Peer Influence and Cannabis Use in Young University Students in Southern Mexico

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RESUMEN

Introducción: el consumo de marihuana representa un problema de salud pública debido a su naturaleza multifactorial. Dentro del ámbito universitario, la influencia de los pares emerge como un factor clave que puede fomentar comportamientos de riesgo, como el consumo de marihuana entre los jóvenes. **Objetivo:** analizar la relación y el efecto de la influencia de los pares sobre el consumo de marihuana. **Método:** estudio correlacional predictivo en 772 jóvenes universitarios del sur de México, con edades comprendidas entre 18 y 29 años. Los datos se recolectaron mediante dos instrumentos autoaplicados (el Inventario de Presión de Pares [IPP] y la Prueba de Identificación de Trastornos por Consumo de marihuana [CUDIT]), programados en la plataforma digital *SurveyMonkey*. **Resultados:** el 31.6% de los jóvenes reportó haber consumido marihuana en algún momento de su vida, de los cuales el 16.3% tenía un consumo perjudicial y el 8.7% un consumo dependiente. Se encontró una relación positiva y significativa entre la influencia de pares y el consumo de marihuana (rs = .188, p < .05). Los resultados del modelo de regresión lineal indicaron que la presión de pares predice el 5.8% de la varianza en el consumo de marihuana (R^2 = .058, p < .05). **Discusión y conclusiones:** la influencia de los pares desempeña un papel significativo en el consumo de marihuana entre jóvenes universitarios. Sería relevante implementar programas de educación y estrategias para fortalecer la toma de decisiones autónomas para disminuir la susceptibilidad a las dinámicas grupales que promueven comportamientos de riesgo.

Palabras clave: uso de marihuana, influencia de pares, adulto joven, estudiantes.

ABSTRACT

Introduction: cannabis use constitutes a public health problem due to its multifactorial nature. In the university environment, peer influence emerges as a key factor that can encourage risky behaviors, such as cannabis use among young people. **Objective:** to analyze the relation and the effect of peer influence on cannabis use. **Method:** predictive correlational study with 772 university students from southern Mexico, aged between 18 and 29 years. Data were collected using two self-administered instruments (the Peer Pressure Inventory [PPI] and the Cannabis Use Disorders Identification Test [CUDIT]), scheduled on the digital platform *SurveyMonkey*. **Results:** a total of 31.6% of young people reported having used cannabis at some point in their lives, of which 16.3% had harmful use and 8.7% had dependent use. A positive and significant relation between peer influence and cannabis use (rs = .188, p < .05) was found. The results of the linear regression model indicated that peer pressure predicts 5.8% of the variance in cannabis use (R^2 = .058, p < .05). **Discussion and conclusions:** peer influence plays a significant role in cannabis use among college students. It would be relevant to implement educational programs and strategies to strengthen autonomous decision-making to reduce susceptibility to group dynamics that promote risky behaviors.

Keywords: marijuana use, peer influence, young adult, students.

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INTRODUCTION

Cannabis use among young people represents a growing public health problem due to the physical, psychological, and social implications it triggers. The most common consequences include accidents, injuries, antisocial behavior, cardiovascular problems, respiratory diseases, and mental disorders. These comorbidities have a high social and health cost, generating losses and suffering for the person, their family, and the community (United Nations Office on Drugs and Crime [UNODC], 2022).

Internationally, North America is among the regions with the highest prevalence of cannabis use. In 2021, 43% of young people reported using this substance in the past year, 29% in the past month, and 11% reported daily use (National Institute on Drug Abuse [NIDA], 2022). In Mexico, the figures are also concerning, with an estimated prevalence of 12.8% of consumption at some point in life, with a higher proportion among men (20.1%) compared to women (6.1%) (Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz [INPRFM] et al., 2017).

These data reflect a trend towards increased cannabis consumption, especially among young people, a group that is vulnerable to the use of this substance due to the consequences on their overall health and personal development (Secretariat of Health [SSA] and National Commission on Mental Health and Addictions [CONASAMA], 2024). In this regard, peer influence emerges as a key factor that significantly intervenes in young people behavior and acts as a catalyst for the adoption of risky behaviors, such as cannabis use (Keyzers et al., 2020).

Peer influence is defined as the pressure that a group exerts on an individual to modify their thoughts, feelings, and actions, and can manifest itself in a positive or negative way (Guzmán-Facundo et al., 2019). In university environments, where young people seek to consolidate their identity and establish meaningful social connections, these group dynamics are particularly relevant. For instance, the need to belong to a social group or to comply with group expectations can lead young people to engage in risky behaviors, even when these contradict their personal values or beliefs (Alves et al., 2021; Barnett et al., 2022).

