Perceptions of cannabis use: What effect does the perceived use and approval among friends, perceived harm of use, and perceived risk of legal consequences have on the intentions to use cannabis?

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Report Title: **Perceptions of cannabis use: What effect does the perceived use and approval among friends, perceived harm of use, and perceived risk of legal consequences have on the intentions to use cannabis?**

ABSTRACT

Cannabis use among young adults is higher than any other age demographic, and research shows that cannabis use increases the risk for adverse mental health, and more so with younger initiation of use. Perceptions of use and approval among friends, and perceptions of harm from use have all been found to predict use. A gap in the research was identified with regards to the effect of the perceived risk of legal consequences on the intentions to use. The present study sought to examine the effect of the perceived risk of arrest and criminal sanctions on the intentions to use cannabis in future and compare this effect with perceived use and approval among friends and perceived harm of cannabis use. A total of 70 young adults aged between 18 and 24 years old completed a questionnaire measuring perceived use and approval among friends, perceived harm of cannabis use, perceived risk of legal consequences, and intentions to use cannabis in the next twelve months. Use and approval among friends, and perceived harm were found to be predictive of intentions to use, perceived risk of legal consequences was not. A multiple regression analysis demonstrated that perceived use and harm were significant predictors, but not approval.

KEY WORDS:	PERCEPTIONS OF CANNABIS USE	HARM FROM CANNABIS USE	USE AND APPROVAL IN FRIENDS	RISK OF LEGAL CONSEQUENCES	MULTIPLE REGRESSION

Introduction

Prevalence

Cannabis is the most widely used drug in the UK with 29% of adults (16-59 years old) having used it at least once in their lifetime and 7.2% of adults having used it in 2017 (Home office, 2018). Among young adults (16-24 years old), the figure for past year use is even higher, with 16.7% having used cannabis in 2017 (Home office, 2018). In a survey completed by university students in the UK (n = 2810), 56% reported having taken illicit drugs in their lifetime, with 94% of these respondents having tried cannabis. Furthermore, among those who reported to having tried illicit drugs in their lifetime, 50% reported using cannabis regularly (once a month or more). Cannabis was also the only illicit drug in the survey reported to be used more regularly than on special occasions (NUS, 2018). Cannabis use is also prevalent among adolescent school children (11-15 year olds) with a report by the NHS showing that cannabis was the most common illicit drug taken by pupils in the past year with 8% saying they had done so in 2016 (NHS, 2018). Cannabis use among young adults has steadily increased since 2013, with 13.5% having used it in the past year as of 2013, and 16.7% having used it in the past year as of 2017 (Home office, 2018). While the present figure is much lower than in previous years (28.2% used in 1998), use is still highly prevalent among young adults.

Adverse health effects of cannabis use

With many countries around the world decriminalising or legalising cannabis use, most recently with Canada legalising use and sale, there is concern over the health effects of cannabis use, particularly among the young who are found to have an increase in cannabis consumption in the first five years following decriminalisation (Williams and Bretteville-Jensen, 2014). Cannabis use is associated with a number of adverse health effects including mental illness, impaired psychosocial functioning, impaired cognitive function, cardiovascular disease, and respiratory problems (Hall, 2015). Of particular salience, is the increased risk of psychotic illness from frequent cannabis use in a dose-response relationship mediated by the age of onset use (Andréasson et al., 1987; Moore et al., 2007; Di Forti et al., 2014; Marconi et al., 2016; Di Forti et al., 2019). One of the most prominent studies on the link between cannabis use and psychosis is the longitudinal Swedish conscript study conducted in 1987. Among a large sample (47,570), a significant increase in risk (six-fold) of schizophrenia was found for high consumers of cannabis compared to non-users after controlling for other psychiatric illness and social background (Andréasson et al., 1987). Another study found that psychosis patients with a history of cannabis use presented with their first episode of psychosis at a younger age than those who had never used cannabis, and those who started use at 15 years old or younger had an earlier onset of psychosis than those who started later (Di Forti et al., 2014). In a more recent study, daily cannabis use was found to increase the risk of psychotic disorder by over three times compared to non-use. This risk increased to nearly five times for daily use of high-potency cannabis (Di Forti et al., 2019). In a meta-analysis it was found that adolescent cannabis use is also linked to an increase in the risk of depression and suicidal behaviour in young adulthood (Gobbi et al., 2019). Given the higher prevalence of cannabis use among young adults, and the subsequent

increased risk for adverse mental illness in younger offset use, reducing cannabis consumption among children and young adults is of vital importance.

