RESEARCH REPORT

Substance use among young people: the relationship between perceived functions and intentions

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Abstract

Aims. To explore the relationship between young people’s use of psychoactive substances, perceived functions for using, the experience of negative effects, and the influences of these variables on their intention to use substances again. Design. Cross-sectional survey in which respondents were purposively recruited using snowballing techniques. Setting. Interviews were conducted in informal community settings. Participants. One hundred young drug and alcohol users (45 females) aged between 16 and 21 years. Measurements. Life-time prevalence, current frequency and intensity of substance use and intentions to use again were assessed for four target substances (alcohol, cannabis, amphetamines and ecstasy) together with measures of the perceived functions for their use and peer substance involvement. Findings. The life-time experience of negative effects from using the assessed substances was not found to correlate with current consumption patterns. Statistically significant associations were observed between the reported frequency of taking substances and the perceived social/contextual and/or mood altering functions cited for their consumption. The substance use function measures together with the reported extent of peer use were significant predictors of intentions to use again. Conclusions. If these findings are confirmed in larger studies, educational and preventative efforts may need to acknowledge the positive personal and social functions which different substances serve for young people. The results also call into question the extent to which the experience of negative effects influences future patterns of use.

Introduction

This paper reports findings from a study of the personal and social influences on substance use among young people. There is widespread concern about this issue in many countries, including the United Kingdom (UK, Central Drugs Coordinating Unit, 1998), continental Europe (European Monitoring Centre for Drugs and Drug Addiction, 1997) and the United States (US, National Institute on Drug Abuse, 1997). In the UK, data from recent population surveys show that some 50% of young people between the ages of 16 and 24 years have used an illicit drug (Ramsay & Spiller, 1997; Health Education Authority, 1997). The life-time prevalence of cannabis use among 16–19-year-olds in Britain is estimated to be 35%, and use of the so-called ‘dance drugs’, ecstasy, amphetamines and LSD,
is 9%, 16% and 10%, respectively. For 20–24-year-olds, life-time prevalence for cannabis rises to 42%, with 21% reporting use of amphetamines, 13% ecstasy and 14% LSD (Ramsay & Spiller 1997). In contrast, the prevalence of cocaine use stands at 2% for 16–19-year-olds and 6% for 20–24-year-olds. Use of heroin is reported by 1% or less of people aged 16–24 years. These data are generally comparable with estimates from other European countries (European Monitoring Centre for Drugs and Drug Addiction, 1997) and the US (Johnston, O’Malley & Bachman, 1997).

A concerted effort has been made to develop aetiological models of substance involvement among young people with some application to prevention and education programmes (see Lentieri, Sayer & Pearson, 1980; Petrakis, Flay & Miller, 1995, for discussions). One approach has viewed young people as essentially passive and vulnerable to influences in their social environment which may encourage substance use (e.g. Elliott, Huizinga & Ageton, 1985; Elliott, Huizinga & Menard, 1989). From this perspective, friends (peers) are thought to exert pressure on a young person to conform to group norms and substance use preferences. Consequently, some prevention programmes have attempted to train young people in the skills needed to resist "peer pressure" (Bureau of Justice Assistance, 1988; Whelan & Culver, 1997). However, while research has consistently found a strong association between peers and individual behaviour, the nature and direction of this relationship has not been studied in detail and is somewhat controversial (Kandel, 1985; Coggans & McKellar, 1994; Bauman & Ennett, 1996). Another aetiological perspective has sought to identify factors which protect young people from or propel them towards using substances. For example, Epstein et al. (1995) proposed that good communication and assertiveness skills are protective factors which help an individual to decline an opportunity to take a substance in a social situation. In this study, links were found between individuals having high self-efficacy for life skills and a lower likelihood of experimentation with cannabis. A range of risk factors have also been suggested, including impaired emotional control (Jessor & Jessor, 1977), low achievement at school (Brook et al., 1986) and family conflict (Robins, 1980).