Peer influence has been documented to not only directly impact the decision to consume cannabis, but also contribute to the normalization of consumption within certain social circles. This dynamic can reduce the perception of risk associated with the substance by presenting it as a means of managing academic stress or by reinforcing the idea that its consumption is a socially accepted, and even expected, behavior in some university groups. This normalization process not only facilitates access and acceptance of consumption, but also hinders young university students adoption of preventive attitudes (Barnett et al., 2022; Herold et al., 2021; Keyzers et al., 2020; Leadbeater et al., 2022).

Previous research has shown that peer influence can vary depending on factors such as gender, emotional proximity to the group, and sociocultural characteristics of the environment (Allen et al., 2022; Alves et al., 2021; Barnett et al., 2022). In fact, it has been observed that men tend to experience greater social pressure to adopt risky behaviors, while women could be more susceptible to indirect forms of influence, such as imitation of consumer behaviors in close circles (Herruzo et al., 2016; Ortíz-García & Clavero-Mira, 2015).

On the topic of drug addiction, international studies such as those by Alves et al. (2021) and Herold et al. (2021) have shown that young people who interact with friends who use cannabis are significantly more likely to adopt this behavior. In the Mexican context, Vega-Cauich et al. (2018) found that having a cannabis user friend was the most determining factor associated with the initiation of illicit drug use. Similarly, Guzmán-Facundo et al. (2019), in their study with young university students in northern Mexico, observed that peer pressure directly influences attitudes towards the consumption of these substances, which encourages risky behaviors.

Despite existing contributions, significant gaps persist in knowledge about peer influence on cannabis use in university settings, especially in Mexico. Most studies have been conducted in international contexts (Alves et al., 2021; Herold et al., 2021; Keyzers et al., 2020; Leadbeater et al., 2022), and the few studies conducted in the country focus on northern regions or highly developed urban areas, leaving aside the cultural, social, and economic particularities of other regions of the country, such as southern Mexico (Vega-Cahuich et al., 2018; Guzmán-Facundo et al., 2019).

Furthermore, there are few studies that have specifically explored the influence of peers on cannabis use within the university population, a particularly vulnerable group that is crucial for implementing prevention and early intervention strategies. This knowledge gap limits the comprehensive understanding of the factors associated with the use of this substance within this population, particularly in less

explored contexts and with specific social dynamics (Guzmán-Facundo et al., 2019; Velasco-Arellanes et al., 2018).

In the current Mexican context, cannabis consumption has shown a progressive increase, generating social, economic, and cultural repercussions in young people from various social strata, both in urban and rural areas (Velasco-Arellanes et al., 2018; SSA & CONASAMA, 2024). This underscores the importance of analysing in more details the social factors influencing its consumption.

Young university students are a population segment of interest, since they present characteristics that can facilitate or prevent the use and abuse of cannabis; thus, the study on the influence of peers is highly relevant to better understand their relationship and effect on the consumption of this substance. The present study aims to analyze these aspects in young university students in southern Mexico.

METHOD

Design

Predictive correlational study, conducted between January 2022 and December 2024.

Participants

The population consisted of young university students. The sample selection was based on a probability sampling stratified by school (Health Sciences, Law, Engineering, and Natural Sciences) and the sample size (n = 772 young people) was estimated through the software nQueryAdvisor 7.0, with a significance level of .05, power of 90%, effect size of .05, and a non-response rate of 20% being considered.

Young men and women between the ages of 18 and 29 years, belonging to a public university located in Ciudad del Carmen, Campeche, Mexico, were included. The sample consisted of 772 participants, with an average age of 20.4 years (SD = 2.0). The female sex predominated (F = 544; 70.5%), with 92.5% of the participants reporting being single and dedicating themselves exclusively to studying (74.0%).

A significant proportion of the sample belongs to the School of Health Sciences (79.2%), followed by Engineering (9.4%), Law (7.5%), and Natural Sciences (3.8%). Among the most prevalent careers are Nursing (34.2%), Law (7.5%), Mechanical Engineering (5.6%) and Marine Biology (3.8%). The vast majority of students are currently in their second term (39.8%) and to a lesser extent in their eighth term (17.6%).