Perceptions surrounding cannabis use

Much research has looked at peoples' perceptions of cannabis use, including perceived descriptive norms (prevalence and frequency of use among others), injunctive norms (how much others approve of use) and expectancies (expected outcomes from use). Descriptive and injunctive norms of friends' cannabis use have been associated with personal use and intentions to use, with descriptive norms having the strongest effect (Buckner et al., 2010; Dempsey et al., 2016; Neighbors et al., 2008). Undergraduate cannabis using students who reported higher levels of use among friends, were significantly more likely to report higher levels of personal use (Buckner et al., 2010).

In research on the harm perceptions of cannabis conducted with undergraduate students from the UK and Norway, UK students rated alcohol as more harmful than cannabis (Pedersen et al., 2016). However, both UK and Norway students rated cannabis as the most harmful to mental health. Another study in the US found that cannabis risk perceptions negatively correlated with the number of incidences of cannabis use in the following year. Hence, higher risk perceptions resulted in less incidences (Parker and Anthony, 2013). In a study on Irish adolescents (ages 15-18 years old), previous cannabis use was associated with lower perceived risk of adverse health effects from cannabis use (Barrett and Bradley, 2016). Another study found that among first year college students, risk perception was greater among non-users of cannabis than users, it has therefore been suggested that for non-users, perceived risks of cannabis use act as a protective barrier against the initiation of use (Kilmer et al., 2007).

Legal consequences of cannabis use

In the UK, prosecutions for cannabis possession have fallen increasingly, with a 19% decrease from 2015 to 2017, and cautions decreased by 34% from 2015 to 2017 (Tapper, 2018). Furthermore, one report states that while the criminal sanctions for cannabis use and possession are strict in theory, they are seldom enforced. The same report also states that the risk for being arrested for cannabis is in the order of less than one in a thousand (Room, 2008). Some critics of drug policy in the UK suggest that the laws against cannabis use and possession are not actively enforced. A report conducted by the Home Office in the UK found that in Japan, a country which has strict enforcement of the laws against drug use and possession and that punishes possession of small amounts of drugs with lengthy imprisonment, there was much lower levels of drug use reported. However, the report concluded that it was difficult to establish whether the low level of use was a result of strict enforcement or strict cultural attitudes towards drugs (Home Office, 2014). Research on cannabis users in Amsterdam and San Francisco found that the majority of cannabis users in San Francisco reported low levels of perceived risk of getting arrested for possession or use of cannabis in the future, despite laws against use and possession (Reinarman, 2009). There was a noticeable lack of quantitative research examining perceptions with regards to the law. Given the lack of research

on the effect of perceived risk of arrest and other legal sanctions on the intentions to use, this was seen as a gap in the research which could be looked into.

Overall, the aim of this study is to investigate a gap in the research concerned with the perceived risk of legal consequences (e.g. being arrested, receiving a criminal record, going to prison) from using and possessing cannabis, and compare this with other established constructs associated with the intentions to use cannabis, such as descriptive norms, injunctive norms and perceived harm.

Four hypotheses were formed for this study:

1. Individuals who perceive a greater risk of legal consequences will have lower intentions to use.
2. Individuals who rate cannabis as more harmful will have lower intentions to use.
3. Individuals who perceive higher rates of use among friends will have higher intentions to use.
4. Individuals who perceive higher approval of use among friends will have higher intentions to use.

Method

Design

An online questionnaire was devised and delivered using qualtrics. The questionnaire comprised of a number of pre-existing and modified measures. A multiple regression analysis was conducted with intentions to use cannabis as the criterion variable. Descriptive norms (perceived use among friends), injunctive norms (perceived approval of use among friends), subjective harm ratings of cannabis, and perceived risk of legal consequences were the four predictor variables.

