

Prevalence and perceptions of ketamine use among Danish clubbers: A mixed-method study

SIGNE RAVN & JAKOB DEMANT

ABSTRACT

AIMS – This article describes the prevalence of ketamine use among Danish recreational drug users and provides a contextual understanding of ketamine use within this group. **METHODS AND DATA** – The analysis is based on a mixed-methods night club study combining a survey among guests in night clubs (N=1,632) with qualitative interviews (9 focus group interviews, 6 double interviews, 7 individual interviews; 53 clubbers in total). **RESULTS** – 10% of the clubbers have tried ketamine (lifetime use). The ketamine users have also tried a range of other drugs. When taken in club settings, ketamine is often part of a poly-drug repertoire. When used in private settings, ketamine is often taken alone to explore its hallucinogenic effects. The users are aware of the potency of the drug, but do not pay attention to long-term negative effects of ketamine use. **CONCLUSION** – Ketamine users predominantly prefer to use ketamine in private settings. This can be viewed as a strategy for risk management, but also as a way of optimising the combination of drug – place – social – body, thereby creating a drug experience that is not possible in public settings.

KEY WORDS – ketamine, recreational drug use, youth, mixed methods, club study.

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Introduction

Ketamine is an anaesthetic used for animals as well as humans (Dillon et al. 2003). Recent studies have also shown that ketamine has anti-depressant effects on persons with "treatment-resistant depressive disorder" (Diazanados et al. 2010). Non-medical use of the drug has been known for decades, particularly since the mid-1990s, in different parts of the world, including the United King-

dom, Australia, Sweden and the United States (Dillon et al. 2003; EMCDDA 2002). Ketamine is a "dissociative": intake of the drug can lead to 1) a lack of responsive awareness and 2) a feeling of dissociating the mind from the body (EMCDDA 2002). These effects are exactly what most users pursue when taking ketamine recreationally. Scientific knowledge about the practice of use and the perceptions

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of ketamine is still limited, also in Denmark (see Moore & Measham 2008 and Newcombe 2008 for exceptions). However, in terms of other drug use, a growing body of research has shown that Danish adolescents and young adults are among the most drug-experienced in Europe. As many as 48 % of the 15–34-year-olds have tried cannabis (lifetime use, European average 31.6 %), while 9.5 % have tried cocaine and 10.5 % have tried amphetamine (lifetime use, European average 5.9 % and 5.2 %, respectively) (EMCDDA 2010a; EMCDDA 2010b). Whether this situation permits us to view the use of cocaine and amphetamine as normalised in Denmark is still debatable, though, even in club settings (Ravn 2012). However, cannabis use as well as drinking frequently and towards intoxication have already reached such a state of “normalisation” (Järvinen & Demant 2011). This position makes it relevant to investigate ketamine use among Danish youth and to add to the limited amount of literature on the topic.

This article aims to describe the prevalence of ketamine use among Danish recreational drug users and to analyse perceptions and contexts of ketamine use within this group. The analysis is based on a mixed-methods night club study, which makes it possible to focus on drug prevalence in a specific subpopulation, that is, young clubbers. This is parallel to Moore & Measham’s (2008) British ketamine study, which provided a comprehensive analysis of the meanings associated with ketamine use among young Britons. However, our analysis aims at extending this by further relating these meanings to the different social settings in which ketamine is used. While Moore

and Measham focused on ketamine use in club and post-club settings, the data in the present study suggests that private house parties for smaller or larger groups of friends may be experienced as more well-suited for ketamine consumption. By exploring how different levels of intoxication are experienced as best fitted for different settings, we thus seek an even more nuanced understanding of recreational ketamine use.