Instruments

A Certificate of Personal Data and Prevalence of Drug Use *(Cédula de Datos Personales y de Prevalencia de Consumo de Marihuana - CDPYPM)* was used along with two measurement instruments programmed in the *SurveyMonkey* Platform.

The CDPYPM collected sociodemographic information, including age, sex, degree, and school term. In addition, data were obtained on the prevalence of cannabis use in its different forms: global, during some periods, current, and instantaneous. The number of times cannabis was used per occasion and the most common forms of use were also recorded.

The first instrument used was the Peer Pressure Inventory (PPI) by Brown and Clasen (1985), adapted to the Mexican population by Guzmán-Facundo et al. (2019). The instrument contains 53 situations that allow questioning how frequent friends pressure is, divided into 5 subscales: friend compliance, family involvement, involvement with friends, involvement at school, and pressure to misbehave (substance use). An example of an item is: How strong is the pressure from your friends to study hard, do homework, or not study or do homework? Each item is answered on a Likert-type scale: 0 = no pressure, 1 = a little, 2 = some pressure, and 3 = a lot of pressure. The overall scale and subscale scores are obtained by calculating the average of the scores assigned to each question. This means that a higher score reflects a higher level of peer pressure. The scale applied to the Mexican population reported a Cronbach's Alpha of .80 (Guzmán-Facundo et al., 2019). In the present study, it showed even higher reliability, with a Cronbach's Alpha of .92.

The second instrument used was the Cannabis Use Disorder Identification Test (CUDIT), developed by Adamson et al. (2010). This instrument consists of 8 items designed to examine problems associated with cannabis use in the last six months, as well as difficulties arising from its use. An example of a question included in the questionnaire is How often do you use cannabis?, with five response options in Likert format: 0 = never; 1 = monthly or less; 2 = two or four times a month; 3 = two or three times a week, and 4 = four or more times a week.

CUDIT score has a minimum value of 0 and a maximum of 32 points. According to the sum of the items that make up the domains, it can be mentioned that from 0 to 7 points = risky consumption; from 8 to 12 points = harmful consumption, and from 13 to 32 points = dependent consumption. This questionnaire, in its original validation, has shown a sensi-

tivity of .91 and a specificity of .90 (Adamson et al., 2010) with a Cronbach's Alpha of .91. The scale has been applied to young Latin Americans (Mezquita et al., 2022) showing a Cronbach's Alpha of .81. For the present study it showed a Cronbach's Alpha of .73.

Procedure

Data collection was carried out between April and May 2024. The recruitment process for participants began after obtainment of an authorization from the educational authorities. Subsequently, the complete list of students enrolled in the schools of Health Sciences, Law, Engineering, and Natural Sciences for the 2023-2024 school year was requested, as well as the distribution of students by degree and term.

Once the information was obtained, the participants were selected randomly, considering the semester and the career, by using a spreadsheet in Microsoft Excel. The selected groups were contacted in their respective classrooms at the end of class hours, when they were invited to participate in the study. Those young people who agreed to participate in the research were informed about the objectives and conditions of the study and were given informed consent, and could read it and clarify any doubts. Moreover, they were informed that their participation was completely voluntary, anonymous, and confidential.

Prior to the application of the instruments, informed consent was obtained. They were then provided with a QR link to access the questionnaires designed on the platform *SurveyMonkey*. The digital survey consisted of two sections: the first presented the CDPYPM, while the second included the PPI and the CUDIT. In both sections, detailed instructions were provided for correctly completing each questionnaire. Participants were also reminded that they could withdraw from the study at any time without any repercussions. At the end of data collection, they were thanked for their collaboration.

Data analysis

Data obtained from the platform *SurveyMonkey* were processed using the Statistical Package for the Social Sciences (SPSS), version 22.0 for Windows. In the first instance, descriptive statistics was applied using frequencies, proportions, measures of central tendency, and measures of dispersion. Subsequently, weighted Chi-square analysis was used to adjust for differences in sample size and to compare the prevalence of cannabis use and type of cannabis use by sex.

Because continuous variables did not show a normal distribution, as determined by the Kolmogorov-Smirnov goodness-of-fit test with Lilliefors correction, the Mann-Whitney U test was used to compare, by sex, the scores obtained in the peer pressure inventory. In addition, Spearman's correlation coefficient analysis was used to evaluate the relationships between the variables.

