

Understanding reasons for drug use amongst young people: a functional perspective

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Abstract

This study uses a functional perspective to examine the reasons young people cite for using psychoactive substances. The study sample comprised 364 young poly-drug users recruited using snowball-sampling methods. Data on lifetime and recent frequency and intensity of use for alcohol, cannabis, amphetamines, ecstasy, LSD and cocaine are presented. A majority of the participants had used at least one of these six drugs to fulfil 11 of 18 measured substance use functions. The most popular functions for use were using to: relax (96.7%), become intoxicated (96.4%), keep awake at night while socializing (95.9%), enhance an activity (88.5%) and alleviate depressed mood (86.8%). Substance use functions were found to differ by age and gender. Recognition of the functions fulfilled by substance use should help health educators and prevention strategists to make health messages about drugs more relevant and appropriate to general and specific audiences. Targeting substances that are perceived to fulfil similar functions and addressing issues concerning the substitution of one substance for another may also strengthen education and prevention efforts.

Introduction

The use of illicit psychoactive substances is not a minority activity amongst young people in the

UK. Results from the most recent British Crime Survey show that some 50% of young people between the ages of 16 and 24 years have used an illicit drug on at least one occasion in their lives (lifetime prevalence) (Ramsay and Partridge, 1999). Amongst 16–19 and 20–24 year olds the most prevalent drug is cannabis (used by 40% of 16–19 year olds and 47% of 20–24 year olds), followed by amphetamine sulphate (18 and 24% of the two age groups respectively), LSD (10 and 13%) and ecstasy (8 and 12%). The lifetime prevalence for cocaine hydrochloride (powder cocaine) use amongst the two age groups is 3 and 9%, respectively. Collectively, these estimates are generally comparable with other European countries (European Monitoring Centre for Drugs and Drug Addiction, 1998) and the US (Johnston *et al.*, 1997, 2000).

The widespread concern about the use of illicit drugs is reflected by its high status on health, educational and political agendas in many countries. The UK Government's 10-year national strategy on drug misuse identifies young people as a critical priority group for prevention and treatment interventions (*Tackling Drugs to Build a Better Britain*, 1998). If strategies to reduce the use of drugs and associated harms amongst the younger population are to be developed, particularly within the health education arena, it is vital that we improve our understanding of the roles that both licit and illicit substances play in the lives of young people. The tendency for educators, practitioners and policy makers to address licit drugs (such as alcohol) separately from illegal drugs may be unhelpful. This is partly because young illicit drug users frequently drink alcohol, and may have little

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regard for the illicit and licit distinction established by the law. To understand the roles that drug and alcohol use play in contemporary youth culture, it is necessary to examine the most frequently used psychoactive substances as a set.

It is commonplace for young drug users to use several different psychoactive substances. The terms 'poly-drug' or 'multiple drug' use have been used to describe this behaviour although their exact definitions vary. The term 'poly-drug use' is often used to describe the use of two or more drugs during a particular time period (e.g. over the last month or year). This is the definition used within the current paper. However, poly-drug use could also characterize the use of two or more psychoactive substances so that their effects are experienced simultaneously. We have used the term 'concurrent drug use' to denote this pattern of potentially more risky and harmful drug use (Boys *et al.*, 2000a). Previous studies have reported that users often use drugs concurrently to improve the effects of another drug or to help manage its negative effects [e.g. (Power *et al.*, 1996; Boys *et al.*, 2000a; Wibberley and Price, 2000)].

The most recent British Crime Survey found that 5% of 16–29 year olds had used more than one drug in the last month (Ramsay and Partridge, 1999). Given that 16% of this age band reported drug use in the month prior to interview, this suggests that just under a third of these individuals had used more than one illicit substance during this time period. With alcohol included, the prevalence of poly-drug use is likely to be much higher.

There is a substantial body of literature on the reasons or motivations that people cite for using alcohol, particularly amongst adult populations. For example, research on heavy drinkers suggested that alcohol use is related to multiple functions for use (Edwards *et al.*, 1972; Sadava, 1975). Similarly, research with a focus on young people has sought to identify motives for illicit drug use. There is evidence that for many young people, the decision to use a drug is based on a rational appraisal process, rather than a passive reaction to the context in which a substance is available (Boys *et al.*,

2000a; Wibberley and Price, 2000). Reported reasons vary from quite broad statements (e.g. to feel better) to more specific functions for use (e.g. to increase self-confidence). However, much of this literature focuses on 'drugs' as a generic concept and makes little distinction between different types of illicit substances [e.g. (Carman, 1979; Butler *et al.*, 1981; Newcomb *et al.*, 1988; Cato, 1992; McKay *et al.*, 1992)]. Given the diverse effects that different drugs have on the user, it might be proposed that reasons for use will closely mirror these differences. Thus stimulant drugs (such as amphetamines, ecstasy or cocaine) will be used for reasons relating to increased nervous system arousal and drugs with sedative effects (such as alcohol or cannabis), with nervous system depression. The present study therefore selected a range of drugs commonly used by young people with stimulant, sedative or hallucinogenic effects to examine this issue further.