The first official reports of ketamine in Danish nightlife were seen in early 2002 in relation to night clubs in Copenhagen (Ritzau 2002). The drug was arguably introduced to the recreational drug scene earlier than that, but this passed more or less unnoted, and from 2000 to 2006 the annual number of seizures of the drug was very low, leading the authorities to conclude that the drug was not very common. However, a rapid increase in the annual number of police seizures by the end of 2007 led to the categorisation of ketamine as illegal in Denmark with immediate effect in February 2008 (Ministry of Health and Prevention 2008a; 2008b). In Denmark, ketamine is a relatively expensive drug with approximate street prices ranging from €60–70 for 1 g. This is on par with powder cocaine in Denmark but is significantly more expensive than ketamine in, for example, the street market in the UK and Hong Kong (Joe-Laidler & Hunt 2008; Moore & Measham 2006; 2008). Analyses of seizures from 2007 to 2009 have shown a relatively high purity of the drug (72–83 %) (Retskemisk Institut [Department of Forensic Chemistry] 2008; 2009; 2010).

In the general Danish youth population, ketamine holds a position as a marginal

drug, tried by only 1 % of 17–19-year-old Danes (Østergaard, Røgeskov, & Rasmussen 2010). However, as this article will show, the drug has a far wider prevalence among specific subgroups (clubbers in general and experienced recreational drug users in particular).

Methods and data

The article draws upon data from a Danish mixed-methods club study on youth drug use, conducted from August 2008 until February 2009. A club study can be characterised as a study on "youth alcohol and illicit drug use within the specific social setting of the night club" (Demant et al. 2010). The clubs in the study are mainstream venues in Copenhagen and in smaller, provincial towns (of 30,000–40,000 inhabitants). This article draws upon a short questionnaire administered among clubbers at the venues and qualitative interviews with drug-experienced clubbers. Both parts of the study were carried out by the authors with the help of assistants in administering the questionnaires.

On specific nights, as many clubbers as possible were approached in the club and were asked to answer a short questionnaire with seven questions about their alcohol consumption and drug experience. In addition, the guests were asked basic questions for background information (employment (employed, enrolled in education, other), age and gender). This information, however, does not allow for a detailed analysis of differences in terms of the respondents' social backgrounds. Across the clubs, 1,854 clubbers were approached during fieldwork nights. A total of 1,632 clubbers answered the questionnaire, whereas 222 declined, which corre-

sponds to a refusal rate of 12 %. The high response rate is considered the outcome of the brief questionnaire, which was literally completed in two minutes and did not interfere too much with the respondents' night out. Formally, our sample has the status of a convenience sample, but in practice it comes close to a large random sample of clubbers. When comparing the number of completed questionnaires at each club with the club owner's information about the total number of guests on these nights, we can estimate that 40–55 % of these guests answered the questionnaire. However, the sample is neither representative of the Danish youth at large nor of the clubbing population in general. Instead it can be argued to be a fair representation of the guests present on the specific club night (Measham et al. 2001). The guests were approached at random, and the large sample size does to some extent offset the lack of total representation. Still, it was easily possible for guests to avoid getting into contact with the research team, if they were concerned about confidentiality issues, for example. In general, though, the impression was not that of reluctant clubbers, quite the opposite (see also Riley & Hayward 2004 for a discussion of this potential bias).

Because of the limited number of items and the small size of the subpopulation of ketamine users within the overall sample, the quantitative analysis is carried out as a univariate analysis based on χ^2 tests. In the analysis, lifetime drug experience is used as an indicator of drug experience. As a measure of alcohol consumption, we use the respondents' self-reported alcohol intake (units of alcohol) during the night at the time of answering the questionnaire

(continuous variable) (see also Measham & Moore 2009). Finally, as a measure of orientation towards drugs, we use a computed variable collapsing the categories "I have taken drugs tonight" and "I intend to take drugs tonight" into a single binary variable.