To address the objective of the study, a Multiple Linear Regression Model was applied. However, since the variables did not follow a normal distribution, the analysis was complemented with the bootstrap resampling technique, using 10,000 subsamples to estimate the 95% confidence intervals of the model. The bootstrap, by generating multiple subsamples from the original sample through random resampling, allows for more precise estimation of confidence intervals and reduction of the impact of deviations from normality on statistical inferences (it reports corrected and accelerated confidence intervals [BCa]). Thus, this strategy provides a robust basis for calculating adjusted statistics, ensuring that the predictive estimates are reliable and representative (less sensitive to biases and standard errors), which allows improving the precision and robustness of the results obtained.

Ethical Considerations

This study was conducted in accordance with the Regulations of the General Health Law on Health Research (Secretaría de Gobernación [SEGOB], 2014), which stipulates that health research must guarantee respect for the participants' rights and well-being. Therefore, approval was obtained from the Research Ethics Committee and the Research Committee of the Nursing School of the Autonomous University of Nuevo León. Moreover, approval was obtained from the relevant educational authorities, as well as the informed consent from the young people participating in the study, ensuring compliance with fundamental ethical principles

RESULTS

Regarding the prevalences of cannabis use, 31.6% (F = 244) of the young people reported having used cannabis at some point in their lives, with an average age of onset of 18.1 years (SD = 2.7). A total of 15.5% (F = 120) reported having consumed in the past year, 13.5% (F = 104) in the past month, and 12.4% (F = 96) during the past week. The average amount consumed per occasion was 1.8 cigarettes (SD = 2.7). In contrast, the preferred methods of

Table 1
Prevalence measures of cannabis use by sex

	Female		Male			
Prevalences	*f*	*%*	*f*	*%*	C^2	*p*
Sometime in life						
Yes	154	46.1	180	53.9		
No	390	58.6	276	41.4	13.901	.001
In the past year						
Yes	70	41.2	100	58.8	14.339	.001
No	473	57.1	356	42.9		
In the past month						
Yes	59	39.6	90	60.4	15.466	.001
No	485	57.0	366	43.0		
In the past week						
Yes	53	38.1	86	61.9	17.229	.001
No	491	57.0	370	43.0		

Note: f = frequency; % = percentage; C^2 = Pearson Chi Square Test; p, statistical significance, n = 772

consumption were the "churro" (60.6%) and the brownies (32.7%). When decomposing data by sex, it was observed that women prefer the brownies (42.4%), while for men the "churro" predominates (71.1%).

When analyzing the prevalence of cannabis use by sex, Table 1 shows statistically significant differences in the four prevalence measures, with higher consumption among men *($p < .05$).*

The young people obtained an average score of 5.9 *(SD* = 4.9*)* in the CUDIT test. Table 2 shows that 75% of young people who used cannabis during the past six months reported risky use, while 16.3% reported harmful use, and 8.7% reported dependent use. Although men presented a higher proportion of risky, harmful, and dependent consumption, these differences were not statistically significant (χ^2 = 3.101, p = 0.212).

Participants obtained an average score of 29.2 (*SD* = 28.0*)* on the Peer Pressure Inventory (PPI). When comparing by sex, statistically significant differences were identified (See Table 3), greater peer pressure was observed in men compared to women (U = 51330.00, p = 0.001). As for the subscales, men reported significantly higher scores than women on the following dimensions: conformity with friends (U = 52141.00, p = 0.001), involvement with friends (U = 48312.50, p = 0.001), and pressure for misconduct (U = 50333.00, p = 0.001).

Table 4 shows a positive relationship between the total PPI score and the CUDIT score ($p < .05$). This same trend is observed in the subscales of involvement with friends ($p < .001$) and pressure for misconduct ($p < 0.05$). The significant results indicate that, in any of the situations analyzed, the greater the pressure exerted by peers, the greater the cannabis consumption.

Answering the objective of the study, the results of the Multiple Linear Regression Models are pre-

Table 2
Use of cannabis according to CUDIT

	Global		Female		Male	
Pattern	*f*	*%*	*f*	*%*	*f*	*%*
Risky consumption	78	75.0	45	40.5	66	59.5
Dependent consumption	9	8.7	3	20.0	12	80.0
Harmful consumption	17	16.3	11	47.8	12	52.2

