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Experienced Drug Users Assess the Relative Harms and Benefits of Drugs: A Web-Based Survey

Robin Lester Carhart-Harris, B.Sc., M.A., Ph.D.[a] &
David John Nutt, D.M., F.R.C.P., F.R.C.Psych, F.Med.Sci[b]

Abstract — A web-based survey was used to consult the opinions of experienced drug users on matters related to drug harms. We identified a rare sample of 93 drug users with personal experience with 11 different illicit drugs that are widely used in the UK. Asked to assess the relative harms of these drugs, they ranked alcohol and tobacco as the most harmful, and three "Class A" drugs (MDMA, LSD, and psilocybin) and one class B (cannabis) were ranked as the four least harmful drugs. When asked to assess the relative potential for benefit of the 11 drugs, MDMA, LSD, psilocybin, and cannabis were ranked in the top four; and when asked why these drugs are beneficial, rather than simply report hedonic properties, they referred to potential therapeutic applications (e.g., as tools to assist psychotherapy). These results provide a useful insight into the opinions of experienced drug users on a subject about which they have a rare and intimate knowledge.

Keywords — drug abuse, drug harms, drug policy, drug users, drugs

INTRODUCTION

In 2007, Nutt and colleagues opened a timely debate on the scientific validity of classification systems of drugs of potential misuse (Nutt et al. 2007). Following a Delphic approach whereby experts on a subject matter consider the most appropriate parameters by which to estimate a variable of interest (e.g., the harms of drugs abuse), a matrix of potential harms was devised based on three main factors: physical harm, dependence, and social harm. The matrix was subsequently used to guide assessments of a number of drugs. Assessments were carried out by two independent groups: a group of 29 psychiatrists specializing in addiction and a group of 8 to 16 independent drugs experts from diverse fields. The results showed that there was a good correspondence between the psychiatrists' and the independent drugs experts' assessments, but a poor correspondence between their assessments and those implied by current classification systems: for example, the independent experts rated LSD and MDMA, which are still classified in the highest bracket of harm in most classification systems, as less harmful than alcohol and tobacco.

A recent study in The Netherlands followed a similar procedure to Nutt and colleagues (van Amsterdam & van den Brink 2010). Using related harm parameters of toxicity (acute and chronic), addictive potency, and social harm (at the individual and population level) and a similar Delphic approach, 19 drugs experts rated the harms of 19 different drugs, 16 of which were rated by the

[a]Post-doctoral Researcher, Imperial College London, Centre for Neuropsychopharmacology, London, UK.
[b]Professor of Neuropsychopharmacology, Imperial College London, Centre for Neuropsychopharmacology, London, UK.
Please address correspondence to Robin Lester Carhart-Harris, B.Sc., M.A., Ph.D., Post-doctoral Researcher, Burlington Danes Building, Du Cane Rd, London, W12 0NN, UK; phone: +44-02075946550; fax: +44-02075946548; email: r.carhart-harris@imperial.ac.uk

panel described in Nutt et al. (2007). The groups' ratings correlated significantly with those of the Nutt study.

Nutt et al. recently sought to improve their assessment of 2007 using multicriteria decision analysis, a method that applies different weights to assessment parameters in order to assess a complex problem such as the relative harms of drugs (Nutt, King & Phillips 2010). The results of this more sophisticated analysis correlated significantly with those of Nutt et al. (2007) and an even stronger correlation was evident with the assessments of van Amsterdam and van den Brink (2010).

In all of these studies, the assessments were carried out by drug experts from a range of disciplines, from epidemiology to toxicology, but a noticeable omission was *drug users* themselves—arguably the group with the most intimate knowledge of drug harms. Morgan et al. (2010) sought to address this matter. Using a web-based survey targeted at drug users, respondents were asked to rate the harms of 21 different drugs using the matrix of harm introduced by Nutt et al. (2007). Respondents could only rate a drug's harms if they had personally used it or known somebody who had. Users' ratings correlated significantly with those of Nutt et al. (2007). A novel aspect of this survey was the inclusion of ratings of potential *benefits* of drugs. As the authors acknowledged, this information is important, not least because it may influence assessments of harm.