The short questionnaire also served as a screening tool for the qualitative part of the study. Clubbers who reported drug use within the previous year were thus asked to voluntarily provide their phone number so that they could participate in a later qualitative interview. Altogether, nine focus group interviews, six double interviews and seven individual interviews were conducted. The mix of different types of interviews was based on a pragmatic choice to secure the participants' comfort as well as to optimise data quality. The participants agreed on different terms; some requested to participate together with their drug-taking friends, others together with one drug-using friend, and still others preferred to be interviewed alone. The research team had advanced experience with all types of qualitative interviewing. A total of 53 individuals were interviewed, 35 men and 18 women, with a median age of 21 years. The interviews were transcribed verbatim and anonymised. The transcripts were coded in NVivo 8 for all passages relating to ketamine. After the initial coding, a phenomenological analysis was conducted focusing on the users' perception of pleasure and control in relation to consuming the drug. The aim of this analysis was to investigate and describe the experiences of the drug-users themselves, not to critically scrutinise, for example, their perceptions of control. The focus was on how the settings for use, the social relations and

drug doses were relevant in constructing perceptions of pleasure and control. We applied a very descriptive phenomenological approach, in which the mundane aspects and experiences of the clubbers' uses of the drug were central, and which thus aimed for condensed descriptions of the ways of using ketamine and the perceptions of ketamine use. We did not try to place this in a structural framework such as ritual-focused or post-durkheimian approaches that tend to describe drug use (or other phenomena) in relation to an overall structure (for good examples of such an approach, see, for example, Tutenges 2010, 2012).

Ethical considerations

The study was carried out in nightlife settings, where most participants are more or less intoxicated. Due to ethical considerations, very few questions were included in the questionnaire, which the club guests were asked to answer on site. In addition, all members of the research wore name tags, and all respondents were informed about our researcher identities and the purpose of the study. Refusals were accepted immediately, and respondents were permitted to opt out if they did not want to answer any more questions. The surveys were carried out near the cloak-rooms, away from bouncers or other club staff, and complete confidentiality was of course maintained, also towards club staff. All appointments for qualitative interview were made in the few days following the club night, and clubbers who regretted their show of interest were assured that this was no problem. Interviews were conducted in interviewees' private homes, in rented meeting rooms in public

Table 1. Lifetime use, divided by gender (%).

	Male	Female	Total
Cannabis	63	48**	58
Cocaine	39	20**	32
Amphetamine	38	20**	32
Ecstasy	29	15**	24
Ketamine	13	4**	10
Magic mushrooms	13	4**	10
LSD	12	5**	10
Fantasy/GHB	11	4**	8
Poppers	9	4**	7
Metamphetamine	7	3**	5
Heroin	3	1**	2
MDMA	2	0*	1

N = 1,632

** Difference between male and female users is significant on a 0.001 level (Pearson's Chi-square)

* Difference between male and female users is significant on a 0.005 level (Pearson's Chi-square)

facilities such as libraries, or in a meeting room at the university. The focus group interviews posed a specific ethical challenge, as the research team was not able to guarantee the anonymity and confidentiality of the interviewees (Demant 2012). The participants were instructed about this and urged to follow the code of confidentiality, but what happened after the interview was beyond the research team's control. In practice, though, most of the very experienced drug-users participated in interviews with one or more of their drug-using friends.

There are no institutional boards for the approval of social science studies in Denmark, but we do not consider the study to be in any way in conflict with the Helsinki Declaration. The Danish Data Protection Agency has approved of the study.

Results

Quantitative analysis

Ketamine use among the overall sample

Overall, the entire sample of clubbers was relatively drug-experienced: 40 % (n=650) had tried a drug other than cannabis, covering a wide range of drugs (Table 1).

Cannabis was clearly the most prevalent drug in this sample, but cannabis was often not used in club settings, but in smaller social gatherings (Järvinen & Demant 2011). Cocaine and amphetamine were the most commonly used club drugs. Compared to ecstasy, more clubbers had tried these drugs – a somewhat surprising finding given the pivotal role ecstasy is often argued to occupy among clubbers (Malbon 1999; Sanders 2005; Sherlock & Conner 1999).¹ Those who had tried ketamine made up 10 % of the sample (n=157), with a significant difference of 9 percentage points between male and female clubbers.

Ketamine use seemed to be strongly associated with the use of other drugs. The prevalence rates for ketamine thus increased significantly among clubbers with experience with other drugs (Table 2).

Table 2. Ketamine use divided by lifetime experience with stimulant drugs and psycho-active drugs (%).

