

Review Article

What motivates students to decrease or cease substance use?: A scoping review

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Abstract

Objective: The association between illicit substance use by third-level education students and their mental and physical health is well documented. The aim of this scoping review was to determine factors that contribute to student motivations to reduce or stop their use of illicit substances, and to elaborate on factors that may be pertinent for student-focused behaviour change interventions for substance use.

Method: We searched eight databases in March 2021 using search terms based on ‘students’, ‘illicit substance use’, and ‘motivations’. We identified 86 research articles that reported on third-level education students’ illicit substance use and included reasons or motives for their use.

Results: After full-text screening, three studies were eligible for inclusion in the qualitative synthesis. The majority of studies described motives for abstention but did not describe motivation for reducing or stopping current patterns of use of illicit substances.

Conclusion: Few studies have examined motivations of third-level education students to decrease or cease substance use. Promising avenues for research on motivations to change substance use behaviour include the social contextual factors, perceived effects on social relationships, and actions of friends and family to prompt contemplations of change.

Keywords: Behaviour motivations; substance use; third-level education.

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Introduction

Worldwide, there is an increase in the use of illicit substances by third-level students (Johnston *et al.* 2017). The factors that predict commencement of the illicit substance use have been the focus of many studies (e.g. DuPont *et al.* 2008; Judson & Langdon, 2009) however, little is known about why third-level students may be motivated to decrease or cease their use of illicit substances, or misuse of prescription drugs (Arria *et al.* 2008). The reasons why third-level students may begin using illicit substances are well mapped in the research literature, as are the consequences of illicit substance use (Teter *et al.* 2006). However, these research findings are not congruent with the perceptions that third-level students have about the effects of illicit substance use on their mental health and wellbeing (Johnston *et al.* 2017), suggesting that students may be experiencing some cognitive dissonance regarding their patterns of illicit substance use (Cranford *et al.* 2009).

Third-level students may be more likely to use illicit substances than same-age peers not in education (Arnett, 2005; White *et al.* 2005). This pattern has been explained with reference to the stress

associated with the transition to college, with a subsequent increased vulnerability to mental health difficulties and adoption of health risk behaviours, including substance use (White *et al.* 2005; Caldeira *et al.* 2009; Schwartz *et al.* 2010). Perceptions of social norms may also increase the likelihood of substance use by third-level students (Kerley *et al.* 2015; Pedrelli *et al.* 2015; Skidmore *et al.* 2016). Students may also use cognitive-enhancing drugs in an effort to have academic advantage (Rabiner *et al.* 2009; McDermott *et al.* 2021).

Efforts to understand illicit substance use among third-level students have emphasised motivations related to coping, perceived social norms and expectancies (Rogowska, 2016; Davoren *et al.* 2018) as well as mental health difficulties (e.g. Prosek *et al.* 2018). Some third-level students may believe that substance use will help combat some of the difficulties of third-level education life, for example time demands, desires to belong to social groups, or participate in group activities (Aikins, 2011; Bennett & Holloway, 2014; Prosek *et al.* 2018). Scrutinising the social contextual factors that influence patterns of substance use by third-level students may indicate vulnerabilities to substance use, and, importantly, the factors which may predict a reduction or cessation in substance use behaviour.

Despite well evidenced reports of the negative psychological, physical, social, and academic consequences of drug use, the potency of these as prompts to stop, or reduce using substances is under-examined. The current high prevalence of use of illicit substances in third-level education students signposts the need

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Table 1. Search terms

Motivation	AND	Illicit substance use	AND	Students
Reason*		Illicit substance *use		Third-level student
Change		Drug *use		University student
Behaviour*Change		Prescription drug *use		Third-level student
Health behaviour*		Illicit drug *use		Post-secondary student
Reduc*		Illegal drug *use		Undergraduate
Cease		Recreational drug *use		Postgraduate
Quit		Study drug *use		Tertiary student
Decrease		Smart drug *use		Tertiary institute
Intention		Psychoactive drug *use		University*
Intervention		Problematic drug *use		Third-level*
Motiv*		Narcotic *use		Database Specific Keyword for 'students'
Database Specific Keyword for 'motive'		Cannabis *use		
		Marijuana *use		
		Database Specific Keyword for 'drug use'		

to identify opportunities for interventions for students who have already used or are currently using substances. The aim of this scoping review is to describe the evidence relating to the factors that may motivate third-level education students to reduce or stop using illicit substances.