To develop the approach of consulting drug users, we sought to collate the opinions of highly experienced drug users on the relative harms and benefits of drugs. This has been done previously in qualitative analyses (Daniulaityte, Falck & Carlson 2012; Daniulaityte et al. 2009; MacLean 2008; Sexton et al. 2005), but here a rare sample of 93 drug users was found who reported personal experience with 11 illicit drugs that are widely used in the UK. Rather than rate each drug according to fixed criteria, users were asked to rank the *relative* benefits and harms of each drug, including alcohol and tobacco (respondents were assumed to have taken alcohol and tobacco before). They were asked to explain their choices for the most harmful and beneficial drug and to express an opinion on how each drug should be classified according to the Misuse of Drugs Act (MoDA). The MoDA is an Act of Parliament (UK) that is consistent with international treaties recommending classification of drugs into three categories: Classes A, B, and C. This system subsequently determines penalties for possession and trafficking, with the severest penalties reserved for offences related to Class A drugs. They were also given a list of 10 potential sources of information on the harms of drugs (e.g., "mine and my friends' own experiences," "the opinions of scientific experts," and "a drug's legal classification") and were asked to select those they considered to have had the most influence on their own perceptions of drug harms.

METHODS

This study was approved by the Imperial College Research Ethics Committee. The survey was built using Bristol Online Survey (http://www.survey.bris.ac.uk), a web survey development service. The survey can be found at the following address: http://www.survey.bris.ac.uk/iscd/mephedrone. The survey was formally advertised on the websites http://www.bluelight.ru, http://www.drugs-forum.com, and http://www.drugscience.org.uk. It was entirely anonymous, took 20−30 minutes to complete, and featured 56 questions requiring both restricted/categorical and open responses. Only questions relevant to the topic of this article (experienced users' opinions on the relative harms and benefits of drugs) are reported here. A total of 1,506 submitted forms were received but these were filtered to focus on a group of individuals that had taken all of the following illicit drugs at least once: heroin, cocaine, amphetamine, cannabis, GHB, magic mushrooms, ketamine, benzodiazepines, mephedrone, MDMA, and LSD. Spearman's rank correlations were performed where appropriate and p values are reported for 2-tailed hypotheses.

RESULTS

Demographic Data

The survey went live in April 2010 and closed in September 2010. Ninety-three forms were received from individuals claiming to have taken all of the listed drugs on at least one occasion. Table 1 displays how many times each drug was taken, how the respondents ranked their harms and benefits, and how they felt each should be classified according to the MoDA. Forty-three percent had heard about the survey through http://www.bluelight.org, 27% had heard about it through http://www.drugs-forum.com, and 30% had either heard about it through a friend or through other websites (e.g., http://www.urban75.co.uk, http://www.facebook.com, http://www.twitter.com, http://www.drugscience.org.uk). Eighty-three percent of the 93 were male and 17% female (84% of the 1506 were male). Seventy-one percent lived in Britain, 4% Ireland, 5% other European countries, 14% North America, and 6% Australia or New Zealand. The mean age of the sample was 29 (SD = 8.1, range 16−58).

Respondents were asked: "Please rank these drugs according to your view of their general level of harm/benefit." And "In your opinion, how should the following drugs be classified?" Assigning Class A drugs a value of 1 and unclassified drugs a value of 4, the mean classification for each drug is italicized and given in brackets.

TABLE 1
Users Rank Harms and Benefits

	Median number of occasions used	Ranked *harms*. 1 = most & 13 = least harmful	Ranked *benefits*. 1 = most & 13 = least beneficial	How should each drug be classified according to MoDA
Alcohol	NA	1 (2.5)	12 (9.2)	A = 23% B = 9% *C = 9% (3.1)* No class = 60%
Tobacco	NA	2 (3.7)	13 (11.3)	A = 19% B = 5% *C = 9% (3.3)* No class = 67%
Heroin	2−10	3 (3.8)	7 (7.8)	A = 45% *B = 10% (2.4)* C = 10% No class = 36%
Cocaine	51−100	4 (4.8)	9 (8.9)	A = 32% *B = 22%* *C = 9% (2.5)* No class = 38%
Amphetamine	51−100	5 (5.6)	8 (8)	vA = 15% B = 25% *C = 16% (2.9)* No class = 44%
GHB	2−10	6 (6.9)	11 (9.1)	A = 16% B = 19% *C = 22% (2.9)* No class = 44%
Benzodiazepines	51−100	7 (7)	5 (5.1)	A = 8% B = 16% *C = 22% (3.2)* No class = 54%
Mephedrone	11−50	8 (7.4)	10 (8.9)	A = 13% B = 16% *C = 19% (3.1)* No class = 52%
Ketamine	11−50	9 (7.7)	6 (7.4)	A = 11% B = 22% *C = 23% (3)* No class = 45%
MDMA	51−100	10 (8.9)	1 (3.4)	A = 7% B = 15% *C = 26% (3.2)* No class = 52%
LSD	11−50	11 (9.9)	3 (4.6)	A = 12% B = 9% *C = 22% (3.3)* No class = 58%
Cannabis	100+	12 (10.4)	2 (3.8)	A = 3% B = 3% C = 19% *No class = 75% (3.7)*
Magic mushrooms	2−10	13 (10.9)	4 (5)	A = 7% B = 3% *C = 23%* *No class = 67% (3.5)*