A contrasting approach, broadly influenced by psychological theories of health behaviour decision-making (e.g. Langer & Warheit, 1992; Ajzen, 1985, 1988), sees young people as making an active appraisal of the personal benefits and costs from using substances. Here, research has tended to focus on alcohol, tobacco and, to a lesser extent, cannabis. Many studies have explored the reasons and motivations which young people cite for using a substance (Carman, 1979; Butler, Gunderson & Bruni, 1981; Newcomb et al., 1988; Cato, 1992; McKay et al., 1992). Some reports have described both personal reasons for use (e.g. because of negative mood) and social motives (e.g. to have a good time with friends) (Haden & Edmundson, 1991). Others have identified more detailed categories including: positive/negative affect, social recreation, compulsive use, drug-effect, tension reduction and peer-influence (Segal, Huba & Singer, 1980; Segal et al., 1982; Segal, 1985–86; Johnston & O’Malley, 1986; Newcomb et al., 1988). A limitation of much of this work has been the grouping of all illicit substances together or a simple distinction between cannabis and an unspecified global category labelled "hard drugs". However, Johnston & O’Malley (1986) were able to differentiate between reasons for use of alcohol, cannabis, LSD, amphetamines, tranquilizers, cocaine and opioids in young Americans. Their findings suggested that these reasons vary across the type of substance and the extent of an individual’s prior experience. Another study showed that the perceived physical and psychological effects of cannabis were more powerful predictors of continued use than the perceived social benefits (Bailey, Flewelling & Rachal, 1992).

The influence of negative effects from taking a substance (e.g. anxiety, hangover) on future consumption patterns has received little attention from research. Despite the emphasis placed by prevention programmes on highlighting negative experiences, there is little evidence that this helps to deter future use (Huba, Newcomb & Bentler, 1986).

In the UK to date, there has been only limited exploration of the relative importance of personal and social factors on substance use involvement and future intentions. Little practical information has been gathered to guide education programmes which distinguish between different types of substances. In consequence, we sought to conduct a focused, small-scale study of young people who have had some experience of using
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Different substances. We considered that a focused study design would be an economical and efficient means of exploring these issues and for generating formal hypotheses for testing in a larger sample. The objective of the study was to explore relationships between individual and peer substance involvement, the reasons or perceived functions for using different substances, the experience of negative effects and future substance use intentions.

Method

Measures

Data were gathered from a researcher-administered interview of approximately 30 minutes’ duration. Life-time use of tobacco, heroin, cocaine hydrochloride, crack cocaine and LSD was recorded. For alcohol, cannabis, amphetamines and ecstasy—the substances which are most commonly used in this population—the frequency (total number of days used) and typical quantity (intensity) of consumption on a using day in the 90 days prior to interview was assessed (see Marsden et al., 1998). Prompt cards were used to assist recall for frequency of consumption while typical daily quantity was recorded verbatim. The reliable measurement of the intensity of illicit drug use from self-reports is acknowledged to be problematic and self-reports were taken to be a proxy for the true dosage. Respondents were asked to estimate the proportion of their friends who were likely to use each substance within the next 6 months (as a indicator of perceived peer drug involvement) using a five-point scale (none–all), and also the likelihood that they would themselves use in the next 12 months, using a seven-point scale (very unlikely–very likely).

We developed three scale measures for the interview. A three-item Mood Function scale assessed the frequency of using a named substance in the past year: (a) “make yourself feel better when you were low or depressed”; (b) “to help you to relax”; and (c) “to help make an everyday activity less boring”. A five-item Social/Contextual Function scale assessed the frequency of using named substances to: (a) “help you to feel more confident in a social situation”; (b) “help you to let go of inhibitions”; (c) “help you to keep going on a night out with friends”; (d) “enjoy the company of your friends”; and (e) “help you to feel closer to someone”. A three-item life-time Negative Effects/events scale also assessed for each substance how often the respondents had ever “felt sick or unwell”; “taken more or a stronger dose than you would have liked to” and “wished the effects would reduce or stop”. Responses to the three scales were recorded using a five-point scale (never–always). It should be noted that the function scales are measures of behaviour (i.e. the recalled frequency of using a substance) and are therefore distinct from expectancy scales which measure beliefs.

An initial pool of 10 items for the Mood Function scale and Social/contextual function scales was derived from the relevant literature and from qualitative interviews with a separate sample of 10 young people (aged 16–21 years), who had recently used two or more of the target substances. Two items were discarded after piloting. The pool of four items for the Negative Effects scale was developed in a similar manner, with one statement being discarded after piloting. Prior to data collection, the items were randomly ordered. Scale scores were subsequently computed by summing the responses for each item and dividing by the number of items.

Sampling and recruitment

One hundred respondents were recruited from Southern England using snowballing interview techniques with nine starting points. Interview starting points included a waitress, a university student, a drug seller and a college student. This recruitment technique is believed to be an effective way of generating samples from hidden population where no formal sampling frame is available (Van Meter, 1990). The sampling procedure was designed to recruit individuals whose experience of substance use was in excess of national norms for this age range. Sampling was therefore intended to yield a representative group of young people in this age range. All interviews were conducted in informal community settings.