The phrase 'instrumental drug use' has been used to denote drug use for reasons specifically linked to a drug's effects (WHO, 1997). Examples of the instrumental use of amphetamine-type stimulants include vehicle drivers who report using to improve concentration and relieve tiredness, and people who want to lose weight (particularly young women), using these drugs to curb their appetite. However, the term 'instrumental substance use' seems to be used when specific physical effects of a drug are exploited and does not encompass use for more subtle social or psychological purposes which may also be cited by users. In recent reports we have described a 'drug use functions' model to help understand poly-substance use phenomenology amongst young people and how decisions are made about patterns of consumption (Boys *et al.*, 1999a,b, 2000a). The term 'function' is intended to characterize the primary or multiple reasons for, or purpose served by, the use of a particular substance in terms of the actual gains that the user perceives that they will attain. In the early, 1970s Sadava suggested that functions were a useful means of understanding how personality and environmental variables impacted on patterns of drug use (Sadava, 1975). This work was confined

to functions for cannabis and 'psychedelic drugs' amongst a sample of college students. To date there has been little research that has examined the different functions associated with the range of psychoactive substances commonly used by young poly-drug users. It is unclear if all drugs with similar physical effects are used for similar purposes, or if other more subtle social or psychological dimensions to use are influential. Work in this area will help to increase understanding of the different roles played by psychoactive substances in the lives of young people, and thus facilitate health, educational and policy responses to this issue.

Previous work has suggested that the perceived functions served by the use of a drug predict the likelihood of future consumption (Boys *et al.*, 1999a). The present study aims to develop this work further by examining the functional profiles of six substances commonly used by young people in the UK.

Methods

Patterns of cannabis, amphetamine, ecstasy, LSD, cocaine hydrochloride and alcohol use were examined amongst a sample of young poly-drug users. Tobacco use was not addressed in the present research.

Sampling and recruitment

A snowball-sampling approach was employed for recruitment of participants. Snowball sampling is an effective way of generating a large sample from a hidden population where no formal sampling frame is available (Van Meter, 1990). A team of peer interviewers was trained to recruit and interview participants for the study. We have described this procedure in detail elsewhere and only essential features are described here (Boys *et al.*, 2000b). Using current or ex-drug users to gather data from hidden populations of drug using adults has been found to be successful (Griffiths *et al.*, 1993; Power, 1995).

Study participants

Study participants were current poly-substance users with no history of treatment for substance-

related disorders. We excluded people with a treatment history on the assumption that young people who have had substance-related problems requiring treatment represent a different group from the general population of young drug users. Inclusion criteria were: aged 16–22 years and having used two or more illegal substances during the past 90 days. During data collection, the age, gender and current occupation of participants were recorded and monitored to ensure that sufficient individuals were recruited to the groups to permit subgroup analyses. If an imbalance was observed in one of these variables, the interviewers were instructed to target participants with specific characteristics (e.g. females under the age of 18) to redress this imbalance.

Study measures

Data were collected using a structured interviewer-administered questionnaire developed specifically for the study. In addition to recording lifetime substance use, questions profiled consumption patterns of six substances in detail. Data were collected between August and November 1998. Interviews were audiotaped with the interviewee's consent. This enabled research staff to verify that answers had been accurately recorded on the questionnaire and that the interview had been conducted in accordance with the research protocol. Research staff also checked for consistency across different question items (e.g. the total number of days of drug use in the past 90 days should equal or exceed the number of days of cannabis use during the same time period). On the few occasions where inconsistencies were identified that could not be corrected from the tape, the interviewer was asked to re-contact the interviewee to verify the data.

Measures of lifetime use, consumption in the past year and past 90 days were based on procedures developed by Marsden *et al.* (Marsden *et al.*, 1998). Estimated intensity of consumption (amount used on a typical using day) was recorded verbatim and then translated into standardized units at the data entry stage.

Table I. Structure of functions scales

Domain	Item
Changing mood	Make yourself feel better when down or depressed
	Help you stop worrying about a problem
	Help you to relax
	Help you feel elated or euphoric
	Just get really stoned or intoxicated
Physical effects	Enhance feelings when having sex
	Help you to stay awake
	Help you lose weight
Social purposes	Help you to sleep
	Help you enjoy the company of your friends
	Help you feel more confident or more able to talk to people in a social situation
	Help you lose your inhibitions
Facilitate activity	Help you keep going on a night out with friends
	Help you to concentrate or to work or study
Manage effects from other substances	Enhance an activity such as listening to music or playing a game or sport
	Help make something you were doing less boring
	Improve the effects of other substances
	Help ease the after effects of other substances

Functions for substance use scale

The questionnaire included a 17-item scale designed to measure perceived functions for substance use. This scale consisted of items developed in previous work (Boys *et al.*, 1999a) in addition to functions derived from qualitative interviews (Boys *et al.*, 1999b), new literature and informal discussions with young drug users. Items were drawn from five domains (Table I).

Participants were asked if they had ever used a particular drug in order to fulfil each specific function. Those who endorsed the item were then invited to rate how frequently they had used it for this purpose over the past year, using a five-point Likert-type scale ('never' to 'always'; coded 0–4). One item differed between the function scales used for the stimulant drugs and for alcohol and cannabis. For the stimulant drugs (amphetamines, cocaine and ecstasy) the item 'have you ever used [named drug] to help you to lose weight' was used, for cannabis and alcohol this item was replaced with 'have you ever used [drug] to help you to sleep?'. (The items written in full as they appeared in the questionnaire are shown in Table III, together with abbreviations used in this paper.)

Statistical procedures

The internal reliability of the substance use functions scales for each of the six substances was judged using Chronbach's α coefficient. Chronbach's α is a statistic that reflects the extent to which each item in a measurement scale is associated with other items. Technically it is the average of correlations between all possible comparisons of the scale items that are divided into two halves. An α coefficient for a scale can range from 0 (no internal reliability) to 1 (complete reliability). Analyses of categorical variables were performed using χ^2 statistic. Differences in scale means were assessed using *t*-tests.