Potential Harms

Thirty-two respondents ranked *alcohol* as having the most potential for harm; stressing its high addiction potential, risk of death from acute and chronic toxicity, its tendency to promote aggression and risky behaviors and related social harms, and the unpleasant and potentially harmful effects of withdrawal. Fifteen respondents ranked *tobacco* as having the most potential for harm; emphasis was placed on its high addiction potential and carcinogenic properties, its generally harmful effects on health, and related fatalities. Twenty-six respondents ranked *heroin* as having the greatest potential for harm, more than tobacco, but with greater variance; the drug's high addiction potential, risks associated with intravenous use, impurities, social harms, and overdose were all mentioned.

Potential Benefits

Respondents' rankings of benefits correlated significantly with those of Morgan et al., both with respect to acute (Rho = .83, p = .002) and chronic (Rho = .73, p = .01) benefits. Twenty respondents ranked *MDMA* as having the greatest potential for benefit. Respondents emphasised MDMA's empathogenic effects; that it can help people open up, which may be useful in psychotherapy. Eighteen respondents ranked *cannabis* as having the greatest potential for benefit. Cannabis' stress-relieving properties were mentioned, and that it can help alleviate anxiety and pain, and aid sleep. Sixteen respondents ranked *LSD* as having the greatest potential for benefit. Respondents emphasised LSD's capacity to facilitate insight and self-understanding. Seven respondents ranked *magic mushrooms* as having the greatest potential for benefit; similar to LSD, their reasons centered on improved well-being and self-understanding. Seven respondents ranked *benzodiazepines* as having the most potential for benefit; the respondents highlighted these drugs important role in psychiatry (e.g., in sedating patients behaving erratically or showing acute anxiety).

How Should Each Drug be Classified According to the Misuse of Drugs Act?

In addition to assessing the relative harms and benefits of the different drugs, respondents also offered opinions on how each drug should be classified (Table 1). Ranking each drug according to its mean classification (with Class A drugs as 1 and unclassified as 4), there was no correlation between chosen classification and rankings of harms (Rho = .41, p = .16) and there was no correlation between classifications and those of the Misuse of Drugs Act (Rho = .05, p = 0.87). Thirty-two respondents (34%) felt that all of the listed drugs should be unclassified.

Respondents' Rankings Correlated Significantly with Those of Previous Assessments

Significant positive correlations were found between the users' rankings in the present study and those of five similar previous analyses (see Table 2). The correlations were strongest between the present results and the Nutt et al. (2010) (harms to users, Rho = .90) and Van Amsterdam and van den Brink (2010) analyses (harms to individual, Rho = .93; harms to population, Rho = .94; all $p < .001$). These results suggest there is a developing consensus on the relative harms of drugs between drugs experts and experienced drug users.

Users' Perceptions of Different Sources of Information on Drugs

Respondents were given a list of 10 possible sources of information on drugs (see Table 3) and were asked to rank those they regarded as having the greatest influence on their perception of the harms of drugs. From the list of 10, respondents were asked to rank their top three and to select "not top three" for the remainder. Ninety-three percent of respondents ranked "mine and my friends' own experiences" in their top three and 70% ranked it as the most influential.

DISCUSSION

This study provides insight into the attitude and opinions of 93 experienced drug users on the relative harms and benefits of 13 different drugs of abuse, all of which they had personal experience with. To our knowledge, this is the first time such a sample has been asked to assess the relative harms and benefits of drugs of abuse. It interesting that their assessments compared well with those of previous assessments conducted by drug experts (i.e., Nutt et al. 2007; 2010; van Amsterdam et al. 2010) and drug users (Morgan et al. 2010) and that all of these assessments contrast with the drugs' current legal classifications. Uniquely, our study also provides new information on *why* drug users regard certain drugs to be harmful and others beneficial. It was interesting that three drugs typically classified by government in the highest bracket of harm in the UK (MDMA, LSD, and magic mushrooms) were ranked in the bottom four for harm and top four for benefit. Moreover, when respondents were asked why they considered these drugs to be beneficial, rather than simply report hedonic properties, they referred to potential therapeutic applications. Such a view is consonant with recent efforts to assess the therapeutic efficacy of these drugs in clinical populations (Grob et al. 2011; Mithoefer et al. 2011).