	Ketamine experienced	Non-ketamine experienced	Total
Stimulant drugs (cocaine, amphetamine, ecstasy)	25	0**	10
Psycho-active (LSD, fantasy/GHB, magic mushrooms)	51	2**	10

N = 1,632

** Differences between ketamine-experienced and non-ketamine experienced users are significant on a 0.001 level (Pearson's Chi-square).

Of the clubbers who had tried stimulants (cocaine, amphetamine or ecstasy, n=625), 25 % (n=157) had tried ketamine, compared with 0 % among clubbers who had not tried these drugs ($\chi^2=279.9$, $p<0.001$). The prevalence of use was even higher among clubbers with experience of hallucinogenic drugs (LSD, fantasy/GHB or magic mushrooms, n=249). Among these clubbers, 51 % (n=126; others: 2 %, $\chi^2=567.6$, $p<0.001$) had tried ketamine. This indicates that ketamine is not an entry drug to the drug scene. Rather, ketamine use is particularly associated with the use of hallucinogenic drugs such as LSD, fantasy/GHB or magic mushrooms. It is clear, however, that this univariate analysis does not imply any causal relationships between ketamine and other drugs; it merely shows a relation between different drugs, which indicates that familiarity with other drugs is often the case for clubbers who try ketamine. This is supported by the qualitative data.

The ketamine-experienced sample

In the remainder of the analysis, focus is on the 10 % of the clubbers who had tried ketamine (n=157, lifetime use). Of these ketamine-experienced clubbers, 83 % were male (compared with

61 % of the non-ketamine-experienced, $\chi^2=29.2$, $p<0.001$), and they were slightly older than the remaining sample (mean age=22.4, range=[16;37], SD=3.9; others: mean age=20.9, range=[16;49], SD=3.6, $t=4.4$, $p<0.001$).

In contrast to most other studies (Dillon, Copeland, & Jansen 2003; EMCDDA 2002; however, see Joe-Laidler & Hunt 2008 for an exception), the ketamine-experienced Danish clubbers were mainly workers and not students. 69 % were employed (others: 48 %, $\chi^2=23.9$, $p<0.001$), and only 24 % were enrolled in education (others: 44 %, $\chi^2=23.9$, $p<0.001$). Given their young age, this indicates a background outside higher education. However, more data on this is needed to make any firm conclusions.

Compared with the non-ketamine-experienced clubbers, this subsample of clubbers who had tried ketamine was very drug-experienced, as Table 3 shows.

Among the ketamine-experienced clubbers, 98 % had tried cocaine (n=154; others: 25 %, $\chi^2=344$, $p<0.001$), 98 % had tried amphetamine (n=154; others: 25 %, $\chi^2=354$, $p<0.001$) and 92 % had tried ecstasy (n=145; others: 17 %, $\chi^2=442.9$, $p<0.001$). Perhaps even more telling, however, is that among the ketamine-experienced sample, 55 % had tried LSD

Table 3. Lifetime drug use, divided by ketamine experience (%).

	Ketamine-experienced	Non-ketamine experienced	Total
Cannabis	94	54**	58
Cocaine	98	25**	32
Amphetamine	98	25**	32
Ecstasy	92	17**	24
Magic mushrooms	61	4**	10
LSD	55	5**	10
Fantasy/GHB	57	3**	8
Poppers	43	4**	7
Metamphetamine	39	3**	5
Heroin	11	2**	2
MDMA	9	0**	1

N = 1,632

** Differences between ketamine-experienced and non-ketamine experienced users are significant on a 0.001 level (Pearson's Chi-square).

(n=87; others: 5 %, $\chi^2=419$, $p<0.001$), 32 % had tried metamphetamaine (n=50; others: 3 %, $\chi^2=242$, $p<0.001$) and 11 % had tried heroin (n=17; others: 2 %, $\chi^2=53$, $p<0.001$). Notably the rate for lifetime heroin use is surprising in this group of self-identified recreational users, since in the qualitative interviews heroin was generally described as a drug that only "junkies would take", or a drug for people "who are, like, done" or "fucked", both among the more and the less drug-experienced clubbers in the qualitative study. This indicates that the ketamine-experienced clubbers are to a very large extent willing to experiment with other drugs, which is supported by Moore & Measham's 2008 study (Moore & Measham 2008).