Note: f = frequencies, % = percentages, n = 104

Table 3
Peer pressure by sex

	Adolescent							
	Woman			Man				
	M	*Mdn*	*SD*	*M*	*Mdn*	*SD*	*U*	*p*
PPI	27.0	19.0	27.0	*34.5*	*27.0*	*29.8*	*51330.00*	*.001*
Conformity with friends	2.6	1.0	4.2	*3.8*	*2.0*	*5.2*	*52141.00*	*.001*
Family Involvement	3.6	2.0	4.3	*3.8*	*2.5*	*4.1*	*61591.00*	*.132*
Involvement with friends	4.4	3.0	5.2	*6.7*	*5.0*	*6.4*	*48312.50*	*.001*
School involvement	6.6	5.0	5.9	*6.1*	*6.0*	*5.4*	*61591.00*	*.880*
Pressure for bad behavior	4.7	2.0	6.2	*6.6*	*4.0*	*7.2*	*50333.00*	*.001*

Note: *M* = Mean; *Mdn* = Median; *SD* = Standard deviation; *U* = *Mann-Whitney U*; *p* = Statistical significance; PPI = Peer Pressure Inventory; *n* = 772

Table 4
Spearman correlation matrix of peer pressure on cannabis use

Variables	*CUDIT*
PPI	.188*
Conformity with friends	.105
Family Involvement	.122
Involvement with friends	.235**
Involvement in school	.137
Pressure for bad behavior	.215*

Note: **p <.001; * p < .05; PPI = Peer Pressure Inventory

sented in Table 5. In the first model, the PPI score and the age of the participants (as a constant) were considered as independent variables, while the dependent variable was the CUDIT score. The model equation was significant (F = 3.597, p = 0.030). However, only the PPI score was identified as a significant predictor of cannabis use (B = 0.041, p = 0.047, *CI 95%* [0.004, 0.085]). This model explained 5.8% of the observed variation in the dependent variable (R^2 = 0.058).

In Model 2, the PPI subscale scores were included as independent variables, while the dependent variable was the CUDIT score. The results indicate that the model was significant (F = 4.210, p = 0.002), which explains 15.6% of the variation in the dependent variable (R^2 = 0.156). Within the subscales analyzed, the following were identified as significant predictors of cannabis use: family involvement (B =

Table 5
Cannabis Use Prediction Estimators (CUDIT)

				Confidence interval at 95% of BCa	
(Model 1)	*B*	*t*	*p*	*Lower Limit*	*Upper Limit*
Age	.265	.101	.417	-.260	1.049
PPI	.041	.213	.047	.004	.085
(Model 2)					
Conformity with friends	-.031	-.768	.605	.071	.626
Family Involvement	.100	2.789	.020	.061	.458
Involvement with friends	.363	2.497	.016	.071	.626
Involvement in school	.009	.360	.709	-.035	.062
Pressure for bad behavior	.079	1.843	.198	-.041	.215

Note: *B* =Beta, *t* = t Value, *p* = Statistical significance, *BCa* = Bias-corrected and accelerated bootstrap based on 10000 samples.

0.100, p = 0.020, *IC 95%* [0.061, 0.458]) and involvement with friends (B = 0.363, p = 0.016, *CI 95%* [0.071, 0.626]). These findings suggest that, in both dimensions, the greater the peer pressure, the greater cannabis use.

DISCUSSION AND CONCLUSIONS

This study analyzed the relationship and influence of peers on cannabis use in a sample of 772 university students from southern Mexico. The results showed that the prevalence of consumption in men is consistent with what has been reported in previous national and international research, which indicates that cannabis consumption is more frequent in this group (INPRFM et al., 2017; Rodríguez-Puente et al., 2022; Rey-Brandariz et al., 2024). However, the consumption percentages observed in women suggest a progressive increase in this behavior, which is consistent with the estimates of the National Institute on Drug Abuse (NIDA, 2024) and the Report on Drug Use in the Americas (Inter-American Drug Abuse Control Commission [CICAD], Organization of American States [OAS], 2019). These reports highlight that women may be adopting consumption patterns equal to or even greater than those of men.

Regarding consumption in both sexes, this behaviour could be linked to the insertion of young people in higher education, where the majority entered courses related to health sciences. These disciplines often require a high academic level and responsibility, which can generate stressful or overwhelming situations. These conditions could promote the use of cannabis as a coping and relaxation mechanism (Li & Guo, 2020; Palacios-Arenas & Terrones-Saldívar, 2019).

