Initiation and continuation : social context and behavioural aspects of ecstasy use

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Citation for published version (APA):

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Predicting ecstasy use among young people at risk: a prospective study of initially ecstasy-naive subjects.

Abstract

Our aim is to identify predictors of first-time ecstasy use in a prospective study among young people at risk. As part of the multidisciplinary Netherlands XTC Toxicity Study (NeXT), we monitored 188 subjects aged ≥ 18 who were ecstasy-naive at baseline but seemed likely to start taking ecstasy in the near future. After an 11- to 26-month follow-up period, 160 respondents remained (85.1%; mean age 21.0 years, 58.1% females): 65 who took ecstasy at least once (novel ecstasy users, NEUs) and 95 persistent non-users (PNUs). At baseline and four times during follow-up, respondents completed self-report questionnaires. Cox regression analysis was used to examine the effects of baseline respondent characteristics on incident ecstasy use. Development of peer group ecstasy use was analysed by logistic regression.

Intention to use ecstasy, low education and current weekly cannabis use independently increased the hazard rate for first ecstasy use. Although ecstasy use among peers at baseline was not a predictor, the proportion of NEUs with ecstasy-using peers increased markedly during the study.

Our results suggest that targeted prevention activities should focus in particular on young people who have strong intentions to take ecstasy, especially if they are also regular smokers of cannabis.

Introduction

The prediction of future or incipient drug use and misuse has been high on the research agenda for decades. The importance of prediction is twofold. First, at a fundamental level, it helps us to better understand the aetiology of substance use, as well as to test existing theories and generate new theoretical insights. Second, it enables the new knowledge to be implemented in evidence-based drug education programmes, thus helping to prevent or delay substance use initiation or to reduce drug-related harm (Hawkins et al. 2002).

The purpose of the present study is to identify predictors specific to the initial use of ecstasy (MDMA) among young people at risk. Zinberg (1984) argued that three determinants must be considered in understanding substance use: the drugs themselves, the set (personal characteristics of the user, including attitudes, expectations and personality structure) and the setting (the social and physical environment).

In terms of the factor drug, the prior use of one substance can be a risk factor for initiating another (Kokkevi et al. 2007; Kostelecky 2005). Cannabis use was found a risk factor for subsequent first onset of ecstasy use (Martins et al. 2006; Reneman et al. 2006; Zimmermann et al. 2005). An early age of onset of tobacco, alcohol and/or cannabis use raises the probability of future drug use (Agrawal et al. 2006; Lynskey et al. 2007).

In relation to set, certain personality traits have been implicated as risk factors for future drug use. These include sensation seeking, rebelliousness, aggression and antisocial or delinquent behaviour as well as mental disorders (for review see: Hawkins et al. 1992; Swadi 1999). However, very few longitudinal studies have been performed to study the effect of ‘set’ characteristics on ecstasy initiation in subjects who were initially ecstasy-naive. In a Dutch prospective population-based study Huizink et al. (2006) found childhood symptoms of anxiety and depression to be risk factors for ecstasy use in adolescents and adults. A German prospective study among a normative sample found ecstasy use to be associated with almost all the mental disorders examined, with the onset of the mental disorders preceding first ecstasy use in most cases (Lieb et al. 2002). Pape & Rossow (2004) found that ecstasy users in Norway differed from other young adults in terms of previous substance use, poor mental health and deviant behaviour. However, De Win et al. (2006) found that depression, impulsivity and sensation seeking were not predictive of first time ecstasy use. Other reported set-
related predictors are intention to use substances (Maddahian et al. 1988) and positive attitudes towards drug use (Martins et al. 2008b; von Sydow et al. 2002b). Intention is a key element in the theory of planned behaviour (Ajzen 1991), which proposes that behaviour can be predicted by intentions to perform that behaviour. This theory has been successfully applied in predicting the use of ecstasy (Orbell et al. 2001; Peters et al. 2008a; Umeh & Patel 2004).

With reference to setting substance use by peers has been shown to be a strong predictor of adolescent substance use (Kokkevi et al. 2007; Martins et al. 2008a; von Sydow et al. 2002b). A number of cross-sectional studies of ecstasy users have found associations between people’s own ecstasy use and that of their peers (Korf et al. 2002; McMillan et al. 2003; Sherlock & Conner 1999; ter Bogt & Engels 2005). McMillan et al. (2003) found that having ecstasy-using friends increased the likelihood that non-users would have intentions to use the drug in the future.