Results

The sample consisted of 364 young poly-substance users (205 males; 56.3%) with a mean age of 19.3 years; 69.8% described their ethnic group as White-European, 12.6% as Black and 10.1% were Asian. Just over a quarter (27.5%) were unemployed at the time of interview; a third were in education, 28.8% were in full-time work and the remainder had part-time employment. Estimates of monthly

Table II. Profile of substance use over the past year and past 90 days ($n = 364$)

Substance (lifetime users)	Lifetime users consuming in past year (%)	Lifetime users consuming in past 90 days (%)	Mean days used in past 90 days (range)	Average amount on typical using day [SD (range)]
Cannabis ($n = 350$)	98.6	98.3	55.2 (1–90)	1.9 ^a (1.49; 0.11–10.7) ^d
Amphetamines ($n = 188$)	87.8	79.3	7.7 (1–70)	0.9 ^a (0.54; 0.02–2.5)
Ecstasy ($n = 177$)	93.8	87.6	9.0 (1–51)	1.7 ^b (1.07; 0.5–5.0)
LSD ($n = 91$)	68.1	50.5	5.3 (1–39)	1.3 ^b (0.67; 0.5–4.0)
Cocaine ($n = 184$)	93.5	85.3	11.3 (1–80)	0.8 ^a (0.53; 0.01–3.5)
Alcohol ($n = 327$)	95.4	94.5	39.7 (1–90)	9.8 ^c (6.74; 0.5–42.0) ^e

^aGrams.^bNumber of tablets.^cNumber of units (1 unit = 8 g ethanol approximately).^dOne respondent reported smoking 21.3 g of cannabis on a typical using day. This outlying value was recoded to the next highest intensity recorded (10.6 g).^eTwo alcohol users reported consuming 48.0 and 50.0 units of alcohol on a typical using day respectively. These outlying values were recoded to the next highest intensity recorded in the sample (42.0 units per day) to ensure a more representative measure of mean intensity.

disposable income (any money that was spare after paying for rent, bills and food) ranged from 0 to over £1000 (median = £250).

Substance use history

The drug with the highest lifetime prevalence was cannabis (96.2%). This was followed by amphetamine sulphate (51.6%), cocaine hydrochloride (50.5%) (referred to as cocaine hereafter) and ecstasy (48.6%). Twenty-five percent of the sample had used LSD and this was more common amongst male participants ($\chi^2_{[1]} = 9.68, P < 0.01$). Other drugs used included crack cocaine (25.5%), heroin (12.6%), tranquillizers (21.7%) and hallucinogenic mushrooms (8.0%). On average, participants had used a total of 5.2 different psychoactive substances in their lives (out of a possible 14) (median = 4.0, mode = 3.0, range 2–14). There was no gender difference in the number of different drugs ever used.

Table II profiles use of the six target drugs over the past year, and the frequency and intensity of use in the 90 days prior to interview.

There were no gender differences in drug use over the past year or in the past 90 days with the exception of amphetamines. For this substance, females who had ever used this drug were more likely to have done so during the past 90

days than males ($\chi^2_{[1]} = 4.14, P < 0.05$). The mean number of target drugs used over the past 90 days was 3.2 (median = 3.0, mode = 3.0, range 2–6). No gender differences were observed. Few differences were also observed in the frequency and intensity of use. Males reported drinking alcohol more frequently during the three months prior to interview ($t[307] = 2.48, P < 0.05$) and using cannabis more intensively on a ‘typical using day’ ($t[337] = 3.56, P < 0.001$).

Perceived functions for substance use

There were few differences between the functions endorsed for use of each drug ‘ever’ and those endorsed for use during ‘the year prior to interview’. This section therefore concentrates on data for the year prior to interview. We considered that in order to use a drug for a specific function, the user must have first hand knowledge of the drug’s effects before making this decision. Consequently, functions reported by individuals who had only used a particular substance on one occasion in their lives (i.e. with no prior experience of the drug at the time they made the decision to take it) were excluded from the analyses. Table III summarizes the proportion of the sample who endorsed each of the functions for drugs used in the past year. Roman numerals have been used to

Table III. Proportion (%) of those who have used [substance] more than once, who endorsed each functional statement for their use in the past year

Used [substance] to...	Cannabis (n = 345)	Amphetamines (n = 160)	Ecstasy (n = 357)	LSD (n = 58)	Cocaine (n = 168)	Alcohol (n = 312)
Make yourself feel better when down or depressed (FEEL BETTER) ^a	69.0	43.1	48.4	20.7	61.9	69.9
Help you 'keep going' on a night out with friends (KEEP GOING)	35.9	95.6 ⁱ	91.1 ⁱ	58.6 ^{iv}	84.5 ⁱ	66.7 ^{iv}
Help you feel elated or euphoric (ELATED/EUPHORIC)	46.1	60.6 ^v	77.7 ⁱⁱⁱ	72.4 ⁱⁱ	57.1 ^v	51.3
Just get really stoned or intoxicated (INTOXICATED)	90.7 ⁱⁱ	55.0 ^v	68.2 ^v	77.6 ⁱ	66.1 ⁱⁱⁱ	89.1 ⁱ
Help you lose weight (LOSE WEIGHT)	–	23.1	7.0	–	6.0	–
Help you enjoy the company of your friends (ENJOY COMPANY)	66.4	58.1	63.1	58.6 ^v	61.3 ^v	74.0 ⁱⁱⁱ
Help you to relax (RELAX)	96.8 ⁱ	13.1	29.9	17.2	28.6	82.7 ⁱⁱ
Help you feel more confident or more able to talk to people in a social situation (INCREASE CONFIDENCE)	36.5	53.1	42.0	10.3	66.1	70.2 ^v
Improve the effects of other substances (IMPROVE EFFECTS)	44.3	37.5	27.4	29.3	26.2	41.0
Help ease the after effects of other substances (AFTER EFFECTS)	64.6	11.9	8.3	3.4	12.5	35.9
Help you to stay awake (STAY AWAKE)	7.5	91.3 ⁱⁱ	72.0 ^{iv}	50.0	69.0 ⁱⁱ	10.6
Help you lose your inhibitions (LOSE INHIBITIONS)	28.1	41.9	49.7	36.2	41.1	51.0
Enhance feelings when having sex (ENHANCE SEX)	27.8	31.9	63.1	25.9	52.4	32.1
Help you stop worrying about a problem (STOP WORRYING)	57.7	22.5	32.5	15.5	41.7	55.1
Help make something you were doing less boring (DECREASE BOREDOM)	70.1 ^v	45.6	36.3	44.8	53.6	60.6
Help you to sleep (SLEEP)	69.6 ^{iv}	–	–	–	–	30.4
Help you to concentrate or to work or study (WORK)	20.9	29.4	3.2	1.7	6.0	6.4
Enhance an activity such as listening to music or playing a game or sport (ENHANCE ACTIVITY)	72.8 ⁱⁱⁱ	66.2 ⁱⁱⁱ	79.6 ⁱⁱ	72.4 ⁱⁱⁱ	60.7	51.6
Total number of items in the scale	17	17	17	16	17	17
Chronbach's α for scale items	0.78	0.74	0.76	0.73	0.78	0.84
Mean total number of different functions endorsed for use of [substance] (range)	9.0 (0–17)	7.8 (0–16)	8.0 (0–16)	5.9 (0–15)	7.9 (0–17)	8.8 (0–17)

