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PREDICTING CANNABIS USE INTENTIONS AMONG STUDENTS: APPLICATION OF THE THEORY OF PLANNED BEHAVIOR

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Abstract

Background

Over the past few decades' Cannabis use has shown a significant increase. The main aim of the present study was to examine cannabis use intentions using the Theory of planned behavior.

Method: A sample of 436 university students ($M_{age}=24.08$) was randomly recruited. The participants completed the self-report measures of Attitude, perceived norms, perceived behavioral control, and cannabis use intentions. The collected responses were analyzed using correlational and multiple regression analysis.

Results: The results revealed that Attitude, perceived norms, and perceived behavioral control significantly predicted cannabis use intentions and explained 33 % of the variance in cannabis use intentions. Furthermore, with respect to gender differences, significant mean differences were found in Attitude, perceived norms, and cannabis use intentions, while the mean differences in perceived behavioral control were found to be indifferent in both males and females.

Conclusion: The findings from this study highlight the usefulness of the Theory of planned behavior in predicting cannabis use intentions. Interventions directly targeting these factors could help reduce cannabis use intentions.

Keywords: Cannabis use, Intentions, Theory of planned behavior

Introduction

Substances have been used by humans since the dawn of civilization in order to cure illness, enhance pleasure and relieve tension (Ray and Ksir 1990). However, in the past few decades, the use of traditional substances has been replaced by new and more hazardous substances. Substance abuse is defined as "Persistent or sporadic use of a drug inconsistent with or unrelated to acceptable medical practice" (W.H.O, 1994). Recently the world has witnessed a significant increase in the use of substances. There are around 271 million drug users, which represents 5.5 percent of the global population (UNODC, 2019). India, the world's second-largest population, has about 160 million alcohol users and 23 million opioid users. In simpler terms, approximately 28% of households are affected by cannabis use. This significant increase in cannabis use is not uniform for all age groups. Research has reported increased involvement of the young generation in cannabis use globally (Ahmed et al., 2020; Koposov et al., 2018; Pirdehghan et al., 2017; Wang et al., 2017; Wu et al., 2011).

India has the world's largest adolescent population belonging to the 10-19 years of age group. Adolescence is a crucial stage of human development. This encompasses emotional, physical, and spiritual changes, which are influenced by both biological and environmental characteristics. During adolescence, individuals are encouraged to make high-risk decisions, which are frequently influenced by growing personal autonomy, peer pressure, media depiction, and advertisements which in turn influence adolescents' Intention to engage in risky behavior such as substance abuse (Swanson et al., 2010). The increased cannabis use among adolescents is responsible for increased mortality, accidents, school dropout, violence, and an increased rate of crimes (World Health Organization, 2014). Drug use disorder accounted for 585,000 deaths in 2017, with 66 percent of deaths attributed to opioid use (Global Burden of Disease Study, 2017). To prevent adolescent substance use, research demands an effective intervention program. Therefore, extensive research needs to be conducted to identify effective factors that improve the understanding of why certain people use drugs while others remain resistant. Once the effective factors are identified, they can be directly targeted in intervention programs to prevent people from using substances (Szalay et al., 2006). Therefore, the present study seeks to apply the Theory of planned behavior to predict cannabis use intentions.

Theory of planned behavior

The Theory of Planned Behavior is an extensively utilized and validated health behavior theory to predict health behavior (Hagger et al., 2018). The Theory proposes that behavior is most proximally predicted by an individual's Intention to perform the target behavior, which in turn, is predicted by an individual's attitudes towards the target behavior and perceived norms related to that behavior, as well as perceived behavioral control. Attitude towards the behavior represents an overall evaluation of engaging in a particular behavior. An individual's favorable evaluation of target behavior increases the chances of developing strong intentions to perform that behavior. Similarly, negative evaluation of target behavior is found to be inversely related to intentions to perform the target behavior.



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Perceived norms refer to the social pressure that individual experiences to perform or not to perform the target behavior. (Fishbein & Ajzen, 1980). If an individual thinks that important people in their lives will accept they're performing the behavior, therefore the individual is more likely to perceive social pressure to perform the target behavior. Perceived behavioral control is an individual's belief in their ability to conduct the target behavior, which is very close to Albert Bandura's concept of self-efficacy (Bandura, 1977), which involves an individual's perception of whether or not an individual will be able to perform the target behavior while keeping in view the level of difficulty (Ajzen, 2002). In the present study, perceived behavioral control is operationalized as efficacy to resist using the substance (Armitage & Conner, 2001; Dzewaltowski et al., 1990; Ito et al., 2015; Lloret et al., 2018; Morell-Gomis et al., 2019; Vries et al., 1988). The Theory has been widely used to predict a variety of cannabis use behavior such as alcohol (Caudwell & Hagger, 2015; Cooke et al., 2016a; Lawental et al., 2018; Mason et al., 2017; Nguyen et al., 2019; Zhang et al., 2018) smoking (Saeed Bashirian et al., 2019; Choudhury Robin & Noosorn, 2019; Hershberger et al., 2018; Jalilian et al., 2016; M, 2015; Pearson et al., 2018) marijuana (Ito et al., 2015; Pearson et al., 2018), and prescription drugs (Saeed Bashirian et al., 2014; Davis et al., 2019; Srigley, 2013). The meta-analytic study conducted by Sheeran et al., (2016) found that experimental changes in an individual's attitude toward the behavior, norms, and self-efficacy results in significant changes in an individual's intentions toward the target behavior.