The sheer availability of drugs has been found to be a risk factor (von Sydow et al. 2002b). However, in a prospective study, Zimmermann et al. (2005) showed that ecstasy availability was no longer a significant predictor when the association was controlled for (lifetime) cannabis use. Pedersen & Skrondal (1999) found the use of ecstasy to be associated with dance party attendance.

In the multidisciplinary Netherlands XTC Toxicity Study (NeXT), we prospectively studied a group of 188 young adults aged 18 or older who had never used ecstasy, but were thought to have a relatively high probability of future ecstasy use (de Win et al. 2005). At the end of an 11- to 26-month follow-up period, 160 respondents (85.1%) remained in the sample: 65 who took their first ecstasy during the follow-up period (novel ecstasy users, NEUs) and 95 persistent non-users (PNUs). In recruiting the study participants, we targeted ecstasy-naive young people who had a reasonable probability of taking ecstasy in the near future. On the basis of the reviewed literature, we decided on two predictors of future ecstasy use that could be readily operationalised and applied during the fieldwork: the extent of peer group ecstasy use (a variable of setting) and/or the intention to use ecstasy (a variable of set).

The prospective nature of our study enabled us to assess later in retrospect whether these variables were indeed valid and practically applicable predictors of future ecstasy use. In chapter 2, focussing on sampling strategies, in a logistic regression analysis with a small set of variables, intention to use and low education level (both reflecting aspects of set) emerged as independent predictors of ecstasy initiation. In this analysis, peer group ecstasy use (a setting variable) proved to have no predictive value at baseline. We concluded that intention to use was a quick and practical on-the-spot recruiting tool.

In the present paper our focus is not on methodological aspects, but on predicting first time ecstasy use among young people at risk from a more theoretical and prevention-oriented perspective. We apply a multivariate survival analysis of a broader set of baseline predictors including variables from the drug, set and setting domains. In addition, the present paper is unique in providing an analysis of the development of peer ecstasy use during the follow-up period. The following research questions will be addressed: (1) Which factors predict first time ecstasy use among young people at risk? (2) What is the role of intention to use ecstasy and peer group ecstasy use in predicting first time ecstasy use? (3) How do the dynamics of peer group ecstasy use develop in the course of the study, and do differences emerge between NEUs and PNUs?
Method

Study design and procedures

Study design and sampling procedures are described in detail in Chapter 2.

Assessments

First time ecstasy use was the dependent variable. At every follow-up assessment, respondents were asked whether they had taken ecstasy for the first time in the interim, and if so, in which month. The independent variables were chosen on the basis of the literature and were categorised in terms of drug, set or setting (see table 1).

**Independent drug variables**

Prior cannabis use, and notably frequent use, was a key apparent predictor of substance use. Therefore, current weekly cannabis use (weekends or more often) was chosen as the first drug variable. The second drug variable was the lifetime use of illicit substances other than cannabis (cocaine, amphetamine, LSD, magic mushrooms). Early use of licit substances like alcohol or tobacco is another potential predictor of drug use; to operationalise it we took the first quartile boundary as a cut-off point and classified respondents who had begun using tobacco or alcohol before age 12 as early-onset users of licit drugs.

**Independent set variables**

To gauge ecstasy intention, we used five answer categories: ‘definitely will’, ‘probably will’, ‘don’t know yet’, ‘probably won’t’ and ‘definitely won’t’. Next, the variable was dichotomised (definitely/probably vs don’t know or definitely/probably not). From the factors motivating non-use specified in Chapter 3, we entered the set variables ‘fear of effects’ and ‘rationality’. The socio-demographic characteristics gender, age, ethnicity, employment status and education were also entered as set variables. Categorical variables were dichotomised: employment (yes/no), educational attainment (vocational or lower secondary vs more education).

**Independent setting variables**

On the basis of the extensive literature that has identified peer substance use as a predictor of drug use, we chose peer group ecstasy use as an independent variable of setting. We recorded the degree of ecstasy use in respondents’ circles of friends in five categories: ‘nobody’, ‘a few’, ‘half’, ‘most’ and ‘everybody’. Next, the variable was dichotomised (none vs one or more ecstasy users). Frequency of nights out (10 times or more in the four weeks prior to baseline) was our second variable of setting. The third was the score on the motivational factor ‘lack of opportunity’ (see Chapter 3). Housing status (in or away from the parental home) was the fourth setting variable.