Participants

A total of 70 participants were recruited using opportunity sampling, all between the ages of 18 and 24 years old as required for participation. The sample comprised of 28 males (40%) and 42 females (60%). Participants were provided with an anonymous link via a Facebook post (Appendix 4), directing them to the questionnaire.

Materials

The questionnaire was created online using qualtrics and consisted of a participant information sheet (Appendix 2), consent form (Appendix 3), demographic questions (Appendix 5), and questions surrounding the use of cannabis (Appendix 6). The questions on cannabis included measures of descriptive norms, injunctive norms, subjective harm ratings, perceived risk of legal consequences, and the intentions to use cannabis.

Perceived Descriptive and Injunctive norms – (Buckner et al., 2010) (Appendix 6)

Questions were used from a study which looked at college students' perceptions of use and approval among friends, students and parents (Buckner et al., 2010). Only the questions concerning use and approval among friends were used as this research was concerned with young adults as opposed to just college students. Injunctive norms concerning parents' approval were also removed as these were not deemed relevant to the research. There were in total 1 question on descriptive norms, and 4 questions on injunctive norms. In the question on descriptive norms, participants were asked *'How often do you think your friends use marijuana/cannabis?'*, responses were as follows; 8 (*daily*), 7 (*nearly every day*), 6 (*two to three times per week*), 5 (*one time per week*), 4 (*two to three times per month*), 3 (*one time per month*), 2 (*three to six times per year*), 1 (*one to two times per year*), and 0 (*never*).
In questions on injunctive norms, participants were asked how they thought their friends would respond if they knew the participant '*used cannabis every weekend', 'used cannabis every day', 'drove after using cannabis', and 'used enough cannabis to pass out'.* Responses were given on a 1-7 Likert scale, with 1 being *'Strong disapproval'* and 7 being *'Strong approval'*. Responses were summed, with higher scores reflecting greater approval of risky cannabis use. The scale was reported to have a Cronbach alpha score of 0.87, demonstrating good internal consistency.

Harm ratings for cannabis – (Pedersen et al., 2016) (Appendix 6)

Questions were used from previous research that compared the harm ratings of tobacco, alcohol and cannabis in different domains of harm (Pedersen et al., 2016). Only the questions concerning the harms of cannabis were used. Participants were asked to rate the harm of cannabis in relation to five different domains; '*Physical harms', 'Mental health harms', 'Dependence', 'Injuries', and 'Social consequences.* Each domain was rated using a 1-6 Likert scale, with 1 being *'Not harmful'* and 6 being *'Very harmful'.* The total of the ratings was used to produce an overall harm rating. Internal consistency for cannabis ratings was 0.82, proving adequate and appropriate for this research.

Perceived risk of legal consequences – (Reinarman, 2009) (Appendix 6)

One question was borrowed and modified from a previous study comparing cannabis policy in Amsterdam and San Francisco (Reinarman, 2009). Participants in the original study were asked *'How likely do you think it is that you will be arrested for possession or use of cannabis at some point in the future?'.* Because the present study is concerned with young adults' perceptions rather than the perceptions of cannabis users alone, this question was modified to *'How likely do you think it is that you could be arrested for possession or use of marijuana/cannabis?'*. The author also included their own question to examine perceived risk of legal sanctions, in the following; *'How likely do you think it is that you could receive criminal sanctions (e.g. criminal record, prison sentence, etc.) for possession or use of cannabis?'.* Internal consistency for the two items was 0.86, proving reliable.

Intentions to use cannabis – (Skenderian et al., 2009) (Appendix 6)

A scale was used from research on cannabis expectancies and intentions to use (Skenderian et al., 2009). Participants' intentions to use cannabis were recorded with the following questions; *'How likely is that you will use marijuana/cannabis, even once or twice, over the next twelve months?'* and *'How likely is it that you will use marijuana/cannabis nearly every month for the next twelve months?'.* Responses were as follows; *1 ('I definitely will not'), 2 ('I probably will not'), 3 ('I probably will'), 4 ('I definitely will').* Internal consistency for both items was 0.73, proving adequate for this research.