The clubbers who indicated lifetime ketamine use also differed in terms of their consumption patterns during the clubbing event. Their average alcohol intake was 12.5 (SD=10) units of alcohol compared with 9.1 (SD=6.1, $t=4$, $p<0.001$) among the non-ketamine-experienced clubbers. In

addition, their orientation towards drug use on a club night was also significantly larger than that of other clubbers (Table 4). The ketamine-experienced clubbers were not the only group of drug-using clubbers whose alcohol intake during the club night was higher than that of non-ketamine-experienced clubbers. The same pattern was detected among cocaine-experienced clubbers in this study (Demant 2010). However, this is more surprising with regard to ketamine, as this drug is contraindicated with alcohol, and one might have expected the ketamine users to have been more selective and risk-averse when combining drugs (and alcohol). However, as we will return to below, the qualitative data showed how ketamine was preferably used in combination with other (stimulant) drugs when consumed in club settings. As such, the higher alcohol intake may be part of an even wider pattern of poly-drug use: ketamine, stimulants and alcohol are combined strategically to reach a certain kind of pleasure in which

Table 4. Orientation towards drug use on club night, divided by specific drug experience (%).

Lifetime experience with...	Have taken or will take drugs on club night
Cocaine	28**
Amphetamine	28**
Ecstasy	32**
Ketamine	48**

N = 1,632.
** Differences between clubbers with and without lifetime experience with the drug are significant on a 0.001 level (Pearson's Chi-square).
Note: Lifetime experience includes all clubbers who have tried the drug in question. Thus, the categories are to some extent overlapping. However, this only makes the differences even more significant.

stimulants "counter" the sedative effects of ketamine, so that the experienced level of intoxication is suitable for the club setting (Measham et al. 2001, Riley & Hayward 2004).

Among the clubbers who had tried one of the three most common club drugs – cocaine, amphetamine and ecstasy – the proportion that had taken or intended to take drugs on the specific night was approximately 3 out of 10. However, among the ketamine-experienced clubbers, this proportion increased to 48 % (n=75; others: 7 %, $\chi^2=247$, $p<0.001$). This marked increase indicates that not only were the ketamine-experienced clubbers very drug-experience, but they also consumed drugs to a much greater extent on a random night out.

We will now proceed to the qualitative data for an analysis of *how* ketamine is used, for *what purposes* and in which *social settings*.

Qualitative analysis

In the subgroup of ketamine-using clubbers, ketamine was predominantly taken in two different ways: in combination with stimulants when going clubbing or as the only drug in private non-party settings.

These different contexts of use are similar to most other recreational drug users, but while previous research has focused on ketamine use in various public realms (Moore & Measham 2008, Joe-Laidler & Hunt 2008), our analysis also sheds light on private settings. The analysis aims to explore the different modes of intoxication which are sought and experienced as appropriate in these different settings.

Clubbing and partying on ketamine

Because of the overall sedative effects of ketamine, some clubbers considered it necessary and pleasurable to combine it with stimulant drugs such as cocaine or ecstasy when going out (night-clubbing, raving or partying at other public events). A common combination was ketamine and MDMA, both in powder form, which were mixed and snorted. This combination was also known as a "Christmas mix", which provided "a relaxed, all-round feeling that everything is great" (male, 20 years old). The combination of being physically paralysed from ketamine and mentally stimulated by MDMA was described as a unique experience. As a young man (21 years old) explained,

"It's the strangest combination I have ever tried. You can't move or anything, but you are still extremely stimulated, and you are sedated, it is...I don't know, it's pretty good, you know".

The sedative effects naturally depended on the dosage, and the clubbers might take smaller or larger amounts of ketamine, still in combination with stimulants. The data did not provide information on the specific doses (the quote below being an exception to this), but generally, the clubbers aimed for a level of intoxication in which they still felt energised while at the same time able to experience the hallucinating effects. They needed to be able to interact with other people in a crowd and transport themselves to and from the dance venue. This means that ketamine use within club settings requires some level of moderation in terms of the dosage taken. As a young man aged 21 explained:

M: Yes, you have to hold back on the ketamine, because you can... it can get pretty rough.

