Drug Education Among Third-Level Students and its Relationship to Subsequent Illicit Drug Behaviours and Attitudes

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Abstract

Illicit drug use among university students has been continuously increasing over time and presents a range of health risks. Education may potentially address this issue by encouraging students to avoid drugs and/or promote relevant skills to ensure safe use. The rationale for the present study is to evaluate the effectiveness of drug education, as delivered through Irish secondary schools, on risk perception towards drugs and drug behaviours through quantitative and qualitative methods. A survey was completed by 309 university students (183 females, 121 males, and 4 transgender/non-binary) aged between 18 and 25 (*M* = 20.71, *SD* = 1.13). The survey measured drug education level using a novel scale based upon retrospective questions, while risk perception and drug behaviour scores utilized scales adapted from previous research. No association was found between drug education and either risk perception or drug behaviours. However, risk perception and drug behaviours were correlated. Additional analyses found males, frequent binge-drinkers, and those with higher perceived prevalence of drug use among peers to be more likely to use drugs. No relationship between socio-economic status and risk perception or drug use was found, however, students eligible for the SUSI grant (potential socio-economic status indicator) reported a higher level of drug-education than the rest of the sample. Qualitative analysis of both student interviews and interviews with drug education experts was conducted to supplement the quantitative data with more rich information. A common theme found between both groups was an acknowledgement of drug education in Irish secondary schools as inadequate. This theme complements observations from the survey data, namely that a large majority of participants received either no drug education or only one class during secondary school. In sum, the present study considers the lack of consistent and evidence-based educational strategies in Irish secondary schools to account for the inefficacy of drug education in influencing attitudes or behaviours.

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Background and Rationale

Substance misuse is defined by the World Health Organization (WHO, 2019) as "the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs". The term illicit drugs encompasses both illegal drugs and drugs which are prescribed for medical purposes, but which are used for nonmedical reasons. Illicit drug use is the focus of the prospective research investigation. Worldwide illicit drug use has reached an unprecedented level (United Nations Office on Drugs and Crime [UNODC], 2019), and according to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA, 2019b), illicit drug use continues to rise at an alarming rate.

Increased rates of illicit drug use have been observed in an Irish context. The Ireland Country Drug Report found that drug use in the adult population (age 15-64) is increasing significantly (EMCDDA, 2019b). In the year 2002-03 less than 20% of adults reported that they had used illicit drugs. In 2014-15, this figure had already risen by more than 50%. Furthermore, the most recent information on drug related deaths in Ireland reported by the Health Research Board (HRB) found that there was an 82% increase in drug-related deaths between 2004 and 2017, with the number of deaths rising from 431 to 786 (Lynn & Lyons, 2019).

These figures suggest that Ireland's current drug policy and interventional methods are not adequately addressing the rising problem of drug use and abuse. These interventions have historically focussed on deterrence rather than harm reduction methods (Butler, 1991). However, some researchers have argued (Darcy, 2020a; Hallfors & Godette, 2002; Porath-Waller et al., 2010) that introducing a more focused harm reduction approach through improving drug education in schools may potentially be the most beneficial method of addressing this issue. According to Darcy (2020a), effective drug education aims to reduce risky behaviour and encourage safer attitudes

towards drugs by providing young people with a safe environment in which they can discuss their opinions and attitudes about drugs, develop and enhance their life skills to deal with risky situations in the future, and make decisions which will improve their overall health and well-being.

However, drug education as a harm reduction method requires a greater volume and consistency of research, especially within an Irish context. This motivates the present study to investigate how second-level drug education may affect subsequent attitudes and behaviours of third-level students in Ireland.

Deterrence and Harm Reduction

Deterrence and harm reduction are the two dominant perspectives used to address drug related issues today. Deterrence policy aims to prevent people from using drugs and promotes complete abstinence. It is based upon moral and medical models of drug use. By contrast, harm reduction policies seek to minimise misuse rather than preventing all use, acknowledging that a drug-free society is unachievable and considers drug use to be a health problem (Murphy, 1996).

The deterrence perspective originated in the UK in the 19th Century, where alcohol use was branded a pathological and social problem. It is thought that deterrence was used to prevent factory workers from engaging in substance use to increase productivity (Murphy, 1996). Since then, it has grown in popularity, and was subsequently adopted by the USA, with American policymakers additionally associating drug use with poor moral standards. The adoption of this perspective was the driving force behind the USA's 'War on Drugs' and has since become the dominant drug use perspective in the Western world (Butler, 1991; Murphy, 1996).

However, the evidence for the effectiveness of deterrence is dubious. The size of the illegal drug market is estimated to have doubled between the 1980s and early 2000s, indicating that the deterrence perspective has failed to achieve its aim of preventing drug use worldwide (UNODC, 2005). Therefore, in response to the wide range of criticisms against deterrence drug policy, there

has been a movement in favour of the harm reduction approach. The WHO defines harm reduction as a collection of social policies, programmes, services, and actions whose goal is to mitigate the harm to individuals, communities and societies related to drug-taking behaviour (WHO, n.d.). Central to this perspective is the distinction between drug use and drug abuse, with the former referring to recreational, experimental, circumstantial, or medicinal use, whereas the latter is regarded as compulsive and dysfunctional (Zinberg, 1986).

Harm reduction has been shown to be successful in reducing mortality and morbidity rates in certain adult populations, reducing the spread of infectious diseases such as HIV, and has also been effectively applied to sexual health education and alcohol education (Leslie et al., 2008; Thakarar et al., 2020; Weatherburn, 2009). Harm reductionists believe that, when abstinence is the goal, people who are unable to abstain may refuse treatment and will not cooperate due to the "disabling" nature of the strategy (Marlatt & Witkiewitz, 2010). Harm reduction neither condones nor condemns drug use. It recognizes that substance abuse rarely occurs in isolation and is often related to other factors or risky behaviours. Therefore, the approach promotes adaptive behaviours, coping skills and social supports for potential substance abusers (Marlatt, 1996).

Defenders of the deterrence approach argue that the normalisation of drug use through harm reduction strategies will accelerate the already rising rate of drug use. However, in 2001, Portugal's government decriminalized the possession of drugs for personal use as part of their harm reduction strategy (Ferreira, 2017). Interestingly, contrary to some predictions, drug use did not increase compared to other Southern European countries who continued to enforce criminal sanctions on users. Instead, it appears that drug-abuse, crime and drug related harms decreased as a result of decriminalization (Hughes & Stevens, 2010).

In line with the growing global deterrence perspective, the Irish government established a specialist committee called the 'Working Party on Drug Abuse', whose 1971 report reflected the USA's drug policy (Butler, 1991). This legislation went against the advice of governmental expert

committee reports in 1971 and 1981. The former argued in favour of rehabilitation as the solution for drug use instead of incarceration, while the latter advocated for a multidisciplinary harm reduction approach in contrast to the deterrence policy (Butler, 1991). However, these recommendations were ignored until the AIDS epidemic of the 1980's, when harm reduction methods became the only way of helping intravenous drug-users to avoid contracting HIV. This led to the opening of methadone maintenance programmes for heroin-addicts to reduce needle usage in 1987 (Butler, 1991).

The success of this response has led to the increased use of harm reduction strategies in Ireland, which marked a shift from the previous abstinence-oriented solutions. Today, these programmes have strengthened and expanded, with organisations such as the Ana Liffey and Merchants Quay providing safety information and clean needles to high-risk vulnerable drug-abusers (Long et al., 2008; Price & Byrne, 2018), while the HSE established a harm reduction information website aimed at recreational users entitled 'Drugs.ie'.

Most recently, a comprehensive set of harm reduction guidelines were published by the government in 2017, entitled "Reducing Harm Supporting Recovery" (Department of Health, 2017). This document emphasized the importance of implementing evidence-based harm reduction drug education among students, from primary school to university. As part of these guidelines, there was a reform of the SPHE drug curriculum, and the introduction of a new evidence-based programme, 'Know the Score'. This programme aims to foster healthy drug-behaviours through contextually appropriate interactive materials with an overall goal of enabling students to make conscious and informed decisions about drugs and alcohol.

However, the overarching deterrence policies established in the 'Misuse of Drugs Act 1974', which criminalizes the possession of drugs, have yet to be rescinded in the legal system (O'Brien et al., 2001). This has led to a confusing and conflicting approach to the rising drug problem, and it is so

far unclear whether drug education as a means of harm reduction has been implemented successfully.

Drug Use Today

The age group most likely to engage in recreational drug use are young adults (Blackman, 2007). More generally, young people have a tendency towards risky behaviour (Wang et al., 2010). This trend has been observed in an Irish population, with a recent report finding the prevalence of drug use to be increasing among adults over recent years, rising from 20% in 2002-03 to 30% in 2014-15 (EMCDDA, 2019b). Illicit drug use increased from 2011 to 2019, with cannabis being the most used illicit drug, followed by MDMA/ecstasy and cocaine. In young adults aged 15-34, it was also found that cannabis use increased since 2011 and use of MDMA also increased considerably in 2014-15, after a temporary decrease in use between 2006-07 and 2010-11. Cocaine use has remained relatively stable (EMCDDA, 2019b).

Illicit drug use has long been associated with deviant behaviour, affiliations with selected subcultures, and lower socio-economic status (SES). However, a retrospective study by Parker and his associates (1998) found an unprecedented increase in the use of drugs amongst "ordinary, conventional young people" during the 1990's in the UK and Ireland, in a new trend of 'illegal leisure'. Drug use has continued to rise among both socially advantaged and disadvantaged young people over the last 20 years, rendering previous explanations of drug use as pathological and socially deviant insufficient and obsolete.

Research has examined the normalisation of cocaine in certain social circles (Treadwell & Ayres, 2014) and the expanding culture of middle-class microdosing, in which people regularly ingest sub-hallucinogenic quantities of hallucinogenic substances (Kuypers et al., 2019). Furthermore, adolescence is a time characterised by risk seeking behaviour, and it is thought that this increased desire to push boundaries and experience new sensations is also a contributing factor to widespread drug use. Another possible explanation is the emergence of rave culture, which has led to increasing

rates of use of drugs such as ecstasy in the nightlife scene (Smith & Flatley, 2011). An Irish study found that over 82% of university students had tried an illicit substance, highlighting how prevalent drug use has become among young Irish people (McCarthy, 2017).

Importantly, these increasing instances of drug experimentation and use can have negative consequences. Palmer and her team (2012) found that over 69% of university students had reported negative experiences using drugs in their lifetime, with a further 63% of students reporting negative experiences in the past year. In addition, students are also misusing prescription stimulants as 'study drugs'. Non-medical use of these prescription stimulant drugs (using prescription stimulants in a way other than the way prescribed, or without a prescription) among college students from the UK and Ireland has been found to have lifetime prevalence rates of 9.1% (Singh et al., 2014). Although a lot of students have reported negative experiences when using illicit substances, Arria and her colleagues (2017) found that many students believe that recreational drug use during college is not lastingly harmful. This apparent disconnect between knowledge and experience highlights an incongruity in young people's attitudes and behaviours, and a possible ignorance regarding the reality of sustained illicit drug use. This emphasises the need for an interventional method to bridge this gap between relaxed attitudes, risky behaviour, and the resulting negative experiences.

The risks associated with drug use vary dramatically according to different types of drugs, though most share the risk of developing dependence. As cannabis is typically smoked (often with tobacco), it damages the respiratory and cardiovascular systems in much the same way tobacco does (Cohen et al., 2019). The negative effects associated with cannabis are primarily psychological, with dependence, psychosis, anxiety, and depression potentially developing. Adolescents may be particularly vulnerable to such adverse outcomes as cannabis usage is found to interfere with brain development (Rubino & Parolaro, 2008). Cocaine and other stimulants increase dopamine activity in the brain, inducing a focused high which is often associated with paranoia and a range of distressful mental states. Physically, it increases heart-rate and blood-pressure which can lead to heart-attack

and stroke (Bolla et al., 2000; Williamson et al., 1997). MDMA is also a stimulant, although it is primarily used for its strong effect on serotonin, generating a euphoric high. Dysregulation of the serotonergic system is common among MDMA users, potentially leading to depression, anxiety disorders, serotonin syndrome (especially when used alongside antidepressants) and a range of other health concerns (Hegadoren et al., 1999; Morgan, 2000). The dissociative anaesthetic ketamine which has been growing in popularity among recreational users poses the immediate risk of traumatic accidents (e.g. hitting off something or falling without awareness or pain sensation), and chronic use is found to cause bladder damage (Dillon et al., 2003; Tsai et al., 2009). Opiates such as heroin, which are less commonly used among students, are strongly associated with dependency, HIV contraction through needle sharing, and overdose (Corrigan & Ireland, 1994).

Drug use is the cause of several hundred deaths per year. According to the latest publication on drug-related deaths from the HRB, 376 people died in Ireland from drug overdose in 2017 (Lynn & Lyons, 2019) A further 410 deaths were attributed to medical causes directly related to drug use. Of the overdose deaths reported, 58% were due to polydrug use, with an average of four drugs involved. Alcohol was the drug most implicated in overdose, with 33% of deaths involving alcohol, while 16% involved solely alcohol. Prescription drugs were implicated in 68% of overdose deaths. These were primarily the opiate methadone and benzodiazepines such as diazepam and alprazolam. Of the illicit drugs commonly used among students, cocaine was implicated in 14% of overdose deaths, while in MDMA 4%. The extent to which intentional suicides account for overdose deaths is indeterminable, though 26% of the 410 non-overdose deaths were due to hanging, with cannabis being the drug most commonly implicated substance. Harm reduction drug education can potentially prevent overdose by raising awareness of the signs of acute dangers specific to each drug; chest pain or shortness of breath after cocaine use (Maraj et al., 2010), pupil restriction and decline in respiratory rate after opiate use (Boyer, 2012) or hypotension and hyperthermia from ecstasy use (Armenian et al., 2013).

Factors Influencing Drug Use

The Normalisation theory (Parker et al., 1998) attempts to explain the rise in illicit drug use as a change in attitudes facilitated by lowered perceptions of risk, decreased stigmatisation of illicit substance use (especially in terms of "soft drugs"), and increased availability and affordability of drugs (McCarthy, 2017). Normalisation theory considers illicit drug use to be increasingly independent from factors previously thought to have predicted illicit drug use, such as social deviance, SES and subculture identity.

However, although the Normalisation theory provides a comprehensive and plausible overview of the increase in illicit drug use in young people, it may be superficial and unjustifiable to ignore factors previously implicated in illicit drug use that have been found to continuously correlate with, if not predict, drug use. These factors include environmental and genetic influences such as SES, gender, perceived prevalence among peers, perceived risk, attitudes, and genetic predispositions.

Socio-Economic Factors

There is substantial evidence to suggest that SES and social inequality significantly impact illicit drug use amongst young people (Shildrick, 2002). Young people with identical drug habits but from socially disadvantaged background are often marginalised, regarded as undeserving of help, viewed as deviant and antisocial, and suffer more from addiction issues and substance use disorders, (Eisenbach-Stangl et al., 2009; Erikson, 1964; MacGregor, 1999; Sznitman, 2008). Drug and alcohol related morbidity and mortality is also disproportionately higher among lower socio-economic groups (Makela, 1999; Villano et al., 1997; Williams, 1999).

In addition, Butler and Mayock (2005) found that in a leaked report by the Special Government Task Force on Drug Abuse it had been stated that the majority of drug problems in Dublin could be explained in terms of the powerlessness and poverty that the working-class

communities face. Highlighting that although drug use is becoming more normalised, and that there remains a need to explain this within a middle-class context, it is still strongly associated with lower SES.

It is also worth noting that often those struggling with substance abuse issues have experienced some form of trauma. A study by Dansky et al. (1996) reported that 90% of a sample of inpatients being treated for substance abuse had suffered a traumatic experience in their lifetime**.** Those of lower SES are disproportionately affected by trauma, and this is on the threshold of being significantly proven to predict problematic drug use (Abedzadeh-Kalahroudi et al., 2018; Advisory Council on the Misuse of Drugs, 1998). Drug related behaviour is therefore inseparable from a person's social environment (Galea & Vlahov, 2002).

Furthermore, different levels of SES have been linked to different forms of illicit drug related behaviour. Research by Legleye and his team (2012) found that adolescents from more affluent backgrounds were more likely to experiment with illicit substances but were less likely to engage in daily use and form frequent and permanent drug habits. There is also evidence linking more affluent groups with increasing rates of cocaine use (Newcomb & Bentler, 1986), and in adults it has been found that demand for illicit substances is price sensitive (Chaloupka & Warner, 2000). Thus, substance use, particularly experimentation-based use, may increase as income rises.

However, data and research accurately depicting the use and abuse of substances in older, more middle to upper class contexts remains scarce and difficult to investigate (Stimmel, 1984). This is thought to be because they are less likely to self-report on their own illicit substance habits for fear of damage to reputation and occupational consequences. It could also be further explained by the ability of those in this demographic to afford the luxury of privacy in their help-seeking behaviour. Many affluent illicit drug users can afford to go to isolated places for rehabilitation or can seek private medical care. Therefore, keeping their addiction or illicit substance use private. As a result, illicit substance use in a more middle-class context is a less explored and researched area.

In practical terms it has also repeatedly proven difficult to succinctly capture and measure information regarding SES and a person's social environment. It can be measured in various ways, based on both subjective and objective characteristics of individuals and areas (Braveman et al., 2005). Regardless, although it has proven difficult to objectively define and measure SES, it is often a confounding variable in drug-use research and so must be controlled for where it potentially impacts data (Daniel et al., 2009).

Gender

Multiple research studies in various contexts have found that rates of substance use are significantly higher in males than females, in both past year and overall lifetime use (Back et al., 2010; Cotto et al., 2010; Karlsson et al., 2019)**.** Interestingly, rates of abuse and dependency do not appear to differ significantly between genders (Back et al., 2010), suggesting that the higher rates of male use could be the result of a difference in attitudes towards drug use between males and females, rather than an inherent difference in proclivity for addictive behaviours between the sexes.

Within a university setting, male students are more likely to report drug use than female students (McCabe et al., 2007). Alongside this, Spigner et al. (1993) found that female students consistently reported greater perceived risks associated with illicit drug use. They theorised that this may be due to the different social roles that females experience, basing their theory on that of the 'generalised female vulnerability hypothesis' by Robbins (1989). They posited that females' greater vulnerability when engaging in risky behaviour may result in a greater awareness and increased perception of the risks involved with illicit drug use.

This is additionally supported by studies from Spitzhoff (1986), as well as Miller and Marshall (1987) who found that females had a heightened perception of risk for the purpose of safety, citing experiences of date-rape drugs and their association with alcohol and other forms of drug use, for example. A further possible explanation is that males feel more peer pressure to drink and engage in

risky behaviour (G. Bradley & Wildman, 2002). It is plausible, however, to view males' increased rates of drug abuse as part of a wider tendency of men to be more likely to engage in risky behaviours than women, for example, violating social distancing and masking COVID-19 restrictions, as well as engaging in risky driving behaviour (Clark et al., 2020; Mahalik et al., 2007; National Highway Traffic Safety Administration [NHTSA], 2003)

Perceived Risk

Perceived levels of risk have been found to be a contributing factor in drug use. Experimentation with different illicit substances is a common feature of young people's transition into adulthood and their identity formation (Dworkin, 2005), and the degree of experimentation often varies depending on an individual's perceived risk of the illicit substance.

Andersson and her associates (2009) analysed the 'European School Survey Project on Alcohol and Other Drugs' and found that higher prevalence of use for a particular drug led to lower rates of perceived harm for its use. This was tested for cannabis, alcohol, ecstasy, and inhalants, being strongly confirmed for the former two, in the data from the 1999 and 2003 surveys.

In the general population, the role of perceived risk has been repeatedly explored and confirmed for various drugs. Between 2002 and 2012, the perceived risk of cannabis use decreased significantly, at the same time regular cannabis use increased greatly, thus showing a strong inverse correlation (Pacek et al., 2015). This association between cannabis use and risk perception has been replicated globally (Bachman et al., 1990; Johnston et al., 2014; Volkow et al., 2014), with perceived risk of cannabis use found to be higher among non-users (Kilmer et al., 2007; Lopez-Quintero & Neumark, 2010; Pacek et al., 2015).

In addition, Gonzalez and Haney (1990) found that the level of perceived risk could be used to predict both usage patterns and attitudes for cocaine, marijuana and alcohol. Those with lower risk perceptions were more likely to combine drugs and alcohol, which has been found to increase

the probability of associated negative consequences (Yeomans-Maldonado & Patrick, 2015). For ecstasy use, Carlson et al. (2004) found that most users do not associate its use with the characteristic risks of neurotoxicity or psychological problems.

The predictions from the 'Health Belief Model' (Janz & Becker, 1984) reflect the above associations, asserting that perceived risk is an influential factor in determining an individual's likelihood to engage in health-related behaviours. However, it should be noted that the relationship between perceived risk and use is likely bidirectional. Regardless, this relationship highlights the need to ensure that potential or current young drug users are made aware of the risks associated with the use of different illicit substances. Gonzalez (1990) found that perceived risk can be changed by drug education, and therefore this should be a key part of implementing any harm reduction policy.

Perceived Prevalence Among Peers

Social context and norms can have a significant influence on a person's drug use (Keene et al., 1998). Social norms can be defined as the informal rules and expectations that are collectively understood by members of a group, thus guiding their behaviours (Cialdini & Trost, 1998). The behaviours which an individual may or may not engage in are often determined by these norms (Ajzen, 1991). For example, Simons-Morton et al. (2001) found a positive relationship between peer influence and cigarette and alcohol use in adolescents. Notably, this relationship increased as a participant's number of friends who used cigarettes or alcohol got larger.

However, individuals can often misjudge the attitudinal and behavioural norms held by their peers, resulting in normative misperceptions (Dempsey et al., 2018; McAlaney et al., 2011; Perkins & Berkowitz, 1986). For example, young people often incorrectly judge their peers to be more likely than themselves to engage in unhealthy substance use behaviours (Helmer et al., 2014; Kilmer et al., 2006; Perkins & Berkowitz, 1986). This may motivate the individual to increase their unhealthy

substance use behaviour in order to adhere to the socially desirable norm. Regardless, whether the result of genuine social norms or normative misperception, it appears that drug use may be substantially influenced by perceived prevalence.

Attitudes

Norms are also closely related to attitudes in influencing drug behaviour. To outline this relationship between attitudes, norms and behaviour, Fishbein and Ajzen (1975) proposed the theory of reasoned action (TRA). This theory asserts that an individual's attitude (either being positive or negative) towards a behaviour can predict their intention to perform that behaviour. Additionally, this intention is also influenced by their perception of the subjective norms in relation to the behaviour, as seen above. For example, one study assessed a sample of young mothers on measures of attitude and perceived subjective norm in relation to cannabis use. Attitude and perceived subjective norm both predicted intention to use cannabis, and this intention subsequently predicted the use of cannabis. The two factors together explained intention, better than either alone (Morrison et al., 2002). A further study of 2,074 college and high school students found that attitude and perceived subjective norms predicted drug and alcohol use (Laflin et al., 1994). Therefore, it appears that both attitudes and subjective norms are integral closely related factors in determining drug use.

Genetic

Substance use disorder (SUD) is a mental health diagnosis designed to identify problematic drug use in clinical mental health practice and research (American Psychiatric Association, 2013). There appears to be a substantial genetic influence on the development of SUD. For example, a twin study carried out by Verweij and his colleagues (2010) reported that genetics accounted for 51% of the variance in problematic illicit drug use. Although the variance in substance abuse associated with genetics can vary depending on the substance of abuse (Tsuang et al., 1996), several candidate gene

studies have found associations between particular genes and increased risk of substance abuse, such as the serontonin-1B (5-HT1B) gene and the high-activity catechol-O-methyltransferase (COMT) gene variant (Cao et al., 2013; Vandenbergh et al., 1997).

These studies demonstrate that some individuals may have a predisposition for substance abuse. However, as genetics do not explain 100% of the variance, environmental contributions, such as those mentioned above, remain significant factors in substance abuse and the development of SUD. Gene-environment interaction studies have been carried out in relation to substance abuse, which have found some indication of a relationship between the environment and specific genes (Ducci et al., 2008; Enoch et al., 2010). However, these studies typically fail to replicate (Prichard et al., 2008).

Predispositions to substance abuse should be used to inform drug education and policies. Instead of purely focusing on prevention and providing information in relation to the risks of substances, acknowledging that some people might be more inclined to abuse them may be useful. It could promote a less blame-focused view of substance abusers, allowing for individuals to speak up about their problems with substances.

In Summary

Therefore, although it is tempting to regard drug use among young people as simply normalised, it is still important to acknowledge risk factors associated with different environments, classes, and stressors. The theory of normalisation is uniquely relative to the social status of the person in question, and as a result a reconstructed and more differentiated version of the normalisation theory inclusive of class, race, gender and age is needed to investigate why almost identical drug use and behaviours in young people from different backgrounds are not equally accepted by mainstream society, and why and how different rates of drug use are increasing differentially between these groups.