Procedure

Prior to the collection of data, ethical approval was required and sought to ensure that the study met ethical guidelines (Appendix 1). Once approved, the questionnaire was hosted online using the online project tool 'qualtrics' and distributed online with the use of Facebook. Before participants could complete the questionnaire, they were required to read a participant information sheet (Appendix 2) briefly describing the purpose of the study, and then asked to complete an online consent form (Appendix 3) confirming they have understood the aims and requirements of the study. The information sheet also provided contact details for the researcher in case participants wanted more information about the study. All participants were informed of their right to withdraw their data up until analysis of the data on 31/03/2019 with the use of an anonymous six-digit code that the researcher could use to identify and remove the data at the request of the participant. Participants were asked to create a unique identifying code by using the two digits of their birth month (e.g. 06 = June), followed by the last two digits of their postcode (e.g. BT) and ending with the last two digits of their mobile number (e.g. 47). Upon completion, participants were asked what their gender and age was. Participants outside the age range 18 to 24 years old were excluded from the study. Participants were then directed to complete the questionnaire comprised of the scales mentioned above.

Results

Internal consistency

An internal consistency analysis was conducted for each subscale, with the exception of descriptive norms which only comprised of one item. Reliability for each subscale was as follows; 'harm ratings for cannabis' was $\alpha = .85$, 'perceived injunctive norms' $\alpha = .86$, 'perceived risk of legal consequences' $\alpha = .86$, and 'intentions to use cannabis' $\alpha = .89$.

Descriptive statistics

Pearsons correlations were computed for each variable (See Table 1). A significant negative relationship was found between 'harm ratings for cannabis' and 'intentions to use' $r(68) = -.49$, $p < .001$, and significant positive relationships were found between 'descriptive norms' and 'intentions to use' $r(68) = .49$, $p < .001$, and between 'injunctive norms' and 'intentions to use' $r(68) = .42$, $p < .001$. No significant

relationship was found for ‘intentions to use’ and ‘perceived risk of legal consequences’.

Table 1. Correlations among variables.

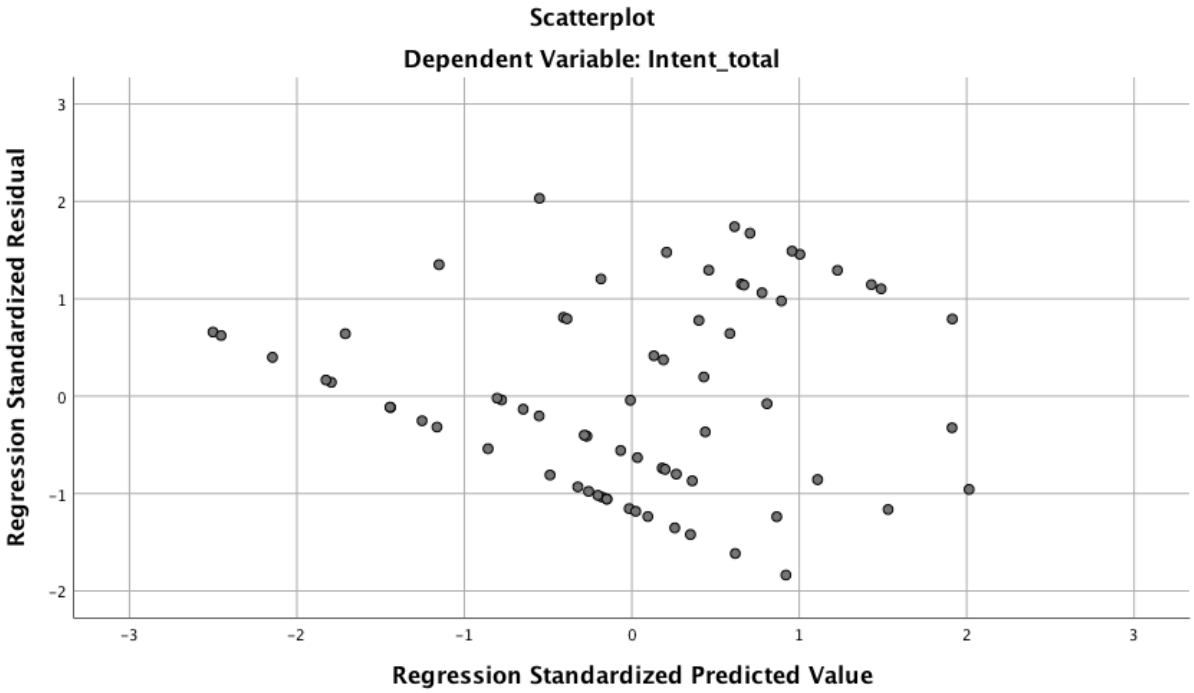
Variable	Intentions to use	Harm ratings	Descriptive norms	Injunctive norms	Perceived risk of legal consequences
Intentions to use		-.49*	-.49*	-.42*	.02
Harm ratings			.42*	-.40*	-.15
Descriptive norms				-.46*	-.001
Injunctive norms					.04
Perceived risk of legal consequences					