Results

The sample

One hundred young people were interviewed (45 females). Their average age was 18.8 years (range 16–21). The majority (n = 74) described themselves as “white European”; 17 reported
Table 1. Frequency and intensity of substance use in the past 90 days (n = 100)

<table>
<thead>
<tr>
<th>Substance (users in past 90 days)</th>
<th>% days used in past 90 days (SD)</th>
<th>Average amount on using day (SD; range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol (n = 93)</td>
<td>41.2 (31.7)</td>
<td>8.5&lt;sup&gt;b&lt;/sup&gt; (4.7; 1–17)</td>
</tr>
<tr>
<td>Cannabis (n = 67)</td>
<td>55.5 (37.0)</td>
<td>4.5&lt;sup&gt;c&lt;/sup&gt; (3.5; 1–14)&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Amphetamines (n = 23)</td>
<td>15.8 (22.3)</td>
<td>1.3&lt;sup&gt;c&lt;/sup&gt; (0.8; 0.075–3.0)</td>
</tr>
<tr>
<td>Ecstasy (n = 22)</td>
<td>13.6 (17.2)</td>
<td>1.6&lt;sup&gt;c&lt;/sup&gt; (0.8; 0.5–3.0)&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup> = No. of “cannabis cigarettes”; <sup>b</sup> = no. of units (1 unit = 8 g ethanol approx.); <sup>c</sup> = no. of tablets; <sup>d</sup> = grams. <sup>1</sup>Two respondents reported smoking 25 and 30 cannabis joints, respectively, on a typical day when using. These outlying values were recoded to the next highest intensity recorded (14 cannabis joints). <sup>2</sup>One ecstasy user reported using six tablets on a typical using day. This outlying value was recoded to the next highest intensity recorded (three tablets/using day) to ensure a more representative measure of mean intensity.

their ethnic origin to be “African-Caribbean” or “black British”, six as “Asian” and three as “mixed race”. Thirty-seven respondents lived with their parent(s); 21 were living in temporary hostels or were of no fixed address and 42 were in rented accommodation. Most of the sample (n = 69) were in some form of education at the time of interview; 16 had full-time work and 15 were formally unemployed.

A wide range of life-time substance use was reported. All respondents had used alcohol, 94 had smoked at least one cigarette and 89 reported using cannabis. For the other six substances assessed, life-time use was as follows: illicit amphetamines (n = 56), ecstasy (n = 38), LSD (n = 35), heroin (n = 13), illicit opioids (n = 5) and illicit benzodiazepines (n = 6). Six respondents reported intravenous drug use at some point in their lives and two were current injectors. None of the participants reported previous treatment for substance use. Life-time polysubstance use was common: the mean number of different substances ever used (excluding cigarettes) was 3.4 (range 1–8). There were no differences in life-time prevalence between males and females. The remaining analyses concern the four target substances (alcohol, cannabis, amphetamines and ecstasy) selected for detailed investigation.

Substance use patterns

Table 1 summarizes the frequency and typical intensity of consumption for the four target substances during the 90 days prior to interview. There were no observed differences in the frequency of substance use between males and females. Gender differences in the average intensity of use were observed for alcohol and cannabis only. Males reported smoking 5.6 cannabis joints on a typical day (range 1–14) and females reported smoking 2.5 cannabis joints (range 1–8) (t<sub>64</sub> = 3.87, p < 0.0001). For alcohol, male drinkers consumed an average of 9.5 standard units on a typical using day (range 2–17 units) in contrast with females, who drank an average of 7.2 units (range 1–16 units) (t<sub>90</sub> = 2.42, p < 0.05).

Pearson’s product–moment correlation coefficients for the age of the respondent and the frequency of use of cigarettes, alcohol, cannabis and ecstasy in the past 90 days averaged 0.16 in absolute value across the four substances. Pairwise comparisons were non-significant (p > 0.05) with the exception of amphetamines (r = 0.65, p < 0.001). There were no statistically significant correlations between the age of the respondent and the intensity of use.

Functions, negative effects and use

Chronbach’s alpha coefficients across the users of alcohol, cannabis, amphetamines and ecstasy averaged 0.72 for the Mood Function scale, 0.80 for the Social/Contextual function scale and 0.78 for the Negative Effects scale. Scores on the Mood Function and Social/Contextual function scales were significantly correlated for all four substance types (the average of the interscale correlations was 0.55; p = 0.01 or less). The Negative Effects scale was statistically independent from the two functions scales with the
exception of alcohol, where the correlation between this and the Social/Contextual function scale was 0.22 ($p < 0.05$).