Regardless, the increasing normalisation of drug use in young people, especially in a university context, is indicative of the need for universities and other institutions to begin reforming their drug use policies. With a majority of university students in many European countries having tried illicit drugs, there may no longer be a use for institutions' zero tolerance policy, as it is evidently not an effective deterrent against illicit drug use. Instead, the design of an educational programme provided throughout their secondary school education may be beneficial to university students. As seen in the study by Palmer and her colleagues (2012), over 60% of students had negative experiences with drugs during the past year. Had there been an effective education on how to avoid negative experiences, mitigate the risks involved when taking drugs, or which drugs cause the most harm and are associated with greatest risk, the numbers reported may have been lower. The growing normalisation of drug use is likely to have negative implication for future life and health of young people, but this harm may be reduced if steps are taken to support and help young people in these contexts.

Drug Education: Aims, Support and Criticism

Drug education as a method of harm reduction aims to reduce risky behaviour and encourage safer attitudes towards drugs, through providing useful information and knowledge about drugs, in a manner that creates new understanding (Darcy, 2020a). This is done in a safe environment in which they can discuss their opinions and attitudes about drugs, whilst developing and enhancing their life skills to deal with situations in the future and make decisions which will improve their overall health and well-being (Foróige Youth Organisation, 2013). This way, students are safely and adequately prepared for situations in which drugs are present and available.

School and educational based settings are ideal environments for youth substance use education (EMCDDA, 2019a). Information can be delivered to a wide range of individuals in a single setting, rather than being aimed at specific high-risk students. This is particularly useful, as programmes that place high-risk individuals together may, in some cases, increase their risky

behaviour (Poulin et al., 2001). Furthermore, school-based drug education may reduce the acceptability of reckless drug use behaviours, creating a social environment amongst students that opposes dangerous drug use and promotes healthy, non-impulsive behaviours (EMCDDA, 2019a). Thus, providing a drug education throughout one's secondary school education may be an effective way of reducing the likelihood that the student may engage in unhealthy and uninformed substance use behaviours, both during their current school years and subsequent college years.

There are multiple forms of drug education, each with arguably different levels of efficacy. Therefore, research into the effectiveness of school-based drug education programmes produces mixed results. Some studies have demonstrated significant differences between control and programme groups, while others have suggested that school-based drug education makes little difference to subsequent drug-use behaviours and attitudes (Botvin et al., 2018). This may be partly due to the fact that strategies with little evidence to support them are still used in many countries (EMCDDA, 2019a). Furthermore, even when programmes are apparently evidence based, they may still show very limited long-term efficacy (Brown et al., 2007; Coggans, 2006; Gandhi et al., 2007). However, certain forms of content and delivery of drug education have been found to be more effective than others.

With regard to the content of an effective drug education, programmes should adopt a holistic approach, dealing with a variety of topics both directly and indirectly related to drugs (UNODC, 2015). For example, Porath-Waller and her associates (2010) argue that a mixture of topics should be dealt with, such as providing relevant information, challenging harmful normative beliefs, and targeting the students' self-esteem and values. One particularly crucial factor is the provision of important life skills (EMCDDA, 2019a). These include decision-making skills, personal and social skills, communication skills, resistance skills and assertiveness skills (Hallfors & Godette, 2002; Porath-Waller et al., 2010). Faggiano and his colleagues (2008) analysed 15 drug education studies and found that those interventions which concentrated on developing the student's social skills were the

most effective in preventing substance use, while also improving students' self-esteem, decision-making skills, and peer pressure resistance. While some of these skills may appear less related to drug use than others, they all provide the student with the necessary tools to safely navigate adolescence and young adulthood, especially in situations where there is greater pressure or temptation to engage in illicit drug use (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1995).

Furthermore, the content of drug education should be socio-culturally relevant to its students, addressing the specific needs of a given group (Hallfors & Godette, 2002; Nation et al., 2003). Given the previously highlighted association of social context and norms to drug use, drug education should target harmful normative beliefs and attitudes regarding drug use. Fishbein & Middlestadt (1987) have outlined how the TRA can be applied to drug education. They emphasise in attempting to change one's behaviour in relation to drugs, it is necessary to understand the relative influence of perceived social norms. Therefore, if a specific normative factor is having a greater influence in a group of individuals, it may be necessary to direct the education towards addressing this particular factor to change illicit drug behaviour. This may be carried out through the adoption of a 'social norms approach'. The social norms approach can be used to challenge potentially harmful normative misperceptions with more accurate and healthier norms (Dempsey et al., 2018; Perkins & Berkowitz, 1986). According to Berkowitz (2005), individuals will benefit from the illumination of these factually correct and healthier norms. McBride's (2003) extensive review found that drug education programmes that include elements of social norms theories in their curriculum are more effective.

With regard to the delivery of drug education, it is essential that the individual providing the drug education is fully trained to lead the course (EMCDDA, 2019a). This means that the teacher must understand the nature of drugs and their effects, whilst being able to appropriately deliver this information to the students (McBride, 2003). An inept educator who neither has the knowledge nor

the skills to appropriately deliver the education will likely fail in their efforts to educate the students, regardless of the educational content. An important characteristic of an effective educator is the ability to establish trust and create an atmosphere of respect and understanding (Midford et al., 2002). This allows students to feel safe discussing issues such as illicit drugs and drug use (Skager, 2007).

In addition, the style of delivery is also important. Interactive methods that incorporate group work and collaborative discussion are far superior to didactic, teacher-led, lecture-style methods (EMCDDA, 2019a; Pan & Bai, 2009; Tobler & Stratton, 1997). As well as allowing students to actively participate in the discussion, collaborative methods may include peer-to-peer interaction, student-generated role play, rehearsal of drug refusal skills and peer modelling of appropriate behaviour (Tobler et al., 2000). Enabling collaboration and active participation facilitates the amount of personal reflection that students may have regarding the topics discussed (Darcy, 2020b). Therefore, the educator must be able to facilitate this interactive style of learning. Finally, the sessions should be delivered using a multicomponent approach (EMCDDA, 2019a). As well as discussion, other modalities of learning could include audio-visual media presentations, case studies, media campaigns, parental involvement in activities, and explorations of drug policy (Darcy, 2020b; Porath-Waller et al., 2010; Skager, 2007).

A particularly crucial element in the delivery of an effective drug education is the timing and consistency of the education. Research strongly suggests that drug education should be provided consistently throughout the year (Petrosino, 2003). Programmes consisting of 15 or more weekly sessions appear to be the most effective (EMCDDA, 2019a; Porath-Waller et al., 2010). Furthermore, the timing of drug education should be appropriate for age and development level (Hallfors & Godette, 2002; Skager, 2007). Accordingly, different drug education strategies should be used for students at different developmental levels (Ginsburg, 1982; Onrust et al., 2016). This may begin with relatively simple strategies that promote prosocial behaviours and discourage impulsive behaviours

(EMCDDA, 2019a). As the student grows older, their drug education should increase in complexity, fostering new informed understandings of drugs and their harms, and promoting healthy and informed social norms (EMCDDA, 2019a). Harm reduction techniques may be introduced at later stages, such as strategies for dealing with adverse effects of drug use (Marlatt et al., 2011). Content which is not developmentally appropriate has little or no effect on a student's drug behaviours (Onrust et al., 2016).

There is some disagreement in the literature regarding when exactly to introduce drug education to young people (McBride, 2003). Whilst some claim that it is never too early to discuss drug use with students (Substance Abuse and Mental Health Services Administration [SAMHSA], 2020), others suggest that the drug education should be based around the time of the normal onset of drug use (Porath-Waller et al., 2010). Regardless, it is clear that delivering some types of drug education inappropriately early to the students (e.g. telling young students about drugs that they have never heard of) should be avoided. This may have negative implications, such as simply making the students more informed users (Darcy, 2020b; EMCDDA, 2019a). Instead, younger children should be taught the emotional and social skills that will help them avoid drug abuse in the future (UNESCO, 2017). Therefore, earlier interventions which are developmentally appropriate appear to be ideal for an effective drug education.

However, there are some forms of drug education that should be avoided as they have been proven to be ineffective at reducing harm. A prime example is scare tactics. Scare tactics involve presenting students with messages that evoke fear, usually through frightening stories or graphic images, with the aim of inspiring behaviour change (Witte & Allen, 2016). Although this is one of the most popular forms of drug education, often included in deterrence-based methods, it is largely ineffective (EMCDDA, 2019a; Meehan, 2017). Scare tactics frequently exaggerate and sensationalise the risks associated with drug use, often contradicting the experience of students or their peers (EMCDDA, 2019a). Sensational scare tactics delivered in this manner are more likely to evoke

resistance responses instead, making individuals less likely to show positive behaviour change (Witte & Allen, 2016). In addition, these scare tactics often negatively contribute to the harmful stigma associated with drug use (Meehan, 2017). Overall, scare tactics are viewed by many in drug education as outdated and inappropriate (UNODC & WHO, 2018).

Another form of drug education that is viewed as inappropriate is testimonials or guest talks from current/recovered addicts (Department of Education and Skills [DES], 2010; Drug and Alcohol Research and Training Australia [DARTA], 2015; EMCDDA, 2019a). These methods are often viewed as unrelatable and far-removed from young people, and thus the speaker's message is often not taken on board. This method of deterrence has been proven to be largely ineffective (EMCDDA, 2019a; Meehan, 2017).

All of the above findings provide a template for an effective drug education. However, it is important to note one potential issue with many of the above studies. According to Darcy (2018), there is a lack of conceptual clarity regarding the aim of an effective drug education. This lack of clarity seems to centre around the distinctions between drug information, drug prevention, and drug education. Drug education is not the same as drug information or drug prevention (Darcy, 2020a; DARTA, 2015). Drug information programmes simply provide students with information regarding drugs and drug use, although normally with an emphasis on prevention (Darcy, 2020b). Solely presenting students with information regarding drugs and their harms will not likely inspire desired behaviour change or adequately prepare them for opportunities to use drugs (Almeida et al., 2017; UNESCO, 1995). Additionally, 'drug prevention' places an emphasis on deterrence, rather than adequately preparing students for the complex social situations in which drug use often occurs (EMCDDA, 2017). A fully developed drug education not only aims to intervene in drug use, but also attempts to foster a new understanding of drugs and their harms (Darcy, 2020a).

Hence, whilst not ignoring the usefulness of information or prevention strategies, effective drug education should focus on providing the student with a holistic view of drugs in the context of

their own lives, challenging harmful normative beliefs about drugs, and imparting skills for navigating high risk drug use scenarios (Darcy, 2018). Unfortunately, there is much confusion between these distinctions, both in research literature and in practice (Darcy, 2018; Kiely & Egan, 2000). This lack of conceptual clarity may lead to different programmes regarding different outcomes of drug education as 'effective', and overall, result in unclear and poorly defined methods and goals for drug education.

Regardless, in comparison to the above evidence-based guidelines and recommendations, Ireland's attempt at drug education to date is discouraging from any perspective. While drug use continues to increase, school-based drug education has received little effort or attention (Darcy, 2020a). Although an early survey carried out by Bryan and her colleagues (2000) found that 94.5% of Irish people supported providing drug education to primary school students, for example, this support has been met with little change. A review from the DES (2014) found that a significant number of teachers leading the drug education programmes, under the 'Social, Personal and Health Education' (SPHE) curriculum, were inadequately trained to carry out the course, and that many materials and methods used were outdated and ineffective. Therefore, there is a clear need for reform in how Ireland's SPHE curriculum deals with drug education.

The new version of the drug education component of the SPHE curriculum, 'Know the Score', was launched in late 2019 and it aims to approach Irish drug education from a more evidence-based, harm reduction perspective, with better training and materials for teachers. However, it is currently unclear how this programme has been carried out. Due to the circumstances of COVID-19, it is likely that most schools have not yet had the opportunity to implement this programme. Given this window of opportunity, the present study aims to investigate the drug education that has been implemented in Ireland to date. Furthermore, it does so using clearly defined questions and measurements, so that the effectiveness of drug education can be clearly observed and understood.

Rationale and Hypotheses

The primary objectives of the present study are to empirically examine the relationship between drug education, drug behaviour, and risk-perception attitudes towards drugs. In accordance with prior literature highlighting what constitutes good education, such as whether the instructor is a teacher and whether the materials are interactive, the current study formulated an original measure of drug education level. Correlational analysis will be conducted to investigate the relationship between education level score, attitudes, and behaviours. Examining this question empirically will further contribute to the literature on effective drug education, but instead of highlighting the efficacy of specific characteristics of drug education, the present study will illustrate whether these characteristics are effective when combined. Combining aspects of drug education into a unitary variable allows for the efficacy of drug education to be assessed via hypothesis driven research, rendering the present study unique among the wider educational literature. As mentioned, it is unclear how well drug education has been carried out among Irish schools, with many students potentially receiving a different drug education or no drug education over the course of their secondary school educational experience. Therefore, the present study will address whether even receiving drug education generally, regardless of its quality and frequency, influences risk perception and behaviours. Lastly, the present study predicts risk-perception to be independently associated with drug behaviours as expected according to the above literature on perceived risk.

As secondary objectives, the present study aims to test the relationship between additional predictor variables of drug behaviours and attitudes which have been studied in the literature, namely SES and gender. Additionally, whether the perceived prevalence of drug use among peers has an effect on drug use will be tested. Including these variables may strengthen the evidence for aforementioned effects if successfully replicated, however the overarching rationale for their inclusion is that they are potentially covariates. If significant effects are observed between drug

education level, attitudes, and behaviour, it is important such effects exist independently from the other predicted effects of socioeconomic status, gender and perceived prevalence among peers.

The final objective of the present study is to explore the nature of drug education and its potential effect on attitudes and behaviour qualitatively through interviews with both drug education experts and university students. This aspect of the present study is paramount given the ambiguity surrounding what drug education teenagers in Ireland receive in their classrooms, as well as the complex and nuanced relationship between drug education and drug behaviours. Very little research has examined this topic qualitatively. Jenkins et al. (2017) conducted interviews with teenagers below the age of 18 examining their relationship with drug use. After applying a thematic analysis, the authors found young people's experiences of drug use to be contextually dependent, recommending harm reduction strategies to be flexible enough to resonate with different individuals from widely different backgrounds. The present study will employ an inductive thematic analysis based on the framework by (Braun & Clarke, 2006). The current analysis differs from Jenkins et al's (2017) insofar as the focus of the interview questions will be on drug education rather than drug behaviours. Instead of interviewing adolescents, the present study will interview drug education experts about their experience working with young people, and their attitudes towards the role of education, while also interviewing university students about their memory of receiving drug education in secondary school. The analysis of these interviews will not be hypothesis driven but instead exploratory in relation to the quantitative analysis, as an inductive approach has been undertaken.

In addition to the aforementioned hypotheses (summarized below), the present study will conduct exploratory statistical analyses which may indicate additional interactions and effects in our data for which previous research has not examined and which future studies should be aware of.

Hypotheses

Primary

Hypothesis 1. There is a relationship between school drug education quality/whether someone had drug education in school and frequency of drug-taking behaviour/whether someone has taken illicit drugs**.**

Hypothesis 2. There is a relationship between drug education quality/whether someone had drug education and perceived risk towards illicit drugs.

Hypothesis 3. There is a relationship between perceived risk of illicit drugs and frequency of drug-taking behaviour/whether someone has taken illicit drugs.

Secondary

Hypothesis 4. There is a relationship between gender (males and females) and illicit drug behaviour and drug attitudes.

Hypothesis 5. There is a relationship between socioeconomic status, and drug education, attitudes towards illicit drugs and illicit drug behaviour.

Hypothesis 6. There is a relationship between perceived prevalence of drug use among peers and frequency of drug-taking behaviour/whether someone has taken illicit drugs.

Method

Design

The present study utilized a mixed method design. The quantitative element of the study implemented a cross-sectional design, in which participants completed a once-off online survey. The survey aimed to measure the relationship between drug education and subsequent attitudes and behaviours regarding illicit drug use, where illicit drug use refers to the use of illegal drugs or the non-medical use of prescription drugs.

There were five main variables assessed by the survey: school drug education (education), school drug education quality (education quality), perceived risk of illicit drugs (perceived risk), illicit drug use (drug use), and frequency of illicit drug use (frequency of use). The first variable, education, consisted of two levels: education and no education, the second variable consisted of the scores for education quality, and the third variable was the scores for perceived risk. The fourth variable, drug use, consisted of two levels: drug users and non-drug users, and the fifth variable was the scores for frequency of use. Each of the five variables were assessed for differences on the basis of socioeconomic status (SES) and gender. SES had two levels: access students and non-access students. Access students were students who accessed university through either the Trinity Access Programme (TAP) or the Higher Education Access Programme (HEAR). These programmes assist students from disadvantaged backgrounds to access third-level education. To be eligible for either programme students must meet a range of financial, cultural, and social criteria.

In addition to access students, an exploratory analysis was also conducted on lower SES students which was defined by access students and students who were recipients of the Student Universal Support Ireland (SUSI) grant. This consisted of two levels: access/SUSI students and non-access/SUSI students. The SUSI grant is a means-tested financial support scheme which offers funding to eligible students in approved full-time third level courses. The impact of gender was also

explored and had two levels: male and female, (differences were only assessed for male and females due to the small sample size of participants who identified as non-binary or transgender). Additionally, perceived prevalence of illicit drug use was measured. This was determined by participants' percentage estimate of how many students they thought engaged in illicit drug use. Further exploratory analyses were undertaken on the resulting data from the survey, including the variables risky illicit drug behaviour and binge drinking.

The qualitative component of the present study consisted of a semi-structured interview with open-ended questions to introduce the research topics while allowing for descriptive and diverse answers. Interviews took place with three university students and three experts in the area of drug education in order to achieve a more comprehensive understanding of the importance of drug education's influence on subsequent illicit drug behaviours and attitudes. Interview transcriptions were coded to highlight phrases or underlying messages that may be psychologically significant and thematic analysis was used to induce meaningful themes from the participant's responses.

Participants

The survey was taken by 409 university students. However, 101 (24.7%) of these failed to complete all sections and were excluded from further analysis, leaving a sample size of 308. Three hundred and eight participants completed all sections of the online survey (183 females, 121 males, 3 non-binary, 1 transgender). All participants were third level college students (295 undergraduate students, 13 postgraduate students, with 54 of these SUSI eligible, 8 TAP/HEAR students, 6 mature students, 28 disability students, 12 non-white ethnicity and 1 from a Traveller background) between the ages of 18 and 25 (M = 20.71, SD = 1.13). The present study purposely refined participants to this age bracket to ensure participants had an accurate memory of their secondary school drug education and to achieve a more recent representation of drug education in Ireland. Participants were recruited to take part in the survey through the social media accounts of the researchers and

through an email that was distributed by the School of Psychology. Thirty-two of the survey participants were incentivised to complete the survey through the Trinity College Sona Recruitment system where undergraduate psychology students were awarded one research credit in exchange for completing the survey.

Six participants took part in an interview which consisted of three students and three experts in the area of drug education. The three students were third-level university students who received their secondary school education in Ireland and were recruited through social media and through the Trinity College Sona recruitment system. Three research credits were offered to undergraduate psychology students in exchange for taking part in the interview. The three experts were chosen by the researchers and were invited to participate in the present study via email. Expert 1 was a drug education researcher, Expert 2 was a secondary school SPHE teacher, and Expert 3 was an HSE worker based in the social inclusion office. No demographic information was recorded from the interview participants as the interviews were anonymous.

Materials

The Trinity College Psychology SONA recruitment system, an email distributed to psychology students in Trinity College Dublin, Recruitment Posters (Appendix A) and personal social media accounts belonging to researchers were used to recruit participants for the survey and for the interviews. The survey was made and administered using Qualtrics (Appendix B). It was distributed via an electronic link and could be completed by participants on any device. Participants were first presented with an Information Sheet and Consent Form (Appendix C), and a Debriefing Form (Appendix D) on completion of the survey.

Survey

The complete survey contained thirty-nine questions and consisted of three sections: drug education, drug attitudes and drug behaviours. The questions regarding drug education were

devised by the research team on the basis of previous literature and knowledge of the secondary school curriculum in Ireland (See Appendix B for further details). The drug education section consisted of twelve questions such as "Overall, how do you feel about your drug education in terms of the following: The quality of your drug education? / Your satisfaction with your drug education?" Participants were presented with a Likert scale consisting of the following responses: "'Very low', 'Low', 'Neutral', 'High', 'Very high'". The questions included in the drug education section aimed to derive an indication of what kind of drug education the participant received, how often they received drug education, by whom it was delivered and the individual's satisfaction with their drug education. A positive or negative score was assigned to each answer, as shown in the education section of Appendix B, to capture the amount and quality of the participants' drug education (this measurement corresponded to the previously mentioned variables, "education" and "education quality"). For example, drug education quality was scored to reflect high quality school drug education and low-quality school drug education.

The attitudes section consisted of eight questions that were interested in participants' attitudes towards illicit drug use and alcohol, e.g. "How much do you think people risk physical or mental harm if they experiment with the following drugs? (Taking them once or twice)" where participants completed a Likert scale; "'No Risk', 'Slight Risk', 'Moderate Risk', 'Great Risk' or 'Drug unfamiliar, Can't Say'" for the following drugs: Cannabis, Stimulants, Prescription stimulants for non-medical use, MDMA, Inhalants, Sedatives or sleeping pills, Psychedelic drugs, Ketamine, Opioids (See Appendix X). More specifically, the attitudes section attempted to assess participants' perceived risk of illicit drug use. The questions in this section were constructed by researchers based on Gonzalez's (1990) questionnaire which consisted of questions regarding the participants' perceived risk of various drugs. The questionnaire and scoring frame were modified by the researchers to include drugs suitable to the social context of third-level students in Ireland. For example, "How much do you think people risk physical or mental harm if they use the following drugs regularly? with the Likert scale: "'No Risk', 'Slight Risk', 'Moderate Risk', 'Great Risk' or 'Drug unfamiliar, Can't Say'" for

the following drugs: Cannabis, Stimulants, Prescription stimulants for non-medical use, MDMA, Inhalants, Sedatives or sleeping pills, Psychedelic drugs, Ketamine, Opioids. Additional questions of interest were added to the survey by the researchers e.g. "Do you consider taking any of the drugs listed above in combination with each other risky?", "Do you consider taking any of the drugs listed above in combination with alcohol risky?", "What is your stance on the legal status of marijuana?", "What is your stance on the legal status of "hard" drugs (e.g. MDMA, heroin, magic mushrooms)", "How widespread do you consider illicit drug use to be among college students?". A score of perceived risk was generated from the participants answers to the questions in the attitude section, corresponding to the variable of "perceived risk" mentioned previously. The score assigned to each answer can be seen in the attitudes section of Appendix B.

Questions assessing illicit drug behaviour were taken from the NIDA-modified Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) which was adapted by the WHO (2010) as it was felt that this accurately captured the degree to which individuals consume various categories of drugs. Researchers modified this test to suit the social context of Irish third-level students, with one question being removed and four questions added. This section consisted of fourteen questions and assessed which illicit drugs participants had used during the past year. Additional information gathered in this section related to; frequency of use; social, legal and personal problems related to a participant's illicit drug use; concerns expressed by friends or relatives over their drug use; and whether they had ever failed in an attempt to regulate their drug consumption. A score of risky drug behaviour was derived from the answers to these questions (this score corresponds to the variable, "risky drug behaviour", which was assessed as an exploratory analysis). The scoring frame for the original NIDA modified ASSIST was adapted slightly by researchers to reflect changes made to the original questions (the scores assigned to each answer is shown in Appendix B). The variable of "frequency of use" was assessed by the question which assessed frequency of use of each of the illicit drugs which were selected by a participant.

Interviews

The interviews were conducted using video conferencing software, Zoom, and were recorded by the researchers. All participants were provided with an Information Sheet (Appendices E & F) and a Consent Form (Appendix G) prior to being interviewed and a Debriefing Form (Appendices H & I) afterwards. Student Interview Questions (Appendix J) assessed the quality of their drug education and their attitudes towards illicit drug use, for example "Do you think your attitude towards drugs and illicit drug use has been impacted by the drug education you received in school?" The interview questions for the experts (Appendix K) explored their views on drug education programmes in secondary school and university and how they could be improved, for example "What do you envision the ideal drug education in secondary school to look like?". Questions and prompts for the qualitative analysis component were created by researchers to be open-ended and to encourage conversations concerning the research topic to gather rich data. The recorded interviews were later transcribed using the transcription application 'Otter' and stored on the researcher's personal computer.