Note: * indicates p < .001

Regression analysis

Prior to conducting a regression analysis, a number of assumptions had to be carried out to ensure a multiple regression was a valid means of testing the data. Assumption of absence of outliers, multicollinearity, independent errors, homoscedasticity, and linearity of data were examined. Analysis of standard residuals showed that were no outliers in the data (Std. Residual Min = -1.84, Std. Residual Max = 2.03). Collinearity tests indicated that the data met the assumption of no multicollinearity (harm ratings of cannabis, Tolerance = .75, VIF = 1.33; descriptive norms, Tolerance = .72, VIF = 1.39; injunctive norms, Tolerance = .74, VIF = 1.35; perceived risk of legal consequences, Tolerance = .97, VIF = 1.03). The data met the assumption of independent errors (Durbin-Watson = 2.53). Finally, the scatterplot of standardised residuals indicated that the data met the assumptions of linearity and homoscedasticity, as seen in figure 1.

Figure 1. Scatter plot of standardised residuals.



As all assumptions were met, a multiple regression was conducted to test the extent to which the variables 'harm ratings of cannabis', 'descriptive norms', 'injunctive norms' and 'perceived risk of legal consequences' predict young adults' intentions to use cannabis. Using the 'enter' method, a significant model emerged F(4,65) = 9.17, p < .001. The relationship between the variables was moderate (R = .60) and the model could explain approximately 36.1% (R2adj = 32.1%) of the variance in 'intentions to use cannabis' scores. Harm ratings of cannabis was a significant predictor of young adults' intentions to use cannabis, β = -.32, t(65) = -2.77, p = < .05. Descriptive norms was also a significant predictor of young adults' intentions to use cannabis, β = .28, t(65) = 2.39, p = < .05. However, injunctive norms and perceived risk of legal consequences did not significantly predict young adults' intentions to use cannabis, with β = .17, t(65) = 1.43, p = > .05, and β = -.04, t(65) = -.40, p = > .05, respectively. The contribution of each predictor variable in accounting for the variance is shown in table 2 below.

Table 2. Summary of the regression analysis for predicting young adults' intentions to use cannabis.

Variable	B	SE B (Std. Error)	β (beta score)
Constant	4.10	1.35	
Harm ratings for cannabis	-.12	.04	-.32*
Descriptive norms	.24	.10	.28*
Injunctive norms	.08	.06	.17
Perceived risk of legal consequences	-.03	.07	-.04
Note: $R^2 = .32$			

Note. * indicates $p < .05$.

Discussion

Summary of findings

The results support the findings in previous literature with descriptive norms and injunctive norms having a moderate positive correlation with the intentions to use cannabis, and a moderate negative correlation between perceived harm and intentions to use. Furthermore, the regression model was found to moderately predict intentions to use, with descriptive norms and perceived harm being the significant predictors of the model. While a moderate positive relationship was found between injunctive norms and intentions to use, this didn't significantly explain the variance in the regression model. No relationship was found for perceived risk of legal consequences and intentions to use. The findings are discussed with regard to each hypothesis below.