Similarly, another study conducted by Malmberg et al.,(2012) on adolescents' marijuana use found that individuals' favorable Attitude toward using marijuana, greater perceived social acceptance, and lower self-efficacy to resist marijuana use were related to the initiation of marijuana use through a stronger intention to begin marijuana use. More recently, a research study conducted by Jalilian et al.,(2020) on young Iranian adults using the Theory of planned behavior to predict marijuana use found that all the proposed variables of the Theory of planned behavior successfully predicted behavioral Intention to use marijuana and were positively correlated to one another and with marijuana use. In contrast, greater levels of self-efficacy and problem-solving skills were found to be correlated with lower marijuana use. Therefore, based on the above-discussed studies, we propose the following hypothesis.

- H₁ Attitude will be positively related to cannabis use intentions,
- H₂ perceived norm will be positively related to cannabis use intentions.
- H₃ perceived behavioral control would be negatively related to cannabis use intentions.
- H₄ Attitude, perceived norms, and perceived behavioral control will significantly predict cannabis use intentions.

2. Methods

Participants

The participants for the present study include students within the age range of 18-35. A total of 450 students were randomly recruited. The participation was purely voluntary, and informed consent was taken from all the participants. To collect the responses self-administered questionnaire was used, which required 20-25 minutes to complete. The survey resulted in 450 responses, of which only 436 responses were found fit for further analysis, which includes 154 males and 282 females with a mean age of 24.08.

Measures used

The items used to measure the Theory of planned behavior (TPB) components, such as Attitude, perceived norms, perceived behavioral control, and Cannabis use Intentions, were adapted from previous studies (Saeid Bashirian et al., 2017; Huang et al., 2014; Malmberg et al., 2012), which were designed according to the TPB manual for the construction of questionnaires. A total of 19 items were used to measure the constructs of TPB. The Attitude was measured using three items (e.g., "I believe using Cannabis is harmful, enjoyable, relaxing); higher scores indicate a positive cannabis use attitude. Perceived norm was measured using six items (e.g., "I believe if I use Cannabis use, my friends will approve it." PBC was measured using a six-item (e.g., "I believe I can resist cannabis use." Behavioral Intention was measured using four items (e.g., "I intend to use Cannabis in the next month." All the constructs were measured using 7 points Likert scale ranging from (1= strongly agree to 7 = strongly disagree).

Data analysis and results

The present study used SPSS (version 26) to perform statistical analysis. Initially, the data were analyzed to ensure the normality of data, absence of missing values, and to test the multivariate assumption. Secondly, Pearson's bivariant correlation analysis was conducted to analyze the relationship between TPB variables. Thirdly multiple regression analysis was conducted to analyze whether Attitude, perceived norms, and perceived behavioral control significantly predict Cannabis use intentions. Finally, an independent t-test was conducted to analyze the mean differences in Attitude, perceived norms, perceived behavioral control, and cannabis use intention with respect to gender.



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Table 1: Intercorrelation and Descriptive statistics of study variables.

Constructs	Mean	SD	Cronbach's alpha	1	2	3	4
1. Attitude	28.51	10.932	0.823	1.00			
2. Perceived norms	21.45	8.313	0.753	0.581**	1.00		
3. Perceived behavioral control	75.12	20.041	0.731	- 0.349**	- 0.357**	1.00	
4. Intention	12.36	5.613	0.814	0.500**	0.513**	- 0.339**	1.00

**= *P* significant at ≤ 0.01

Results

Table 1 represents the results of descriptive statistics, including Pearson's bivariate correlations between Attitude, perceived norms, perceived behavioral control, and Intention to use substances. Results revealed that attitude ($r = 0.500, p < 0.01$), and perceived norms ($r = 0.513, p < 0.01$), both have significantly positive correlation with intention to use substances. While perceived behavioral control ($r = -0.339, p < 0.01$) was significantly negatively related to Cannabis use Intention. i.e., students with a positive attitude towards Cannabis use, perception of others' approval, and lower ability to resist Cannabis use are significantly related to Cannabis use Intentions. Moreover, all the relationships of understudy variables are below 0.8, which suggests the absence of multicollinearity (Tabachnick et al., 2007)