Procedure

Quantitative

Prior to the survey going live to participants, it was piloted for face validity and clarity of questions. The survey was live and available to complete for eight days before being privatised by the researchers. The survey was distributed by the researchers via an electronic link which brought participants directly to the survey. Participants completed the survey in their own time, and it took approximately fifteen minutes to complete. Participants were first presented with the information sheet and consent box, informed consent was then obtained, and demographic information was collected. Participants completed the survey in the order of drug education, drug attitudes and drug behaviours. The survey skipped questions where necessary based on a participant's prior answers. For instance, participants who answered "no, never" to the first question in the drug education

section; "Did you receive any drug education as part of your secondary school education?" skipped questions referring to drug education in secondary school. Participants who answered "no" to the question "In your lifetime, have you ever engaged in illicit drug use?" skipped questions inquiring about their illicit drug behaviours. Survey answers were anonymously saved to Qualtrics where the data could be collected and analysed. The data was analysed using descriptive statistics, Spearman's rank-order correlations, Mann-Whitney tests and chi-square tests of independence (non-parametric tests were used due to the lack of normality observed in the data) using SPSS IBM 26.

Qualitative

Six interviews took place over Zoom with three third-level students and three experts in the area of drug education. The experts were contacted via email and a suitable meeting time was arranged. The third level students were recruited via social media and the TCD SONA recruitment system. All participants received an email before their interview that included an information sheet, consent form and Zoom link. The interviews were conducted by two researchers. One researcher led the interviews and asked the questions while the second researcher recorded the interview. The interview recordings were transcribed and anonymised and the recordings were subsequently destroyed. The interview transcriptions were stored securely on the researcher's personal computer and were subjected to qualitative analysis.

The student and expert interviews were analysed separately. Two researchers explored the student transcripts, and a further two researchers explored the expert transcripts. These four researchers assessed the transcripts independently and assigned meaningful codes to each line of text, identifying phrases or hidden meanings within the data that was relevant to the present research. An example can be found in Appendix I for both student and expert interview questions. Each researcher identified patterns between the codes across all three student or expert transcripts and these patterns were developed into themes that described recurring ideas which were psychologically significant. The codes were then revised and changed to ensure that the themes

were exhaustive and mutually exclusive. Two researchers discussed their codes and themes over a Zoom call to agree on the final themes for the qualitative analysis and the interrater reliability was calculated using Cohen's Kappa. A Cohen's kappa value of 0.62 and a percentage of agreement of 90.9 revealed strong interrater reliability.

Seven themes were generated in the thematic analysis of student interviews; (1) the need for a better drug education (which consisted of two subthemes – lack of education and insufficient drug education); (2) pressure to abstain from drug use from authoritative figures; (3) mental health (which consisted of two sub-themes - as a motivator for illicit drug use and as a reason to abstain from illicit drug use); (4) the comparison between alcohol and illicit drugs (which consisted of two sub-themes – the focus on alcohol within drug education and the acknowledgement of the dangers of alcohol); (5) normalisation of illicit drug use (6) illicit drugs being on a spectrum (which consisted of two sub-themes – distinctions between the types of illicit drugs and the range of illicit drug use), and; (7) the link between attitude and behaviour. These themes are fully described and discussed in the qualitative results section.

A thematic analysis was also carried out on three expert interviews. As with the student interviews, two of the researchers separately coded and identified themes among the three experts (an example can be found in Appendix M), and subsequently came together to discuss these codes and themes over a zoom call and to calculate inter-rater reliability using Cohen's Kappa. The agreement rate between the two researchers was found to be 97%, with a Cohen's kappa value of 0.79 which indicated a strong interrater reliability.

Seven themes in total were generated from this analysis; (1) current secondary school drug education is insufficient (which consisted of six sub-themes – no universal drug education, inaccurate idea of drug education, outdated, insufficient time, lack of social context, a too formal setting, and watered down curriculum); (2) the role of drug education (which consisted of two sub-themes – drug prevention, and harm reduction); (3) the content that should be included in a good

drug education (which consisted of three sub-themes – the risks of illicit drug use, why people take drugs, and drug education should be age-appropriate and feature every year) (4) who should deliver the drug education? (which consisted of two sub-themes – teachers, and external parties); (5) similarities between a harm reduction approach to drug education, and drug information (which consisted of six sub-themes - information/education alone won't change behaviour, informing harm reduction strategies, unreliability of online information, importance of social setting, role of subcultures, and increasing complexity of the drug landscape); (6) legal consequences of drug behaviours (which consisted of two sub-themes – drug policy and legal stance); and (7), drug education and gender. As only three experts were interviewed, the theme of 'drug education and gender' was covered by just one expert. However, this was nonetheless considered important as it addressed key findings from the current research.

Quantitative Results

Descriptive Statistics

Demographics

The survey was completed by 308 university students. The age range of participants was 18-25 (*M* = 20.71, *SD* = 1.13). There were 183 (59.4%) females, 121 (39.3%) males, 3 (1.0%) non-binary and 1 (0.3%) transexual. Further demographic characteristics regarding the sample are given in Table 1.

Table 1

Categories of Students

	n	*%*
Student Category		
TAP/HEAR[a]	8	3%
SUSI Eligible[b]	54	18%
Non-White Ethnicity	12	4%
Mature Students[c]	6	2%
Disability Students	28	9%
Traveller Background	1	.3%
Undergraduate Students	295	96%
Postgraduate Students	13	4%

Note. N = 308

[a] TAP (Trinity Access Programme) and HEAR (Higher Education Access Route) are both programmes to assist disadvantaged groups avail of 3rd level education.; [b] SUSI (Student Universal Support Ireland)is a state awarding authority which provides means tested grants and payments to eligible third-level students to cover fees and living expenses.; [c] Students who begin 3rd level education aged 23 or older.

Drug Education

Of the 308 participants, 103 (33%) did not receive a drug education, 152 (49%) received a one-off seminar, 37 (12%) had a once-yearly seminar, and 16 (5%) had multiple sessions throughout the year. As such, 255 (82%) of students had either no drug education or a single one-off class.

Of the 205 students who received a drug education, 64% (*n* = 130) had their first class aged 15 or older, 71% (*n* = 146) had a school teacher involved in the delivery of their drug education, and of those students who had a school teacher involved, 64% (*n* = 94) perceived their teachers not to be adequately prepared/trained. The classes focused on persuasion (*n* = 188, 92%) over harm reduction (*n* = 17, 8%), information (*n* = 168, 82%) over skills (*n* = 37, 18%), and were lecture-style (*n* = 172, 84%) rather than interactive (*n* = 33, 16%). The quality of drug education was rated low or very low by 47% (*n* = 96) of students and 56% (*n* = 114) rated their satisfaction with their education as low or very low (based on five-point Likert scales which ranged from very low to very high). Outside of school, students received education information about drug use from a variety of sources as summarised in Table 2.

Table 2

Other Sources of Drug Education and Information

	n	*%*
Source		
Peers or friends -	204	66%
Parents or siblings -	144	47%
Community clubs or organizations (Youth clubs, religious groups, sports teams, etc.) -	27	9%
Movies and TV shows -	171	56%
Electronic media (Podcasts, social media, etc.) -	148	48%
Independent research (e.g. Websites/books) -	153	50%
Harm reduction campaigns (e.g. Student union campaigns, government campaigns, nightclub campaigns)	73	24%
Other	5	2%
None	16	5%

Note. N = 308

Note. Responses greater than number of participants due to multiple sources of drug education and information

Categories of Drugs

Participants were asked about their attitudes towards, and their consumption of, nine categories of drug. They were given examples of the most common drugs in these categories which included street names and brand names, if appropriate. The categories and constituent drugs are shown in Table 3. For brevity, only the category name will be used in the remainder of this results section.

Table 3

Categories of Drug

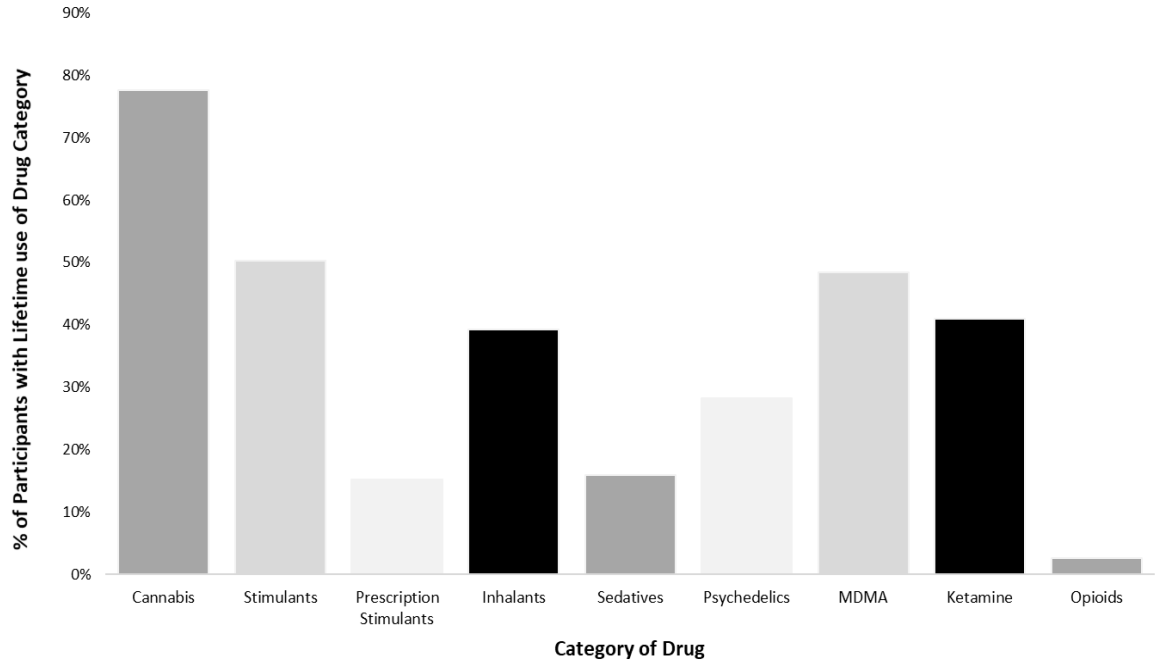
Category of Drug	Includes
Cannabis	Marijuana, Hash, etc.
Stimulants	Cocaine, Speed, etc.
Prescription stimulants (non-medical use)	Ritalin, Study Drugs, Diet Pills, etc.
Inhalants	Nitrous Oxide, Poppers, Gas, Balloons, etc.
Sedatives or sleeping pills	Benzos (blueys), Valium, Xanax, GHB, etc.
Psychedelics	LSD (acid), Mushrooms, Truffles, 2CB, etc.
MDMA	Ecstasy, Mandy, Yokes
Ketamine	Ket, K
Opioids	Heroin, Prescription Opioids (non-medical use) etc.

Lifetime Drug Behaviours

Participant's lifetime use of any illicit drug was 79% (n = 243). Cannabis had the highest prevalence of lifetime use among third-level students in our sample at 78% (n = 239). Stimulants such as cocaine were used by 155 students (50%) and MDMA by 149 (48%). Heroin and prescription opioids had a prevalence rate of 3% (n = 8). Lifetime use of illicit drugs by type of drug is shown in Figure 1.

Figure 1

Lifetime Use of Illicit Substance by Type



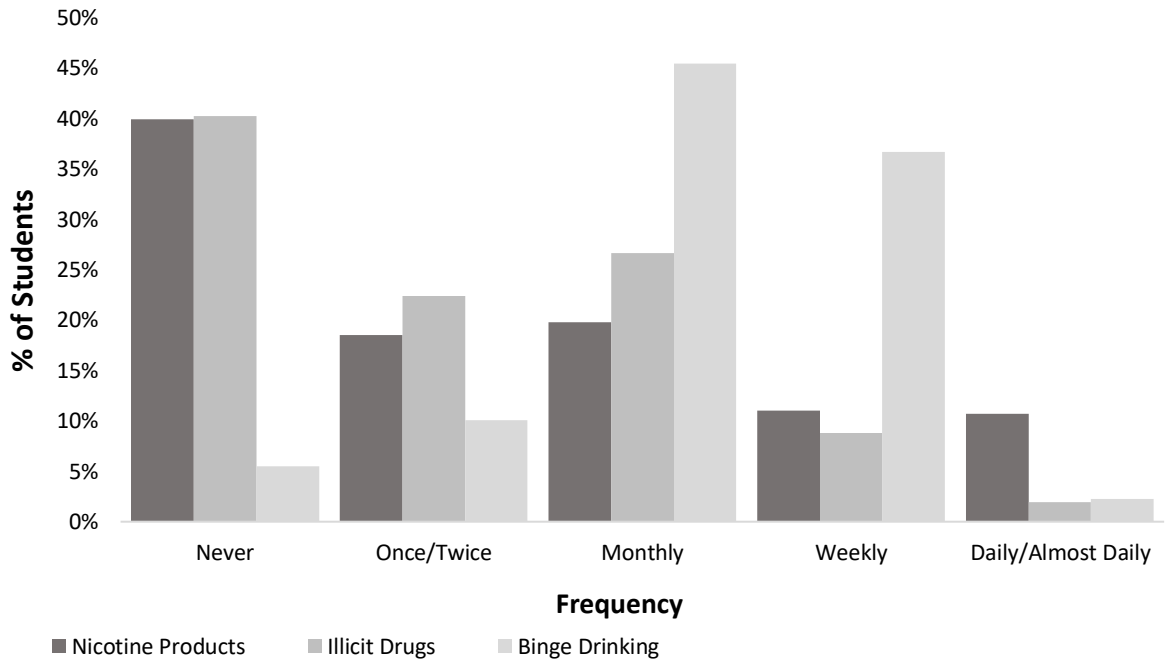
Note. N = 308
Note. Totals > 100% due to polydrug use by participants.

Past-Year Drug Behaviours

Past-year frequency of consumption of nicotine and illicit drugs, and episodes of binge drinking (4+ drinks for females, 5+ drinks for males in a day) are presented in Figure 2. Binge drinking at least monthly was reported by 259 (84%) of students.

Figure 2

Past-Year Frequency of Consumption of Nicotine Products[a], Illicit Drugs[b], and Binge Drinking[c] among Students



Note. N = 308

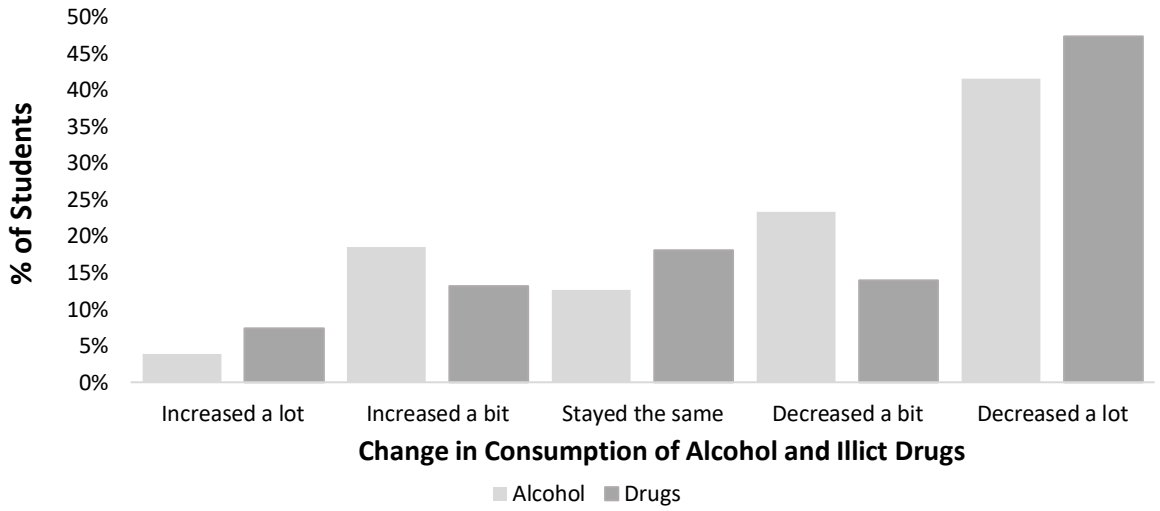
[a] Tobacco or vaping; [b] illegal or prescription drugs for non-medical use; [c] 4 + drinks for females, 5+ drinks for males in one c

Changes in Drinking and Illicit Drug Use During the Pandemic

Participants reported both their drinking and illicit drug use decreased during the COVID-19 pandemic (Figure 3). 65% of students said they drank less alcohol and 61% said their illicit drug use had decreased. An increase in alcohol consumption was reported by 22% of students while 21% of students said they used more illicit drugs.

Figure 3

Changes in Drinking and Illicit Drug Use Behaviour During COVID-19 Pandemic



Past Year Drug Use

The most consumed drug over the past year was cannabis (n = 173), followed by stimulants (n = 121) such as cocaine and speed, and MDMA (n = 93). A detailed breakdown of drug use by drug type and frequency is given in Table 4.

Table 4

Frequency of Past Year Drug Use by Drug Type

			Drug Use in the Past Year by Frequency of Drug Type Used							
	No Previous Drug Use Past Year		Once/Twice Past Year		Monthly		Weekly		Daily/Almost Daily	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
No Yearly Drug Use	124	40%								
Category of Drug										
Cannabis			59	19%	70	23%	30	10%	14	5%
Stimulants			62	20%	52	17%	7	2%	0	0%
Prescription Stimulants			13	4%	4	1%	1	0%	1	3%
MDMA			74	24%	18	6%	1	0%	0	0%
Inhalants			61	20%	19	6%	0	0%	0	0%
Sedatives			17	6%	3	1%	1	0%	0	0%
Psychadelics			46	15%	13	4%	0	0%	0	0%
Ketamine			60	19%	20	7%	3	1%	0	0%
Opioids			3	1%	1	0%	1	0%	0	0%

Note. N = 308
% = percentage of all students who reported that frequency for that category of drug. Totals exceed the number of participants due to polydrug use by respondents.

Urges to Use and Problems Associated with Drug Use in the Past Year

Cannabis users report the most frequent urges to use with 24% experiencing an urge or desire to use that drug within the past week as detailed in Table 5. Opioid, sedative and stimulant users report the next most frequent past-week urges at 14%, 9% and 8% respectively. All other categories report a 2% or less past week urge to use.

Table 5

Urges or Desires to Use Category of Drug

	Never/Rarely		Monthly/Every few months		Within Past Week	
	n	*%*	*n*	*%*	*n*	*%*
Cannabis	99	55%	38	21%	43	24%
Stimulants	96	72%	27	20%	10	8%
Prescription stimulants	39	91%	3	7%	1	2%
MDMA	104	84%	19	15%	1	1%
Inhalants	95	90%	8	8%	2	2%
Sedatives	40	91%	0	0%	4	9%
Psychedelics	70	85%	11	13%	1	1%
Ketamine	94	85%	14	13%	2	2%
Opioids	5	71%	1	14%	1	14%

Problems Stemming from Drug Use

Participants were asked about problems which may arise from their use of drugs. They were asked about how often they failed to do what was expected of them due to their drug use in the past year and how often their drug use had led to health, social, legal, or financial problems (Table 6). Stimulant and cannabis users were most likely to have failed to do what was expected of them at 7% and 6% respectively. All other categories of drug users rarely or never failed to do what was expected due to their drug use. Participants reported few health, social, legal or financial problems linked to their drug use.

Table 6

Attitudes to the Risks Posed to Physical and Mental Health by Problems Stemming from Drug Use

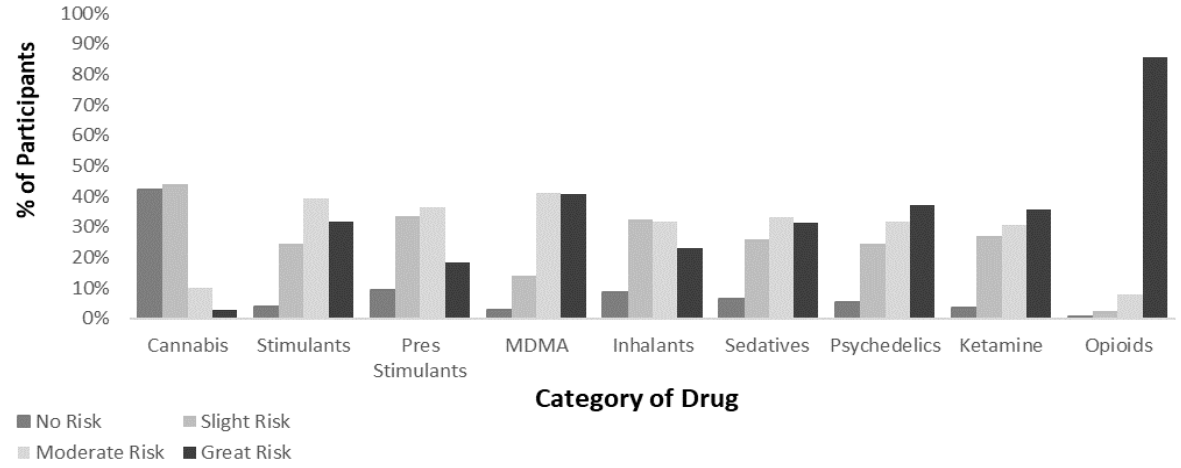
During the past year, how often:	have you failed to do what was normally expected of you because of your use of these substances?				has your use of these substances led to health, social, legal, or financial problems?			
	Never/Rarely		More than Twice per Year		Never/Rarely		More than Twice per Year	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Cannabis	169	94%	11	6%	176	98%	4	2%
Stimulants	124	93%	9	7%	127	95%	6	5%
Prescription stimulants	43	100%	0	0%	42	98%	1	2%
MDMA	122	98%	2	2%	122	98%	2	2%
Inhalants	104	99%	1	1%	104	99%	1	1%
Sedatives	44	100%	0	0%	43	98%	1	2%
Psychedelics	81	99%	1	1%	82	100%	0	0%
Ketamine	107	97%	3	3%	110	100%	0	0%
Opioids	7	100%	0	0%	7	100%	0	0%

Experimental and Regular Drug Use

Participants rated the risk to physical and mental health for all categories of drugs to be less for experimental use (Figure 4) rather than regular use (Figure 5). Cannabis was seen as the least risky drug both for experimental use and regular use. Thirteen percent of respondents believed experimental use of cannabis posed a moderate or great risk to a user's physical or mental health while 51% believed there were moderate or great risks associated with regular use of cannabis. Opioids were seen as the riskiest drug with participants reporting little distinction between the risks associated with experimenting and regular use of that category of drug. Opioid experimentation was viewed as a moderate or great risk by 94% of participants while 96% viewed regular use as at least moderately risky.

Figure 4

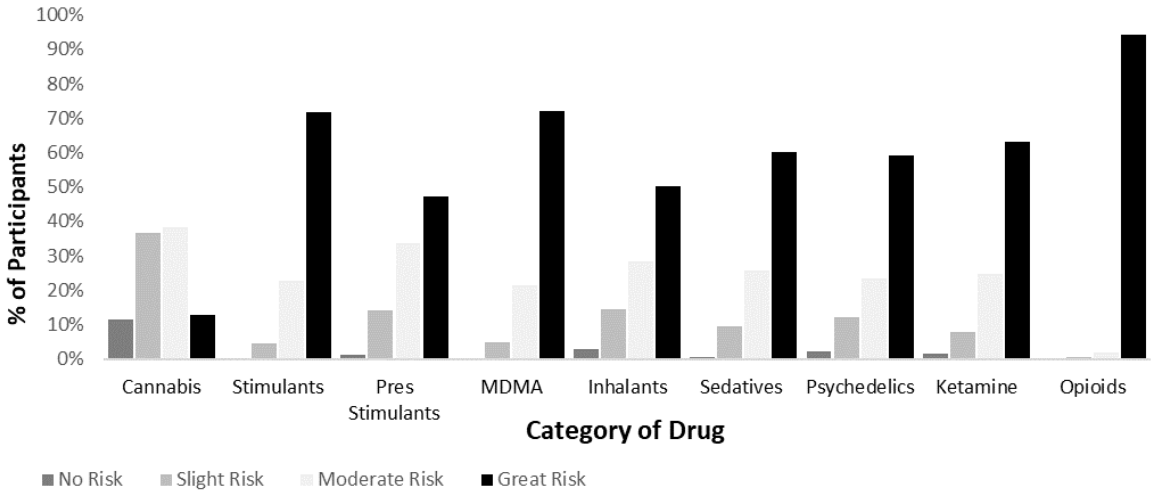
Risk Associated with Experimenting with Category of Drug



Note. *N* = 308

Figure 5

Risks Associated with Regular Use of Categories of Drugs

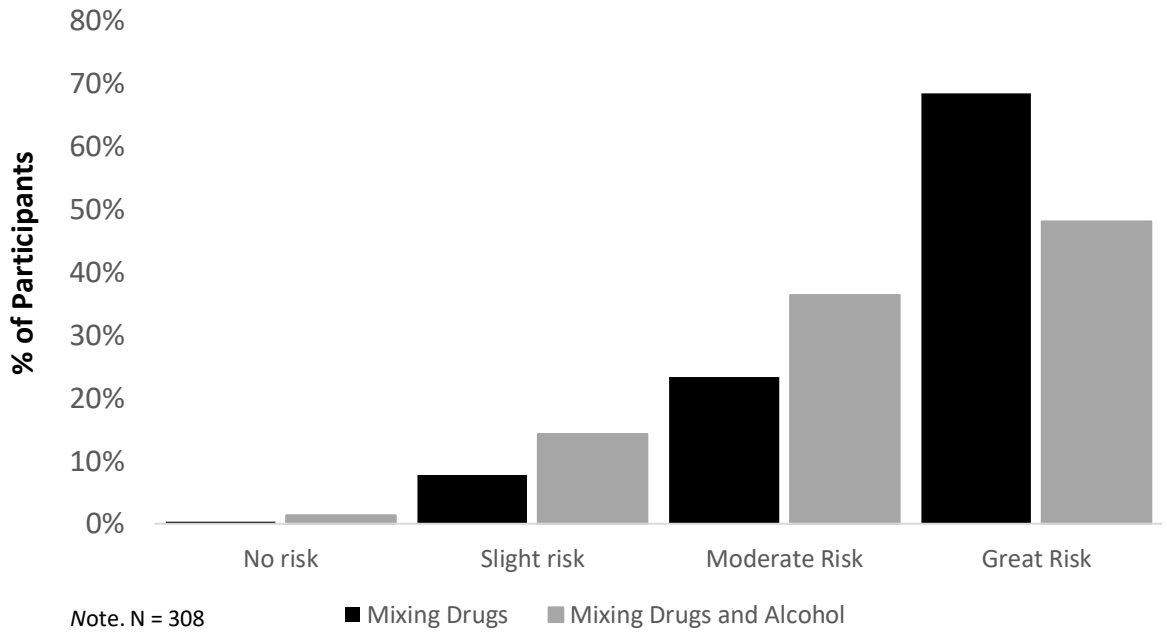


Note. N = 308

As can be seen in Figure 6, participants viewed mixing different categories of drugs as riskier than mixing drugs with alcohol.