The increase in cannabis use among women today could be associated with social and political changes that have contributed to the normalization and reduction of stigma surrounding substance use (Cuttler et al., 2016; Velasco-Arellanes et al., 2018). Another possible explanation for the observed increase is the preference for alternative products containing cannabis, such as brownies. This type of presentation is more accessible and socially acceptable, especially in contexts where smoking is more stigmatized. In addition, these products may be more persuasive to women compared to traditional methods of consumption, such as smoking cannabis cigarettes (Palacios-Arenas & Terrones-Saldívar, 2019; SSA & CONASAMA, 2024; Velasco-Arellanes et al., 2018).

Regarding the score obtained in the Peer Pressure Inventory (PPI), young university students reported experiencing pressure from their peers, mainly among men when compared to women. This trend was also observed in the dimensions of conformity with friends, involvement with friends, and pressure to misbehave. The findings are consistent with previous studies (Eze et al., 2020; Keyzers et al., 2020; Ogowewo et al., 2015), which indicate that young men are more likely to be influenced by their peers to adopt or avoid risky behaviors, including substance use.

This phenomenon can be explained from a sociocultural perspective (Herruzo et al., 2016; Ogowewo et al., 2015). In Mexico, men tend to engage in impulsive and risky behavior more frequently, as well as feel a stronger need to belong to a group. These groups often share attitudes, beliefs, and ideologies, which in many cases include antisocial behaviors such as cannabis use (Guzmán-Facundo et al., 2014, 2019).

With respect to peer influence, positive and significant relationships were identified between the total score of the PPI and the CUDIT, indicating greater cannabis use as peer pressure increases. Significant correlations were also found between the scores of the subscales involvement with friends and pressure for bad behavior (drug use) and the CUDIT. These results suggest that the greater the influence of peers to participate in activities with friends and the greater the pressure for risky behaviors, the higher the cannabis use.

These findings support international studies that have reported a positive relationship between peer pressure and the use of illicit drugs such as cannabis (Keyzers et al., 2020; Leadbeater et al., 2022; Scott et al., 2015). Furthermore, the results observed in this sample of young university students can be explained by the need to socialize and belong to a group, adopting behaviors similar to those of their peers to share experiences and be socially accepted (Guzmán-Facundo et al., 2019; Palacios-Arenas & Terrones-Saldívar, 2019).

Conversely, the linear regression models were significant, showing a positive effect of the total score of peer influence on cannabis use. These results indicate that the greater the pressure exerted by peers, the greater the consumption of cannabis among university students. This same trend was observed in the scores of the family involvement and friend involvement subscales, which were identified as significant predictors of cannabis use.

In line with the positive effect identified in peer

influence, the results of this study show concordance with previous literature (Alves et al., 2020; Schilling et al., 2017). Several studies have shown that peer influence can play a significant role in the adoption of behaviors such as cannabis use (Allen et al., 2022; Alves et al., 2020; Keyzers et al., 2020). The scientific literature also indicates that having peers who consume licit and illicit drugs can act as a factor associated with the initiation or increase of consumption in university students (Barnett et al., 2022; Guzmán-Facundo et al., 2019; Palacios-Arenas & Terrones-Saldívar, 2019; Scott et al., 2015).

Thus, the results of this study show that peer influence is a determining factor in cannabis use among young university students in southern Mexico, with gender differences. Men tend to be more influenced by the need for group belonging, while women have seen an increase in consumption associated with social normalization and accessibility to alternative cannabis products. These findings not only confirm trends observed in national and international research, but also suggest the need to design preventive interventions focused on the social dynamics of young university students (involvement with friends and pressure to misbehave).

It is crucial to consider educational and psychosocial strategies that strengthen coping skills, reduce susceptibility to social pressure, and promote a healthy academic environment to reduce the likelihood of risky behaviors such as cannabis use. This research provides valuable evidence for understanding the social factors that contribute to cannabis use, providing a solid foundation for future initiatives in public health and addiction prevention in university populations.

Limitations of the Study

Despite the results obtained, this research presents some limitations that must be considered. One of them is the non-normal distribution of the variables, which could have limited the predictive estimation of the model on the dependent variable. Furthermore, since this is a correlational predictive study, it is not possible to establish causal relationships among the variables analyzed.