Another novel aspect of the survey was the invitation for respondents to express their opinions on how each drug should be classified according to the UK's Misuse of Drugs Act. Interestingly, although there was a close correspondence between the respondents' rankings of harm and those of previous assessments (Table 2), when their chosen classifications were averaged and ranked accordingly, the results did not concur with their rankings of

TABLE 2
Correlations Between the Rankings Reported in the Present Study and Those of Prior Similar Studies

	Ninety-three drug users with personal experience with all 11 of the listed illicit drugs (present study).	Twenty-nine psychiatrists working in addiction. Nutt et al. (2007). Rho = .73, p = .025	Eight to sixteen drugs experts. Nutt et al. (2007). Rho = .61, p = .048	The Independent Scientific Committee on Drugs. Nutt et al. (2010). Harms to users. Rho = .9 P < .001 Harms to others in brackets. Rho = .76, p = .002	Nineteen drugs experts. Van Amsterdam et al. (2010). Individual level. Rho = .93, p < .001. Population level in brackets. Rho = .94, p < .001	Several hundred drug users; many with personal experience with a number of the listed drugs. Morgan et al. (2010). Rho = .8, p = .003
Alcohol	1	3	3	2 (1)	3 (1)	3
Tobacco	2	6	7	6 (3)	2 (3)	5
Heroin	3	1	1	1 (2)	1 (2)	1
Cocaine	4	2	2	3 (5)	4 (4)	2
Amphetamine	5	4	6	4 (6)	5 (5)	4
GHB	6	NA	9	5 (9)	6 (7)	7
Benzodiazepines	7	5	5	8 (7)	7 (6)	8
Mephedrone	8	NA	NA	9 (10)	NA	NA
Ketamine	9	NA	4	7 (8)	9 (10)	5
MDMA	10	7	10	11 (12)	10 (9)	6
LSD	11	9	8	12 (11)	11 (11)	9
Cannabis	12	8	8	10 (4)	8 (8)	10
Magic mushrooms	13	NA	NA	13 (13)	12 (12)	NA

TABLE 3
What Informs Users' Opinions Most? Respondents were asked: "Please rank the following according to the extent to which it/they has/have influenced your perception of the harms of drugs. Rank the three most influential and for all others select not top 3.' "

	Most influential	Second most influential	Third most influential	Not top three
Mine and my friends' own experiences	70%	11%	12%	8%
Users' posts on drug use related web forums like "bluelight.ru"	19%	34%	23%	25%
My reading of peer-reviewed scientific articles	13%	35%	14%	38%
Opinions expressed by scientific experts	9%	24%	22%	46%
General web searches	5%	5%	17%	72%
My parents' advice	2%	1%	8%	89%
Media reports	0%	1%	5%	94%
Government-sponsored advice services (e.g., Talk to Frank)	0%	0%	2%	98%
Government-sponsored ad campaigns	0%	0%	0%	100%
A drug's legal classification	0%	0%	0%	100%

harm. For example, alcohol was ranked tenth and tobacco eleventh (thirteenth reflecting the most liberal classification), but when ranked according to harm, these drugs were considered the first and second most harmful, respectively. Clearly, although respondents perceived these drugs to be especially harmful, their chosen classifications did not reflect this. This implies that drug users consider factors other than harm when assessing how a drug should be classified. Perhaps respondents were influenced by current classifications. It is also likely that many are regular users of alcohol and tobacco; thus the idea of these drugs being made illegal may have been particularly objectionable to them. However, despite this disparity, it should be noted that a sizeable proportion of the sample (34%) thought that all of the listed drugs should be unclassified.

Another novel aspect of the survey was the invitation for respondents to rank sources of information on drugs according to those they regarded as having the most influence on their own perceptions of drug harms. Results revealed that users prioritize their own experiences and those of their friends above other potential sources of information on drugs. Information sources intended to inform and guide young people on the harms of drugs (e.g., government-sponsored advertisement campaigns and advice services) fared particularly badly in this analysis.