^aAbbreviations for these items shown in brackets are used in the text of this paper.

^{i-v}Indication of rank according to item scores on Likert scales.

indicate the functions with the top five average scores. Table III also shows means for the total number of different items endorsed by individual users and the internal reliability of the function scales for each substance using Chronbach's α coefficients. There were no significant gender differences in the total number of functions endorsed for any of the six substances.

The following sections summarize the top five most popular functions drug-by-drug together with any age or gender differences observed in the items endorsed.

Cannabis use ($n = 345$)

Overall the most popular functions for cannabis use were to 'RELAX' (endorsed by 96.8% of people who had used the drug in the last year), to become 'INTOXICATED' (90.7%) and to 'ENHANCE ACTIVITY' (72.8%). Cannabis was also commonly used to 'DECREASE BOREDOM' (70.1%) and to 'SLEEP' (69.6%) [this item was closely followed by using to help 'FEEL BETTER' (69.0%)]. Nine of the 17 function items were endorsed by over half of those who had used cannabis on more than one occasion in the past year. There were no significant gender differences observed, with the exception of using to 'KEEP GOING', where male participants were significantly more likely to say that they had used cannabis to fulfil this function in the past year ($\chi^2_{[1]} = 6.10, P < 0.05$).

There were statistically significant age differences on four of the function variables: cannabis users who reported using this drug in the past year to help feel 'ELATED/EUPHORIC' or to help 'SLEEP' were significantly older than those who had not used cannabis for these purposes (19.6 versus 19.0; $t[343] = 3.32, P < 0.001$; 19.4 versus 19.0; $t[343] = 2.01, P < 0.05$). In contrast, those who had used cannabis to 'INCREASE CONFIDENCE' and to 'STOP WORRYING' tended to be younger than those who did not (19.0 versus 19.4; $t[343] = -2.26, P < 0.05$; 19.1 versus 19.5; $t[343] = -1.99, P < 0.05$).

Amphetamines ($n = 160$)

Common functions for amphetamine use were to 'KEEP GOING' (95.6%), to 'STAY AWAKE'

(91.3%) or to 'ENHANCE ACTIVITY' (66.2%). Using to help feel 'ELATED/EUPHORIC' (60.6%) and to 'ENJOY COMPANY' (58.1%) were also frequently mentioned. Seven of the 17 function items were endorsed by over half of participants who had used amphetamines in the past year. As with cannabis, gender differences were uncommon: females were more likely to use amphetamines to help 'LOSE WEIGHT' than male participants ($\chi^2_{[1]} = 21.67, P < 0.001$).

Significant age differences were found on four function variables. Individuals who reported using amphetamines in the past year to feel 'ELATED/EUPHORIC' were significantly older than those who did not (19.9 versus 19.0; $t[158] = 2.87, P < 0.01$). In contrast, participants who used amphetamines to 'STOP WORRYING' (18.8 versus 19.8; $t[158] = -2.77, P < 0.01$), to 'DECREASE BOREDOM' (19.2 versus 19.9; $t[158] = -2.39, P < 0.05$) or to 'ENHANCE ACTIVITY' (19.3 versus 20.1; $t[158] = -2.88, P < 0.01$) were younger than those who had not.

Ecstasy ($n = 157$)

The most popular five functions for using ecstasy were similar to those for amphetamines. The drug was used to 'KEEP GOING' (91.1%), to 'ENHANCE ACTIVITY' (79.6%), to feel 'ELATED/EUPHORIC' (77.7%), to 'STAY AWAKE' (72.0%) and to get 'INTOXICATED' (68.2%). Seven of the 17 function items were endorsed by over half of those who had used ecstasy in the past year. Female users were more likely to use ecstasy to help 'LOSE WEIGHT' than male participants (Fishers exact test, $P < 0.001$).

As with the other drugs discussed above, participants who reported using ecstasy to feel 'ELATED/EUPHORIC' were significantly older than those who did not (19.8 versus 18.9; $t_{[155]} = 2.61, P < 0.01$). In contrast, those who had used ecstasy to 'FEEL BETTER' (19.3 versus 20.0; $t[155] = -2.29, P < 0.05$), to 'INCREASE CONFIDENCE' (19.2 versus 19.9; $t[155] = -2.22, P < 0.05$) and to 'STOP WORRYING' (19.0 versus 19.9; $t[155] = -2.96, P < 0.01$) tended to be younger.