I: In order not to be completely knocked out?

M: Yes, because then you just sit like this [shows paralysed body language] for an hour, and then you are back again, and that's it. And if you take just a little ketamine, around 50–60–70 mg, then you get in a totally good mood, and if you drink [alcohol] as well, you get going in such a strange way. But it...I don't know why the effect is different, each time you take it. That's why it is so...special [laughs].

However, the clubbers were not always successful in controlling the ketamine experience, because the purity of the drug is unknown and the sedative effect can be too strong. A young man (aged 20) described

how he had had too much ketamine on a club night:

I don't think it's a great experience when going clubbing. I took too much, or it was too strong, so after 20 minutes I was sitting on the staircase in the backyard, just leaning forward. I take a look at the guards and say "Ehh, I need to..." and the next moment, "bang", I bump my head on the floor and I am carried out of there.

The very overwhelming effects of the wrong dosage of ketamine were among the reasons that the drug was perceived as a drug for advanced users and mostly as a drug for a controlled home setting among a number of other drug-experienced friends.

Seeking the K mode at home

The negative experiences described above were a central motivation for some of the most drug-experienced clubbers to actively explore the effects of ketamine and other (psychoactive) drugs within the private realm. Here they could take the drug either on their own or with a closed circle of friends with a specific focus on pursuing the hallucinogenic experience. One example of this was a young man and his group of drug-using friends. They combined 2-CB and ketamine in what they termed a "forest combo" because the high was experienced outdoors in the woods. They would take the drugs while getting ready inside the flat, "with [their] coats on and [then] hurry out on that hill there", and stay out for a couple of hours while the drug high lasted.

Among the users, there was a great awareness of the drug literature and of how other users in Internet forums described the experience of taking ketamine.

The clubbers had read about "the K hole" and had learned, to paraphrase Becker (Becker 1953), how to enjoy the dissociative effects of ketamine. Some of the young men in the qualitative interviews even referred to scientific literature on the chemical composition of the drug(s). In the quote below, a young man (aged 21) described how he experienced the "K mode"; an experience which parallels descriptions documented in international reports (see, for example, Copeland & Dillon 2005; Newcombe 2008):

Ketamine can also be used more extensively, where you enter what is called K-mode. [...] then you just lie there with your eyes closed and experience so many things, because your imagination is unfolding visually. So you just lie there, I lie there and waft over lawns and... you can feel that your body is being pulled in a strange way, as if you are moving around in the room. You can feel that you body is flying against the wall and you can feel it physically that you are being pulled. And you lie there and this happens to you, you fly around and you float. It lasts about an hour and a half and then you wake up quietly and you think "this was fucking cool!"

This young man was a minority in the sample because of his orientation towards the very strong hallucinogenic effects, his interest in taking drugs on his own, and his attitude towards ketamine. Other users described how the drug actually affected their bodies less than other drugs and as such minimised the downer (drug hangover), as was expressed in the following quote by a young man (aged 20):

The reason I did it [took ketamine often] was that I was then able to sleep, it

was really important for me to be able to sleep, and you did not get totally wrecked. Amphetamine, on the contrary, beats your muscles, and it eats you completely. With the other stuff [ketamine] you can eat, you can sleep, you are just blown away for two, three hours.

For this young man, the negative side-effects of amphetamine weighed heavier than the pleasure obtained from the drug. He found ketamine to be a better compromise between negative side-effects and pleasure. However, for the dominant part of the less drug-experienced clubbers in the study, this weighing up of pros and cons would fall out differently in that the hallucinogenic effects of ketamine would keep them from trying it.

The experience of being able to control the side-effects of the drug was not only a harm-minimisation process; it meant that some clubbers found the drug suitable for small trips in their everyday life, because it could be fitted into small slots of free time, as another young man (aged 21) explained:

The effect lasts an hour and a half and then you are back to normal. So you can take ketamine Tuesday after school, take a couple [of lines], be in the craziest world for two hours and just fly above the landscape and experience the psychedelic aspects.