Variables	Gender	N	Mean	SD	df	t-value	Sig
Attitude	male	154	31.47	11.75	434	4.270	.000
	female	282	26.89	10.11			
Perceived norms	male	154	23.66	8.51	434	4.189	.000
	female	282	20.24	7.96			
Perceived behavioral control	male	154	76.07	17.28	434	.731	.465
	female	282	74.60	21.41			
intention	male	154	14.02	6.63	434	4.656	.000
	female	282	11.46	4.74			

**Sig. at 0.01; SD= standard deviation



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The results reported in Table 2 represent the mean differences in Attitude, perceived norms, perceived behavioral control, and Intention to use substances with respect to gender. The results revealed that the calculated t-value of attitude ($t= 4.270$), perceived norms ($t= 4.189$), and intention to use substances ($t= 4.656$), is significant at 0.01 level. While the calculated t-value ($t= 4.656$) of perceived behavioral control is found to be insignificant at a 0.05 level, suggesting that males and females significantly differ in Attitude, perceived norms, and intentions to use substances. Furthermore, results revealed that males scored significantly higher on Attitude, perceived norms, and intentions to use substances than females.

Variables	Beta coefficient	SE	t-value	sig.	R	R ²
Attitude	0.277	0.025	5.674	<0.001**	0.583	0.335
Perceived norms	0.304	0.033	6.202	<0.001**		
Perceived behavioral control	- 0.133	0.012	-3.121	<0.001**		

Note: SE= standard error, $p<0.01$; **, Adjusted R², .335, F, 74.101; R², .340.

Table 3 reports the results of the multiple regression analysis. Results revealed that the proposed predictors significantly predicted the Intention to use substances. The overall proposed model explained 33 % of variance ($R^2 = 0.335$; $F = 74.101$; $p < 0.001$) and the model is found to be well adjusted. Attitude ($\beta = 0.277$, $p < 0.01$), perceived norms ($\beta = 0.304$, $p < 0.01$), and perceived behavioural control ($\beta = -0.133$, $p < 0.01$), significantly predicted intention to use substances. Moreover, results revealed that Attitude and perceived norms played a more significant role in influencing the Intention to use substances than perceived behavioral control.

Discussion

The main aim of the present study was to analyze the role of attitude, perceived norms, and perceived behavioral control as a predictor of Cannabis use Intentions. The results of the present study revealed a significant relationship between perceived behavioral control, attitude, and perceived norms with cannabis use intentions, which depicts that students who had evaluated Cannabis use positively and perceived the pressure of using Cannabis also had lower levels of refusal self-efficacy are more likely to develop cannabis use intentions. These results are supported by the past literature (Jalilian et al., 2020; Lawental et al., 2018). The proposed model significantly predicted cannabis use intentions. Perceived norms and attitudes turned out to be the strongest predictor of cannabis use intentions as compared to perceived behavioral control. These results are in line with previous research that has found attitude and perceived norms as the strongest predictors of Cannabis use intentions (González-Iglesias et al., 2015), and the overall model explained 33% of the variance in cannabis use intentions.

Moreover, regarding the gender differences in attitude, perceived norm, perceived behavioral control, and Cannabis use Intentions, our results revealed significant mean differences in attitude, perceived norms, and Cannabis use Intentions, which is consistent with the previous studies, while no significant mean differences were found in perceived behavioral control with respect to



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gender. These results are consistent with previous studies. (Cooke et al., 2016; Zimmermann & Sieverding, 2010). Furthermore, the mean differences in attitude, perceived norms, and cannabis use intention was found to be high in males as compared to females, while no significant mean differences were found in perceived behavioral control. This indicates that males evaluate Cannabis use positively and gives more importance to others' approval of using Cannabis than females. While both males and females believe that they can resist Cannabis use if tempted. These differences in mean scores might be due to the gender role, especially in the Asian contexts where males have more freedom to express themselves, providing their opinions and experiences more chances of getting involved in cannabis use than females.

Implication and limitations

The present study adds to the literature on the applicability of the Theory of planned behavior in the Indian context to predict cannabis use intention, as the present study provided evidence of the predictive validity of TPB variables in predicting cannabis use intentions. The results from this study have compelling evidence which will help to develop effective intervention programs to reduce cannabis use intentions by directly focusing on Cannabis use attitudes, perceived norms, and helping students on increasing refusal self-efficacy toward Cannabis use. For example, a study conducted by (Barratt & Cooke, 2018) reported that interventions using digital techniques, such as the use of digital apps and messages, could be used to highlight the negative consequences of using substances and to feel confident about avoiding using Cannabis. Furthermore, the results from this study highlight the differences in TPB variables with respect to gender, thus highlighting the need for gender-specific intervention programs. The present study has some limitations. First, the present study is based on a cross-sectional design which allows the researcher to measure the students' intentions at a single point in time. Future studies based on the perspective and experimental design will help to examine the translation of students' intentions into actual behavior. Second, the present study used self-report measures, which may lead to social desirability bias. Therefore, future studies may include multiple assessments to improve the validity of the findings.

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