Statistics

Pearson chi-square analyses, independent samples t-tests and Fisher’s exact tests were used here for basic bivariate comparisons. Proportional hazards (Cox) regression analysis with a Forward Stepwise (Likelihood Ratio) selection procedure ($p_{in}=.05$; $p_{out}=.10$) was used to examine the independent effects of baseline respondent characteristics on time to the initiation of ecstasy use. Data were censored if subjects had not taken ecstasy by the end of follow-up. (If an event, in this case ecstasy
use, does not occur before the end of the study, it is defined as a ‘censored case’ in statistics.) Those lost to follow-up were excluded from the analyses. It was not possible to account for changes in the characteristics studied in the Cox regression model by using segmented time-dependent covariates. The statistical program requires covariate values for every time point and every case, and since follow-up assessments were made at different points in time (in terms of months after baseline) for different respondents, this would have entailed creating up to 21 variables for each covariate. Changes in peer group ecstasy use were therefore examined in a logistic regression model, with the number of months before and after ecstasy initiation (for NEUs), or the number of months after baseline (for PNUs), entered as a covariate. All analyses were done using the Statistical Package for the Social Sciences (SPSS Inc., 1989-2005, version 14.0). Statistical significance was accepted at $p \leq .05$.

**Results**

Twenty-eight respondents (14.9%) were lost to attrition in the course of the study; non-response analysis showed this was not linked to their sociodemographic characteristics (see chapter 2). Of the 160 respondents remaining after the fifth and final assessment, 65 (40.6%) had taken ecstasy during the follow-up period (averaging 4.0 occasions, SD = 6.1, median = 2; and 6.7 pills, SD = 12.1, median = 2). Initiation of ecstasy use occurred 2 weeks to 21 months after baseline (averaging 8.4 months, SD = 5.79).

The mean age at baseline of the 160 respondents was 21.0 years (SD = 2.7). Females (58.1%) outnumbered males. Most respondents were of Dutch or other Western ethnicities (89.4%), meaning that both parents were born in the Netherlands or other Western countries. The large majority (85.6%) were students or secondary school pupils; 12.5% were employed. Educational attainment levels were vocational or lower secondary for 10.6%, middle secondary for 15.0% and higher secondary or higher for 74.4%. Almost half the respondents (48.1%) lived alone in single households; others lived with their parents (26.3%), or with a partner, friends, fellow students or other housemates (25.6%).

Last-month alcohol use at baseline was high (97.5%), and half the respondents (50.0%) had smoked tobacco in the past month. The age of onset for licit substances (tobacco and/or alcohol) averaged 13.0 years (SD = 2.3). Cannabis use at baseline was also high, with a last-month prevalence of 45.6%, and 11.9% current users on a weekly basis (every weekend, several days a week or daily). Last-month use of other illicit drugs was 5.0% for cocaine, 1.9% for amphetamines, 1.3% for magic mushrooms and 0.6% for LSD. Last-month use of any of these four substances was 7.5% and lifetime use was 35.0%.

Baseline characteristics of the 65 NEUs and the 95 PNUs are shown in table 1. The two groups were similar in terms of gender, age, ethnicity, housing and employment status, frequency of nights out and presence of ecstasy users in their circles of friends. As an intended consequence of our recruitment strategy, the majority of respondents (81.9%) had at least some ecstasy-using friends, and many (77.5%) had an acknowledged intention to take ecstasy themselves in the future. No difference between NEUs and PNUs was found in terms of the age of onset of licit substance use. Marked distinctions were seen, however, in the use of illicit drugs. Current use of cannabis on at least a weekly basis was four times as prevalent among NEUs at baseline, and lifetime prevalence of other illicit drug use at baseline was almost twice as high. In the four weeks prior to baseline, 48.1% of respondents had visited bars, clubs or dance events on at least a weekly basis (4-9 times); 29.4% were very frequent nightlifers (10 times or more). In terms of the reasons and motives given at baseline for not having taken ecstasy, as described in Chapter 3, PNUs scored significantly higher than NEUs.
on both fear of effects and rationality, and they were more likely to have lacked opportunities to take
the drug. Rationality was the factor that best distinguished the two groups.