Figure 6

Risk Associated with Mixing Drugs/Mixing Drugs and Alcohol



*N*ote. N = 308

Views on the Legal Status of Illicit Drugs

As can be seen in Table 7, participants were strongly of the view that cannabis should not be illegal (94%). Views on the other categories of illicit drug was more varied. Thirty-one percent of participants stated that all drugs other than cannabis should be illegal and 35% said their view on legality was drug dependent.

Table 7

Views on the Legal Status of Illicit Drugs

	Cannabis		Hard Drugs[a]	
	n	*%*	*n*	*%*
Should be illegal	18	6%	94	31%
Should be decriminalised[b]	64	21%	87	28%
Should be legalised[c]	226	73%	19	6%
Stance differs depending on drug in question	N/A	N/A	108	35%

Note. $N = 308$

[a] All other categories of drugs except marijuana. [B] Remains black market supply but users cannot be prosecuted for personal possession. [C] No criminal charges for supply and use

Inferential Statistics

Confirmatory Analyses

The three main relationships (corresponding to the present study's primary hypotheses) analysed were: The relationship between school drug education and illicit drug behaviour, the relationship between school drug education and attitudes towards illicit drugs, and the relationship between attitudes towards illicit drugs and illicit drug behaviour.

School drug education was determined via two variables: school drug education (education) and school drug education quality (education quality). The variable education consisted of two levels: education and no education. The variable education quality ranged from 1 to 17, with a higher score indicating a higher quality of school drug education and a lower score indicating a lower quality of school drug education. Attitudes towards illicit drugs was measured via one variable, perceived risk of illicit drugs (perceived risk), which ranged from 0 to 54, with a higher score indicating a higher perceived risk of illicit drugs, and a lower score indicating a lower perceived risk of illicit drugs. Illicit drug behaviour was measured through two variables: illicit drug use (drug use) and frequency of illicit drug use (frequency of use). The variable drug use consisted of two levels: drug users and non-drug users. The variable frequency of use ranged from 0 to 45, with a higher score indicating a higher frequency of illicit drug use and a lower score indicating a lower frequency of illicit drug use. Accordingly, the five main variables being assessed were: education, education quality, perceived risk, drug use and frequency of use.

Additionally, corresponding to the present study's secondary hypotheses, the five main variables were assessed for differences based on gender and socioeconomic status (SES). The relationship between perceived prevalence of illicit drug use and illicit drug behaviour was also analysed.

For correlational analyses, a Spearman's rank-order correlation was used as the assumption of normality was not met, as indicated by significant Shapiro-Wilks tests for the scores of education

quality ($p < .001$), perceived risk ($p < .001$), and frequency of use ($p < .001$) Furthermore, Mann-Whitney tests were used when comparing differences between groups due to the lack of normality observed in the aforementioned variables. Chi-square tests of independence were run when assessing the relationships between categorical variables, unless otherwise stated.

The relationship between school drug education and illicit drug behaviour. There was not a significant correlation between education quality and frequency of use, $r_s(203) = .06$, 95% BCa CI [-0.06, 0.19], $p = .396$ (see Table 8). There was not a significant difference in education quality scores between drug users (*Mdn* = 7, *IQR* = 6, 9) and non-drug users (*Mdn* = 8, *IQR* = 5, 10), $U = 3437.5$, $z = -.778$, $p = .436$, $r = .05$. Additionally, there was not a significant difference in frequency of illicit drug use between education (*Mdn* = 4, *IQR* = 0, 11) and no education (*Mdn* = 4, *IQR* = 0, 11), $U = 10317$, $z = -.338$, $p = 735$, $r = .02$. Moreover, there was not a significant association between education and drug use, $\chi^2(1, N = 308) = 1.22$, $p = .269$, odds ratio = 0.71.

The relationship between school drug education and attitudes towards illicit drugs. There was not a significant correlation between education quality and perceived risk, $r_s(203) = .11$, 95% BCa CI [-0.17, 0.24], $p = .157$ (see Table 8). As well, there was not a significant difference in perceived risk scores between education (*Mdn* = 39, *IQR* = 33, 45) and no education (*Mdn* = 39, *IQR* = 33, 44), $U = 1026$, $z = -.245$, $p = .807$, $r = .01$.

The relationship between attitudes towards illicit drugs and illicit drug behaviour. There was a significant difference in perceived risk scores between drug users (*Mdn* = 38, *IQR* = 31, 43) and non-drug users (*Mdn* = 46.5, *IQR* = 39, 49), $U = 3533$, $z = -6.721$, $p < .001$, $r = .38$ (see Figure 7). Non-drug users reported higher levels of perceived risk of illicit drugs in comparison to non-drug users. Additionally, there was a significant negative correlation between perceived risk and frequency of use, $r_s(305) = -.45$, 95% BCa CI [-0.54, -0.35], $p < .001$ (see Table 8). Those who reported higher levels of perceived risk of illicit drugs also frequently reported lower levels of frequency of illicit drug use.

Table 8

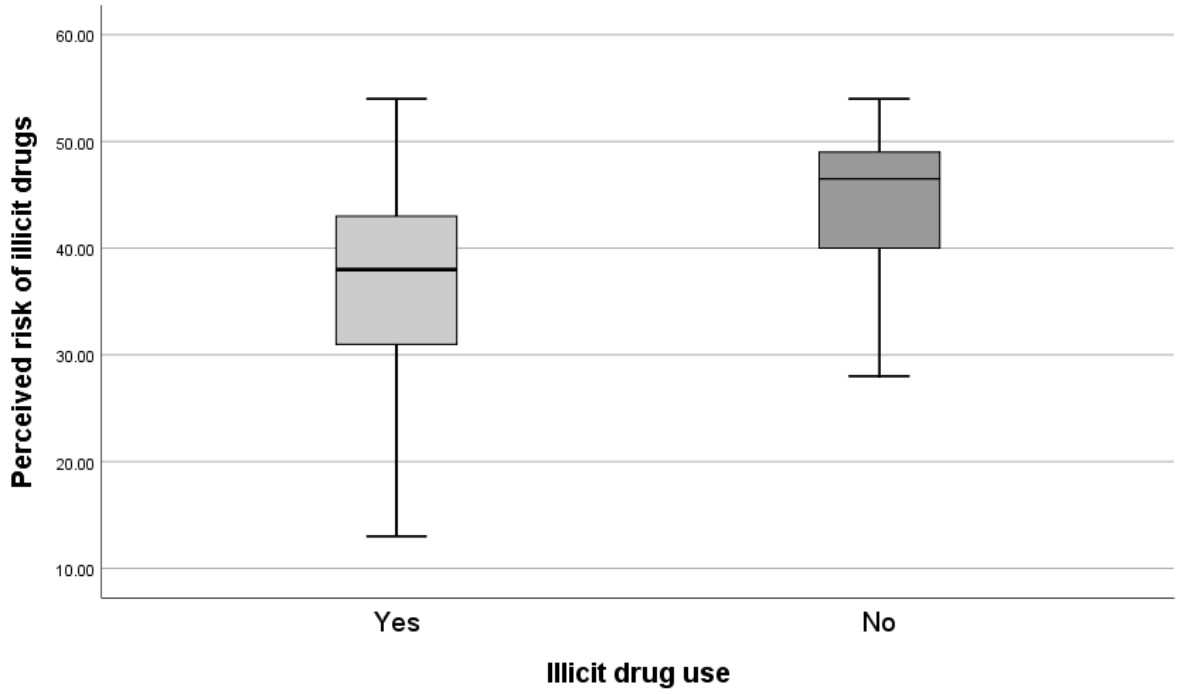
Correlations Between the Variables of Education Quality, Frequency of Use and Perceived Risk

	Education quality	Frequency of use	Perceived risk
Education quality	1.00		
Frequency of use	.06	1.00	
Perceived risk	.11	-.45**	1.00

** $p < .01$

Figure 7

The Difference in Perceived Risk Scores Between Drug Users and Non-Drug Users (Median and IQR)



Socioeconomic status (SES). Each of the five main variables were assessed for differences based on SES. The variable of SES consisted of two levels: access students and non-access students. Fisher's exact tests were carried out when assessing the associations between SES and education and SES and drug use (as the expected frequencies in their respective contingency tables were not all greater than five).

There was not a significant association between SES and education, two-tailed, Fisher's exact test, $p = .736$, odds ratio = 0.75. Additionally, there was not a significant difference in education quality between access students (*Mdn* = 8, *IQR* = 6.75, 11.25) and non-access students (*Mdn* = 7, *IQR* = 6, 9), $U = 434$, $z = -1.148$, $p = .251$, $r = 0.08$. Similarly, there was not a significant difference in perceived risk scores between access students (*Mdn* = 42.5, *IQR* = 36.25, 47.25) and non-access students (*Mdn* = 39, *IQR* = 33, 44), $U = 1134.5$, $z = -1.271$, $p = .204$, $r = 0.07$. As well, there was not a significant association between SES and drug use, two-tailed, Fisher's exact test, $p = .445$, odds ratio = 0.61. Moreover, there was not a significant difference in frequency of use scores between access students (*Mdn* = 2, *IQR* = 0, 12.5) and non-access students (*Mdn* = 4, *IQR* = 0, 11), $U = 1490$, $z = 0$, $p = 1$, $r = 0.08$.

Gender. The five main variables were assessed for differences based on gender. The variable of gender consisted of two levels: male and female. There was not a significant association between gender and education, $\chi^2(1, N = 304) = .42$, $p = .519$, odds ratio = 1.17. Furthermore, there was not a significant difference in education quality scores between males (*Mdn* = 7, *IQR* = 5, 8) and females (*Mdn* = 7, *IQR* = 6, 10), $U = 4434.5$, $z = -1.244$, $p = .214$, $r = .09$. Although, there was a significant difference in perceived risk scores between males (*Mdn* = 37, *IQR* = 31, 41) and females (*Mdn* = 41.5, *IQR* = 35, 46), $U = 7588$, $Z = -4.587$, $p < .001$, $r = .26$ (see Figure 8). Females reported higher levels of perceived risk of illicit drugs in comparison to males. Additionally, there was a significant association between gender and drug use, $\chi^2(1, N = 304) = 18.06$, $p < .001$, odds ratio = 4.18. Males were 4.18 times more likely to have taken illicit drugs in comparison to females. Moreover, there was a

significant difference in frequency of use scores between males (*Mdn* = 9, *IQR* = 0-13.5) and females (*Mdn* = 2, *IQR* = 0, 9), *U* = 7551, *z* = -4.872, *p* < .001, *r* = .28 (see Figure 9). Males reported higher levels of frequency of illicit drug use in comparison to females.

Figure 8

The Difference in Perceived Risk Scores Between Males and Females (Median and IQR)

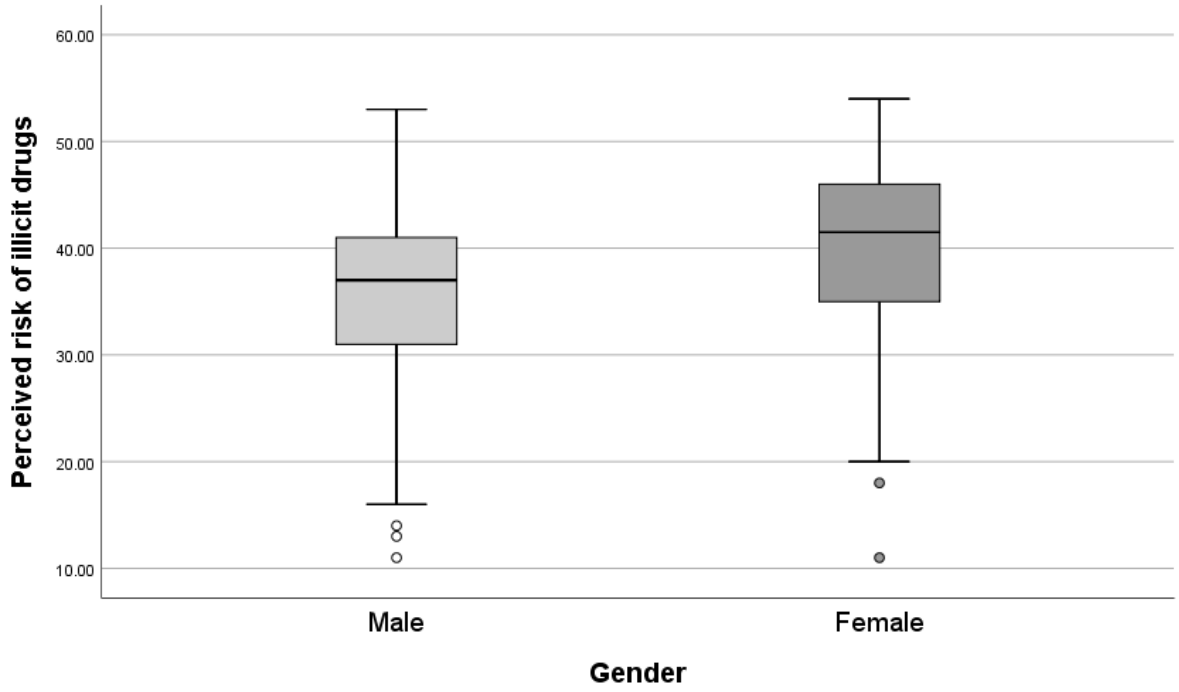
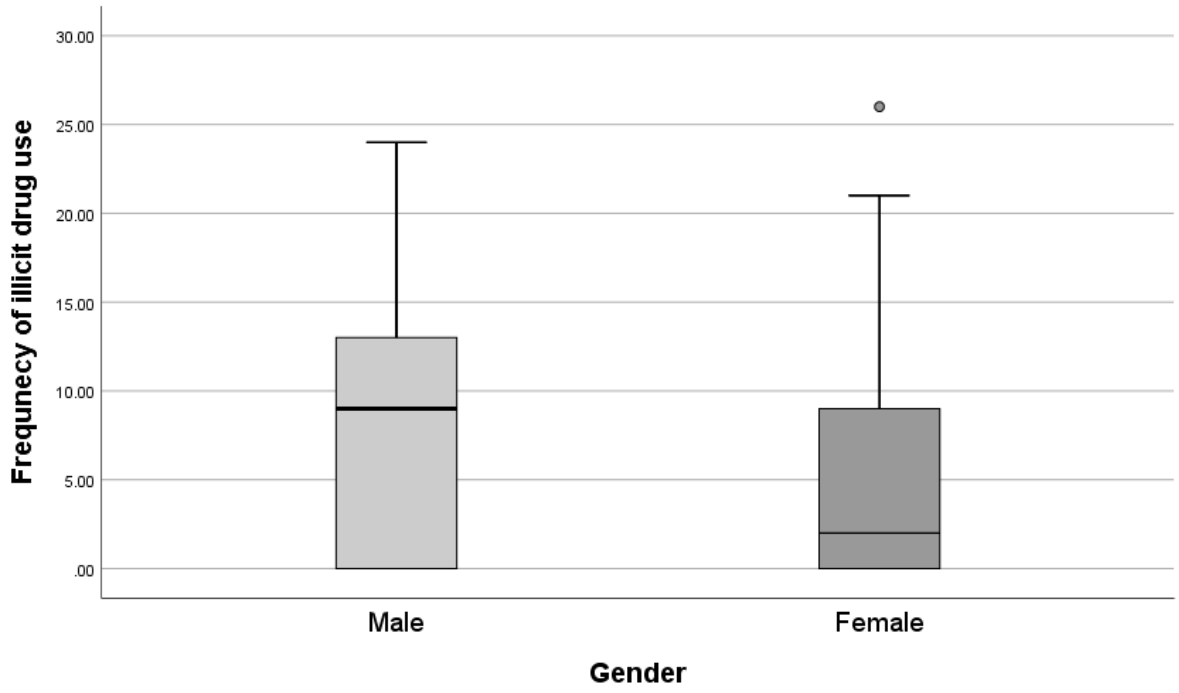


Figure 9

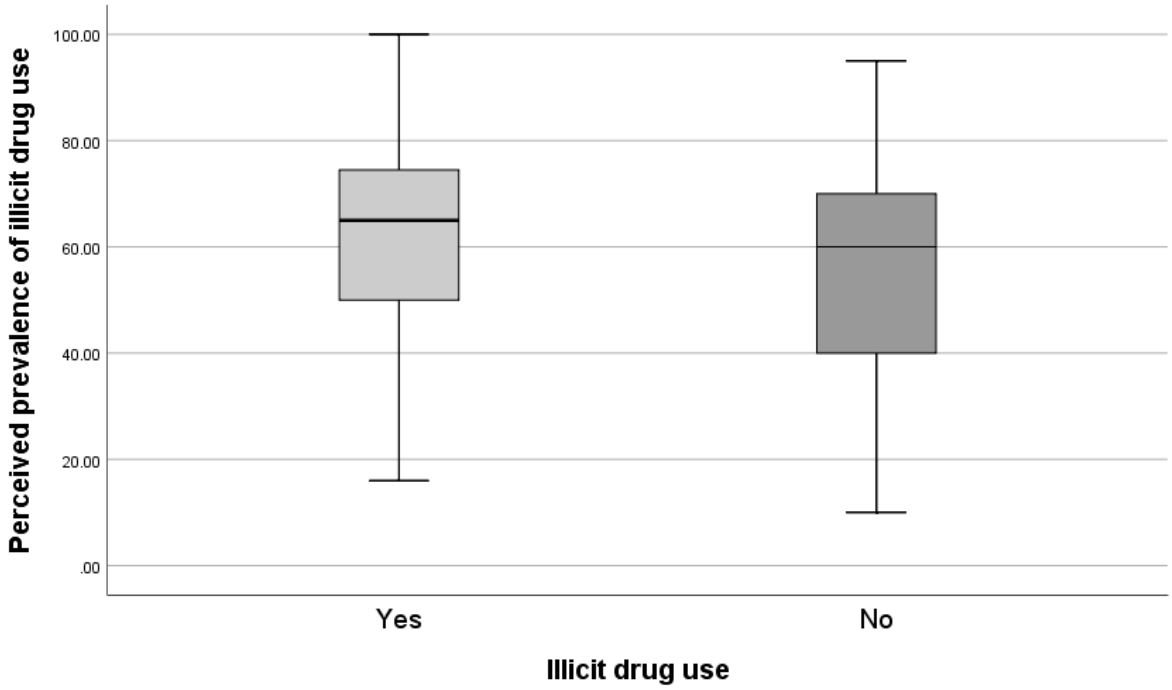
The Difference in Frequnecy of Illicit Drug Use Scores Between Males and Females (Median and IQR)



Perceived prevalence of illicit drug use among peers and illicit drug behaviour. There was a significant difference in perceived prevalence scores between drug users (*Mdn* = 65, *IQR* = 50, 75) and non-drug users (*Mdn* = 60, *IQR* = 40, 70), *U* = 6634.5, *z* = -1.984, *p* = .047, *r* = .11 (see Figure 10). Drug users estimated that a larger percentage of college students had taken illicit drugs in comparison to non-drug users. Furthermore, there was a significant positive correlation between perceived prevalence and frequency of use, $r_s(308) = .20$, 95% BCa CI [0.09, 0.30], $p < .001$. Those who reported higher estimates in relation to prevalence of illicit drug use among college students also frequently reported higher levels of frequency of illicit drug use.

Figure 10

The Difference in Perceived Prevalence Scores Between Drug Users and Non-Drug Users (Median and IQR)



Exploratory Analyses

Risky illicit drug behaviour. The variable of risky illicit drug behaviour (risky drug behaviour) was examined. The following relationships were assessed: The relationship between school drug education and risky illicit drug behaviour and the relationship between attitudes towards illicit drugs and risky illicit drug behaviour.

There was not a significant correlation between education quality and risky drug behaviour, $r_s(119) = .01$, BCa CI [-0.16, 0.20], $p = .802$. Likewise, there was not a significant difference in risky drug behaviour scores between education (*Mdn* = 19, *IQR* = 7.88, 30.13) and no education (*Mdn* = 19, *IQR* = 8.88, 29.13), $U = 3571$, $z = -.267$, $p = .790$, $r = .02$. Although, there was a significant negative correlation between perceived risk and risky drug behaviour, $r_s(179) = -.17$, BCa CI [-0.31, -.03], $p = .02$. Those who reported higher levels of perceived risk of illicit drugs also frequently reported lower levels of risky illicit drug behaviour.

Additionally, the difference in risky drug behaviour based on school drug education technique (education technique) was also assessed. This variable consisted of two levels: harm reduction and persuasion. There was no significant difference in risky drug behaviour scores between harm reduction (*Mdn* = 19.5, *IQR* = 8.88, 30.13) and persuasion (*Mdn* = 19, *IQR* = 7.63, 30.38), *U* = 697, *z* = -.474, *p* = .635, *r* = .04.

Access/SUSI students. The variable of access/SUSI was also examined, which consisted of two levels: access/SUSI students and non-access/SUSI students. The five main variables were assessed for differences based on the variable of access/SUSI.

There was not a significant association between access/SUSI and drug use, $\chi^2(1, N = 308) = .004$, *p* = .948, odds ratio = 0.98. Additionally, there was no significant difference in frequency of use scores between access/SUSI students (*Mdn* = 2, *IQR* = 0, 10) and non-access/SUSI students (*Mdn* = 3.5, *IQR* = 0, 10), *U* = 6725, *z* = -.570, *p* = .569, *r* = .03. As well, there was not a significant difference in perceived risk scores between access/SUSI students (*Mdn* = 40, *IQR* = 35.25, 43) and non-access/SUSI students (*Mdn* = 39, *IQR* = 33, 45), *U* = 6551, *z* = -.795, *p* = .427, *r* = .05. Although, there was a significant association between access/SUSI students and education, $\chi^2(1, N = 308) = 5.19$, *p* = .023, odds ratio = 0.5. Access/SUSI students were 50% less likely to have a school drug education. Additionally, there was a significant difference in education scores between access/SUSI students and non-access/SUSI students, *U* = 1914, *z* = -2.389, *p* = .017, *r* = .17. Access/SUSI students (*Mdn* = 8, *IQR* = 6.75, 10.25) had higher education scores in comparison to non-access/SUSI students (*Mdn* = 7, *IQR* = 5, 9).

Binge drinking and illicit drug behaviour. The variable of binge drinking consisted of two levels: binge drinkers and non-binge drinkers. The relationship between binge drinking and drug use was assessed. There was a significant association between binge drinking and drug use, $\chi^2(1, N = 308) = 26.46$, *p* < .001, odds ratio = 10.8 (see Table 9). Binge drinkers were 10.8 times more likely to have taken illicit drugs than non-binge drinkers.