Hypothesis 1: *'Individuals who perceive a greater risk of legal consequences will have lower intentions to use.'*

Surprisingly, no relationship was found between the perceived risk of legal consequences and intentions to use and so this hypothesis had to be rejected. The reason for this could be due to a number of limitations related to the validity of the questions. Firstly, the questions used to assess the perceived risk of legal consequences included the terms 'use or possession of cannabis', which are terms that are potentially too broad as 'possession' could also include 'possession with intent to supply' which receives much stricter punishment by UK law compared to possession for personal use. Therefore, some participants may have taken this into

account when they reported their answers. Furthermore, the range of legal consequences is broad, and some consequences (e.g. a ‘caution’) may be considered less severe than other consequences. As such, a higher likelihood of less severe legal consequences (ie ‘caution’) might have less effect on participants intentions to use compared with a higher likelihood of more severe legal consequences (e.g. prison). Therefore, future research should try to create more specific questions that look at the perceived risk of different legal consequences, as well as looking at specific types of possession, and a separate question for use.

Secondly, the sample included young adults generally, rather than just young adults who are cannabis users. While this was done on purpose, young adults who are cannabis users may be a more relevant sample than young adults in general when assessing the effect of perceived risk of legal consequences on intentions to use, as the risk of legal consequences would be more relevant to cannabis users as not all young adults are cannabis users.

Hypothesis 2: *Individuals who rate cannabis as more harmful will have lower intentions to use.*

Consistent with previous literature, the perceived harm of cannabis was predictive of intentions to use, with higher harm ratings correlating with lower intentions to use. The hypothesis was therefore accepted. Harm ratings was also the most significant predictor in the regression model. As with previous research, perceived harm has a moderate effect on the intentions to use, and it has been suggested that education into the harms of cannabis could help to deter use in future, as those with greater perceived risk of cannabis use are less likely to initiate in cannabis use (Kilmer et al., 2007).

Hypothesis 3: *Individuals who perceive higher rates of use among friends will have higher intentions to use.*

Consistent with the previous literature, the perceived rate of use among friends was predictive of intentions to use, with higher perceived rates of use among friends correlating with higher intentions to use. The hypothesis was therefore accepted. As in previous research (Buckner et al., 2010; Dempsey et al., 2016; Neighbors et al., 2008), descriptive norms of were more significant than injunctive norms in predicting use of cannabis, or in this case, intentions to use cannabis.

Hypothesis 4: *Individuals who perceive higher approval of use among friends will have higher intentions to use.*

Consistent with the previous literature, the perceived approval of use among friends was predictive of intentions to use, with higher perceived approval among friends correlating with higher intentions to use. The hypothesis was therefore accepted. However, injunctive norms did not significantly explain the variance in the regression model, and had a weaker relationship with intentions to use when compared with descriptive norms and perceived harm of cannabis use.

One consideration for future research is the number of participants used. This study recruited 70 participants, whereas for a multiple regression with four predictor variables, the recommended minimum is 82 (N ≥ 50 + 8m) according to Green (1991). As previously mentioned, future research should consider revising and creating specific questions on perceived risk of legal consequences in levels of severity. In conclusion, this research attempted to explore a gap in the research concerned with the effect of the perceived risk of legal consequences on the intentions to use cannabis. The results have demonstrated an issue with the validity of the questions used to assess the perceived risk of legal consequences and futher research should focus on using more specific questions when measuring the perceived risk of legal consequences.

References

Andréasson, S., Engström, A., Allebeck, P., Rydberg, U. (1987) 'Cannabis and Schizophrenia A Longitudinal Study of Swedish Conscripts' *The Lancet*, 330(8574), pp. 1483-1486.

Barrett, P., Bradley, C. (2016) 'Attitudes and perceived risk of cannabis use in Irish adolescents' *Irish Journal of Medical Science,* 185, pp. 643-647.

Buckner, J. D. (2010) 'College Cannabis Use: The Unique Roles of Social Norms, Motives and Expectancies' *Journal of Studies on Alcohol and Drugs*, 74(5), pp. 720-726.

Dempsey et al. (2016) 'Normative Perceptions of Cannabis Use Among European University Students: Associations of Perceived Peer Use and Peer Attitudes With Personal Use and Attitudes' *Journal of Studies on Alcohol and Drugs,* 77(5), pp. 740-748.

Di Forti et al. (2014) 'Daily use, especially of high-potency cannabis, drives the earlier onset of psychosis in cannabis users.' *Schizophrenia Bulletin,* 40(6), pp. 1509-1517.