Table 1. Baseline characteristics of NEUs and PNUs

<table>
<thead>
<tr>
<th></th>
<th>PNUs n = 95</th>
<th>NEUs n = 65</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drug variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early-onset alcohol/tobacco use</td>
<td>16.8%</td>
<td>20.0%</td>
<td>.611</td>
</tr>
<tr>
<td>Current weekly cannabis use</td>
<td>5.3%</td>
<td>21.5%</td>
<td>.002</td>
</tr>
<tr>
<td>Lifetime other illicit drug use</td>
<td>28.4%</td>
<td>44.6%</td>
<td>.035</td>
</tr>
<tr>
<td><strong>Set variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>60.0%</td>
<td>55.4%</td>
<td>.561</td>
</tr>
<tr>
<td>Average age (SD)</td>
<td>21.0 (2.5)</td>
<td>21.1 (3.0)</td>
<td>.937</td>
</tr>
<tr>
<td>Western ethnicity</td>
<td>88.4%</td>
<td>90.8%</td>
<td>.636</td>
</tr>
<tr>
<td>Employed</td>
<td>12.6%</td>
<td>12.3%</td>
<td>.951</td>
</tr>
<tr>
<td>Low education</td>
<td>3.2%</td>
<td>21.5%</td>
<td>.001</td>
</tr>
<tr>
<td>Intention to use ecstasy</td>
<td>66.3%</td>
<td>93.8%</td>
<td>.001</td>
</tr>
<tr>
<td>Mean factor score on Fear of Effects (SD)</td>
<td>.274 (.202)</td>
<td>.210 (.171)</td>
<td>.038</td>
</tr>
<tr>
<td>Mean factor score on Rationality (SD)</td>
<td>.499 (.311)</td>
<td>.368 (.297)</td>
<td>.009</td>
</tr>
<tr>
<td><strong>Setting variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer ecstasy use (at least one ecstasy user)</td>
<td>80.0%</td>
<td>84.6%</td>
<td>.457</td>
</tr>
<tr>
<td>Frequent nights out (≥ 10 in 4 weeks)</td>
<td>29.5%</td>
<td>29.2%</td>
<td>.974</td>
</tr>
<tr>
<td>Living with parent(s)</td>
<td>23.2%</td>
<td>30.8%</td>
<td>.283</td>
</tr>
<tr>
<td>Mean factor score on Lack of Opportunity (SD)</td>
<td>.239 (.282)</td>
<td>.154 (.244)</td>
<td>.050</td>
</tr>
</tbody>
</table>

All variables from table 1 were entered into the Cox regression analysis. Table 2 shows the
coefficients, hazard rates and confidence intervals of the variables significantly influencing the time
to initiation of ecstasy use. Intention to use ecstasy, low education level (vocational or lower
secondary) and current weekly cannabis use independently increased the hazard of first ecstasy use.
Less frequent or no cannabis use decreased the risk of future ecstasy use by 57% (1 / 2.23 = .43), a
higher level of education decreased it by 65% (1 / 2.87 = .35), and not explicitly intending to start
taking ecstasy (hesitation or no intention) lowered the risk by 80% (1 / 5.07 = .20)

Table 2. Predicting initiation of ecstasy use from baseline characteristics (N = 160)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>signif.</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current weekly cannabis use</td>
<td>0.83</td>
<td>.011</td>
<td>2.30</td>
<td>1.21-4.35</td>
</tr>
<tr>
<td>Low education</td>
<td>1.06</td>
<td>.001</td>
<td>2.87</td>
<td>1.52-5.44</td>
</tr>
<tr>
<td>Intention to use ecstasy</td>
<td>1.62</td>
<td>.002</td>
<td>5.07</td>
<td>1.84-14.00</td>
</tr>
</tbody>
</table>
Different from what we expected from the international literature, peer influence was not encountered in the model. We therefore went on to analyse how peer ecstasy use had evolved throughout the course of the study. Since changes in peer ecstasy use could not be accounted for by including segmented time-dependent covariates in the Cox regression analysis (see Method, Statistics), we performed additional logistic regression analysis. The significant increase in the proportion of respondents with ecstasy-using friends that took place among NEUs, as shown by the logistic regression, did not occur among PNUs. Figure 1 depicts changes in ecstasy use that occurred in the NEUs’ circles of friends, plotted against the number of months before and after the NEUs’ ecstasy initiation. Peer group ecstasy use appears to increase from the moment of respondents’ first use of the drug. Logistic regression analysis over time revealed a significant increase in the percentage of NEUs with at least one ecstasy-using peer (B = .085, Wald = 10.491, p = .001). For the PNUs, this percentage remained stable from baseline onwards (B = -.015, Wald = .604, p = .437).