However, daily use of ketamine was very rare in the qualitative material and was only found among the drug users who had experienced a loss control over their drug use (Järvinen & Ravn 2011). And even among this group, ketamine was often considered a more exclusive drug, partly because of the higher price and difficulties

in obtaining the drug, reserved for special occasions.

Conclusion

Ketamine use is not widespread in Denmark. In the general Danish youth population (17–19-year-olds), 1 % has tried the drug, while within the subgroup of clubbers studied in this article the prevalence is higher (10 %). However, when focusing on clubbers who are experienced with other drugs, the proportion who has tried ketamine is markedly higher. Further, the analysis showed that ketamine users are very drug-experienced. Altogether, this indicates that ketamine is not an entry drug to the drug scene; quite the contrary, the qualitative data indicates that users turn to ketamine after having tried a range of other drugs. In this way, the ketamine users can be argued to be insiders in a subculture of recreational drug users, willing to experiment with known as well as less well-known drugs, and who do not merely take drugs as a means to some other purpose (such as more self-confidence when flirting or dancing in clubs) but who are (also) interested in the drug experience itself.

The quantitative data suggested that the ketamine users were not to be found among students in higher education, but rather among people in full-time employment. This makes sense with the relatively high prices of ketamine in Denmark in mind. In contrast to what previous research has shown, then, ketamine is not used because it is a cheap means to intense intoxication, but is rather an exclusive drug that is reserved for special occasions.

Through the qualitative part of the study, we were able to focus on the relation between ketamine use, risk assess-

ment and pleasure. First of all, it became clear that the ketamine users are to a large extent aware of the potency of the drug. It is perceived as risky and as a drug that should be used with caution and in very accurate doses because the sedative effect easily becomes uncontrollable. Some users even turn away from the drug after a single use because of this highly sedative effect, which for some users results in unpleasant experiences. This perception of ketamine and its associated risks made the users very proactive in choosing the preferred setting for using ketamine. They largely differed between use in private home settings and use in public settings in the night time economy (such as clubs and discos), and they preferred to use ketamine in private spaces. Such "private" spaces can be made within a public night club setting, if the clubbers and the club interact in organising it (Massey 1998, 2005). While such a space can be difficult to create in a large mainstream club, it may be possible in some smaller, public settings such as more underground clubs at which both clubbers and organisers may play an active part in creating a space that can be perceived as partially private. This may happen if the club is tolerant towards drug use, if the spatial organisation of the club allows one to chill out for longer periods of time, or if the club space is not felt as a space of interruption. In such cases, it can be argued that a private space has been produced within the public space of the club, and that clubbers may then experience that drug use can be both safe and pleasurable. However, the Danish clubbers described it as very difficult to use solely ketamine inside the club, as it would have required the social space of the club to be

tolerant not only towards chilling out, but towards a lengthy (1½ hour or more), total disconnection from the social interactions within the club. Instead, the clubbers felt that ketamine use was more secure and pleasurable in club settings when used in smaller doses and in combination with stimulants. This combination of the drugs was described as being more "in-place" (Cresswell 1996), that is, appropriate, in the club because the stimulants countered the sedative effects of ketamine so the clubbers would be less bodily disconnected from the social interactions at the club. Moore & Measham (2008) have described how the clubbers aim for a particular intersection between intoxication and socialising on what they term a "pleasure-nexus". In our study, this pleasure-nexus was very unlikely to be reached if only taking ketamine, but more likely to be found when combining ketamine with stimulants such as MDMA, amphetamines or cocaine.

However, the club space did only in few cases provide the preferred place for ketamine use. This article has shed light on how the private space of the home is central for understanding the position of ketamine among recreational drug users. In relation to the pleasure-nexus of drug intensity and sociability, the home is described as very different from the club space. The home, as a private space, makes it possible to enjoy the feeling of getting intensely intoxicated by ketamine. Within this space, it is possible to search for the "K hole" experience and to bracket all social interactions for a period of time. The private space also makes it possible to organise more creative ways of using the drug. Enjoying the drug in the dark woods together with one's friends constructs a space that

is social (with friends), private (away from the club space) and public (outside the home) at the very same time. Such uses of ketamine make it clear that the users of ketamine are very active in constructing and optimising the drug experience.