LSD (*n* = 58)

Of the six target substances examined in this study, LSD was associated with the least diverse range of functions for use. All but two of the function statements were endorsed by at least some users, but only five were reported by more than 50%. The most common purpose for consuming LSD was to get 'INTOXICATED' (77.6%). Other popular functions included to feel 'ELATED/EUPHORIC' and to 'ENHANCE ACTIVITY' (both endorsed by 72.4%), and to 'KEEP GOING' and to 'ENJOY COMPANY' (both endorsed by 58.6%). Unlike the other substances examined, no gender or age differences were observed.

Cocaine (*n* = 168)

In common with ecstasy and amphetamines, the most widely endorsed functions for cocaine use were to help 'KEEP GOING' (84.5%) and to help 'STAY AWAKE' (69.0%). Consuming cocaine to 'INCREASE CONFIDENCE' and to get 'INTOXICATED' (both endorsed by 66.1%) were also popular. However, unlike the other stimulant drugs, 61.9% of the cocaine users reported using to 'FEEL BETTER'. Ten of the 17 function items were endorsed by over half of those who had used cocaine in the past year.

Gender differences were more common amongst functions for cocaine use than the other substances surveyed. More males reported using cocaine to 'IMPROVE EFFECTS' of other drugs ($\chi^2_{[1]} = 4.00, P < 0.05$); more females used the drug to help 'STAY AWAKE' ($\chi^2_{[1]} = 12.21, P < 0.001$), to 'LOSE INHIBITIONS' ($\chi^2_{[1]} = 9.01, P < 0.01$), to 'STOP WORRYING' ($\chi^2_{[1]} = 8.11, P < 0.01$) or to 'ENJOY COMPANY' of friends ($\chi^2_{[1]} = 4.34, P < 0.05$). All participants who endorsed using cocaine to help 'LOSE WEIGHT' were female.

Those who had used cocaine to 'FEEL BETTER' (18.9 versus 19.8; $t[166] = -3.06, P < 0.01$), to 'STOP WORRYING' (18.6 versus 19.7; $t[166] = -3.86, P < 0.001$) or to 'DECREASE BOREDOM' (18.9 versus 19.6; $t[166] = -2.52, P < 0.05$) were significantly younger than those who did not endorse these functions. Similar to the other drugs,

participants who had used cocaine to feel 'ELATED/EUPHORIC' in the past year tended to be older than those who had not (19.6 versus 18.7; $t[166] = 3.16, P < 0.01$).

Alcohol (*n* = 312)

The functions for alcohol use were the most diverse of the six substances examined. Like LSD, the most commonly endorsed purpose for drinking was to get 'INTOXICATED' (89.1%). Many used alcohol to 'RELAX' (82.7%), to 'ENJOY COMPANY' (74.0%), to 'INCREASE CONFIDENCE' (70.2%) and to 'FEEL BETTER' (69.9%). Overall, 11 of the 17 function items were endorsed by over 50% of those who had drunk alcohol in the past year. Male participants were more likely to report using alcohol in combination with other drugs either to 'IMPROVE EFFECTS' of other drugs ($\chi^2_{[1]} = 4.56, P < 0.05$) or to ease the 'AFTER EFFECTS' of other substances ($\chi^2_{[1]} = 7.07, P < 0.01$). More females than males reported that they used alcohol to 'DECREASE BOREDOM' ($\chi^2_{[1]} = 4.42, P < 0.05$).

T-tests revealed significant age differences on four of the function variables: those who drank to feel 'ELATED/EUPHORIC' were significantly older (19.7 versus 19.0; $t[310] = 3.67, P < 0.001$) as were individuals who drank to help them to 'LOSE INHIBITIONS' (19.6 versus 19.0; $t[310] = 2.36, P < 0.05$). In contrast, participants who reported using alcohol just to get 'INTOXICATED' (19.2 versus 20.3; $t[310] = -3.31, P < 0.001$) or to 'DECREASE BOREDOM' (19.2 versus 19.6; $t[310] = -2.25, P < 0.05$) were significantly younger than those who did not.

Combined functional drug use

The substances used by the greatest proportion of participants to 'IMPROVE EFFECTS' from other drugs were cannabis (44.3%), alcohol (41.0%) and amphetamines (37.5%). It was also common to use cannabis (64.6%) and to a lesser extent alcohol (35.9%) in combination with other drugs in order to help manage 'AFTER EFFECTS'. Amphetamines, ecstasy, LSD and cocaine were also used for these purposes, although to a lesser extent. Participants

Table IV. Combined functional substance use reported by the sample over the past year

	Cannabis (n = 153)	Amphetamines (n = 60)	Ecstasy (n = 43)	LSD (n = 17)	Cocaine (n = 44)	Alcohol (n = 128)
Used with [substance] to improve its effects						
cannabis	–	16	18	8	14	93
amphetamines	37	–	20	7	3	29
ecstasy	55	39	–	11	19	45
LSD	24	10	9	–	3	6
cocaine	42	4	5	1	–	45
alcohol	110	38	23	4	29	–
hallucinogenic mushrooms	2	0	0	1	0	1
	Cannabis (n = 223)	Amphetamines (n = 19)	Ecstasy (n = 15)	LSD (n = 3)	Cocaine (n = 23)	Alcohol (n = 112)
Used to help ease after effects of [substance]						
cannabis	–	5	2	0	4	18
amphetamines	83	–	6	1	1	47
ecstasy	114	7	–	3	10	59
LSD	29	0	5	–	0	13
cocaine	80	1	1	0	–	34
alcohol	70	18	7	0	14	–

who endorsed the combination drug use items were asked to list the three main drugs with which they had combined the target substance for these purposes. Table IV summarizes these responses.