Method

We sought to identify both published and unpublished studies by systematically searching relevant databases and websites, as well as conducting a grey literature search. Academic Search Complete, PsycINFO, PsycBOOKS, CINAHL, PubMed, MEDLINE, PsycARTICLES, and Psychology and Behavioural Sciences Collection were searched for articles published from January 2000 to March 2021 using search terms, key words, and MeSH terms. Search terms were generated based on 'students', 'illicit substance use', and 'motivations' (see Table 1). Two researchers completed a full search, independently of the others. All results were imported to EndNote and 250 duplicate items were removed (Fig. 1). The articles were blind screened in Endnote by two reviewers, based on defined inclusion and exclusion criteria. Each reviewer also searched the reference lists of retrieved papers to identify any possible studies or publications not indicated in the search return, and to generate a list of authors who may have other or unpublished data on this topic. Identified potential authors were then contacted with a request for any additional data, conference publications or other output that may be of relevance. The final stage of the search strategy consisted of a grey literature search. Search terms remained consistent to those outlined above in the search of published studies - 'students', 'illicit substance use', and 'motivations' (see Table 1 for an extended list of search terms). After eligibility screening, studies were included in the review if they met the following inclusion criteria outlined in Table 2, and were not in breach of any exclusion criteria. The study characteristics and findings were charted by the two researchers who had completed the searches. The quality of each of the included papers included was assessed by two researchers using a Critical Appraisal Skills Programme checklist.

Results

Following screening and full-text review, three publications were included in the review (see Fig. 1). The studies (see Table 3) were published in 2005, 2009, and 2012 on data collected between 2003, 2005, and 2004–2007, respectively. Two studies used quantitative data, one of which was a cross-sectional design and the other was a longitudinal study design, with three time points across 3 years. All the studies used data collected from third-level education students on campuses in the United States. All three studies recruited participants who had used an illicit substance at least once in their lifetime. Two studies used self-report of use of substances in the last year, and lifetime use. Standardised questionnaires were used to generate indicators of addiction and substance use related experiences. One study used focus-group methodology to understand motivations to stop using ecstasy.

Caldeira *et al.* (2009) reported on the prevalence of substance use disorders (SUDs) and subsequent help-seeking behaviours amongst a high-risk sample of students using data from the 'Third-Level Life Study' (US), a longitudinal cohort study. All incoming ($N = 3400$) first year students aged 17–19 years were screened for a history of illicit substance use. Following screening, face-to-face interviews were conducted during the first year of third-level education) with 1253 students (baseline), and then annually for the next 2 years. A third ($n = 946$) of students enrolled (46% male, 54% female) completed all three interviews and provided complete data on substance use. Students were interviewed about their past-year alcohol and/or marijuana related substance use and answers mapped against criteria for SUDs. Only students who met criteria for SUD in at least one of the 3 years were included in the final analysis ($n = 548$). In the third interview, students were asked about the factors that might motivate them to seek support to change their patterns of substance use. Subsets were then created based on whether students had; (a) perceived a need for help, (b) experienced social pressures from others to receive help, and (c) had attempted to change their substance use behaviours. Results indicated that of the total number of students presenting with SUD ($n = 548$) only a small minority of students (3.6%) perceived that they had a need for help.