In future research, it is recommended to evaluate the trajectory of the variables through longitudinal studies, which will allow examining changes over time and exploring possible causal relationships. It is also suggested that comparisons be made by course to identify groups with the greatest peer influence and cannabis use. Moreover, there is a need to increase the sample size and integrate new variables, as well as social and personal factors that could be involved in this behavior, to strengthen the methodological design and provide a more comprehensive analysis of the phenomenon studied.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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AUTHORS CONTRIBUTION

Pedro Moisés Noh-Moo: conceptualization, methodology, formal analysis, investigation, data curation, writing original draft, writing review and editing.
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REFERENCES

Adamson, S. J., Kay-Lambkin, F. J., Baker, A. L., Lewin, T. J., Thornton, L., Kelly, B. J., & Sellman, J. D. (2010). An improved brief measure of cannabis misuse: the Cannabis Use Disorders Identification Test-Revised (CUDIT-R). *Drug and Alcohol Dependence, 110*(3), (1-2), 137-143. https://doi.org/10.1016/j.drugalcdep.2010.02.017

Allen, J. P., Loeb, E. L., Kansky, J. y Davis, A. A. (2022). Beyond susceptibility: Openness to peer influence is predicted by adaptive social relationships. *International Journal of Behavioral Development, 46*((3), 180-189. https://doi.org/10.1177/0165025420922616

Alves, R., Precioso, J., & Becoña, E. (2021). Ilicit Drug Use among College Students: The Importance of Knowledge about Drugs,

Live at Home and Peer Influence. *Journal of Psychoactive Drugs, 53*(4), 329-338. https://doi.org/10.1080/02791072.2020.1865592

Barnett, N. P., DiGuiseppi, G. T., Tesdahl, E. A., & Meisel, M. K. (2022). Peer selection and influence for marijuana use in a complete network of first-year college students. *Addictive Behaviors, 124,*107087. https://doi.org/10.1016/j.addbeh.2021.107087

Brown, B. B. & Clasen, D. R. (1985). The multidimensionality of peer pressure in adolescence. *Journal of Youth and Adolescence, 14*(6), 451-468. https://doi.org/10.1007/BF02139520

Comisión Interamericana para el Control del Abuso de Drogas [CICAD], Organización de los Estados Americanos [OEA]. (2019). *Informe sobre el consumo de drogas en las Américas*. Recuperado de https://bit.ly/3Qe2UAB

Cuttler, C., Mischley, L. K., & Sexton, M. (2016). Sex Differences in Cannabis Use and Effects: A Cross-Sectional Survey of Cannabis Users. *Cannabis and Cannabinoid Research, 1*(1), 166-175. https://doi.org/10.1089/can.2016.0010

Eze, J. E., Chukwuorji, J. C., Idoko, S., & Ifeagwazi, C. M. (2020). Does peer pressure and sensation seeking differentially influence substance use for male versus female trauma-exposed youth? *Journal of Substance Use, 25*(5), 538-544. https://doi.org/10.1080/14659891.2020.1738575

Guzmán-Facundo, F. R., García-Salas, B. A., Rodríguez-Aguilar, L., & Alonso-Castillo, M. M. (2014). Actitud, norma subjetiva y control conductual como predictores del consumo de drogas en jóvenes de zona marginal del norte de México. *Frontera norte, 26*(51), 53-74. https://bit.ly/4j7aB94

Guzmán-Facundo, F. R., Vargas-Martínez, J. I., Candia-Arredondo, J. S., Rodríguez Aguilar, L., & López-García, K. S. (2019). Peer Influence on Teens' Usage of Marijuana and Tobacco Use and Urinary Biomarkers. *Pediatrics, 147 (3_MeetingAbstract): 1011-1013. https://doi.org/10.1542/peds.147.3MA10.1011*

Herold, R., Boykan, R., Eliscu, A., & Alcala, H. (2021). Methamphetamine Use and Criminal Behavior. *International Journal of Offender Therapy and Comparative Criminology*, *54*(6), 915-936. https://doi.org/10.1177/0306624X09351825

Herruzo, C., Lucena, V., Ruiz-Olivares, R., Raya, A., & Pino, M. J. (2016). Diferencias en función del sexo en la percepción del riesgo asociado al consumo de drogas en jóvenes. *Acción Psicológica, 13 (1), 79-90. https://dx.doi.org/10.5944/ap.13.1.17422*

Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz [INPRFM], Instituto Nacional de Salud Pública [INSP], Comisión Nacional Contra las Adicciones [Conadic], Secretaría de Salud [SSA]. (2017). *Encuesta Nacional de Consumo de Drogas, Alcohol y Tabaco, 2016-2017: Reporte de Drogas*. https://bit.ly/40vgYM5

Keyzers, A., Lee, S.-K., & Dworkin, J. (2020). Peer Pressure and Substance Use in Emerging Adulthood: A Latent Profile Analysis. *Subst Use Misuse, 1–8*. https://doi.org/10.1080/10826084.2020.1759642