The scale scores were then correlated with the frequency and intensity of substance use in the past 90 days (Table 2). The average correlation for the Mood Function scale and frequency of use for the four substances was 0.42. Higher scores on this scale were associated with more frequent use of alcohol, cannabis and ecstasy in the 3 months prior to interview. With the exception of ecstasy, correlations for the Social/Contextual scale also suggested that there was a tendency for higher scores to be associated with more frequent use. For the typical intensity of use, correlations between the average number of units of alcohol consumed on a typical drinking occasion and both the Mood Function scale and Social/Contextual function scales were significant ($p < 0.001$ for both). The average intensity of cannabis smoking was also found to correlate significantly with the Mood Function scale ($p < 0.05$) but not with the Social/Contextual function scale.

Many respondents reported experiencing negative effects from their life-time consumption of the four substances. These were most commonly reported for alcohol. Mean scores on the Negative Effects scale (range 0–12) were as follows: alcohol = 6.1; cannabis = 2.9; ecstasy = 2.8; amphetamines = 2.8. In contrast to the function scales, correlations between frequency of recent use and the negative effects scale were low (averaging 0.08 in absolute magnitude) and were non-significant. Correlations between intensity of use and the negative effects scale were also low (averaging 0.23 in absolute magnitude, NS). Correlations between the measure of perceived current peer drug involvement and both the frequency and typical intensity of cannabis use were significant ($r = 0.36; p < 0.01$ and $r = 0.28; p < 0.05$, respectively). The perceived extent of peer use of alcohol correlated with the frequency of use ($r = 0.30; p < 0.01$), but not the usual intensity of use ($r = 0.13; NS$). Correlations between perceived peer drug involvement and the frequency and intensity of ecstasy use ($r = 0.38; NS; r = 0.41; NS$) and amphetamine use ($r = 0.12; NS; r = 0.38; NS$) were also non-significant.

**Future substance use intentions**

We then sought to explore the relationships between the function scales, perceived peer involvement and the respondents’ substance use intentions. Specifically, the ability of the Mood Function, Social/Contextual function and Negative Effects scales to predict the perceived likelihood of future use for each substance was assessed. Correlations between scores on the Negative Effects scale and the likelihood of using each substance were low (averaging 0.09 in absolute value) and were non-significant. This scale was therefore excluded from further analysis.

Separate standard multiple regressions analyses (in which all covariates were entered simultaneously) were performed. The perceived likelihood of using each substance in the next 12 months was the dependent variable and age, sex, the Mood Function and Social/Contextual function scores and the extent of peer involvement were covariates. The cases to covariates ratio for

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**Table 2. Correlations between frequency and intensity of use and the functions and negative effects scales ($n = 100$)**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Mood Function scale</th>
<th>Social/Contextual function scale</th>
<th>Negative Effects scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol ($n = 93$)</td>
<td>0.52*** (0.40)***</td>
<td>0.34*** (0.50)***</td>
<td>0.08 (0.06)</td>
</tr>
<tr>
<td>Cannabis ($n = 67$)</td>
<td>0.44*** (0.27)*</td>
<td>0.30* (0.18)</td>
<td>-0.02 (-0.18)</td>
</tr>
<tr>
<td>Amphetamines ($n = 23$)</td>
<td>0.30 (0.20)</td>
<td>0.43* (0.28)</td>
<td>0.03 (0.29)</td>
</tr>
<tr>
<td>Ecstasy ($n = 22$)</td>
<td>0.42* (0.31)</td>
<td>0.20 (0.22)</td>
<td>0.19 (0.40)</td>
</tr>
</tbody>
</table>

* = $p < 0.05$; *** = $p < 0.001$. 

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Table 3. Standard multiple regressions of personal demographics, perceived function scales and extent of peer use on future intentions to use alcohol, cannabis, amphetamines and ecstasy (n = 100)

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Alcohol</th>
<th>Cannabis</th>
<th>Amphetamines</th>
<th>Ecstasy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r$^1$</td>
<td>β</td>
<td>r</td>
<td>β</td>
</tr>
<tr>
<td>Age</td>
<td>−0.13</td>
<td>0.006</td>
<td>−0.16</td>
<td>0.037</td>
</tr>
<tr>
<td>Sex$^1$</td>
<td>−0.04</td>
<td>0.011</td>
<td>0.09</td>
<td>0.033</td>
</tr>
<tr>
<td>Mood alteration scale</td>
<td>0.51***</td>
<td>0.338**</td>
<td>0.60***</td>
<td>0.400***</td>
</tr>
<tr>
<td>Social/contextual scale</td>
<td>0.66***</td>
<td>0.253*</td>
<td>0.52***</td>
<td>0.270*</td>
</tr>
<tr>
<td>Extent of peer use</td>
<td>0.30***</td>
<td>0.267**</td>
<td>0.34***</td>
<td>0.192*</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.210</td>
<td>0.189</td>
<td>−0.053</td>
<td>0.359</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.34***</td>
<td>0.40***</td>
<td>0.48***</td>
<td>0.30*</td>
</tr>
</tbody>
</table>