![Figure 1. Proportion of NEUs with ecstasy-using peers before and after first ecstasy use](image)

In this analysis, no distinction was made between respondents with one such friend and those with many. At the final assessment that included all respondents (N = 160; this fourth follow-up assessment hence occurred for NEUs at varying time intervals after initiation), 30.7% of NEUs reported that at least half of their friends sometimes took ecstasy, compared to only 10.6% of the PNUs (p = .001; the respective percentages at baseline were 12.3% and 10.6%, p = .459). We thus see a further clear distinction between NEUs and PNUs in terms of the numbers of ecstasy-using friends they had by the end of the study.
Discussion

The purpose of this study was to identify predictors for ecstasy initiation in a population at risk. Cox regression analysis revealed that intention to use, low education and current weekly cannabis use independently increased the hazard of ecstasy use onset.

Our finding that cannabis use is a predictor of first time ecstasy use is consistent with the literature (Zimmermann et al. 2005). The association between cannabis use, and notably frequent use, and a higher risk of the future use of other illicit drugs is well known and much debated in the field of substance use research, but no agreement exists on any causal interpretation of that relationship (for discussion see: Fergusson et al. 2006; Morral et al. 2002). Lifetime prevalence of illicit drugs other than cannabis at baseline was significantly higher for NEUs in bivariate analysis, but it failed to emerge as a predictor in the regression model, which in this case probably cannot be blamed on strong correlations with the significant independent predictors in the model (correlations with intention r = .113, p = .155; with current weekly cannabis use r = .176, p = .026; with education r = −.130, p = .102).

Regarding the second research question, intention was found to play an important role in first time ecstasy use. Although we did not explicitly set out to test the theory of planned behaviour (Ajzen 1991), our results do seem to support the concept of intention as a key element. A desire to take the drug thus proves to be a critical factor in ecstasy initiation. Our findings thus indicate that the well-established concepts of intention and cannabis use as predictors of substance use are also applicable to a party drug such as ecstasy. In contrast, peer group ecstasy use at baseline did not predict ecstasy initiation. This is a remarkable finding in the light of the international literature, where peer substance use is often seen as one of the most important determinants in the aetiology of drug use, notwithstanding certain more critical viewpoints (Arnett 2006; Liechti et al. 2000). Our finding might derive from the fact that peer ecstasy use was already a selection criterion in our study, meaning that most of our respondents (81.9%) – both NEUs (84.6%) and PNUs (80.0%) – already had at least some ecstasy-using friends at baseline; this might have provided insufficient variance to effectively study peer ecstasy use as a predictor. On the other hand, intention to use ecstasy, which did prove a strong predictor, was also a selection criterion (acknowledged by 77.5% of respondents, including 93.8% of the NEUs and ‘only’ 66.3% of the PNUs). A possible explanation is that ecstasy use among peers did not become a differentiating factor for initiation until a point in time that was closer to their first use of ecstasy. Our study is unique because the evolution of peer ecstasy use dynamics was measured prospectively. Logistic regression analysis revealed that during the study period the proportion of respondents with ecstasy-using friends increased among NEUs, and remained stable among PNUs. Our results suggest that first time ecstasy use is preceded by a relatively short transition period in which peer group ecstasy use increases. Further analysis showed a clear distinction between NEUs and PNUs in terms of the numbers of ecstasy-using friends they had by the end of the study. Hence, even though peer group ecstasy use was not a factor distinguishing NEUs and PNUs at baseline, nor a predictor of ecstasy initiation in the Cox regression model, the differences in the peer group dynamics of the two groups as the study progressed suggest that the use of ecstasy by friends plays a part in the initiation of ecstasy. Our data does not allow for conclusions about the causal direction of that relationship. That is, we do not know whether our ecstasy initiates actually sought out new ecstasy-using friends (peer selection) or, alternatively, whether more of their existing friends began taking ecstasy (peer influence).
With regard to drug use, Dutch policy can be characterised as harm reduction oriented. This raises the question whether our results are also valid for countries with different drug policies. Beyers and colleagues (2004) have compared risk and protective factors for cigarette, alcohol and cannabis use in the United States and Australia. Despite the fact that those two countries have different policies regarding substance use, i.e. abstinence oriented (US) versus harm reduction (Australia), the majority of predictors were comparable across countries. Friend’s substance use was equally predictive in both countries and favourable attitudes toward drug use (the factor that most closely resembles ‘intention’ in our study) proved more predictive of regular alcohol use in the United States than in Australia.