Di Forti et al. (2019) 'The contribution of cannabis use to variation in the incidence of psychotic disorder across Europe (EU-GEI): a multicentre case-control study' *The Lancet,* [Online] http://dx.doi.org/10.1016/S2215-0366(19)30048-3

Gobbi, G., Atkin, T., Zytynski, T. (2019) 'Association of Cannabis Use in Adolescence and Risk of Depression, Anxiety and Suicidality in Young Adulthood: A Systematic Review and Meta-analysis' *JAMA Psychiatry,* 76(4), pp. 426-434.

Green, S. B. (1991) 'How Many Subjects Does It Take To Do A Regression Analysis' *Multivariate Behavioural Research,* 26(3), pp. 499-510.

Hall, W. (2015) 'What has research over the past two decades revealed about the adverse health effects of recreational cannabis use?' *Addiction,* 110(1), pp. 19-35.

Home Office (2018) *Drug Misuse: Findings from the 2017/18 Crime Survey for England and Wales.* [Online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/729249/drug-misuse-2018-hosb1418.pdf

Home Office (2014) *Drugs: International Comparators.* [Online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/368489/DrugsInternationalComparators.pdf

Kilmer, J. R., Hunt, S. B., Lee, C. M., Neighbors, C. (2007) 'Marijuana use, risk perception, and consequences: Is perceived risk congruent with reality?' *Addictive Behaviours,* 32(12), pp. 3026-3033.

Marconi, A., Di Forti, M., Lewis, C. M., Murray, R. M., Vassos, E. (2016) 'Meta-analysis of the Association Between the Level of Cannabis Use and Risk of Psychosis' *Schizophrenia Bulletin*, 42(5), pp. 1262-1269.

Moore, T., Zammit, S., Lingford-Hughes, A., Barnes, T., Jones, P. B., Burke, M., Lewis, G. (2007) 'Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review' *The Lancet*, 370(9584), pp. 319-328.

National Union of Students (2018) *Taking the hit: student drug use and how institutions respond*. [Online] https://www.nusconnect.org.uk/resources/taking-the-hit-student-drug-use-and-how-institutions-respond

Neighbors, C., Geisner, I. M., Lee, C. M. (2008) 'Perceived marijuana norms and social expectancies among entering college student marijuana users.' *Psychology of Addictive Behaviors,* 22(3), pp. 433-438.

NHS (2018) *Statistics on Drug Misuse: England, 2018.* [Online] https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-drug-misuse/2018

Parker, M. A., Anthony, J. C. (2013) 'A prospective study of newly incident cannabis use and cannabis risk perceptions: Results from the United States Monitoring the Future Study, 1976-2013' *Drug and Alcohol Dependence,* 187, pp. 351-357.

Pedersen, W., Fjær, E. G., Gray, P., von Soest, T. (2016) 'Perceptions of Harm Associated With Tobacco, Alcohol, and Cannabis Among Students From the UK and Norway' *Contemporary Drug Problems*, 43(1), pp. 47-61.

Reinarman, C. (2009) 'Cannabis policies and user practices: Market separation, price, potency, and accessibility in Amsterdam and San Francisco' *International Journal of Drug Policy,* 20(1), pp. 28-37.

Room et al. (2008) *Cannabis Policy: Moving Beyond Stalemate.* [Online] https://www.tni.org/en/issues/cannabis/item/2406-cannabis-policy-moving-beyond-stalemate

Skenderian, J. J., Siegel, J. T., Crano, W. D., Alvaro, E. E., Lac, A. (2009) 'Expectancy Change and Adolescents' Intention to Use Marijuana' *Psychology of Addictive Behaviors*, 22(4), pp. 563-569.

Tapper, J. (2018) 'Police 'decriminalising cannabis' as prosecutions fall away' *The Guardian* https://www.theguardian.com/society/2018/jul/14/police-decriminalising-cannabis-prosecutions-fall-norman-lamb-mp

Williams, J., Bretteville-Jensen, A. L. (2014) 'Does liberalizing cannabis laws increase cannabis use?' *Journal of Health Economics,* 36, pp. 20-32.