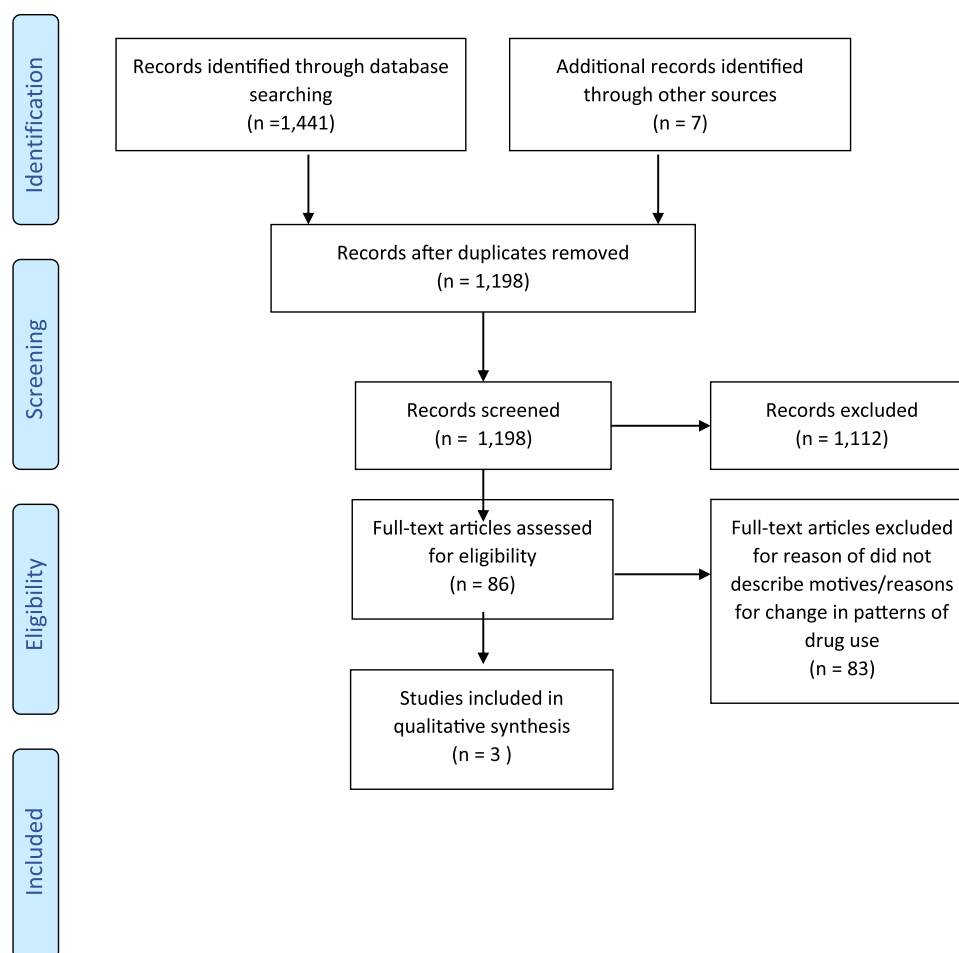


Fig. 1. PRISMA flow diagram.

The encouragement by either a friend or family member to seek help was noted as a motivating factor by 16.4% of the participants included in the final analysis. Caldeira *et al.* (2009) described an overall reluctance by students to engage in help/treatment seeking, with only 8.8% (48 students) reporting actively seeking help or treatment. The findings from this study suggest that a large treatment gap existed between those students who met the criteria for SUD for one or more years ($n = 548$) and the number who perceived a need for behaviour change themselves ($n = 19$). Perceptions of social pressure were more prevalent for alcohol use with marijuana use, than for marijuana use alone. Students who reported a perception of social pressure were more likely to seek help than those who did not experience social pressure.

In a study of third-level education students who had used ecstasy in 2003, Levy *et al.* (2005) reported on a qualitative examination of the experiences of using ecstasy. The study aimed to gain greater understanding of students' behaviours and attitudes towards the use of illicit substances. Thirty students from a large US university who had used ecstasy at least once were recruited for focus groups. Over half of the 30 participants reported using ecstasy on more than five occasions, and all 30 participants reported lifetime use of multiple illicit substances. The 30 participants were then divided into four focus groups (one male-only, one female-only, and two mixed), and engaged in an hour-long discussion about their personal experiences of ecstasy use.

The group facilitator led a discussion about positive and negative experiences of substance use and gave prompts to participants for potential motivational factors related to stopping. Participants were asked to describe reasons for quitting using ecstasy, from their own personal experience or the experiences of their friends. The findings indicated several possible reasons that students may be motivated to stop using ecstasy. These were categorised as health concerns, a loss of interest, fear of legal consequences, addiction/tolerance, negative observations of others using ecstasy (perception that people using ecstasy had reduced intellectual capacity or 'personality changes') and negative personal experiences, including becoming 'emotionally unstable'.

The third eligible study was completed by Palmer *et al.* (2012) and describes the findings from a series of questionnaires completed in 2005 by undergraduate students who had declared lifetime use of any illicit substance, and/or misuse of a prescription drug. The overall aim was to identify students' patterns of substance use, concerns and consequences relating to use, and interest in interventions to reduce use. Students ($N = 262$) were recruited through campus advertisements. Participants completed a survey of their past year and lifetime substance use and a measure of negative consequences of substance use (adapted from the Young Adult Alcohol Problem Screening Test and the Inventory of Drug Use Consequences). Participants were also asked to indicate their willingness to participate in eleven different