LIMITATIONS

This study has some important limitations. The approach of ranking drugs in relation to each other, rather than rating them according to fixed criteria, can be criticized. Recently, more sophisticated approaches to assessing drugs' harms are being considered that weight assessment parameters according to their perceived importance (Nutt et al. 2010). Such assessments may prove useful; however, just as it is worth engaging the opinion of drug users on the harms of drugs, it may be worth consulting their opinions on what assessment parameters should be included and how they should be weighted. It might be argued that assessments provided by drug users' are especially vulnerable to personal bias, but biases will also be implicit in the assessments of scientific experts. It is important to acknowledge that, given the complexity of this issue, even the more sophisticated analyses will still be vulnerable to these confounds, since underlying all of these assessments are subjective judgements. Comparing independent assessments (e.g., as has been done in Table 2) might be a useful way of addressing this problem.

The sample was dominated by males, and there is some evidence that males are more likely to report false information about themselves than females (McLean & Anderson 2009). It remains possible that some drug experts are also experienced drug users, but it seems unlikely many would have used all 11 listed drugs, and so the distinction we make between proclaimed "drug experts" and experienced drug users seems fair. Another limitation is that we should have distinguished between cocaine powder and crack cocaine, as previous assessments have (Morgan et al. 2010).

Finally, the respondents were self-selecting in this web-based survey and this may present biases. It is also impossible to verify the accuracy of respondents' claims, although we could have enquired about more aspects of their drug taking, such as the order in which they had first sampled the 11 drugs.

In conclusion, the results of this study support the view that certain drugs classified in the highest bracket of harm under most classification schemes (e.g., MDMA, LSD, and magic mushrooms) pose a *relatively* low (but not negligible) potential for harm, and may, under certain circumstances, present some potential for benefit. The results also support the view that alcohol and tobacco pose a *relatively* high potential for harm.

REFERENCES

Daniulaityte, R.; Falck, R. & Carlson, R.G. 2012. "I'm not afraid of those ones just 'cause they've been prescribed": Perceptions of risk among illicit users of pharmaceutical opioids. *International Journal of Drug Policy* 23: 374–384.

Daniulaityte, R.; Falck, R.S.; Wang, J. & Carlson, R.G. 2009. Illicit use of pharmaceutical opioids among young polydrug users in Ohio. *Addictive Behaviors* 34: 649–653.

Grob, C.S.; Danforth, A.L.; Chopra, G.S.; Hagerty, M.; McKay, C.R.; Halberstadt, A.L. & Greer, G.R. 2011. Pilot study of psilocybin treatment for anxiety in patients with advanced-stage cancer. *Archives of General Psychiatry* 68: 71–78.

MacLean, S. 2008. Volatile bodies: Stories of corporeal pleasure and damage in marginalised young people's drug use. *International Journal of Drug Policy* 19: 375–383.

McLean, C.P. & Anderson, E.R. 2009. Brave men and timid women? A review of the gender differences in fear and anxiety. *Clinical Psychology Review* 29: 496–505.

Mithoefer, M.C.; Wagner, M.T.; Mithoefer, A.T.; Jerome, L. & Doblin, R. 2011. The safety and efficacy of {+/-}3, 4-methylenedioxymethamphetamine-assisted psychotherapy in subjects with chronic, treatment-resistant posttraumatic stress disorder: The first randomized controlled pilot study. *Journal of Psychopharmacology* 25: 439–452.

Morgan, C.J.; Muetzelfeldt, L.; Muetzelfeldt, M.; Nutt, D.J. & Curran, H.V. 2010. Harms associated with psychoactive substances: Findings of the UK National Drug Survey. *Journal of Psychopharmacology* 24: 147–153.

Nutt, D.J.; King, L.A. & Phillips, L.D. 2010. Drug harms in the UK: A multicriteria decision analysis. *Lancet* 376: 1558–1565.

Nutt, D.; King, L.A.; Saulsbury, W. & Blakemore C. 2007. Development of a rational scale to assess the harm of drugs of potential misuse. *Lancet* 369: 1047–1053.

Sexton, R.L.; Carlson, R.G.; Siegal, H.A.; Falck, R.S.; Leukefeld, C. & Booth, B. 2005. Barriers and pathways to diffusion of methamphetamine use among African Americans in the rural South: Preliminary ethnographic findings. *Journal of Ethnicity in Substance Abuse* 4: 77–103.

van Amsterdam, J. & van den Brink, W. 2010. Ranking of drugs: A more balanced risk-assessment. *Lancet* 376: 1524–1525.