Table 9

The Association Between Binge Drinking and Illicit Drug Use

		Illicit Drug Use		
		Yes	No	Total
Binge Drinking	Non-Binge Drinkers	24	24	48
	Binge Drinkers	219	41	260
Total		243	65	308

Qualitative Results

Student Interviews

Thematic analysis of the three student interviews generated seven themes: The need for a better drug education (which consisted of two sub-themes – lack of education, and insufficient education), pressure to abstain from drug use from authoritative figures, mental health (which consisted of two sub-themes – as a motivator to take illicit drugs, and as a reason not to take illicit drugs), the comparison between alcohol and illicit drugs (which consisted of two sub-themes – focus on alcohol in drug education and the acknowledgement of the dangers of alcohol), normalisation, illicit drugs being on a spectrum (which consisted of two sub-themes – illicit drugs, and illicit drug use), and the link between attitude and behaviour.

The need for a better drug education

Lack of education. The lack of drug education received by participants was evident through explicit statements of dissatisfaction such as “I don't remember teachers ever like specifically having a drug talk” and another participant said, “I can't really remember getting any sort of in-depth education in relation to drugs, be that, you know, just stay away from them or harm reduction”.

Insufficient education. Only one participant admitted to getting absolutely no drug education, the remaining two had regular classes but these focused more so on alcohol as one participant mentioned “there wasn't much talk of, like, drug use” along with “it was kind of treated as a free class, so it wasn't very consistent.” The quality of drug education was insufficient as references from one participant alluded to infrequent one-off lectures saying, “we got a talk from an alcoholic” and another remembered, “meetings where people came in from like outside companies”.

The poor quality of drug education was also revealed through a general lack of knowledge with regards to illicit drug use and the risks associated, for example one participant claimed, “I don’t really know like the science behind the long-term effects of drugs and like mental health” and “I didn't really learn about the damages that it does to yourself really”.

Pressure to abstain from drug use from authoritative figures.

Promoting abstinence in an effort to deter was a common thread throughout the interviews. One participant spoke of their school’s reaction to incidents outside of school saying, “they did take it very serious”. This agreed with another participants experience in school, but they felt that their school’s strict abstinence approach was rooted in religion stating, “I feel like the Catholicism has something to do with the fact that, like we weren't actually like actively taught like that drugs are bad or good, it's just like not to do them”. The pressure from parents to avoid illicit drugs was highlighted with comments such as “your parents are always gonna scare you about drugs but they wouldn't… they’d be like don't do this don't do that” and “my parents have always been like ‘don’t touch drugs’”.

The efforts to deter did not seem to be successful with one participant stating, “I remember in the journal it said ‘no drugs and no drinking or smoking,’ I remember that was like a page in the journal that we all like took the piss out of” and another admitting “I'm not sure what anyone could have told me would have dissuaded me”.

Mental health

As a motivator to take illicit drugs. Escaping mental health problems was discussed as a reason for taking illicit drugs with one participant claiming, “a lot of people seem to be suffering, and badly, kind of with their, say, mental health, and I think this is a very easy escape for that” and “say somebody is not doing great, it's very much something that people know they can do which is going to make them feel good”. This was mentioned by another participant in response to why people

would take illicit drugs, “probably an escapism as well, because some people have like, obviously like a lot of people our age would have like mental health issues and things like that” and “cocaine could like lift them up or make them feel better or like, say they take acid they can go into like a different realm”.

As a reason not to take illicit drugs. The detrimental effect of illicit drugs on mental health was evident in all three interviews. One participant drew on personal experience saying, “how you feel about just even the world in general is massively distorted and definitely in a negative way.” Another speculated on the risk of taking illicit drugs, “every week or every like couple of days or something I think that that would definitely have a long-term effect.” The short-term negative effects of illicit drugs were mentioned by another participant who remarked on feelings the day after taking illicit drugs, “you have to prepare to be in bed for at least a day and feel like crap” and referred to “feeling very depressed for a few days after” as a reason not to take them.

The comparison between alcohol and illicit drugs

Focus on alcohol in drug education. Participants recollected that their school drug education focused mainly on alcohol and not on illicit drugs. One participant stated that, “we did, like, a lot on alcohol, but not specifically on drugs, mainly on alcohol.” This point was repeated several times by the participant in order to make this clear to the interviewer, “But it was mainly due to alcohol, it wasn't, it wasn't much on drugs”. Another participant remembered a harm reduction component of their drug education which focused on alcohol consumption, when they said that “I think I remember a harm one, say being drunk, you could like put yourself into like certain situations and things like that.” This participant also stated that there were posters in their school which focused on alcohol, “I remember posters being up in some religion room about not drinking before 18, and I feel like there could have been a drug one but again I'm not too sure”.

The acknowledgement of the dangers of alcohol. Alcohol was described by participants as being as risky as illicit drug use. One participant grouped alcohol and illicit drugs together and claimed that they were both harmful. “I think like illicit drugs and even like binge drinking alcohol are kind of, they're similar enough, as in they’re… they're very f***ing disruptive”. Additionally, another participant had the view that excessive alcohol consumption was riskier than casual illicit drug use, “I'd say people who drink a lot are more at risk for like long term effects than people who do drugs every now and again”. Furthermore, the relationship between alcohol consumption and how this can lead to subsequent illicit drug use was mentioned. One participant claimed that “so first you start drinking and then you move on to this, then move on to that”. And another stated that “we got a talk from an alcoholic in fourth year… I think drugs did come into it because I think he said that, like, the alcoholism led him to using drugs”.

Normalisation

Normalisation was present throughout all three interviews. When asked about their views on how many college students their age had taken illicit drugs, each of the participants claimed that the majority of students had taken illicit drugs. One participant stated that “I would guess that the majority of people my age have tried drugs” and “I'd say maybe a quarter of them do drugs regularly”. While another participant viewed themselves as being in the minority in relation to not taking illicit drugs. “I think I'm like one of the only people out of my friend group who, like, wouldn't do anything”.

When asked on how comfortable they would be around others taking illicit drugs, two of the participants said they would be comfortable, one stating, “yeah, yeah completely” and another, “yeah, more than comfortable”.

Additionally, one participant on being asked why people choose to take illicit drugs stated, “I'd say, because others are. I think that's really the reason”, as well as, “I definitely think there’s a

normalisation of it". They also claimed that there is an illicit drug problem among young people. "It appears to be like a pretty pressing problem among people my age".

Illicit drugs being on a spectrum.

Illicit drugs. The distinctions between various types of illicit drugs were mentioned by each participant in relation to potential risks as well as legalisation. One participant mentioned the diversity of illicit drugs when they stated, "All the different substances, I think there's definitely a scale". All three participants were in favour of the legalisation of marijuana. On being questioned on whether illicit drugs should be legalised, one participant claimed, "for marijuana I'd say yes, recreational and medicinal marijuana should be legal". While another stated, "I'm like a firm believer in that like medicinal cannabis should be legalised". Two participants referred to the legalisation of psychedelics, "even like some of the psychedelic drugs there's probably room for that to be legal" and "but like maybe a few psychedelics like mushrooms or truffles or, maybe not acid, like naturally grown psychedelics I would like to see them legal".

Furthermore, all three participants were in favour of hard drugs being illegal. A participant stated that "I definitely think like hard drugs, like Class A drugs, like heroin and stuff, they obviously need to be illegal". And a second participant claimed, "but for like drugs that are, like, linked to criminal organisations, like cocaine and ketamine and all that, I wouldn't really like to see them legalised".

Additionally, when talking about legalisation of certain illicit drugs, participants referred to the benefits of these drugs. One participant claimed that "there's probably also medical applications for stuff like MDMA" and another when referring to marijuana stated, "I've heard it's really helped cancer patients", as well as, "I think there's like a lot of benefits".

Illicit drug use. A clear dissociation was also made between casual drug use and drug abuse, with the former being considered acceptable and the latter being considered harmful. All three participants referred to the infrequent use of illicit drugs being associated with few risks. One participant stated that, “some people don't abuse them so they might just use them say going out every now and again on a big night out and they might have no adverse problems” and another claimed that, “if you're taking it like for a night out or like a once off, I really don't think it's that bad, in the long run”.

While subsequently each participant referred to regular use of illicit drugs being problematic. One participant after commenting on infrequent illicit drug use claimed that it was not that risky “as long as you don’t abuse it”, and another when referring to problematic illicit drug use claimed that, “other people just get sucked in straight away to that type of lifestyle”.

Additionally, illicit drug use being on a spectrum was commented on by one participant on being asked whether they thought illicit drug use was risky, “I can't, like, give an answer and just like be like yeah or no” and “I think it completely depends on who's taking it and how much and how often”. Another participant referred to the importance of being in control, “as long as you, like, control yourself and don't go overboard I’d say you’d be grand”.

The link between attitude and behaviour

Participants’ attitudes towards illicit drugs appeared to be associated with their behaviour in relation to illicit drugs. One participant’s change of attitude reflected their change in behaviour:

> I have gone down that road pretty far before...being able to kind of see how you were, how I was then and how I am now is enough of a deterrent to stop myself from going down that road again. (Student 1)

This was also observed in a second remark from the participant as they described their attitudes towards being around illicit drug use having changed:

> I personally don't partake in any other kind of harder stuff like that, so kind of the likes of like cocaine or anything like that, anything that kind of end of the spectrum I wouldn't be comfortable being around that anymore, but I would've, say, a few years ago. (Student 1)

This participant also commented on their lack of belief that anything could change people's attitudes or behaviour towards illicit drugs, and specifically mentioned this in relation to males, "but I think a lot of people and I think especially men tend to, like, there's nothing you can say to him that you're going to kind of change them".

Another participant's "trial and error" attitude to estimating price and quantities when using illicit drugs and his comfort in being around illicit drug users is also reflected in his attitude towards the risk, "doesn't really affect your life in general, I wouldn't say it's that risky."

While a different participant stated that they were frightened of illicit drugs, "I feel like it's kind of, like, a value system really. I'm just personally petrified". And later mentioned this as a reason for not taking illicit drugs, "I'd be so scared of, like, how I'd be if I did take them". This participant also referred to their attitude toward illicit drugs being influenced by the media when they stated:

> Movies as well, like I watched Trainspotting I think when I was about 16 and I was just like I'm never, ever touching anything. And I feel like that kind of, like, scared me almost you know what I mean. (Student 2)

Although, later when being asked whether they thought their school drug education had an impact on them, this participant stated that, "I don't know if this school thing yeah if I wasn't told that it was such a bad thing. Like, I don't know if I would have taken them".

Expert interviews

Thematic analysis of the three expert interviews generated seven themes: current secondary school drug education is insufficient (which consisted of six sub-themes – no universal drug education, inaccurate idea of drug education, outdated, insufficient time, lack of social context, a too formal setting, and watered down curriculum), the role of drug education (which consisted of two sub-themes – drug prevention, and harm reduction), the content that should be included in a good drug education (which consisted of three sub-themes – the risks of illicit drug use, why people take drugs, and drug education should be age-appropriate and feature every year), who should deliver the drug education? (which consisted of two sub-themes – teachers, and external parties), similarities between a harm reduction approach to drug education, and drug information (which consisted of six sub-themes - information/education alone won't change behaviour, informing harm reduction strategies, unreliability of online information, importance of social setting, role of subcultures, and increasing complexity of the drug landscape), legal consequences of drug behaviours (which consisted of two sub-themes – drug policy and legal stance), and drug education and gender.

Current secondary school drug education is insufficient.

Both Expert 1 and Expert 2 believed our current drug education is insufficient. The following are the points they touched on regarding this:

No universal drug education. Expert 1 talked about there being a problem of not having a universal drug education:

> This is a problem, the fact that there is no universal drug education in Ireland, in terms of, you know, it's not delivered the same way everywhere, there's a real deficit or shortfall, you know, where you have little bits done here and there, little bits done at different times, you know what I mean? And it's all very localised, so

> depending on, you know, the delivery of it is going to vary an awful lot, it might be delivered very well in some schools, and less well in others, you know what I mean? (Expert 1)

Inaccurate idea of drug education. Expert 1 mentioned how "people's ideas of drug education isn't always accurate", and that "people conflate drug education with drug information, people think drug education is drug prevention", and so he believed "a lot of the time people are delivering drug *information*, and not drug *education*".

Outdated. With regards to the understanding people have about drugs, Expert 1 believed it's outdated:

> People's understanding of drugs is way outdated as far as I'm concerned, like that was one thing that like when I was, you know, actively involved in drug education, most people's drug knowledge was about 20 years out of date. (Expert 1)

He also mentioned that "even the department of education did a review themselves on SPHE materials and found that a lot of them were outdated".

Insufficient time. In terms of how much time students get for drug education, Expert 1 believed it's not enough:

> You look at how much time is actually allocated to substance use education, or drug education schools... it's very little. Substance use education only forms a very small part of the SPHE curriculum, so the reality is young people might get an hour or two per *year*, where they might talk about drug use issues, you know? (Expert 1)

Lack of social context. Expert 1 mentioned how "not talking about the social setting in which drug use occurs" is "one of the major fundamental flaws [of drug education]", and that "drug education should be helping people to navigate those social situations". To further illustrate this

point, telling people “just say no” doesn’t work when you take into account the social context, as he explained with an example:

> You’re out with your friends at the weekend, and it’s your friends offering it, how do you say no to your friends? your best mate? How do you tell him he’s a gobshite [for offering a drug], you know what I mean? That doesn’t happen. (Expert 1)

Too formal setting. Both Expert 1 and Expert 2 believed that the setting in which drug education is delivered should be more casual and not so one-way. According to Expert 1, The formal nature of the school setting and the one-way conversation from teacher to student is a major flaw in drug education:

> I think the setting is part of the problem, like how do you switch, how do you go from talking about, you know, from doing maths or doing Irish, you know? And like I say it's generally one direction, you've got information coming at you, how do you switch from that then into talking about an issue like drug use, and how do you create an environment where you can openly talk about it and safely talk about it, you know?. (Expert 1)

Expert 2 also brought up the one-way communication between teachers and students being a problem, as well as the need for drug education to be more fun for students:

> I think that would be really helpful if we had groups to come in, especially to make it kind of more interesting for the students that they're gonna have a day like when somebody comes in and they'll be off for the day, makes it more fun for them, more likely that the information will go in, rather than me standing at the front of the classroom just droning on, you know? (Expert 2)

Watered down. Finally, Expert 2 also added that secondary school drug education is “quite watered-down”. For example, she mentioned “we would be recommended not to show any

documentaries that would be too explicit for them, when in reality that's probably what they need to see".

The role of school drug education

Drug prevention. For Expert 2 and Expert 3, the goal of drug education is to prevent students from taking drugs. Expert 3 made the distinction that her work is in "more so with drug information" where the role is "giving people credible information", whereas she explained that drug prevention "is sometimes paired with education", and that for students under 18, the role of drug education for the HSE is to "delay the onset of use for as long as possible" as the brains of those under the age of 18 are still developing, and so drug use could therefore "increase the risk of mental health later in life". For Expert 2 as well, the point she referred to throughout the interview is that drug education "has to be on a shock-basis" to turn them off drugs and prevent them from using it.

Harm reduction. Expert 1 mentioned how his "biggest thing is people's expectations around what drug education can do". He disagreed with the expectation of the role of drug education that it should prevent drug use, because he believed "drug education on its own will not change behaviour", and so rather than expecting prevention of drug use, Expert 1's expectation of drug education was "that somebody at the end of it arrives at a new level of understanding", and "to allow somebody to make a more informed choice" so that people make safer choices and reduce the harm of drug use.

The content that should be included in a good drug education.

The risks. Expert 3 believed that "people need to know what the risks are if you use a substance". Likewise, Expert 2 also believed students "should get to see the harsh effects of drug use...". However, while Expert 2 believed these risks or effects should be shown first-hand in its harshest form in order to create "that shock element", Expert 3 brought up the point that "we don't want to scare people about drugs. We don't want to create stigma" in the sense that we don't want

to create a bias in the student's thinking by portraying drug-users very negatively, so that they think "'this person uses drugs this way, but I'm over here and I use drugs this way'". It should therefore be ensured that the drug education is "un-biased" and "delivered in a very fair manner".

Why people use drugs. When listing what a good drug education should include, apart from "non-scare-based tactics", "non-biased drug education" and "risks", Expert 3 also mentioned that drug education should include "why people use drugs". Expert 1 mentioned this too saying that "we need to talk about how they're used in social settings. Why do people use drugs? What do they do for someone in a social context or social setting? That's what we need to get down to".

Age-appropriate/Feature every year. Expert 1 mentioned that "drug education should definitely feature in each age group, so I think you should be doing some in first year, some in second year, some in third year...". Expert 3 also mentioned this in her point that if students are going to use drugs, "they need tailored information for each age group".

Who should deliver the drug education

Teachers. There was an agreement between Expert 1 and Expert 3 on the importance of teachers delivering the drug education to students. Expert 1 pointed towards the evidence in the literature for teachers having the best impact "you know, the literature suggests that teachers are the best place to deliver it, best place because they have regular contact with young people". Likewise, Expert 3 brought up the evidence in support of teachers in the literature, as well as support for parents too:

All the evidence indicates that parents and teachers are very credible sources, so if the information is right, and they have the right structures to have those conversations, those parents and teachers can yield the best rewards for behaviour change. (Expert 3)

It's also worth pointing out Expert 1 mentioning how "teachers aren't trained in drug education" and how "they often felt that young people knew more about drugs than they did", which "kind've

turned them off actually delivering it". Despite this, Expert 3 believed that "although teachers might be afraid of delivering it, they are the best people, and so are parents", and Expert 1 agreed saying "you don't need to be a drug Expert to have a conversation about drugs with people".

Furthermore, both Expert 1 and Expert 3 brought up the new materials that came out in 2019 called 'Know the Score', which is as Expert 3 describes it, "a manual which gives teachers what they need to guide young people through evidence-based education". She further explained that it "gives people good foundational skills that they need before going to third level" and that "it's moving away from dark imagery" which were found to be stigmatising by focus groups. This has only been newly implemented however so Expert 1 doesn't know "how it's fairing out".

External parties. With regards to external parties however, there were mixed opinions among the Experts. Expert 2 believed there should be more involvement of external parties in delivering drug education in secondary schools:

> Yeah I think that probably what needs to happen is there needs to be more, now I know this year this obviously isn't able to happen, but more outside groups or, you know, companies that run drug education that we could get into school, to teach the students and to have it as maybe a one day course where they see the drastic effects. (Expert 2)

Expert 3 suggested however that "once-off talks don't work" and that "school-based programmes are more credible [than outsiders coming in]". While Expert 1 agreed that "if you've got an external party coming and they're only there maybe once a week or whatever, they're going to have less of an impact [than teachers]", he in fact believed that having the best of both worlds would be better "ideally I think, you know, that the ideal drug education programme should have multiple elements to it I suppose really, I don't think it should just be teachers, I think it should include you know external experts too". One reason for this is that external parties have insights into the unique problems students have in their particular area which can be factored into their education:

> An external component can be important, so if there are links established between local drug task forces because they're the ones that are going to know what drug use issues are happening at one particular level. That's where a partnership approach between external and the school can really help to develop or to tailor something that will best meet their needs. (Expert 1)

Similarities between a harm reduction approach to drug education, and drug information

Many of the points Expert 1 made about how drug education should be for second level students, mirrored those of Expert 3's points about drug information for third level students and nightlife populations:

Information/education alone won't change behaviour. Similar to Expert 1's statement that education alone won't change behaviour, and that it should be about enabling students to make more informed choices, Expert 3 also stated that "information sharing will not change behaviour", but rather it will make people more informed about "emerging harms... with an aim to reduce the short-term risk" so that they can make safer decisions.

Informing harm reduction strategies. In terms of informing students on harm reduction strategies, both experts pointed out that not taking drugs is the safest, but believed information for safe use should be given in case they're going to use drugs anyway. Expert 3 made it clear that "it's always safer to not take drugs, but we acknowledge if people are going to use them, they need tailored information for each group". Likewise, when trying to inform students on harm reduction strategies while trying his best not to condone it, Expert 1 would say,

> The best way for you to stay safe is not to take drugs, but if you are going to take a tablet, we think you shouldn't take any tablets, but if you were going to take a tablet, this is how you might stay safe... (Expert 1)

Unreliability of online information. On the point of obtaining information online, Expert 1 said that "now more than ever like we're surrounded by so much misinformation online". Expert 3 agreed and expanded on this point:

> I know people would advocate 'Pill Reports', would advocate using Reddit, and there's limitations to all of these things that I see people saying 'Well this is what worked for me' or 'my pill had this', but, you know, drugs change so quickly that there's copy-cat batches or if your drug is just pressed slightly differently another drug that looks the same the onset of effects can be different, so there's all these different nuances. (Expert 3)

Importance of social setting. Both experts also emphasised taking into account the social context in which drug use takes place. As alluded to in his point about not talking about the social context, Expert 1 placed great importance in the need for drug education to be "real world based off real scenarios". Similarly, Expert 3 mentioned that,

> The issues for the 18-30 year olds kind of stems outside of the universities into nightlife and the mainstream nature of nightlife, and our nightlife is changing, so I think the best way we can engage with them is in nightlife rather than in university. (Expert 3)

Role of subcultures. Regarding the role of subcultures, as both experts have alluded to in their aforementioned points, there should be a tailored approach to take into account the differences in the pattern of drug use both between, and within institutions. Expert 3 talked about this in the context of college students:

> For a lot of students, their cultural connection will be influencing their patterns of use, and it's not the same for every college, like I know from talking to some colleges that have different patterns of use where, you know, their subgroups will

> have different patterns of use within the college. So colleges really need to, I suppose, understand the 'new' mainstream nature of drug use. (Expert 3)

Expert 1 on the other hand talked about this in the context of secondary school:

> I think what would be appropriate would be that it is tailored to the specific, you know, to each individual school you know, you're going to have very different demographics within each school... so I think there needs to be a certain amount of customization. (Expert 1)

Increasing complexity of the drug landscape. Both experts commented on the development and increasing complexity of the drug landscape now compared to years ago. Expert 1 talked about how

> a lot of, you know, new psychoactive substances or novel psychoactive substances, they weren't around you know, 15 years ago really, you know what I mean like there was only maybe one or two, but like the drug landscape is so much more complex now. (Expert 1)

Likewise, Expert 3 also mentioned,

> The issue for third level populations is just so much more diverse now and complex than it was years ago because you have all these other factors like high strength ecstasy, more ecstasy, travel, you know, increasing popularity of festivals. (Expert 3)

Legal consequences of drug behaviours

Drug policy. With regards to third level students, Expert 2 believed there should be a very strict drug policy and that it's best to hit them

> from a legal side of like 'we will come down on you like a ton of bricks if we find out that you are dealing on the campus, or if we find out that you're involved in any way with the sale of drugs. (Expert 2)

She believed that this "would probably be more likely to hit third level students, rather than the damages, because they should know that already", for example, "cigarettes damage you in such an awful way, and people still use them".

Legal stance. For the question of whether drugs should remain illegal, or be decriminalised or legalised, Expert 3 answered "The HSE technically, and my role, is neutral. So, I don't give opinion and we don't give opinion... we're very much neutral"

Expert 1 on the other hand when asked about decriminalisation, answered "I worry about it, to be honest... because of the messages then, that come with it... that 'it's ok, it's safe, it's alright I'll be fine, if it's legal, it must be fine'. However, Expert 1 made it clear that "just because it is legal, doesn't mean it's safe".

Drug education and gender

Based on the evidence of males being at greater risk of using drugs than females, when asked if there was a need for separate drug education for each gender, Expert 1 answered that it would be expecting too much of drug education to tackle that problem:

> What are we expecting drug education to do? And how have we got an unfair expectation? So then, what you're asking for there is a drug education programme that tackles our ideas about gender A drug education that somehow tackles our ideas of what it is to be a man, what it is to be a woman? How can a drug education do that, you know? (Expert 1)

Discussion

Drug Education, Frequency of Use, and Perceived Risks

The present study examined the quality of drug education that Irish third-level students received in secondary school and its association with illicit drug behaviours and attitudes. The three primary hypotheses were (1) there would be a relationship between the standard of a person's education (education quality) and the frequency of their drug use (frequency of use); (2) there would be a relationship between one's education quality and their perceived risk of illicit drug use (perceived risk); (3) there would be a relationship between a person's perceived risk and their frequency of use. The present results do not provide support for the first two hypotheses; however, the third hypothesis is supported.

Firstly, no significant association was found in the quantitative analysis between education quality and either frequency of use or perceived risk. This included non-drug users as well as those who did not receive a drug education. These findings are similar to previous studies which have also found a limited long-term efficacy of drug education on attitudes and behaviours (Brown et al., 2007; Coggans, 2006; Gandhi et al., 2007). This apparent ineffectiveness of drug education observed in the survey data was clearly reflected in the student interviews. The students reported poor overall education quality, noting its infrequent and inconsistent delivery, if it was delivered at all. For a majority of students, the drug education that they did receive was implemented inadequately. It appears that students failed to take the deterrence efforts made by their schools seriously, with one student even noting how it was mocked among their peers. Importantly, these students also admitted a lack of knowledge about the various harmful effects of drugs.