$^1$2-tailed probabilities; $^2$Spearman’s rho for bivariate correlation with dependent variable. *p < 0.05, **p < 0.01, ***p < 0.001.

these analyses ranged from 31:1 (alcohol) to 7:1 (ecstasy), exceeding the minimum ratio considered acceptable for multiple regression analysis (Tabachnick & Fidell, 1989). The results are shown in Table 3.

Subjects’ age and sex did not make significant contributions to any of the regression equations. For alcohol, 34% of the variability in future intention to drink again was predicted from the scores on the three covariates. A similar result for cannabis was observed. Here, 40% of the variability in intention scores was predicted by the covariates, with the Mood Function score exerting a relatively stronger predictive effect ($β = 0.400$) than the other covariates. A different result emerged from the analysis of the intentions to use ecstasy and amphetamines. For ecstasy, the Social/Contextual function scale was the only significant predictor ($β = 0.476$). A similar and somewhat stronger result was seen for amphetamines, with 48% of the variability in intentions accounted for, with the Social/Contextual function score as the sole significant predictor ($β = 0.594$).

Discussion
This paper has explored the personal and social influences on substance use and intentions to use in a sample of 16–21-year-olds. Data collection focused on the respondents’ perceived functions for their use, the life-time experience of negative effects, the extent of peer involvement and future use intentions. Our results provide evidence that substance consumption by young people can serve specific mood altering and social functions and that these may prove useful in predicting their intentions to use again in the future. The results also call into question the extent to which negative effects from drug use directly influence subsequent drug-related behaviours.

A common approach in drug prevention in the UK has been to highlight the potential negative effects from use. However, we found that in our sample correlations between the life-time experience of negative effects and the frequency and intensity of substance use were low. It appears that for this group of young people, negative experiences arising from substance use had not been sufficient to discourage future consumption. The implications of these data are that education and prevention programmes may be strengthened by using new approaches to deter use. However, since our questionnaire recorded life-time prevalence of negative effects, it is possible that those that were reported had been experienced some time ago. In such cases, use might have been modified soon after these experiences in order to avoid similar consequences in the future.

Drug use has a long history of being linked to influences exerted by the individual’s peer group. We measured the perceived extent of peer substance involvement and examined its relationship with consumption patterns in our sample. The results showed that this variable was significantly correlated with the respondents’ frequency and typical intensity of cannabis use and their frequency of drinking alcohol. A positive but nonsignificant association was also found between peer and individual use of amphetamines and ecstasy. This is perhaps unsurprising, as the use of both alcohol and cannabis could be described as a social activity in itself. In contrast, the use of
amphetamines and ecstasy, while often occurring in a social context, is more likely to be associated with additional activity such as dancing.

From the results of our regression analyses it appears that the perceived likelihood of taking a substance in the future may be understood in terms of the functions served by its use. For cannabis and alcohol, perceived mood alteration and social/contextual functions, together with the extent of peer involvement predicted intentions to use. For amphetamines and ecstasy, our analyses suggested that there may be a tendency for social/contextual, but not mood altering functions to be more influential on future use.

Overall, our findings support the recommendation that educators and prevention programme planners should recognize the complexity of the reasons behind substance use and then encourage young people to seek alternative ways of fulfilling them (Newcomb et al., 1988; Boys et al., in press). However, we suggest that research should focus more on measuring the perceived functions for use in contrast with more generalized reasons for use. This approach could yield data leading to more specific suggestions for alternative ways for fulfilling individual and social functions (which do not involve drug taking). Additionally, profiling the functions for the use of different drugs might help to predict which substances are likely to be substituted for one another (Boys, Marsden & Griffiths, 1999).

Assessing the specific functions for substance use among young people may prove to be an important new territory for prevention research. This approach could help to predict whether a substance is used on a regular basis after experimentation and may also contribute to the modelling of other aspects of substance-related decision-making. Overall, it appears from the present study that different substances fulfil different functions for the young consumer. If these results are confirmed in larger-scale studies, it suggests that educational and preventative efforts need to recognize these functional differences and tailor their content accordingly.

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References