We can also view this attention to creating the best combination of drug – place – social – body as both a way to be able to enjoy the drug and as a way of reducing risks. This points to the fact that Danish ketamine users are knowledgeable and search for very specific drug experiences. However, while the image of ketamine is that of a serious drug that must be taken with caution, and in this sense of a risky drug, the risk perception does not entail any consideration of long-term negative mental or physiological effects (see Morgan & Curran 2012 for a review of such effects). Further, the ketamine users are not worried about getting addicted or ultimately of dying, as was found in a study on young Danes with very little drug-experience (Demant & Ravn 2010). The risks associated with ketamine are of a different kind: of being paralysed to an unwanted extent, causing a loss of the specific drug experience one was seeking, or missing the more general experience of a clubbing night. This one-sided knowledge is paradoxical in that the users do seek out information, scientific as well as from other users, about the drug on the Internet (see also Tackett-Gibson 2008). And yet, they do not seem to have taken in knowledge about the potential side-effects from ketamine use. They also worry very little about risks associated with poly-drug use, even though this is a common pattern of use. As shown in the qualitative analysis, some users describe their experience with

drug combinations (ketamine and stimulants) as more controllable than ketamine use alone. However, this assessment puts doubt on the users' actual information about the drugs. It seems that no information on possible risks associated with poly-drug use that includes ketamine is in circulation within the social (online or offline) networks of users, or that potential information about both short- and long-term risks is being discarded.

Ketamine use is far more limited in Denmark than, for example, in England and Hong Kong, and because of its image as a risky drug for advanced users only, a very widespread use of the drug does not seem likely at the moment. Attention should perhaps be directed not so much to the general youth population, but to ketamine users, who perceive the drug as having the potential to provide highly hallucinating and pleasurable effects. Despite the users being quite knowledgeable in some respects, their knowledge about the drug appears one-sided. Because of their willingness to seek out information there is nevertheless a potential to communicate to this group.

Strengths and limitations

While the sample is not representative of either Danish youth or the clubbing population, it is a large random sample, with approximately half of the guests of each club night participating in the study. The main findings of the study are limited to the users in the sample and their experience with ketamine use, and not to general prevalence.

The combination of quantitative and qualitative data strengthens the study in that it enables a thorough analysis of the

ketamine users in the sample as well as the cultural understandings that are central for contextualising the statistical findings.

The two data sets also contain various limitations. The questionnaire for the survey was limited to seven questions, because it had to be possible to complete in two minutes. This means that simplicity was prioritised over details. More detailed questions regarding educational level and frequency of drug use seem to be the two most urgent questions to add in further research. The qualitative data does not provide the possibility for exploring the gender differences found in the quantitative analysis because of a lack of female, ketamine-experienced clubbers. Only one woman in the qualitative sample reported ketamine use. Further research is therefore needed as to the gendered experiences of and motivations for use of ketamine, and about the extent of and objective risks associated with poly-drug use that includes ketamine. Last, the interviews do not systematically contain information about specific doses and prices of drugs, which could add to our understanding of the character of the clubbers' poly-drug use and position within the larger repertoire of drugs, respectively.

Declaration of Interest None.

Signe Ravn, Post doc.

Centre for Alcohol and Drug Research
University of Aarhus
E-mail: shr@sfi.dk

Jakob Demant, Associate Professor, PhD

Centre for Alcohol and Drug Research
University of Aarhus
E-mail: jd@crf.au.dk

NOTE

- 1 The relatively low prevalence of ecstasy must be understood within the specific Danish context. An earlier study showed how young people with very limited drug experiences perceived ecstasy very clearly as a dangerous drug (Demant & Ravn

2010). Further, an analysis of media coverage showed that while media discourse on, for example, cocaine was ambiguous, ecstasy was clearly represented negatively in the Danish mass media (Demant et al. 2011).

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