The inadequate standard of second-level drug education was further highlighted in the expert interviews. The experts view the previous SPHE drug education curriculum and materials as outdated, with one expert referring to the review carried out by the DES (2014), which reported poor training

among teachers along with ineffective materials and methods. The subpar level of training among teachers is worrying, given that the EMCDDA (2019a) strongly emphasizes the importance of a teacher who is fully trained in drug education methods to lead the course. Inadequately trained teachers will likely fail in their efforts to deliver the correct information in an appropriate manner, as well as failing to create an atmosphere of trust and understanding whereby the students feel safe and respected discussing topics such as drugs and drug use (McBride, 2003; Midford et al., 2002; Skager, 2007). One expert also highlighted the inconsistency between teachers in implementing drug education, citing the lack of organisation and clear universal guidelines as key factors leading to high variation and poor fidelity in how the education is delivered.

With regards to how the experts involved in teaching believe drug education should be delivered, they stress the importance of avoiding teacher-led, lecture-style methods. Instead, they would like to see more interactive and "fun" methods which create a safe atmosphere for the students to discuss drug use, whilst keeping them interested and engaged. These preferences are encouraging, given that they reflect the recommendations for delivery promoted throughout the literature (EMCDDA, 2019a; Pan & Bai, 2009; Tobler et al., 2000; Tobler & Stratton, 1997). Unfortunately, however, the experts bemoan the fact that these collaborative and engaging approaches are rarely implemented, as illustrated in the current quantitative analysis. The analysis revealed an overwhelming preference for using didactic over interactive teaching methods. Finally, one of the experts highlighted the lack of social context as "one of the major fundamental flaws" of drug education. According to this expert, drug education fails to properly account for the deeply social nature of drug use, neglecting the fact that fostering social skills is a vital component of an effective drug education (DES, 2010; Faggiano et al., 2008; Hallfors & Godette, 2002; Porath-Waller et al., 2010). These findings are further reinforced through the current study's quantitative results, with a remarkably large proportion of students receiving information-based education rather than skill-based education. Overall, there was a clear consensus among students and experts that second-level drug education in Ireland is implemented poorly. The inadequate implementation of drug education,

or lack of, is thought to account for the non-significant effect of drug education on behaviours and attitudes.

However, there was a significant difference found between drug users' and non-drug users' perceived risks regarding drugs, with a medium effect size being found – drug users estimated significantly lower levels of perceived risks in comparison to non-drug users. This is consistent with previous studies examining risk perceptions of cannabis among cannabis users versus non-users (Kilmer et al., 2007; Lopez-Quintero & Neumark, 2010; Pacek et al., 2015). There was also a significant moderate negative correlation observed between perceived risk of drugs and frequency of use. These findings indicate that participants who view drugs as riskier are less likely to take drugs frequently, if at all. Overall, the results provide further support for the existing literature which highlights an inverse correlation between perceived risk and use for substances such as alcohol, marijuana and cocaine (Bachman et al., 1988, 1990; Gonzalez & Haney, 1990; Johnston et al., 2014; Volkow et al., 2014). The student interviews mirrored this trend of how perceived risk influenced behaviour. Each participants' level of fear and perceived risk relating to drugs appeared to reflect the frequency of their own drug use.

As part of a related exploratory analysis, a small negative correlation was also found between perceived risk and risky illicit drug behaviour (risky behaviour) – participants who viewed drugs as riskier were less likely to engage in risky drug behaviours. Thus, risk perception was seen to have an interesting relationship with not only drug-taking frequency, but also generally risky behaviour. The relationship between lower perceived risk and risky behaviour was observed previously by Yeomans-Maldonado and Patrick (2015) in the form of concurrent alcohol and marijuana use. Two of the three student interviewees did exhibit caution in relation to the risk of drugs and didn't indicate any significantly unhealthy drug behaviour, however, the third participant displayed a remarkably relaxed attitude regarding the risks of drug use, for example, describing his own approach to drug use as "trial and error". However, the effect size in this instance was only

small, suggesting that alternative factors, apart from perceived risk, may also influence an individual's propensity to engage in risky behaviour.

The expert interviewees stressed the importance of highlighting the risks of drug use to students. One of the experts, a teacher, believed that scare-tactics and shock-elements were important to increase students' levels of perceived risk. However, another expert expressed that risks should be presented in a manner that does not scare young people or stigmatize drug users. Therefore, there is a clear distinction here between differences in deterrence and harm reduction approaches in risk communication. However, as one student highlighted, it may be ultimately very difficult to change students' perceptions of risk and attitudes regarding drug use.

Interestingly, another expert highlighted a separate issue regarding the effect of decriminalisation/legalisation on risk perception. This expert worried whether decriminalising/legalising drugs may serve to detrimentally reduce young people's risk perceptions of drugs and increase frequent or harmful use. Interestingly, the perceived risks of regular cannabis use in the US decreased significantly between 2002 and 2012, in the same period that regular cannabis use also greatly increased due to legalisation efforts (Pacek et al., 2015). However, it should be noted that this study was correlational in nature and conclusions regarding the effect of legalisation cannot be directly drawn from its results. Contradictory results were seen in the decriminalisation of the possession of all drugs for personal use in Portugal, whereby drug-abuse and drug related harms subsequently decreased (Ferreira, 2017; Hughes & Stevens, 2010). Regardless, the current findings indicate the clear role that perceived risk plays in the frequency and riskiness of substance use.

SES, Gender, and Perceived Prevalence

Aside from these main hypotheses, there were also three secondary hypotheses. The first secondary hypothesis investigated whether SES would have an effect on: education, education quality, drug use, frequency of use, and perceived risk. The next hypothesis examined the relationship between gender and: education, education quality, drug use, frequency of use, and perceived risk.

The final hypothesis examined the possible relationship between perceived prevalence of drug use among peers (perceived prevalence) and: drug use and frequency drug use.

SES was found to have no significant effect on the above variables. This may be in part due to the growing normalisation of drug use currently seen across the young population (Pennay & Measham, 2016), including Irish youth (EMCDDA, 2019b). According to Normalisation Theory (Parker et al., 1998; Pennay & Measham, 2016) lowered perceptions of risk, decreased stigmatisation of illicit substance use, and increased availability and affordability of drugs help to explain this normalisation of drug use. Thus, illicit drug use has become less narrowly associated with socially deviant behaviour and lower SES. The current study's survey results may reflect this trend - the growing normalisation of drug use may be reflected across all socioeconomic backgrounds, thus leading to the observed lack of association between SES and drug behaviours and attitudes. All the student interviewees saw drug use as widespread across the student population.

The expert interviews offer further insight into the decreasing effect of SES on illicit drug use. In particular, they highlight the growing popularity of drug use in the student nightlife setting. This growing popularity can be observed in the increasingly mainstream nature of 'rave culture' and its association with drugs such as ecstasy (Smith & Flatley, 2011). The experts comment on the increasing complexity and diversity of the drug landscape, with novel psychoactive substances and higher strength drugs continuously emerging. Furthermore, one expert comments on how travel and festivals have become such a large part of students' social lives, which offer more novel opportunities for illicit drug use. This expert alludes to the possibility of drug education being administered through nightlife outlets as being a more effective approach than through institutionalised education, as those involved with nightlife events may be better acquainted with the type of drug behaviour students are participating in.

Overall, the current investigation also reveals the difficulty with studying the link between SES and drug use. Firstly, it may be important to define the type of illicit drug in question. For example,

increasing rates of cocaine use have been associated with more affluent groups (Newcomb & Bentler, 1986). Furthermore, measuring and defining SES has proven to be a challenge for previous studies, given that it can be defined based on a number of objective and subjective characteristics (Braveman et al., 2005). As part of an exploratory analysis, the current study also included SUSI-scheme eligible students with the 'access students' as an alternative SES analysis. Interesting findings were obtained regarding drug education. The non-SUSI/access students were more likely to receive a school drug education than SUSI/access students. However, SUSI/access students that do report receiving drug education reported a significantly better education quality than non-SUSI/access students, although this was backed up by only a small effect size.

As opposed to SES, gender was found to have a significant effect on both drug behaviour and perceived risk. Females view drugs as riskier, with the medium effect size indicating a considerable difference in risk perception. Furthermore, males were over four times more likely to have taken drugs than females, while females take drugs less frequently with a small effect size being observed. This finding is thoroughly backed by previous research which has found that males take significantly more drugs than females in the past year or throughout their lifetime (Back et al., 2010; Cotto et al., 2010). Furthermore, it has been shown that male students are more likely to report their drug use than female students (McCabe et al., 2007), and women report higher perceived risks towards drugs than men (Pacek et al., 2015; Spigner et al., 1993). Some have hypothesised that this caution observed in women is a result of the heightened vulnerability that this risky behaviour places them in, especially in regard to date-rape drugs (Miller and Marshall, 1987; Robbins, 1989; Spitzhoff, 1986)

This difference in drug use and perceived risk was touched upon in the student and expert interviews. For example, the differences between men and women may also be a consequence of men being more stubborn when it comes to assimilating knowledge regarding the risks of drugs and incorporating this knowledge into their own behaviours and attitudes. This explanation was alluded to by a student in the interviews who commented on the obstinate nature of men when their attitudes

are challenged. With regards to accommodating for the effect of gender in drug education, one expert commented on how splitting education to suit this difference is not within the scope of drug education, as it may be quite complicated to concurrently deal with both drug problems and the complex idea of what it is to be male or female.

Finally, an interesting association between perceived prevalence and drug use was also observed. Higher perceived prevalence appears to be related to whether an individual has tried drugs before, although the effect sizes observed were small. In addition, a small positive correlation was observed between perceived prevalence and frequency of use. Therefore, overall, participants who viewed drug use as more prevalent among their fellow college students were more likely to also use drugs themselves. Although it is of course important to keep in mind that the direction of causation here is unclear, it is possible that perceived prevalence may potentially influence drug use. This is supported by studies such as that by Simons-Morton and his associates (2001) which demonstrated how adolescents' alcohol and cigarette use was positively correlated with the number of their friends engaging in these behaviours. Furthermore, in combination with attitudes, subjective norms (which are inherently influenced by perceived prevalence) have been found to strongly influence drug and alcohol use (Laflin et al., 1994; Morrison et al., 2002). One expert commented on this particularly strong social aspect of drug use, noting how refusing drugs from one's peers is particularly challenging for young people. Furthermore, another expert noted how particular subcultures may have higher rates of drug use, thus evoking again the idea of peer influence and the social context of drug use.

In the student interviews, there was a clear consensus among all interviewees that drug use is quite widespread across most of their peers or fellow students, with all students estimating that the majority of students have either tried drugs before or regularly take drugs. One student interviewee even mentioned that they felt like the only person in their peer group who would not use drugs. Two of the three students said they would be completely comfortable with others taking drugs around

them, while the other said they would no longer be comfortable with this behaviour, though they would have in the past. This perception of widespread drug use is not entirely founded on misperception – the current study's survey results reveal that a large majority of third-level students have taken illicit drugs at least once in their lifetime.

Two of the experts also made multiple references to the increasing popularity and normalisation of drugs. The Normalisation Theory (Parker et al., 1998) of drug use, as previously mentioned, may help to explain this widespread prevalence of drug use (Pennay & Measham, 2016). Therefore, given that perceived prevalence is associated with drug use and frequency of use, in a society in which drugs are becoming increasingly normalised, it may be of paramount importance that any effective second-level drug education addresses this issue. To do so, it must be socio-culturally relevant to its students. This follows from McBride's (2003) review that the inclusion of social norms theories in drug education programmes leads to more effective outcomes. As previous studies have outlined, this may involve addressing the needs of a specific population (Hallfors & Godette, 2002; Nation et al., 2003) as well as challenging harmful normative beliefs and values (Dempsey et al., 2018; Perkins & Berkowitz, 1986).

Exploratory Results - Harm Reduction/Deterrence and Binge Drinking

One of the primary distinctions in the delivery of drug education is that of harm reduction versus deterrence techniques. The current study showed that a vast majority of students' drug education was from a persuasion/deterrence perspective. This lack of a harm reduction approach was evident in the student interviews, with all students struggling to recall being taught anything resembling harm reduction. Instead, they noted pressure to abstain from illicit drug use as a common theme throughout their school education. One of the expert interviewees, a teacher, reflected this pervasive deterrence perspective, placing a lot of emphasis on scare tactics and shock-based approaches. This perspective is contrary to the current evidence and guidelines regarding drug education, which advise against the use of scare tactics (DES, 2010; EMCDDA, 2019a; Meehan,

2017). As one student recalled, these deterrence efforts were not taken seriously among their fellow students.

The only harm reduction efforts ultimately recalled in the student interviews are seen when one participant vaguely remembers a harm reduction method being used for alcohol consumption. This recollection highlights the somewhat counterintuitive practice of implementing harm reduction methods for alcohol but not for drugs, which can be highly addictive and destructive for mental and physical health. Encouragingly, two of the interviewees showed some informed awareness of the mental health effects, both short and long term, of illicit drug use. The other participant, however, admitted a general lack of knowledge about the risks of drug use - “I don’t really know, like, the science behind the long-term effects of drugs and like mental health”.

Interestingly, the contradictions and disagreements among the experts regarding the aim of drug education, primarily harm reduction versus deterrence, raises the issue highlighted by authors such as Darcy (2018) and Kiely and Egan (2000). The confusion between whether drug education is intended to prevent drug use or, instead, educate and provide skills to reduce the harm of drugs is evident throughout the expert interviews. Expert 1 repeatedly alludes to this confusion that exists in many areas of drug education stating that “people conflate drug education with drug information, people think drug education is drug prevention”. However, while advocating strongly for an educational harm reduction-based perspective, even Expert 1 acknowledges that deterrence efforts should be incorporated into education alongside the fostering of new understandings. Expert 3 adopts a similar position, strongly favouring harm reduction perspectives to education yet attempting to “delay the onset of use for as long as possible”. Importantly, they note how deterrence methods that may delay the onset of drug use are favourable, given the potential health consequences associated with underage drug use. Thus, Expert 1 and Expert 3 ultimately advocate for a mixture of a deterrence and harm reduction-based methods. In contrast, Expert 2, the teacher, represents a largely deterrence-based approach. Overall, these inconsistencies between the experts'

views of what drug education should aim to achieve reveal the deeply complex nature of drug education and its appropriate delivery. Furthermore, this inconsistency may reflect the previously aforementioned disparities that exist between institutions such as the Irish healthcare system and the Irish legal system in their attitudes towards drug use.

However, although harm reduction based education techniques aim to decrease the amount of harm done to individuals and communities by drugs, there was no significant difference in risky behaviour observed between students who received harm reduction education and those who received persuasion-based techniques. This non-significant finding may be due to the fact that students didn't receive a fully concise harm reduction or abstinence-based education, rather, their drug education seemed to resemble a disjointed mixture of deterrence/harm reduction approaches. Most survey participants who did receive a harm reduction education only received this education in one-off seminars, which are ultimately ineffective methods of education (EMCDDA, 2019a; Petrosino, 2003; Porath-Waller et al., 2010).

However, two of the experts mention the new 'Know the Score' drug education programme that is to be included in the second-level SPHE curriculum, as part of the government's most recent set of harm reduction policy guidelines entitled "Reducing Harm Supporting Recovery" (Department of Health, 2017). According to the experts, this programme is far more evidence based and harm reduction focussed than previous programmes, favouring imparting important foundational skills, as opposed to scare tactics and dark imagery. However, the outcome of this programme is yet to be seen, as it was introduced in late 2019, and its implementation has likely been majorly hindered by the closure of schools due to COVID-19. Nonetheless, future research investigating the effectiveness of this new programme, examining its effects on drug behaviours and attitudes, will provide an opportunity to compare the state of drug education to date with that of the new programme. This may provide a useful comparison and measure of its efficacy.

Finally, there was a very strong relationship observed between binge drinking and illicit drug use. Binge drinkers were over ten times more likely to have taken illicit drugs in the past than non-binge drinkers. The student interviewees showed an informed awareness regarding the harms of alcohol, especially binge drinking, with one participant even saying, “I'd say people who drink a lot are more at risk for, like, long term effects than people who do drugs every now and again”. This is interesting, given that the majority of drug education that the interviewees did report was to do with alcohol consumption. Despite this awareness, the data still reflects a worrying association between binge drinking and drug use. This association may be a result of drug education not discussing binge drinking in tandem with drug consumption.

Overall Findings and Important Themes

For the students who did receive a drug education, almost half of them rated the quality as being very low and over half of the students rated their satisfaction with their drug education as low or very low. These results are supported by the Department of Education and Skills’ (2014) review which highlighted the incompetence of SPHE teachers and the outdated materials and methods they employed for drug education. The average age at which students in the present study received their drug education was fifteen, despite research stressing the importance of starting drug education either at an early age (SAMHSA, 2020) or at least around the time of the onset of drug use (Porath-Waller et al., 2010). Furthermore, interventions which focus on the growth of the student’s personal and social skills have been shown to be most beneficial (DES, 2010; Faggiano et al., 2008 Hallfors & Goodette, 2002; Porath-Waller et al., 2010). However, the results of this study showed that the vast majority of drug education classes focused on deterrence over skill-based strategies. Only around a third of these classes were interactive, despite research indicating that interactive, skill-based drug educations were the most effective (Faggiano et al., 2008; Pan and Bai, 2009; Tobler et al., 1999). Therefore, the current study demonstrates that drug education is being delivered too late to students, and that when it is delivered it is done so in highly disorganized and inappropriate manner.

However, perhaps the most remarkable finding from this investigation was the large majority of participants that either didn't receive any drug education at all or only received a one-off seminar. This worrying outcome highlights the lack of adequate drug education provided to Irish second-level students. One expert interviewee commented on this infrequent delivery of drug education, stating how there is not near enough consistency in how drug education is delivered. Implementation varies by school, with "little bits" delivered sporadically, if at all. In particular, they specify how the lack of time allocated to drug education on the SPHE curriculum results in drug education being largely neglected. The low frequency of drug education was clearly reflected in the student interviews. Of the three students, one of them didn't receive any drug education in secondary school. The other two received infrequent, inconsistent, and poorly structured classes. These findings, alongside the quantitative data, are disconcerting. As previously highlighted, effective drug education needs to be continuously provided throughout the year (Petrosino, 2003), with programmes consisting of fifteen or more weekly sessions appearing to be most effective (EMCDDA, 2019a; Porath-Waller et al., 2010). This is in stark contrast to the current findings which show that almost half of students only had a one-off seminar for drug education, with another third of students receiving no drug education at all. Therefore, it is unsurprising that no association was found between education quality and drug behaviours and attitudes, given that even those who may have received a better standard of drug education likely received this education only sporadically and infrequently.

Limitations

One obvious limitation of this study was the use of the cross-sectional survey method. Cross-sectional surveys only provide a snapshot of the period in which they are administered, and therefore do not allow for changes that may occur due to confounding extraneous variables (Coughlan et al., 2009). In particular, the current study took place during the COVID-19 pandemic and national lockdown, and thus students' levels of drug use have been affected by the unusual

circumstances accompanying the lockdown. The current survey did ask about any change in both drug and alcohol use during the pandemic, capturing a clear decrease in drug and alcohol use amongst students. However, a longitudinal study design including pre-COVID measurements of drug use may have captured these changes with greater precision. Unfortunately, this was beyond the scope of the current study. Thus, the survey's measurements of drug use may be less representative of regular drug use patterns. An additional factor which may have affected the precision of our survey in measuring drug use is the stigmatisation of drug use in society and the fact that participants may have skewed their answers to reflect more socially desirable drug behaviour and attitudes (Paulhus & Vazire, 2007).

It is also important to note that this study employed a correlational design when analysing the relationship between certain variables (e.g. drug education quality, perceived risk, frequency of use). Correlational designs are quite useful for examining relationships, especially in cases where manipulating the variables of interest can be very difficult or even impossible (Curtis et al., 2016; Stanovich, 2014). In the present study, it would have been very difficult to create an experimental design in which drug education is directly manipulated among groups of students, given the scale required for such a study. Regardless, it is important to bear in mind that correlational studies are limited in their ability to reveal much beyond relationships between variables. Correlation does not equate to, or imply causation (Asamoah, 2014; Curtis et al., 2016). Therefore, correlational study does not imply that a change in one variable would lead to a change in another (Plichta & Kelvin, 2011). However, the primary function of the correlational techniques used in this study is to provide a portrayal of the relationships that do exist - for example, between perceived prevalence and frequency of drug use. Future studies may utilise these findings to further investigate these phenomena in further detail using more experimental designs, or to inform drug education guidelines.

In addition, both the education and the attitudes sections of the survey were constructed by the researchers. Although these tools were constructed based on previous literature and theory, as well as using components from other pre-existing scales, there is still a possibility that levels of validity and reliability may have negatively affected the results (Umbach, 2005). While the clarity of survey items and their face validity were assessed using a pilot study, more advanced measures of validity – as content validity (Lawshe, 1975), construct validity (Cronbach & Meehl, 1955), or concurrent validity (Bryant, 2000) – were not implemented in the construction of the education or attitudes section. However, the items included in the attitudes section had a high level of face validity, as they simply measured perceived risks of drug use. On the other hand, the education scores were quite difficult to assess for validity or reliability, given that they were constructed entirely on the basis of theory and previous research, since there are no pre-existing studies assessing drug education quality via survey methods.

A methodological issue which may have arisen from the survey design was the measurement of SES. As previously highlighted, TAP and HEAR students – access students – were regarded as lower-SES in the data analysis. Using this metric as a measure of SES did not yield meaningful results. However, when SUSI-eligible students were included in the exploratory analysis, interesting results were found in relation to the quality of drug education received. This situation highlights an issue which is regularly encountered when attempting to gauge SES via survey methods. It is often difficult to objectively define and adequately capture one's level of SES (Daniel et al., 2009). Different subjective and objective features of an individual and their environment are frequently used, varying from one study to another (Braveman et al., 2005).

This difficulty in objectively defining and measuring SES was encountered in the present study. Students who are eligible for Access programmes provide an indication of lower socioeconomic status, while the SUSI scheme provides college funding for students who need it, encompassing both lower-SES groups as well as some middle-class individuals. These schemes

however are based upon arbitrary thresholds with potential loopholes for applicants, calling into question the potential validity of Access and SUSI schemes as valid measures of SES. Furthermore, the measures of SES may not have provided a fully accurate representation of lower-SES. All members of the lower-SES group were current third-level students. Thus, this sample may have represented higher achieving members of the lower-SES population, by academic standards. Mazur and her colleagues (2016) showed that expectations of academic achievement act as protective factors against substance abuse and deviant behaviours in young people. Therefore, the current study may not have accurately represented the true lower-SES population.

A further variable which presented some difficulty during data analysis was gender. As stated above, females view drugs as riskier, are less likely to have taken drugs, and those that have taken drugs take them less often. Given the strong effect of gender, it may have been useful to control in performing the analyses for the three primary hypotheses. Unfortunately, this was too complex and out of the scope of the current study, due to the nonparametric nature of the variables under investigation. Future research may benefit from including gender as a covariate in similar investigations.

A final relevant factor which could also not be controlled for, nor included in the study, was genetic influence. Genes may have a substantial influence on substance use and abuse. This has been demonstrated by twin studies (e.g. Kendler et al., 2000; Verweij et al., 2010) which consistently find a significant influence of genetics in the variance of problematic substance use. Candidate gene studies, such as those by Cao et al. (2013) and Vandenbergh et al. (1997), have highlighted a number of genes which may be implicated in a predisposition towards substance abuse. It was far beyond the scope of the current study to screen individuals for these particular substance abuse related genes. Further complex gene-environment interactions, which may be involved in the development of substance abuse (Ducci et al., 2008; Enoch et al., 2010), could also not be accounted for.

Conclusion

The current study found no significant relationship between drug education and illicit drug behaviours and attitudes. However, perceived risks of illicit drug use were found to influence drug-taking frequency and risky drug-taking behaviour. However, gender had a significant effect on both illicit drug use and perceived risks in that females view illicit drug use as riskier and are less likely than males to have taken illicit drugs. Furthermore, perceived prevalence of illicit drug use is associated with whether one has taken illicit drugs before, as well as frequency of drug use. Interestingly, a strong association was also observed between binge drinking and illicit drug use.

Overall, the drug education provided to second-level students in Ireland to date has been infrequent, inconsistent, and even non-existent for many students. The drug education that has been delivered to students is of poor quality and fails to meet the standards of Ireland's allegedly harm reductionist perspective. Future research may focus on the newly developed 'Know the Score' programme, as it is implemented across Irish secondary schools, examining its effect on drug behaviours and attitudes, and could compare these results to that of the current study.