We are aware of the limitations of the present study. First, because our sample was not normative, it may not even be representative of the population of people who are thinking of trying ecstasy. We deliberately recruited participants among a population at risk. Within this population we contacted candidates in a variety of places and through different recruitment strategies, which resulted in a broadly distributed, heterogeneous sample. As a result of this recruitment strategy, our respondents (N = 160) differed in many ways from their age group in the general population. Their last-month substance use at baseline, for instance, was significantly greater in terms of alcohol (97.5% vs 79.5% nationwide and 79.5% in Amsterdam, p = .001), cannabis (45.6% vs 11.2% nationwide and 21.0% in Amsterdam, p = .001) and cocaine (5.0% vs 1.6% nationwide and 2.0% in Amsterdam, p = .001) (Abraham et al. 2002). If we look solely at the PNUs, they, too, differed from their age group in terms of baseline alcohol and cannabis, though not cocaine. As an additional consequence of our recruitment strategy, 81.8% had at least one ecstasy-using friend at baseline, whereas a 2005 survey of young Amsterdam pubgoers (Nabben et al. 2006) found a percentage of 53.0%, and a study by Benschop et al. (2002) of clubbers and ravers in three European cities found that 68.1% of the ecstasy-naive respondents had one or more ecstasy-using friends. Our respondents were therefore disproportionately likely to know ecstasy users at baseline. All these figures show that our sample was selective and therefore atypical. This may have implications for the way the results should be interpreted. The predictors that emerged in our study apply to a population that is already at risk. If we were to investigate predictors of ecstasy initiation in the general population, additional factors might emerge, because greater initial differences would exist between the future ecstasy users (or any drug for that matter) and those who persist in not taking the drug.

A second limitation arises from the informed consent papers signed by all respondents acknowledging that their participation was voluntary, that ecstasy could be harmful and that the researchers did not intend to encourage ecstasy use. At the start of the study, all respondents also received detailed information about the potentially harmful effects of ecstasy. Although both NEUs and PNUs received identical information at baseline, we cannot rule out that they interpreted it differently and that PNUs were more strongly deterred or frightened off than NEUs.

Do our findings offer insights that could be useful in drugs prevention? Although our sample was not normative, this very type of sample – young adults at risk to start using ecstasy – could be vital in the drugs education discourse, in view of the growing importance assigned to targeted interventions in preference to universal prevention initiatives (Marlatt & Witkiewitz 2002; Moore et al. 2007). As Moore (2007, p. 372) has put it: ‘The idea that specific populations require specialised educational and health promotion programmes rather than generic interventions has become normative in service development.’ Our results suggest that prevention activities targeted at individuals at risk of taking ‘club drugs’ should have a particular focus on those who have strong intentions to do so, especially if they are regular cannabis smokers. Moreover, given that low education emerged here as a predictor for ecstasy initiation, it is important for specific drug education programmes to approach low-skilled young people using messages understandable to the target group.
All the same, an intention to take ecstasy – which we might interpret as ‘free will’ or ‘conscious choice’ – emerged here as a highly powerful predictor of future ecstasy use. Such a desire is probably more difficult to influence through drug education. Intention does not stand alone as a concept, but is shaped and influenced by a range of other factors. The theory of planned behaviour (Ajzen 1991) argues that the behavioural intention itself is determined by three major components: attitude (subject’s approval or disapproval of the behaviour), subjective norm (perceived social pressure from significant others), and perceived behavioural control (the assumed ease or difficulty of performing the behaviour). In our sample, too, friends may have played a direct or indirect role in shaping our respondents’ intentions. In this light, peer-focused drugs education programmes might indeed be helpful, although qualitative literature on smoking initiation suggests that peer influence is more likely to be normative in nature, rather than taking the form of direct pressure (Stewart-Knox et al. 2005). In our retrospective study of ecstasy users, which is described in chapter 5, most respondents stressed that even though friends did play a major or minor role in their decision to take the drug, it was still their own decision. Drug educators who target young people at risk of trying psychoactive substances like ecstasy ought to therefore keep in mind that such people make their own individual decisions. They should avoid approaching them as passive individuals who are under heavy pressure from their social surroundings. Drug education with a personalised message targeted at young people with strong intentions who are in a critical transition period with increasing peer ecstasy use, might yield the best results in preventing or postponing first time ecstasy use.