Overall functions for drug use

In order to examine which functions were most popular overall, a dichotomous variable was created for each different item to indicate if one or more of the six target substances had been used to fulfil this purpose during the year prior to interview. For example, if an individual reported that they had used cannabis to relax, but their use of ecstasy, amphetamines and alcohol had not fulfilled this function, then the variable for 'RELAX' was scored '1'. Similarly if they had used all four of these substances to help them to relax in the past year, the variable would again be scored as '1'. A score of '0' indicates that none of the target substances had been used to fulfil a particular function. Table V summarizes the data from these new variables.

Over three-quarters of the sample had used at least one target substance in the past year for 11 out of the 18 functions listed. The five most

common functions for substance use overall were to 'RELAX' (96.7%); 'INTOXICATED' (96.4%); 'KEEP GOING' (95.9%); 'ENHANCE ACTIVITY' (88.5%) and 'FEEL BETTER' (86.8%). Despite the fact that 'SLEEP' was only relevant to two substances (alcohol and cannabis), it was still endorsed by over 70% of the total sample. Using to 'LOSE WEIGHT' was only relevant to the stimulant drugs (amphetamines, ecstasy and cocaine), yet was endorsed by 17.3% of the total sample (almost a third of all female participants). Overall, this was the least popular function for recent substance use, followed by 'WORK' (32.1%). All other items were endorsed by over 60% of all participants.

Gender differences were identified in six items. Females were significantly more likely to have endorsed the following: using to 'INCREASE CONFIDENCE' ($\chi^2_{[1]} = 4.41, P < 0.05$); 'STAY AWAKE' ($\chi^2_{[1]} = 5.36, P < 0.05$), 'LOSE INHIBITIONS' ($\chi^2_{[1]} = 4.48, P < 0.05$), 'ENHANCE SEX' ($\chi^2_{[1]} = 5.17, P < 0.05$) and 'LOSE WEIGHT' ($\chi^2_{[1]} = 29.6, P < 0.001$). In contrast, males were more likely to use a substance to

Table V. Percentage of participants who reported having used at least one of the target substances to fulfil each of the different functions over the past year (n = 364)

Used at least one target substance to...	Male (%) (n = 205)	Female (%) (n = 159)	Total (%) (n = 364)	χ^2
1. RELAX	96.1	97.5	96.7	0.54
2. INTOXICATED	96.1	96.9	96.4	0.15
3. KEEP GOING	95.6	96.2	95.9	0.09
4. ENHANCE ACTIVITY	90.2	86.2	88.5	1.46
5. FEEL BETTER	84.9	89.3	86.8	1.54
6. ENJOY COMPANY	83.4	86.2	84.6	0.52
7. DECREASE BOREDOM	82.0	84.3	83.0	0.34
8. INCREASE CONFIDENCE	79.0	87.4	82.7	4.41 ^a
9. STAY AWAKE	78.0	87.4	82.1	5.36 ^a
10. FEEL ELATED/EUPHORIC	77.1	74.2	75.8	0.40
11. STOP WORRYING	71.7	79.9	75.3	3.21
12. SLEEP	73.7	67.9	71.2	1.43
13. AFTER EFFECTS	71.2	65.4	68.7	1.41
14. LOSE INHIBITIONS	62.4	73.0	67.0	4.48 ^a
15. ENHANCE SEX	57.6	69.2	62.6	5.17 ^a
16. IMPROVE EFFECTS	65.9	48.4	58.2	11.18 ^c
17. WORK	33.7	30.2	32.1	0.49
18. LOSE WEIGHT	7.8	29.6	17.3	29.6 ^c

^a $P < 0.05$, ^b $P < 0.01$; ^c $P < 0.001$.

‘IMPROVE EFFECTS’ of another drug ($\chi^2_{[1]} = 11.18$, $P < 0.001$).

Statistically significant age differences were identified in three of the items. Those who had used at least one of the six target substances in the last year to feel ‘ELATED/EUPHORIC’ (19.5 versus 18.6; $t[362] = 4.07$, $P < 0.001$) or to ‘SLEEP’ (19.4 versus 18.9; $t[362] = 2.19$, $P < 0.05$) were significantly older than those who had not used for this function. In contrast, participants who had used in order to ‘STOP WORRYING’ tended to be younger (19.1 versus 19.7; $t[362] = -2.88$, $P < 0.01$).

Discussion

This paper has examined psychoactive substance use amongst a sample of young people and focused on the perceived functions for use using a 17-item scale. In terms of the characteristics of the sample, the reported lifetime and recent substance use was directly comparable with other samples of poly-drug users recruited in the UK [e.g. (Release, 1997)].

Previous studies which have asked users to give reasons for their ‘drug use’ overall instead of breaking it down by drug type [e.g. (Carman, 1979; Butler *et al.*, 1981; Newcomb *et al.*, 1988; Cato, 1992; McKay *et al.*, 1992)] may have overlooked the dynamic nature of drug-related decision making. A key finding from the study is that with the exception of two of the functions for use scale items (using to help sleep or lose weight), all of the six drugs had been used to fulfil all of the functions measured, despite differences in their pharmacological effects. The total number of functions endorsed by individuals for use of a particular drug varied from 0 to 15 for LSD, and up to 17 for cannabis, alcohol and cocaine. The average number ranged from 5.9 (for LSD) to 9.0 (for cannabis). This indicates that substance use served multiple purposes for this sample, but that the functional profiles differed between the six target drugs.

We have previously reported (Boys *et al.*, 2000b) that high scores on a cocaine functions scale are strongly predictive of high scores on a cocaine-related problems scale. The current findings support

the use of similar function scales for cannabis, amphetamines, LSD and ecstasy. It remains to be seen whether similar associations with problem scores exist. Future developmental work in this area should ensure that respondents are given the opportunity to cite additional functions to those included here so that the scales can be further extended and refined.