Table 2. Inclusion and exclusion criteria

Inclusion criteria
• Studies dealing with a third-level student population (such as university or third-level students) • Studies reporting on illicit substances (such as marijuana, cocaine, amphetamines), or the misuse of prescription substances • Studies which have clearly outlined motives for changing current patterns of illicit substance use • Studies published after the year 2000 • English language studies
Exclusion criteria
• Studies dealing with students outside a third-level setting (such as adolescents) • Studies reporting on any substances (such as alcohol, tobacco, caffeine) that are not considered to be illicit/illegal • Studies reporting on illicit/illegal substances (such as prevalence rates, demographics) without clearly identifying motives for changing patterns of use • Studies outlining motives for abstaining from illicit substance use • Studies published before the year 2000 • Non- English language studies

interventions. The most frequently reported negative consequences of substance use that may relate to motivation to reduce or stop were having said or done something embarrassing, feeling ashamed or guilty, and factors relating to poor academic performance, although there were low levels of concern regarding their patterns of substance use. Notably, despite low concern about substance use, students demonstrated relatively high interest in an intervention.

Discussion

The purpose of this scoping review was to identify factors that may motivate third-level students to change their illicit substance use behaviour, in part to inform an intervention to reduce the harm associated with the use of illicit substances in this cohort (Dick *et al.* 2020). The review revealed a dearth of research on factors that motivate a reduction or cessation of illicit substance use by third-level students.

Each of the studies included in this review described students' personal experiences of substance use and outlined the harmful effects which may indicate opportunities to develop tailored interventions for students who use substances. Caldeira *et al.* (2009) included only students who met DSMIV criteria for SUD and detected a treatment gap between those students who reported negative consequences, and those who took action to change their behaviour. Of the students who attempted to change their behaviour themselves, 54.2% were unsuccessful. Many students engage in illicit substance use but do not meet the criteria for a SUD and are therefore unlikely to perceive their use as problematic (Slutske, 2005; Caldeira *et al.* 2009), or present at a student health service for support, even when experiencing negative consequences (McCabe *et al.* 2007). This represents a challenge for intervention design and can be a barrier to engagement with interventions. The work by Palmer *et al.* (2012) also indicates the need for tailorable interventions as their findings describe several motives to change substance use behaviour, including health concerns, legal consequences, social stigma, and negative intrapersonal consequences.

Table 3. Summary of included papers

Authors	Title	Sample	Outcome measures	Study design	Findings
1. Caldeira <i>et al.</i> (2009)	Third-level students rarely seek help despite serious substance use problems.	548 undergraduate students Mid-Atlantic University, US	Self-perceived need to change substance use behaviour Social pressures Help/treatment seeking for substance use behaviour	Longitudinal cohort study Self-report measures Survey and face-to-face interviews	Only 3.6% of the 548 meeting criteria for substance use disorder sought help to change behaviour. Efforts at behaviour change were associated with social pressures from family and friends. In the absence of a self-perceived need, encouragement from family or friends was a significant predictor of effort to change (33%) versus those with no self-perceived need and no encouragement from others (1.3% sought help to change)
2. Levy <i>et al.</i> (2005)	An in-depth qualitative examination of the ecstasy experience: results of a focus group with ecstasy-using third-level students.	30 undergraduate students, University of Maryland, US	Experiences of using ecstasy	Focus groups	Reasons tendered by participants as motivations for stopping use were categorised as negative personal experiences, health, addiction/tolerance, financial, loss of interest, own observation of the undesirable behaviour or experience of others who use ecstasy (e.g. personality change in other users) and concern about legal consequences.
3. Palmer <i>et al.</i> (2012)	Third-level student drug use: patterns, concerns, consequences, and interest in intervention.	262 undergraduate students, Southern Connecticut, US	Prevalence of drug use Prevalence of negative consequences of drug use Interest in interventions for drug use	Self-reporting measures Consisted of three scales to assess outcomes	Negative consequences (e.g. not completed homework; financial) especially intrapersonal consequences (e.g. felt guilty, ashamed, embarrassed; regretted impulsive actions) were associated with personal concern, but negative consequences and personal concern not associated with interest in intervention for behaviour change

There are some inconsistencies in the reports of student interest in changing their substance use behaviour, for example, Palmer *et al.* (2012) reported that less than 30% of third-level education student participants reported an only moderate concern about their substance use, yet almost 80% reported a moderate interest in interventions. This may be explained by the perceptions of low personal risk of substance misuse. The research by Levy *et al.* (2005) brought students together in focus groups to explore their experiences of using ecstasy, including motivations to stop using ecstasy, which pointed to a range of reasons, including impact on social relationships, which hints at intervention opportunities related to promotion of social norms and personal reflections on experience and desire for change. A caution is noted in the higher likelihood of third-level students to share positive experiences with substance use, as students may be less likely to share negative experiences with peers in regular social or friendship contexts (Christensen *et al.* 2004); sharing experiences about sensitive topics is more likely to occur in focus groups than in individual interviews (Guest *et al.* 2017). Within these focus groups, no single factor was identified as a primary motive, and an avenue for programmes to prompt reduction and cessation of substance use behaviour may be to support students to recognise consistent negative effects across various life domains (Vasilou *et al.* 2021), and to reflect on how these consequences are incongruent with their desired outcomes for use.

