by vets on large animals.
- **Xylazine** has been found as an adulterant in heroin and in a range of other drugs. It has been associated with at least a dozen deaths in the UK.*
- The combination of **Ketamine** and **xylazine** is likely to result in extreme sedation and could be fatal. Using alcohol or other drugs at the same time increases the risk.
- The combination of **Ketamine** and **xylazine** will also leave you extremely vulnerable and at risk of sexual assault and robbery.

*Xylazine can cause severe skin ulcers, although this thought to be a result of dirty injection equipment.

Harm Reduction Advice

- Start any new batch of ketamine with a small test dose and don't take more for at least an hour.
- Make sure you are in a safe environment
- Don't use alone as there is nobody to help if you overdose.
- If using with friends, take it in turns so you can look out for each other.
- If somebody overdoses, has a fit or is in distress, call for an ambulance or seek help straight away.
- If a friend is unconscious and can't be roused, put the person into the **recovery position** to avoid them drowning in their own vomit. Call for an ambulance or seek help from medical welfare staff straight away.

The Recovery Position



Dependent often daily use of ketamine is increasing and leading to an increase in serious damage to peoples bladder, kidneys and liver as a result.

Help and advice is available from your local drug service

<https://www.talktofrank.com/get-help/find-support-near-you>

<https://gmtrends.mmu.ac.uk/>