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Appendix A

Recruitment Poster

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Drug Education Among Third-Level Students and Its Relationship to Subsequent Illicit Drug Behaviours and Attitudes

We are interested in investigating how drug education influences third level university students drug attitudes and drug behaviors.

We are looking for volunteers to complete our 15-minute online survey which can be found here: https://tcdecon.qualtrics.com/jfe/form/SV_3a4D93qMzT3HikKAll you need to do is follow the link and complete the survey!

Can I take part?

Participants must:

- *Be between 18 and 25 years of age*
- *Have received an Irish second level education*
- *Currently be a student in an Irish third-level university*

TCD psychology students will be able to earn 1 research credit in return for taking part.

If you have any questions, please feel free to email us at:
drugedgp@gmail.com

Appendix B

Survey Questions

Drug Education

Q1. Did you receive any drug education as part of your secondary school education?

- No, never
- A one-off seminar
- Yearly
- Multiple sessions throughout the year

Q2. At what age did you first receive your drug education?

- 12 or below
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 19+

Q3. Please tick if any of the following were involved in the delivering of your drug education:

- School teachers [+1][1]
- Drug education experts [+1]
- Outside professional (e.g., police, medical professionals, etc) [-1][2]
- Former drug users [-1]

Q4. Did all of these teachers appear to be adequately prepared/trained to deliver this drug education?

- Yes [+1]
- No [-1]

Q5. Which of the following best describes your drug education?

[1] A point was added towards the overall drug education quality score for answers that were deemed effective for drug education according to past literature.
[2] A point was deducted from the overall drug education quality score for answers that were deemed ineffective for drug education according to past literature.

- My drug education involved some or all of the following skills: decision making, communication, problem solving skills, personal relationship skills, self-efficacy and assertiveness as well as providing information about drugs and drug use [+1]
- My drug education focused solely on the delivery of information about drugs and drug-use [-1]

Q6. Which of the following best describes your drug education?

- My drug education focused more on safe practices to help reduce the harm associated with drugs/drug [+1]
- My drug education focused more on persuading me not to take drugs [-1]

Q7. Which of the following best describes your drug education?

- My drug education included interactive student-teacher engagements including group work and collaborative learning [+1]
- My drug education was only delivered in a lecture style manner [-1]

Q8. Did your drug education include the dangers of alcohol?

- Yes [+1]
- No [-1]

Q9. Which of the following best describes your drug education?

- My drug education focused mostly on alcohol
- My drug education focused mostly on illicit drugs
- My drug education focused on both equally

Q10. Did your drug education involve focus on the mental health consequences of drug use?

- Yes [+1]
- No [-1]

Q11. Overall, how do you feel about your drug education in terms of the following?

- The quality of your drug education
  - Very low / Low / Neutral / High / Very high
- Your satisfaction with your drug education
  - Very low / Low / Neutral / High / Very high

Q12. Outside of your school education, did you receive any drug education or information about drug use from either of the following:

- Peers or friends
- Parents or siblings
- Community clubs or organizations (e.g. Youth clubs, religious groups, sports teams, etc.)

- Harm reduction campaigns (e.g. Student union campaigns, government campaigns, nightclub campaigns)
- Movies and TV shows
- Electronic media (e.g. Podcasts, social media, etc.)
- None
- Other (Please Specify Below)

Drug attitudes

Please answer the following questions with regard to **illicit drug use** and alcohol. Illicit drug use refers to the use of illegal drugs or the non-medical use of prescription drugs.

Q1. How much do you think people risk physical or mental health if they **experiment** with the following drugs? (Taking them once or twice):

- **Cannabis** (marijuana, hash, etc.)
  - No Risk [0][3] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Stimulants** (cocaine, speed, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Prescription stimulants for non-medical use** (Ritalin, study drugs, diet pills, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **MDMA** (ecstasy/Mandy/yokes)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Inhalants** (nitrous oxide, poppers, gas, balloons, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Sedatives or sleeping pills** (Benzo's [blueys], Valium, Xanax, GHB, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Psychedelic drugs** (LSD [acid], mushrooms, truffles, 2CB, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Ketamine** (ket, K)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Opioids** (heroin, prescription opioids for non-medical use, etc.)

[3] The number of points added to the overall perceived risk of drugs score when answer was chosen. Points were added from each illicit drug from in question 1 and 2 to calculate the overall perceived risk of drugs score.

- No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say

Q2. How much do you think people risk physical or mental health if they use the following drugs **regularly?**

- **Cannabis** (marijuana, hash, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Stimulants** (cocaine, speed, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Prescription stimulants for non-medical use** (Ritalin, study drugs, diet pills, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **MDMA** (ecstasy/Mandy/yokes)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Inhalants** (nitrous oxide, poppers, gas, balloons, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Sedatives or sleeping pills** (Benzo's [blueys], Valium, Xanax, GHB, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Psychedelic drugs** (LSD [acid], mushrooms, truffles, 2CB, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Ketamine** (ket, K)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say
- **Opioids** (heroin, prescription opioids for non-medical use, etc.)
  - No Risk [0] / Slight Risk [1] / Moderate Risk [2]/ Great Risk [3] / Drug unfamiliar, Can't Say

Q3. Do you consider taking any of the drugs listed above in combination with each other risky?

- No risk
- Slight risk
- Moderate risk
- Great risk

Q4. Do you consider taking any of the drugs listed above in combination with alcohol risky?

- No risk
- Slight risk
- Moderate risk
- Great risk

Q5. What is your stance on the legal status of marijuana?

- Should be illegal
- Should be decriminalised (remains black-market supply, but users cannot be convicted for personal possession)
- Should be legalized (no criminal charges for the supply and use of marijuana)

Q6. What is your stance on the legal status of 'hard' drugs (e.g. MDMA, heroin, magic mushrooms)?

- Should be illegal
- Should be decriminalised (remains black-market supply, but users cannot be convicted for personal possession)
- Should be legalized (no criminal charges for the supply and use of marijuana)
- My stance differs depending on the hard drug in question

Q7. How widespread do you consider illicit drug use to be among college students?

- (Sliding scale, 0-100 percentage of illicit drug users)

Drug Behaviour

Q1. Has your alcohol use increased or decreased since the beginning of the pandemic?

- Increased a lot
- Increased a bit
- Stayed the same
- Decreased a bit
- Decreased a lot

Q2. In your lifetime, have you ever engaged in illicit drug use?

- Yes
- No

Q3. Has your illicit drug use increased or decreased since the beginning of the pandemic?

- Increased a lot
- Increased a bit
- Stayed the same
- Decreased a bit
- Decreased a lot

Q4. In your LIFETIME, which of the following substances have you ever used?

- **Cannabis** (marijuana, hash, etc.)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily
- **Stimulants** (cocaine, speed, etc.)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily
- **Prescription stimulants for non-medical use** (Ritalin, study drugs, diet pills, etc.)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily
- **MDMA** (ecstasy/Mandy/yokes)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily
- **Inhalants** (nitrous oxide, poppers, gas, balloons, etc.)

- Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily

· **Sedatives or sleeping pills** (Benzo's [blueys], Valium, Xanax, GHB, etc.)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily

· **Psychedelic drugs** (LSD [acid], mushrooms, truffles, 2CB, etc.)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily

· **Ketamine** (ket, K)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily

· **Opioids** (heroin, prescription opioids for non-medical use, etc.)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily

Q5. In the past year, how often have you used the following?

· Alcohol (For men, 5 or more drinks in a day/For women, 4 or more drinks in a day)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily

· Nicotine Products (Tobacco/Vaping)
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily

· Illegal Drugs OR Prescription Drugs for Non-Medical Reasons
  - Never / Once or Twice / Monthly/Every few months / Weekly / Daily or Almost Daily

Q6. <u>In the past year</u>, how often have you used these substances?

· **Cannabis** (marijuana, hash, etc.)
  - Never [0][4] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Stimulants** (cocaine, speed, etc.)
  - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

[4] The number of points added towards the overall drug frequency score and overall risky drug behaviour score when answer was chosen. Points from each illicit drug in question 6 were added together to calculate the overall drug frequency score, and points from each illicit drug in questions 6, 7, 8, 9, 10 and 11 were added together to calculate the overall risky drug behaviour score.

- **Prescription stimulants for non-medical use** (Ritalin, study drugs, diet pills, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **MDMA** (ecstasy/Mandy/yokes)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Inhalants** (nitrous oxide, poppers, gas, balloons, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Sedatives or sleeping pills** (Benzo's [blueys], Valium, Xanax, GHB, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Psychedelic drugs** (LSD [acid], mushrooms, truffles, 2CB, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Ketamine** (ket, K)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Opioids** (heroin, prescription opioids for non-medical use, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

Q7. <u>In the past year,</u> how often have you had a strong desire or urge to use these substances?

- **Cannabis** (marijuana, hash, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Stimulants** (cocaine, speed, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Prescription stimulants for non-medical use** (Ritalin, study drugs, diet pills, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **MDMA** (ecstasy/Mandy/yokes)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Inhalants** (nitrous oxide, poppers, gas, balloons, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Sedatives or sleeping pills** (Benzo's [blueys], Valium, Xanax, GHB, etc.)

- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Psychedelic drugs** (LSD [acid], mushrooms, truffles, 2CB, etc.)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Ketamine** (ket, K)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Opioids** (heroin, prescription opioids for non-medical use, etc.)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

Q8. <u>During the past year</u>, how often has your use of these substances led to health, social, legal or financial problems?

- **Cannabis** (marijuana, hash, etc.)
  - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Stimulants** (cocaine, speed, etc.)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Prescription stimulants for non-medical use** (Ritalin, study drugs, diet pills, etc.)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **MDMA** (ecstasy/Mandy/yokes)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Inhalants** (nitrous oxide, poppers, gas, balloons, etc.)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Sedatives or sleeping pills** (Benzo's [blueys], Valium, Xanax, GHB, etc.)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Psychedelic drugs** (LSD [acid], mushrooms, truffles, 2CB, etc.)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

· **Ketamine** (ket, K)
- Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

- **Opioids** (heroin, prescription opioids for non-medical use, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

Q9. During the past year, how often have you failed to do what was normally expected of you because of your use of these substances?

- **Cannabis** (marijuana, hash, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]
- **Stimulants** (cocaine, speed, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]
- **Prescription stimulants for non-medical use** (Ritalin, study drugs, diet pills, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]
- **MDMA** (ecstasy/Mandy/yokes)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]
- **Inhalants** (nitrous oxide, poppers, gas, balloons, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]
- **Sedatives or sleeping pills** (Benzo's [blueys], Valium, Xanax, GHB, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]
- **Psychedelic drugs** (LSD [acid], mushrooms, truffles, 2CB, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]
- **Ketamine** (ket, K)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]
- **Opioids** (heroin, prescription opioids for non-medical use, etc.)
    - Never [0] / Once or Twice [2] / Monthly/Every few months [3] / Weekly [4] / Daily or Almost Daily [6]

Q10. Has a friend or relative or anyone else ever expressed concern about your use of these substances?

- **Cannabis** (marijuana, hash, etc.)
    - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]
- **Stimulants** (cocaine, speed, etc.)

- No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Prescription stimulants for non-medical use** (Ritalin, study drugs, diet pills, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **MDMA** (ecstasy/Mandy/yokes)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Inhalants** (nitrous oxide, poppers, gas, balloons, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Sedatives or sleeping pills** (Benzo's [blueys], Valium, Xanax, GHB, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Psychedelic drugs** (LSD [acid], mushrooms, truffles, 2CB, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Ketamine** (ket, K)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Opioids** (heroin, prescription opioids for non-medical use, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

Q11. Have you ever tried and failed to control, cut down or stop using these substances?

- **Cannabis** (marijuana, hash, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Stimulants** (cocaine, speed, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Prescription stimulants for non-medical use** (Ritalin, study drugs, diet pills, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **MDMA** (ecstasy/Mandy/yokes)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Inhalants** (nitrous oxide, poppers, gas, balloons, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Sedatives or sleeping pills** (Benzo's [blueys], Valium, Xanax, GHB, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Psychedelic drugs** (LSD [acid], mushrooms, truffles, 2CB, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Ketamine** (ket, K)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

- **Opioids** (heroin, prescription opioids for non-medical use, etc.)
  - No, Never [0] / Yes, but not in the past year [3] / Yes, in the past year [6]

Q12. Do you take illegal drugs in combination with other illegal drugs, alcohol and/or prescription drugs (recreationally)?

- Never
- Sometimes
- Mostly
- Always

Q13. Are you aware of signs of overdose in the illegal drugs you take?

- Yes
- No

Appendix C

Online Information Sheet

Drug Education Among Third-Level Students and Its Relationship to Subsequent Illicit Drug Behaviours and Attitudes

You are being invited to take part in an online research study that is being done by third year psychology students at Trinity College Dublin. Before you decide whether or not you wish to take part, please read this information sheet carefully. You may email the researchers at drugedgp@gmail.com if you have any questions.

This study is being completed as requirements for the researchers' undergraduate degrees in Psychology. We are conducting this study to establish the standard of drug education that third-level students have received and the relationship this might have on their subsequent illicit drug-taking behaviours and attitudes. You have been invited to take part in this study because you are a third-level undergraduate student who has received a second-level Irish education.

Participation in this study is voluntary. You can withdraw from participating at any time during the survey without giving a reason and withdrawal will carry no consequences. However, after the survey is submitted you will no longer be able to withdraw your data as it will not be possible to link any data you have provided back to you. You will not be contacted further by the researchers.

If you agree to take part in this survey you will also be asked to provide non-identifying information such as your age, gender, ethnicity and socio-economic status. You will be then asked to complete a series of questions exploring your standard of drug education, your attitudes towards drugs, and your drug-taking habits. This should take about 15 minutes to complete.

Once you have submitted the survey, data will be stored anonymously in a password protected file on the researcher's computer which is also password protected. Any data collected will only be used as part of this study and there will not be any third-party transfer of the data. Under the Freedom of Information Act (2014), you can have access to any information we store about you, if requested. The data will be destroyed after the research has been submitted. The risk of breach of confidentiality is considered very low.

However, confidentiality may be breached in circumstances in which;

1. The research team has a strong belief or evidence exists that there is a serious risk of harm or danger to either the participant or another individual. This may relate to issues surrounding physical, emotional and/or sexual abuse, concerns for child protection, rape, self-harm, suicidal intent or criminal activity.
2. Disclosure is required as part of a legal process or Garda investigation. In such instances, information may be disclosed to significant others or appropriate third parties without permission being sought. Where possible, a full explanation will be given to the participant regarding the necessary procedures and also the intended actions that may need to be taken.

Taking part in this study will not directly benefit you. The results may help inform the direction and development of future studies. Through your participation you are helping to advance the field of psychological research. Furthermore, you will help drug education organisations in providing drug education for third-level college students and advising drug policies for colleges.

You may experience distress answering some of the questions as they relate to sensitive topics regarding your drug use. The questions however will not be overly emotive and with regards to mental health or drug problems, support groups and help lines will be provided in this information sheet and the debriefing form if you require support. There is also a small risk you may feel encouraged to engage in illicit drug behaviours. The survey questions do not condone the use of illegal drugs, and the purpose is to obtain factual information without leading you into engaging in such behaviours. In the case of any psychological distress you may have while answering the survey questions, you can contact a psychological support service at Student counselling support - student-counselling@tcd.ie, 01-8961407.

The results of the study will not be reported in medical/scientific journals but will be disclosed in a final thesis and presentation. No information which reveals your identity will be disclosed. If you wish to be informed of results, contact the researchers at drugedgp@gmail.com.

Your data will only be accessed by the principal and co-investigators (Andrew Breen, Fionn Byrne, Daniel Craig, Maeve Kelly, Niall Larkin, Cliodhna MacAteer, Roisin Moran, Alan Rogers and Avi Shandilya) as well as our supervisors, Dr Sam Cromie and Dr Siobhán Corrigan. Data will not leave the site, Ireland or the EU

A Risk Assessment of the data protection implications of the research and a Data Protection Impact Assessment was carried out. The investigators have been informed about data protection law by the supervisors, who have trained in data protection law. All individuals with access to the data are bound by a contractual code of secrecy which would result in disciplinary action if they make publicly available any of the participants data.

Approval was granted by School of Psychology Research Ethics Committee (SPREC), psych.ethics@tcd.ie on [Approval pending]. The researchers are not receiving any remuneration for their work, nor will the research be used for any commercial purposes. There is no payment for taking part in the study, nor is there any cost for agreeing to take part. Permission is only being given for this study and does not extend to future research.

If you have any concerns or questions, you can contact the lead researcher, Andrew Breen, or their supervisors Dr Siobhan Corrigan and Dr Sam Cromie -

By email: drugedgp@gmail.com
By Post: School of Psychology, Áras an Phiarsaigh, Trinity College Dublin, Dublin 2.
By Phone: 01-896 1886

By clicking “I agree” below you are indicating that you are at least 18 years old, have read and understood this consent form and agree to participate in this research study. Please print a copy of this page for your records.

I Agree | I Do Not Agree

Appendix D

Online Debriefing Sheet

Drug Education Among Third-Level Students and Its Relationship to Subsequent Illicit Drug Behaviours and Attitudes

Thank you for taking part in the study. This sheet is intended to serve as a reminder that participation in this research is voluntary and you may decide to withdraw at any moment without explanation, penalty or consequence up to such a point that you submit your replies below. If you decide not to submit your replies all data collected from you will be destroyed and not included in this analysis.

As explained in the information sheet, any information you provide is confidential and anonymous. As a reminder, please note that while the data will be confidential to our research this confidentiality can only be protected within the limitations of the law. That is to say, for example, that it may be possible for data to be requested legally (subpoenaed) or under a freedom of information claim. In this case information may be provided to third parties without permission being sought.

All information gathered will be stored in a secure location at all times and it will not be possible to link this information back to you. Access to this information will be limited to the researchers and supervisors.

If you are a student of Trinity College, Dublin and require credits for participating in this study, please email the researchers at drugedgp@gmail.com

If you feel especially concerned as a result of your participation in this study or experience any distress or adverse reaction, please feel free to contact the lead researcher, Andrew Breen, or their supervisors, Dr Siobhan Corrigan and Dr Sam Cromie –

- By email: drugedgp@gmail.com
- By Post: School of Psychology, Áras an Phiarsaigh, Trinity College Dublin, Dublin 2.
- By Phone: 01-896 1886

Additionally, you may contact the following:

Student Counselling

- Email: student-counselling@tcd.ie
- Telephone: (01) 8961407

Samaritans

- Phone: 116 123 (24 Hours helpline)
- Drop-in centre: 112 Marlboro Street, Dublin 1 from 10am to 10pm.
- Website: www.dublinsamaritans.ie

HSE Drug and Alcohol Helpline

- Freephone: 1800-459-459
- Email support: helpline@hse.ie
- Website: drugs.ie

Appendix E

Student Interview Information Sheet

Drug Education Among Third-Level Students and Its Relationship to Subsequent Illicit Drug Behaviours and Attitudes

Principal Investigator(s) and Co-Investigator(s)
Andrew Breen, Undergraduate Student, email: breena5@tcd.ie
Fionn Byrne, Undergraduate Student, email: byrnef9@tcd.ie
Daniel Craig, Undergraduate Student, email: craigda@tcd.ie
Maeve Kelly, Undergraduate Student, email: kellym98@tcd.ie
Niall Larkin, Undergraduate Student, email: larkinni@tcd.ie
Cliodhna MacAteer, Undergraduate Student, email: macateec@tcd.ie
Roisin Henderson-Moran, Undergraduate Student, email: rohender@tcd.ie
Alan Rogers, Undergraduate Student, email: rogersal@tcd.ie
Avi Shandilya, Undergraduate Student, email: shandila@tcd.ie

Study Organiser/Sponsor – N/A

Data Controllers – Trinity College, Dublin (for research data)

Data Protection Officer – Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2

Thank you for considering taking part in this study investigating the relationship between prior illicit drug education received by third level students to subsequent illicit drug behaviours and attitudes. This study is being conducted by a group of undergraduate psychology students as part of the requirements for their degree under the supervision of Dr Siobhan Corrigan and Dr Sam Cromie in the School of Psychology, Trinity College Dublin. Before you decide whether or not you wish to take part, please read this information sheet carefully. Email drugedgp@gmail.com if you have any questions. Don't feel rushed or under pressure to make a quick decision. You should understand the risks and benefits of taking part in this study so that you can make a decision that is right for you.

You are being invited to take part in this study because you are a third-level undergraduate student who has received a second-level Irish education. Participation is voluntary and any decision not to take part will carry no consequences. You do not have to provide a reason for withdrawing. If you do decide not to take part, your data will be destroyed and will not be used as part of the research. You may withdraw your consent to take part in this study up until submission of the research after which it will not be possible to remove your data. If you wish to withdraw from this study, please contact the researchers at drugedgp@gmail.com.

The interviews will take place online via Microsoft Teams. A link for the call will be emailed to you on the day of the interview. The interviews will be semi-structured allowing for an open discussion on the central themes. Two or three researchers will conduct the interview around a framework of themes such as drug education and its perceived impact on attitudes and behaviours. The interview will be about 30-45 minutes in length allowing you sufficient time to respond appropriately to each question. With your consent, the interview will be recorded and transcribed once finished. You will be emailed a transcription of the audio recording of the interview giving you a chance to review it for accuracy and to check if there is anything you wish to omit from the final transcription. You will then

email the transcription back to the researcher and any personally identifiable information about you will be removed from the transcription after which the recording will be destroyed. Thematic analysis will then be performed on the transcription as part of data analysis.

The transcription from the interview will be stored in a double encrypted file on the researcher's computer which is password protected. The data will also be shared with the researcher's supervisors, Dr Siobhán Corrigan and Dr Sam Cromie. Your anonymised data will only be used as part of this study and there will not be any third-party transfer of the data. The transcription will be analysed using thematic analysis. The data will be destroyed after the research has been submitted. It is also necessary to retain the consent form for 7 years under Trinity College Guidelines

The results may help inform the direction and development of future studies. Through your participation you are helping to advance the field of psychological research. Furthermore, you will help drug education organisations in providing drug education for third-level college students and advising drug policies for colleges.

The risk of breach of confidentiality is considered very low. All computers storing your data will be password protected, and access will be restricted to designated users only. However, confidentiality may be breached in circumstances in which;

1. The research team has a strong belief or evidence that there is a serious risk of harm or danger to either the participant or another individual. This may relate to issues surrounding physical, emotional and/or sexual abuse, concerns for child protection, rape, self-harm, suicidal intent or criminal activity.

2. Disclosure is required as part of a legal process or Garda investigation. In such instances, information may be disclosed to significant others or appropriate third parties without permission being sought. Where possible, a full explanation will be given to the participant regarding the necessary procedures and also the intended actions that may need to be taken.

You may experience distress answering some of the questions as they relate to sensitive topics regarding your drug use. The questions however will not be overly emotive and with regards to mental health or drug problems, support groups and help lines will be provided in this information sheet and the debriefing form if you require support. There is also a small risk you may feel encouraged to engage in illicit drug behaviours. The survey questions do not condone the use of illegal drugs, and the purpose is to obtain factual information without leading you into engaging in such behaviours.

In the case of any psychological distress you may have while answering the survey questions, you can contact a psychological support service at Student counselling – student-counselling@tcd.ie, 01-8961407.

The results of the study will not be reported in medical/scientific journals but will be disclosed in a final thesis and presentation. No information which reveals your identity will be disclosed. If you wish to be informed of results, contact the researchers at drugedgp@gmail.com.

The only identifiable information will be your signature in the consent form and your email, but this is not connected to the data in any way as both will be stored separate to the data.

Your data will be accessed by the principal and co-investigators (Andrew Breen, Fionn Byrne, Daniel Craig, Maeve Kelly, Niall Larkin, Cliodhna MacAteer, Roisin Moran, Alan Rogers and Avi Shandilya) as well as our supervisors, Dr Sam Cromie and Dr Siobhán Corrigan. Data will not leave the site, Ireland or the EU.

All data will be stored on the researchers' computer in a password protected file. A Risk Assessment of the data protection implications of the research and a Data Protection Impact Assessment was carried out. The investigators have been informed about data protection law by the supervisors, who have trained in data protection law. All individuals with access to the data are bound by a contractual code of secrecy which would result in disciplinary action if they make publicly available any of the participants data. Data collected is not intended for use in future research. You will not be contacted again by the researchers in relation to this study.

By law you can exercise the following rights in relation to your personal data, unless the request would make it impossible or very difficult to conduct the research.