The relationship between illicit substances use and negative psychosocial and health consequences is well established, but these consequences may not be identified by students themselves, or as Palmer *et al.* (2012) noted, be insufficient motivation for behaviour change. Students may misperceive or underestimate the effects of substance use behaviour on their lives, or normalise the negative or unintended consequences. Findings from this review indicate that the strongest predictor of behaviours was by social factors. The negative consequences reported by students predominantly related to how their peers would view them; the feelings of shame surrounding their use, and the concerns about what others would think. The strongest predictor of help-seeking behaviours was social pressure experienced from a friend or family member. Even in cases where students did not recognise problems with their own patterns of use, they were willing to attempt to change their behaviour if someone else expressed concern about their substance use. This highlights the high regard, which students, particularly young adults, place on the opinions of their peers, and how they incorporate these opinions into the formation of behaviours which are deemed socially acceptable. These findings can guide the development of intervention designs by attempting to rectify social norms in student populations and inform students of the best way to intervene if they feel concerned about a friend/peer/classmate use.

Much of the research on third-level students use of substances focuses on decisions to begin or to abstain, rarely on what motivates reduction or cessation. The reasons for cessation of substance use are de-coupled from the original motivating force, for example, third-level students have reported academic enhancement as a primary motive for initiating substance use (Low & Gendaszek, 2002; Eickenhorst *et al.* 2012), however the achievement of academic goals does not necessarily result in cessation of use (Palmer *et al.* 2012). Further, we note that many studies do not report or measure if the motivations for substance use (e.g. seeking social belonging) was satisfied, which may relate to

any (dis)continuance of the behaviour. Understanding the factors that may serve as motivations for third-level education students to reduce or discontinue with using illicit substances is crucial in identifying strategies and supports in relation to behaviour change (DiClemente, 1999; Webb *et al.* 2010).

Limitations

Differences in injunctive norms and legal policies with respect to substance use exists across countries and cultures, and we note that all three of the included studies were completed with undergraduate students in universities in the United States, so caution is advised in any transference to other cultures or countries. In addition to the demographic (e.g. age) and immediate social context (university) the broader social, cultural, and legal context of substance use behaviour may influence motivations to begin or discontinue substance use. These contextual factors may directly or indirectly contribute to motivations to change substance use behaviour and so should be explicitly examined and were not in the included studies. The possibility of procedure and design as influences on the data of studies examining motivations related to substance use is acknowledged, for example in studies that use focus-group methodology in young adult groups discussing substance use. Anonymisation and other design procedures may avert some of the most obvious challenges in conducting research on illicit behaviours, but this, with the dominance of self-report and retrospective report may influence recruitment and study findings.

There are significant changes in the ease of access to substances, and the types of substances likely to be used by third-level in the last two decades, and we note that the three studies we identified examine motivations to change substance use behaviour based on data collected more than a decade ago. Motivations to commence or stop using substances are influenced as much by social contextual factors, as by personal experiences and intrapersonal factors — even if these social contextual factors are less considered in research and policy (Duff, 2007). Careful consideration of the unique context of third-level student life is necessary to understand student motivations to desist substance use, as equally as understanding the individual differences in motivations. Contemporary research is needed to describe if and how motivations to reduce to stop substance use may be associated with social norms and social context.

Conclusions

For behaviour change to occur, the person must first feel they need to change, that is, they must have a motive. This review appraised the factors related to motivations to reduce or stop using substances among third-level students. This area is under-researched, and very few studies have examined third-level students' motivations to stop using substances. Several promising avenues for future research are indicated, including a close examination of the social contextual factors, perceived effects of social relationships, and actions of friends and family members to prompt change in use or contemplations of change in use of substance by students.

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Conflict of interest. The authors report no conflicts of interest.

Ethical standards. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. The authors assert that ethical approval for publication of this scoping review was not required by their local Ethics Committee.

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