Recent campaigns that have targeted young people have tended to assume that hallucinogen and stimulant use is primarily associated with dance events, and so motives for use will relate to this context. Our results support assumptions that these drugs are used to enhance social interactions, but other functions are also evident. For example, about a third of female interviewees had used a stimulant drug to help them to lose weight. Future education and prevention efforts should take this diversity into account when planning interventions for different target groups.

The finding that the same functions are fulfilled by use of different drugs suggests that at least some could be interchangeable. Evidence for substituting alternative drugs to fulfil a function when a preferred drug is unavailable has been found in other studies [e.g. (Boys *et al.*, 2000a)]. Prevention efforts should perhaps focus on the general motivations behind use rather than trying to discourage use of specific drug types in isolation. For example, it is possible that the focus over the last decade on ecstasy prevention may have contributed inadvertently to the rise in cocaine use amongst young people in the UK (Boys *et al.*, 1999c). It is important that health educators do not overlook this possibility when developing education and prevention initiatives. Considering functions that substance use can fulfil for young people could help us to understand which drugs are likely to be interchangeable. If prevention programmes were designed to target a range of substances that commonly fulfil similar functions, then perhaps this could address the likelihood that some young people will substitute other drugs if deterred from their preferred substance.

There has been considerable concern about the perceived increase in the number of young people

who are using cocaine in the UK (*Tackling Drugs to Build a Better Britain*, 1998; Ramsay and Partridge, 1999; Boys *et al.*, 2000b). It has been suggested that, for a number of reasons, cocaine may be replacing ecstasy and amphetamines as the stimulant of choice for some young people (Boys *et al.*, 1999c). The results from this study suggest that motives for cocaine use are indeed similar to those for ecstasy and amphetamine use, e.g. using to 'keep going' on a night out with friends, to 'enhance an activity', 'to help to feel elated or euphoric' or to help 'stay awake'. However, in addition to these functions which were shared by all three stimulants, over 60% of cocaine users reported that they had used this drug to 'help to feel more confident' in a social situation and to 'feel better when down or depressed'. Another finding that sets cocaine aside from ecstasy and amphetamines was the relatively common existence of gender differences in the function items endorsed. Female cocaine users were more likely to use to help 'stay awake', 'lose inhibitions', 'stop worrying', 'enjoy company of friends' or to help 'lose weight'. This could indicate that women are more inclined to admit to certain functions than their male counterparts. However, the fact that similar gender differences were not observed in the same items for the other five substances, suggests this interpretation is unlikely. Similarly, the lack of gender differences in patterns of cocaine use (both frequency and intensity) suggests that these differences are not due to heavier cocaine use amongst females. If these findings are subsequently confirmed, this could point towards an inclination for young women to use cocaine as a social support, particularly to help feel less inhibited in social situations. If so, young female cocaine users may be more vulnerable to longer-term cocaine-related problems.

Many respondents reported using alcohol or cannabis to help manage effects experienced from another drug. This has implications for the choice of health messages communicated to young people regarding the use of two or more different substances concurrently. Much of the literature aimed at young people warns them to avoid mixing drugs

because the interactive effects may be dangerous [e.g. (HIT, 1996)]. This 'Just say No' type of approach does not take into consideration the motives behind mixing drugs. In most areas, drug education and prevention work has moved on from this form of communication. A more sophisticated approach is required, which considers the functions that concurrent drug use is likely to have for young people and tries to amend messages to make them more relevant and acceptable to this population. Further research is needed to explore the motivations for mixing different combinations of drugs together.

Over three-quarters of the sample reported using at least one of the six target substances to fulfil 11 out of the 18 functions. These findings provide strong evidence that young people use psychoactive drugs for a range of distinct purposes, not purely dependent on the drug's specific effects. Overall, the top five functions were to 'help relax', 'get intoxicated', 'keep going', 'enhance activity' and 'feel better'. Each of these was endorsed by over 85% of the sample. Whilst all six substances were associated to a greater or lesser degree with each of these items, there were certain drugs that were more commonly associated with each. For example, cannabis and alcohol were popular choices for relaxation or to get intoxicated. In contrast, over 90% of the amphetamine and ecstasy users reported using these drugs within the last year to 'keep going'. Using to enhance an activity was a common function amongst users of all six substances, endorsed by over 70% of ecstasy, cannabis and LSD users. Finally, it was mainly alcohol and cannabis (and to a lesser extent cocaine) that were used to 'feel better'.

Several gender differences were observed in the combined functions for recent substance use. These findings indicate that young females use other drugs as well as cocaine as social supports. Using for specific physical effects (weight loss, sex or wakefulness) was also more common amongst young women. In contrast, male users were significantly more likely to report using at least one of the target substances to try to improve the effects of another substance. This indicates a greater

tendency for young males in this sample to mix drugs than their female counterparts. Age differences were also observed on several function items: participants who had used a drug to 'feel elated or euphoric' or to 'help sleep' tended to be older and those who used to 'stop worrying about a problem' were younger. If future studies confirm these differences, education programmes and interventions might benefit from tailoring their strategies for specific age groups and genders. For example, a focus on stress management strategies and coping skills with a younger target audience might be appropriate.

Some limitations of the study need to be acknowledged. The sample for this study was recruited using a snowball-sampling methodology. Although it does not yield a random sample of research participants, this method has been successfully used to access hidden samples of drug users [e.g. (Biernacki, 1986; Lenton *et al.*, 1997)]. Amongst the distinct advantages of this approach are that it allows theories and models to be tested quantitatively on sizeable numbers of subjects who have engaged in a relatively rare behaviour.