- *The right to access to your data and receive a copy of it*
- *The right to restrict or object to processing of your data*
- *The right to object to any further processing of the information we hold about you (except where it is de-identified)*
- *The right to have inaccurate information about you corrected or deleted*
- *The right to receive your data in a portable format and to have it transferred to another data controller*
- *The right to request deletion of your data*

You can exercise these rights by contacting the Trinity College Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. Email: dataprotection@tcd.ie. Website: www.tcd.ie/privacy.

Approval for this study was granted by School of Psychology Research Ethics Committee (SPREC), psych.ethics@tcd.ie on [Approval pending]. Permission is only being given for this study and does not extend to future research. However anonymised data will be stored securely for possible future use.

The researchers are not receiving any remuneration for their work, nor will the research be used for any commercial purposes. There is no payment for taking part in the study, nor is there any cost for agreeing to take part.

If you have any concerns or questions, you can contact the lead researcher, Andrew Breen, or their supervisors Dr Siobhan Corrigan and Dr Sam Cromie

- By email: drugedgp@gmail.com
- By Post: School of Psychology, Áras an Phiarsaigh, Trinity College Dublin, Dublin 2.
- By Phone: 01-896 1886

Data Protection Officer, Trinity College Dublin: Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. Email: dataprotection@tcd.ie. Website: www.tcd.ie/privacy. Under GDPR, if you are not satisfied with how your data is being processed, you have the right to lodge a complaint with the Office of the Data Protection Commission, 21 Fitzwilliam Square South, Dublin 2, Ireland. Website: www.dataprotection.ie.

If you would like to take part in this study, you will be asked to sign the Consent Form on the next page. You should keep a copy of this information and the consent form and return a signed copy of the consent form to the researchers at School of Psychology, Áras an Phiarsaigh, Trinity College Dublin, Dublin 2.

Appendix F

Experts Information Sheet

Drug Education Among Third-Level Students and Its Relationship to Subsequent Illicit Drug Behaviours and Attitudes

Principal Investigator(s) and Co-Investigator(s)
Andrew Breen, Undergraduate Student, email: breena5@tcd.ie
Fionn Byrne, Undergraduate Student, email: byrnef9@tcd.ie
Daniel Craig, Undergraduate Student, email: craigda@tcd.ie
Maeve Kelly, Undergraduate Student, email: kellym98@tcd.ie
Niall Larkin, Undergraduate Student, email: larkinni@tcd.ie
Cliodhna MacAteer, Undergraduate Student, email: macateec@tcd.ie
Roisin Henderson-Moran, Undergraduate Student, email: rohender@tcd.ie
Alan Rogers, Undergraduate Student, email: rogersal@tcd.ie
Avi Shandilya, Undergraduate Student, email: shandila@tcd.ie

Study Organiser/Sponsor – N/A

Data Controllers – Trinity College, Dublin (for research data)

Data Protection Officer – Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2

Thank you for considering taking part in this study investigating the relationship between prior illicit drug education received by third level students to subsequent illicit drug behaviours and attitudes. This study is being conducted by a group of undergraduate psychology students as part of the requirements for their degree under the supervision of Dr Siobhan Corrigan and Dr Sam Cromie in the School of Psychology, Trinity College Dublin. Before you decide whether or not you wish to take part, please read this information sheet carefully. Email drugedgp@gmail.com if you have any questions. Don't feel rushed or under pressure to make a quick decision. You should understand the risks and benefits of taking part in this study so that you can make a decision that is right for you.

You are being invited to take part in this study because you are an expert working in the field of illicit drug education and/or prevention. Participation is voluntary and any decision not to take part will carry no consequences. You do not have to provide a reason for withdrawing. If you do decide not to take part, your data will be destroyed and will not be used as part of the research. You may withdraw your consent to take part in this study up until submission of the research after which it will not be possible to remove your data. If you wish to withdraw from this study, please contact the researchers at drugedgp@gmail.com.

The interviews will take place online via Microsoft Teams. A link for the call will be emailed to you on the day of the interview. The interviews will be semi-structured allowing for an open discussion on the central themes. Two or three researchers will conduct the interview around a framework of themes. The themes are (to be chosen). The interview will be about 30-45 minutes in length allowing you sufficient time to respond appropriately to each question. Given your consent, the interview will be recorded and transcribed once finished. You will be emailed a transcription of the audio recording of the interview giving you a chance to review it for accuracy and to omit anything from the transcription. You will be asked to email the transcription back to the researcher and any personally identifiable information about you will be removed from the transcription after which the recording

will be destroyed. Thematic analysis will then be performed on the transcription as part of data analysis.

The transcription from the interview will be stored in a double encrypted file on the researcher's computer which is password protected. The data will also be shared with the researcher's supervisors, Dr Siobhán Corrigan and Dr Sam Cromie. Your anonymised data will only be used as part of this study and there will not be any third-party transfer of the data. The transcription will be analysed using thematic analysis. The data will be destroyed after the research has been submitted. It is also necessary to retain the consent form for 7 years under Trinity College Guidelines

The results may help inform the direction and development of future studies. Through your participation you are helping to advance the field of psychological research. Furthermore, you will help drug education organisations in providing drug education for third-level college students and advising drug policies for colleges.

The risk of breach of confidentiality is considered very low. All computers storing your data will be password protected, and access will be restricted to designated users only. However, confidentiality may be breached in circumstances in which;

1. The research team has a strong belief or evidence exists that there is a serious risk of harm or danger to either the participant or another individual. This may relate to issues surrounding physical, emotional and/or sexual abuse, concerns for child protection, rape, self-harm, suicidal intent or criminal activity.

2. Disclosure is required as part of a legal process or Garda investigation. In such instances, information may be disclosed to significant others or appropriate third parties without permission being sought. Where possible, a full explanation will be given to the participant regarding the necessary procedures and also the intended actions that may need to be taken.

We do not envision any personal distress arising from the interview.

The results of the study will not be reported in medical/scientific journals but will be disclosed in a final thesis and presentation. No information which reveals your identity will be disclosed. If you wish to be informed of results, contact the researchers at drugedgp@gmail.com.

The only identifiable information will be your signature in the consent form and your email, but this is not connected to the data in any way as both will be stored separate to the data.

Your data will be accessed by the principal and co-investigators (Andrew Breen, Fionn Byrne, Daniel Craig, Maeve Kelly, Niall Larkin, Cliodhna MacAteer, Roisin Moran, Alan Rogers and Avi Shandilya) as well as our supervisors, Dr Sam Cromie and Dr Siobhán Corrigan. Data will not leave the site, Ireland or the EU.

All data will be stored on the researchers' computer in a password protected file. A Risk Assessment of the data protection implications of the research and a Data Protection Impact Assessment was carried out. The investigators have been informed about data protection law by the supervisors, who have trained in data protection law. All individuals with access to the data are bound by a contractual code of secrecy which would result in disciplinary action if they make publicly available any of the participants data. Data collected is not intended for use in future research. You will not be contacted again by the researchers in relation to this study.

By law you can exercise the following rights in relation to your personal data, unless the request would make it impossible or very difficult to conduct the research.

- The right to access to your data and receive a copy of it
- The right to restrict or object to processing of your data
- The right to object to any further processing of the information we hold about you (except where it is de-identified)
- The right to have inaccurate information about you corrected or deleted
- The right to receive your data in a portable format and to have it transferred to another data controller
- The right to request deletion of your data

You can exercise these rights by contacting the Trinity College Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. Email: dataprotection@tcd.ie. Website: www.tcd.ie/privacy.

Approval for this study was granted by School of Psychology Research Ethics Committee (SPREC), psych.ethics@tcd.ie on [Approval pending]. Permission is only being given for this study and does not extend to future research. However anonymised data will be stored securely for possible future use.

The researchers are not receiving any remuneration for their work, nor will the research be used for any commercial purposes. There is no payment for taking part in the study, nor is there any cost for agreeing to take part.

If you have any concerns or questions, you can contact the lead researcher, , or their supervisors Dr Siobhan Corrigan and Dr Sam Cromie

- By email: drugedgp@gmail.com
- By Post: School of Psychology, Áras an Phiarsaigh, Trinity College Dublin, Dublin 2.
- By Phone: 01-896 1886

Data Protection Officer, Trinity College Dublin: Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. Email: dataprotection@tcd.ie. Website: www.tcd.ie/privacy.

Under GDPR, if you are not satisfied with how your data is being processed, you have the right to lodge a complaint with the Office of the Data Protection Commission, 21 Fitzwilliam Square South, Dublin 2, Ireland. Website: www.dataprotection.ie.

If you would like to take part in this study, you will be asked to sign the Consent Form on the next page. You should keep a copy of this information and the consent form and return a signed copy of the consent form to the researchers at XXXXXXXXXXXX

Appendix G

NTERVIEW CONSENT FORM

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

STUDY NAME: Drug Education Among Third-Level Students and Its Relationship to Subsequent Illicit Drug Behaviours and Attitudes

Centre ID:

Identification Number for study:

Consent Form

There are 2 sections in this form. Each section has a statement and asks you to initial if you agree. The end of this form is for the researchers to complete.

Please email any questions you may have when reading each of the statements to drugedgp@gmail.com.

Thank you for participating.

Please tick the box if you agree with the statement.

General	**Tick box**
I confirm I have read and understood the **Information Leaflet** for the above study. The information has been fully explained to me and I have been able to ask questions, all of which have been answered to my satisfaction.	

I understand that this study **is entirely voluntary, and if I decide that I do not want to take part, I can stop taking part in this study at any time without giving a reason**. However, after my interview responses have been analysed, I will not be able to withdraw my data	
I understand that deciding not to take part or withdraw during the interview will not result in any penalty or consequences.	
I understand that I **will not be paid for taking part in this study**.	
I know how to contact the research team if I need to.	
I agree to take part in this research study having been fully informed of the **risks, benefits and alternatives** which are set out in full in the information leaflet which I have been provided with.	
I agree to being contacted by researchers by email/phone as part of this research study.	
Data processing	**Tick box**
I understand that personal information about me will be protected in accordance with the General Data Protection Regulation.	
I understand that all information is anonymous, that no identifiable information about me will be collected and my data will only be accessed by the researchers and their supervisors.	

I understand that confidentiality may be breached in circumstances in which; 1. The research team has a strong belief or evidence exists that there is a serious risk of harm or danger to either the participant or another individual. This may relate to issues surrounding physical, emotional and/or sexual abuse, concerns for child protection, rape, self-harm, suicidal intent or criminal activity. 2. Disclosure is required as part of a legal process or Garda investigation. In such instances, information may be disclosed to significant others or appropriate third parties without permission being sought. Where possible, a full explanation will be given to the participant regarding the necessary procedures and also the intended actions that may need to be taken.	
I understand that there are **no direct benefits to me** from participating in this study. I understand that **results from analysis of my personal information will not be given to me**.	

Participant Name (Block Capitals) Participant Signature Date

Witness Name (Block Capitals) Witness Signature Date

To be completed by the Principal Investigator or nominee.

I, the undersigned, have taken the time to fully explain to the above participant the nature and purpose of this study in a way that they could understand. I have explained the risks and possible benefits involved. I have invited them to ask questions on any aspect of the study that concerned them.

I have given a copy of the information leaflet and consent form to the participant with contacts of the study team

Researcher name

Title and qualifications

Signature

Date

| | |

2 copies to be made: 1 for participant and 1 for PI

Appendix H

Student Interview Debriefing Sheet

Drug Education Among 3rd Level Students and Its Relationship to Subsequent Illicit Drug Behaviours and Attitudes

Thank you for taking part in the study and for your contribution. This sheet is intended to serve as a reminder that participation in this research is voluntary and you may decide to withdraw at any moment without explanation, penalty or consequence up to such a point that the research report will be finalised. If you withdraw all data collected from you will be destroyed and not included in this analysis.

As explained in the information sheet, any information you provide is confidential and anonymous. As a reminder, please note that while that while the data will be confidential to our research this confidentiality can only be protected within the limitations of the law. That is to say, for example, that it may be possible for data to be requested legally (subpoenaed) or under the Freedom of Information Act. In this case information may be provided to third parties without permission being sought.

Consent forms, containing personal information, are collected and retained as part of this research. This information will be stored in a secure location at all times and encrypted to protect the identity of the participant. Access to this information will be limited to the researcher and supervisors.

If you feel especially concerned as a result of your participation in this study or experience any distress or adverse reaction, please feel free to contact the lead researcher, Andrew Breen, or their supervisors, Dr Siobhan Corrigan and Dr Sam Cromie –

- By email: drugedgp@gmail.com
- By Post: School of Psychology, Áras an Phiarsaigh, Trinity College Dublin, Dublin 2.
- By Phone: 01-896 1886

Additionally, you may contact the following:

Student Counselling

- Email: student-counselling@tcd.ie
- Telephone: (01) 8961407

Samaritans

- Phone: 116 123 (24 Hours helpline)
- Drop-in centre: 112 Marlboro Street, Dublin 1 from 10am to 10pm.
- Website: www.dublinsamaritans.ie

HSE Drug and Alcohol Helpline

- Freephone: 1800-459-459
- Email support: helpline@hse.ie
- Website: drugs.ie

Appendix I

Expert Interview Debriefing Sheet

Drug Education Among 3rd Level Students and Its Relationship to Subsequent Illicit Drug Behaviours and Attitudes

Thank you for taking part in the study and for your contribution. This sheet is intended to serve as a reminder that participation in this research is voluntary and you may decide to withdraw at any moment without explanation, penalty or consequence up to such a point that the research report will be finalised. If you withdraw all data collected from you will be destroyed and not included in this analysis.

As explained in the information sheet, any information you provide is confidential and anonymous. As a reminder, please note that while that while the data will be confidential to our research this confidentiality can only be protected within the limitations of the law. That is to say, for example, that it may be possible for data to be requested legally (subpoenaed) or under the Freedom of Information Act. In this case information may be provided to third parties without permission being sought.

Consent forms, containing personal information, are collected and retained as part of this research. This information will be stored in a secure location at all times and encrypted to protect the identity of the participant. Access to this information will be limited to the researcher and supervisors.

If you have any concerns as a result of your participation in this study, please feel free to contact the lead researcher, Andrew Breen, or their supervisors, Dr Siobhan Corrigan and Dr Sam Cromie –

- By email: drugedgp@gmail.com
- By Post: School of Psychology, Áras an Phiarsaigh, Trinity College Dublin, Dublin 2.
- By Phone: 01-896 1886

Appendix J

Student Interview Questions

Q1. What was your drug education like in secondary school? Could you describe as best you can remember what you were taught and what was involved?
Prompts:

- Abstinence based or more harm reduction and factual?
- Frequency of sessions?
- What were the teachers like? Were they consistently good?
- If someone came in from outside school - who was it? What was their attitude and what did they talk about?
- Was there a distinction between study drugs/prescription drugs and illegal drugs?
- Was alcohol covered and if so to what extent?

Q2. What was your school's attitudes towards illegal drugs?

Prompts:

- Did your school have a drug policy?
- Did the school's attitude affect what was taught in drug education classes?
- Did the school's attitude affect student's ability to have honest and open conversations about drugs?
- Was there a conservative attitude towards drugs - zero tolerance attitude

Q3. What aspect(s) of your drug education would you improve upon and how?

Q4. Where did you find out most of your information about drugs?
Prompts:

- Family/ friends or internet
- What information did you learn from other sources?

Q5. To what extent do you think people your age do drugs?

Q6. Are you comfortable with people doing drugs around you?

Q7. What would be your main reasons for not taking an illicit drug?
Prompts:

- Long term risks vs short reasons

Q8. Why do you think people take drugs illicitly?

Q9. Do you think your attitude towards drugs and illicit drug use has been impacted by the drug education you received in school?

Q10. How risky do you think illicit drug use is?
Prompts:

- Long term vs short term risks

Q11. How do you feel about the legality of drugs?
Prompts:

- Distinction between legalised and decriminalised
- Is there a distinction between types of drugs

Q12. Do you feel like your drug education has had an impact on your views on harm reduction techniques for safe drug practises?
Prompts:

- For example injection swapping centres and drug testing sites

Appendix K

Expert Interview Questions

Q1. What do you envision the ideal drug-education in secondary school to look like?
Prompts:

- Who should deliver it
- Harm reduction vs deterrence
- To what age group should it be delivered to and for how long

Q2. To make that vision become a reality, what barriers might be in the way?

Q3. What do you envision the ideal drug-education in universities to look like?

Q4. To make that vision become a reality, what barriers might be in the way?

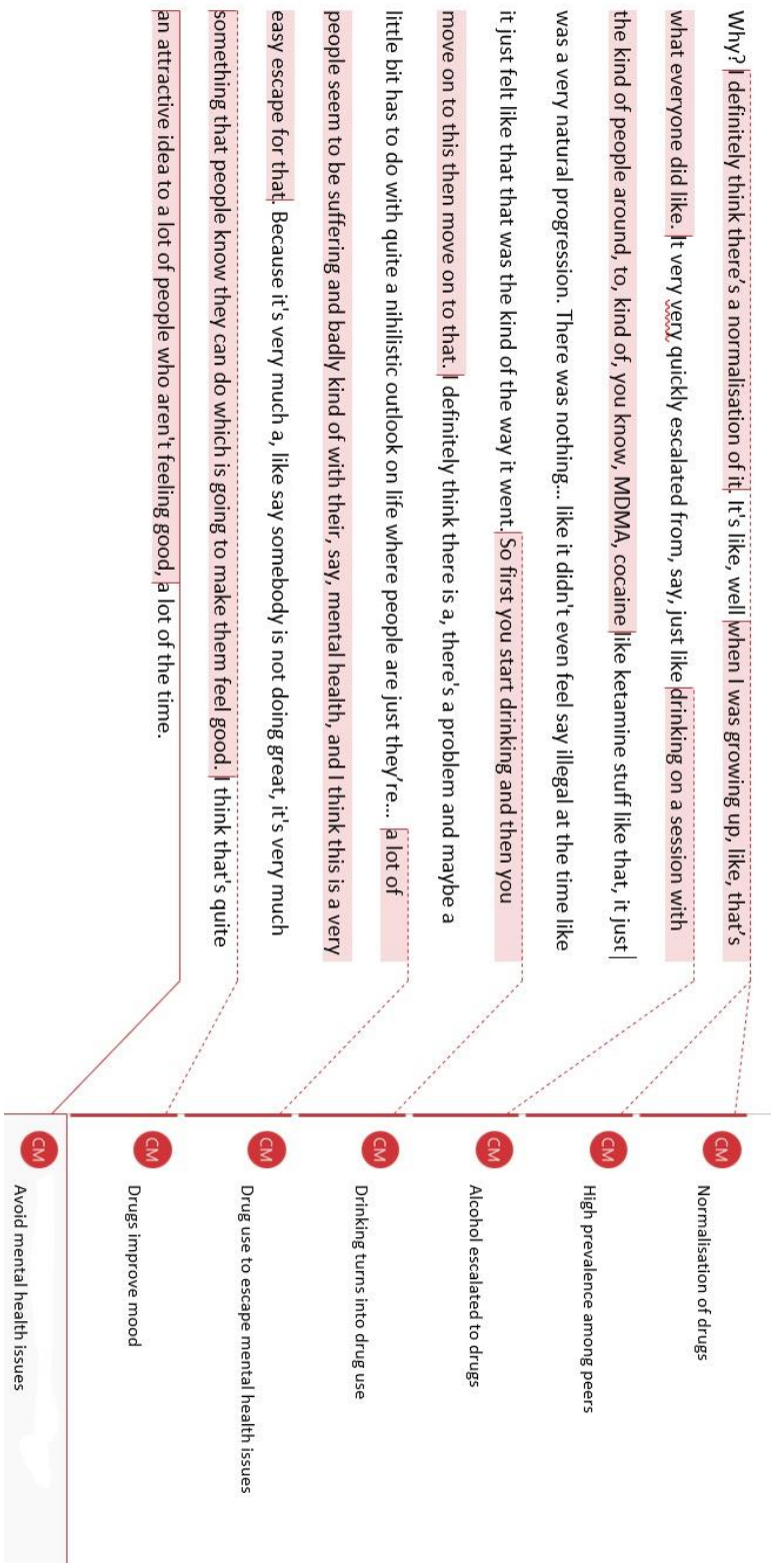
Q5. What role does education play in tackling the drug problem? Do we expect too much from it?

Appendix L

Students Thematic Analysis Example

Figure 11

Example of coding from the student interview transcripts



These codes were grouped together to create psychologically meaningful themes. An example of how codes from the text correspond to the themes extracted in qualitative analysis is shown in Table 10 below.

Table 5

Examples of codes and their corresponding themes from the student interview transcripts

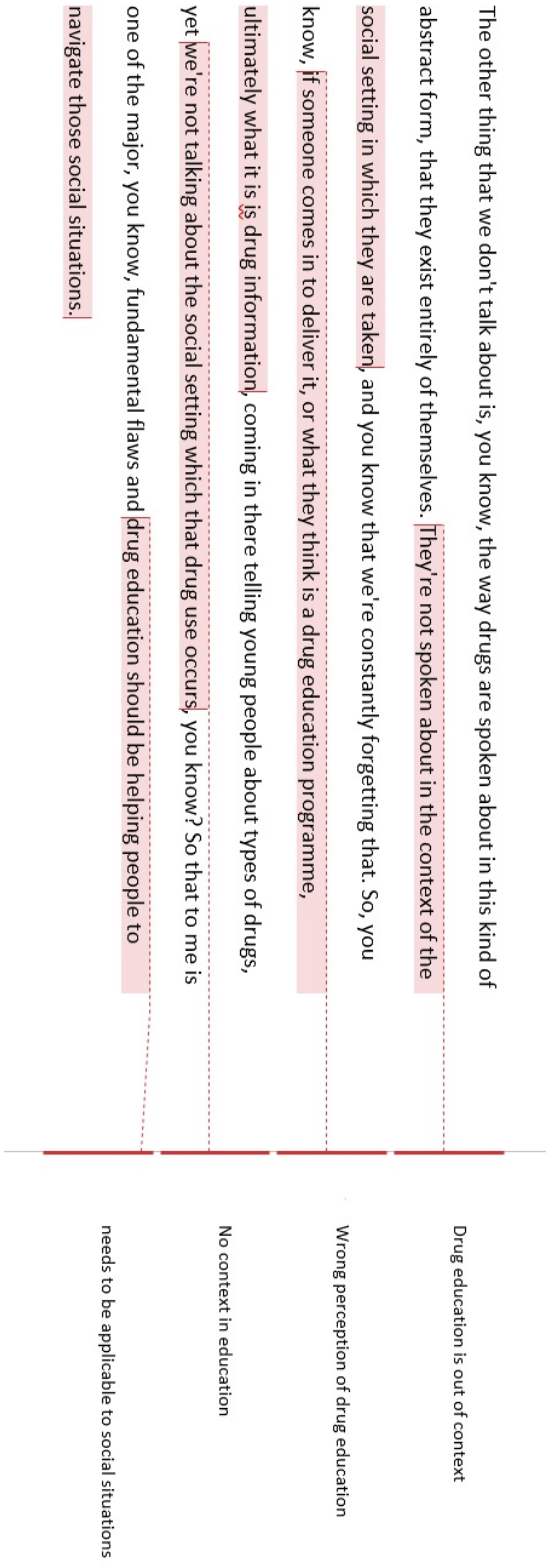
Examples of themes	Normalisation of drugs	The link between alcohol and drug use	Mental health as a reason for illicit drug use
Examples of codes	Normalisation of drugs High prevalence among peers	Alcohol escalated to drugs Drinking turns to drug use	Drug use to escape mental health issues Drugs improve mood Avoid mental health issues

Appendix M

Experts Thematic Analysis Example

Figure 12

Example of coding from the expert interview transcripts



These codes were grouped together to create psychologically meaningful themes. An example of how codes from the text correspond to the themes extracted in qualitative analysis is shown in Table 6 below.

Table 6

Examples of codes and their corresponding themes from the expert interview transcripts

Examples of Themes	**Lack of social context**	**Inaccurate idea of drug education**	**Importance of social setting**
Examples of codes	Drug education is out of context No context in education	Wrong perception of drug education	Needs to applicable to social situations

Appendix N

Ethics Approval Letter

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

F.A.O. ANDREW BREEN, FIONN BYRNE, DANIEL CRAIG, ROISIN HENDERSON MORAN, MAEVE KELLY, NIALL LARKIN, CLIODHNA MACATEER, ALAN ROGERS, AVI SHANDILYA

Approval ID: SPREC112020-33

School of Psychology Research Ethics Committee

2nd February 2021 Dear all,

The School of Psychology Research Ethics Committee has reviewed your application

entitled “Drug education among third-level students and its relationship to subsequent illicit drug behaviours and attitude”, and I am pleased to inform you that it was approved.

Adverse events associated with the conduct of this research must be reported immediately to the Chair of the Ethics Committee.

Yours sincerely,

Richard Carson Chair,

School of Psychology Research Ethics Committee