Further research is now required to determine whether our observations may be generalized to other populations (such as dependent drug users) and drug types (such as heroin, tranquillizers or tobacco) or if additional function items need to be developed. Future studies should also examine if functions can be categorized into primary and subsidiary reasons and how these relate to changes in patterns of use and drug dependence. Recognition of the functions fulfilled by substance use could help inform education and prevention strategies and make them more relevant and acceptable to the target audiences.

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References

- Biernacki, P. (1986) *Pathways from Heroin Addiction: Recovery without Treatment*. Temple University Press, Philadelphia, PA.
- Boys, A., Marsden, J., Griffiths, P., Fountain, J., Stillwell, G. and Strang, J. (1999a) Substance use among young people: the relationship between perceived functions and behavioural intentions. *Addiction*, **94**, 1043–1050.
- Boys, A., Marsden, J., Fountain, J., Griffiths, P., Stillwell, G. and Strang, J. (1999b) What influences young people's use of drugs? A qualitative study of decision-making. *Drugs: Education, Prevention and Policy*, **6**, 373–389.
- Boys, A., Marsden, J. and Griffiths, P. (1999c) Reading between the lines: is cocaine becoming the stimulant of choice for urban youth? *Druglink*, **14**, 20–23.
- Boys, A., Fountain, J., Marsden, J., Griffiths, P., Stillwell, G. and Strang, J. (2000a) *Drug Decisions: A Qualitative Study of Young People, Drugs and Alcohol*. Health Education Authority, London.
- Boys, A., Marsden, J., Griffiths, P. and Strang, J. (2000b) Drug use functions predict cocaine-related problems. *Drug and Alcohol Review*, **19**, 181–190.
- Butler, M. C., Gunderson, E. K. E. and Bruni, J. R. (1981) Motivational determinants of illicit drug use: an assessment of underlying dimensions and their relationship to behaviour. *International Journal of the Addictions*, **16**, 243–252.
- Carman, R. S. (1979) Motivations for drug use and problematic outcomes among rural junior high school students. *Addictive Behaviors*, **4**, 91–93.
- Cato, B. M. (1992) Youth's recreation and drug sensations: is there a relationship? *Journal of Drug Education*, **22**, 293–301.
- Edwards, G., Chandler, J. and Peto, J. (1972) Motivation for drinking among men in a London suburb, *Psychological Medicine*, **2**, 260–271.
- European Monitoring Centre for Drugs and Drug Addiction (1998) *Annual Report on the State of the Drugs Problem in the European Union*. EMCDDA, Lisbon.
- Griffiths, P., Gossop, M., Powis, B. and Strang, J. (1993) Reaching hidden populations of drug users by privileged access interviewers: methodological and practical issues. *Addiction*, **88**, 1617–1626.
- HIT (1996) *Chill Out: A Clubber's Guide—The Second Coming*. HIT, Liverpool.
- Johnston, L. D., O'Malley, P. M. and Bachman J. G. (1997) *National Survey Results on Drug Use from the Monitoring the Future Study, 1975–1996: Secondary School Students*. US DHHS, National Institute on Drug Abuse, Rockville, MD.
- Johnston, L. D., O'Malley, P. M. and Bachman J. G. (2000) *The Monitoring the Future National Results on Adolescent Drug Use: Overview of Key Findings 1999*. US DHHS, National Institute on Drug Abuse, Rockville, MD.
- Lenton, S., Boys, A. and Norcross, K. (1997) Raves, drugs and experience: drug use by a sample of people who attend raves in Western Australia. *Addiction*, **92**, 1327–1337.
- Marsden, J., Gossop, M., Stewart, D., Best, D., Farrell, M., Edwards, C., Lehmann, P. and Strang, J. (1998) The Maudsley Addiction Profile (MAP): a brief instrument for assessing treatment outcome. *Addiction*, **93**, 1857–1867.
- McKay, J. R., Murphy, R. T., McGuire, J., Rivinus, T. R. and Maisto, S. A. (1992) Incarcerated adolescents' attributions for drug and alcohol use. *Addictive Behaviors*, **17**, 227–235.
- Newcomb, M. D., Chou, C.-P., Bentler, P. M. and Huba, G. J. (1988) Cognitive motivations for drug use among adolescents: longitudinal tests of gender differences and predictors of change in drug use. *Journal of Counselling Psychology*, **35**, 426–438.
- Power, R. (1995) A model for qualitative action research amongst illicit drug users. *Addiction Research*, **3**, 165–181.
- Power, R., Power, T. and Gibson, N. (1996) Attitudes and experience of drug use amongst a group of London teenagers. *Drugs: Education, Prevention and Policy*, **3**, 71–80.
- Ramsay, M. and Partridge, S. (1999) *Drug Misuse Declared in 1998: Results from the British Crime Survey*. Home Office, London.
- Release (1997) *Release Drugs and Dance Survey: An Insight into the Culture*. Release, London.
- Sadava, S. (1975) Research approaches in illicit drug use: a critical review. *Genetic Psychology Monographs*, **91**, 3–59.
- Tackling Drugs to Build a Better Britain* (1998) *The Government's 10-year Strategy on Drug Misuse*. Central Drugs Co-ordinating Unit, London.
- Van Meter, K. M. (1990) Methodological and design issues: techniques for assessing the representatives of snowball samples. In Lambert, E. Y. (ed.), *The Collection and Interpretation of Data from Hidden Populations*. US DHHS, National Institute on Drug Abuse, Rockville, MD, pp. 31–33.
- Wibberley, C. and Price, J. (2000) Patterns of psycho-stimulant drug use amongst 'social/operational users': implications for services. *Addiction Research*, **8**, 95–111.
- WHO (1997) *Amphetamine-type Stimulants: A Report from the WHO Meeting on Amphetamines, MDMA and other Psychostimulants*, Geneva, 12–15 November 1996. Programme on Substance Abuse, Division of Mental Health and Prevention of Substance Abuse, WHO, Geneva.

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