Leadbeater, B., Ames, M.E., Contreras, A., Thompson, C., & Goulet-Stock. (2022). Parent and Peer Influences and Longitudinal Trajectories of Cannabis Use from Adolescence to Young Adulthood. *Journal of Child and Family Studies, 31,* 3181-3191. https://doi.org/10.1007/s10826-022-02353-7

Li, Y., & Guo, G. (2020). Heterogeneous peer effects on marijuana use: Evidence from a natural experiment. *Social Science & Medicine, 252, 112907*. https://doi.org/10.1016/j.socscimed.2020.112907

National Institute on Drug Abuse [NIDA]. (24 de abril de 2022). *El consumo de marihuana y alucinógenos entre los adultos jóvenes alcanzó un máximo histórico en 2021*. https://bit.ly/4gOUDz5

National Institute on Drug Abuse [NIDA]. (30 de agosto de 2024). *El consumo de cannabis y alucinógenos entre los adultos permaneció en niveles históricamente altos en 2023.* https://bit.ly/4ji6kQu

Mezquita, L., Bravo, A. J., Pilatti, A., Ortet, G., & Ibáñez, M. I. (2022). Quantifying cannabis problems among college students from English and Spanish speaking countries: Cross-cultural validation of the Cannabis Use Disorders Identification Test-Revised (CUDIT-R). *Addictive Behaviors, 127,* 107209. https://doi.org/10.1016/j.addbeh.2021.107209

Oficina de las Naciones Unidas Contra la Droga y el Delito [UNODC]. (2022). *Informe Mundial Sobre las Drogas 2022: Tendencias del mercado de drogas de cannabis y Opioides*. https://bit.ly/40ya6NW

Ogowewo, B., Noh, S., Hamilton, H., Brands, B., Gastaldo D., Miotto-Wright, M. D. G., Cumsille, F., Khenti, K. (2015). Gender differences for peer influence on drug use among students from one university in guyana: curriculum implications. *Texto Contexto Enfermagem, 24*(spe), 170-176. http://dx.doi.org/10.1590/0104-07072015001200014

Ortíz-García, P., & Clavero-Mira, E. (2015). Estilos de consumo de sustancias adictivas en función del género. Una aproximación desde el análisis de discurso. *Acta Sociológica,* (64). https://doi.org/10.1016/S0186-6028(14)70485-2

Palacios-Arenas, M. O., & Terrones-Saldívar, M. del C. (2019). Prevalencia del consumo de marihuana en estudiantes de una institución de educación superior y los factores asociados a su consumo. *Lux Médica, 14*(41), 21-30. https://doi.org/10.33064/41lm20192010

Rey-Brandariz, J., Santiago-Pérez, M. I., Candal-Pedreira, C., Varela-Lema, L., Ruano-Ravina, A., Martinez, C., Veiga, Ss., Otero, M., Malvar, A., & Pérez-Ríos, M. (2024). Consumo de cannabis en población adulta en Galicia: Prevalencias y características asociadas. *Adicciones, 36(3), 257-266. https://adicciones.es/index.php/adicciones/article/view/1805/1379*

Rodríguez-Puente, L. A., Navarro-Oliva, E. I. P., Flores-Pérez, C., Villarreal-Mata, J. L., Botello-Mendoza, L. A., Pérez-Aguirre, D. M., & Castillo-Vargas, R. A. (2022). Depressive symptoms, dissocial behavior, consumption of alcohol and marijuana in university students. *Revista Internacional de Investigación en Adicciones, 8*(2), 32-40. https://doi.org/10.28931/riiad.2022.2.05

Schilling, L., Zeeb, H., Pischke, C., Helmer, S., Schmidt-Pokrzywniak, A., Reintjes, R., Walter, U., Girbig, M., Krämer, A., Icks, A., & Schneider, S. (2017). Licit and illicit substance use patterns among university students in Germany using cluster analysis. *Substance Abuse Treatment Prevention and Policy, 12* (1), 44. https://doi.org/10.1186/s13011-017-0128-z

Scott, M., Noh, S., Brands, B., Hamilton, H., Gastaldo, D., Miotto Wright, M. G. M., Cumsille, F., & Kenthi, A. (2015). Influencia de Pares, Familia, Espiritualidad, Entretenimiento y Consumo de Drogas en Estudiantes de Universidad en Manabi, Ecuador. *Texto & Contexto Enfermagem, 24*(Esp), 154-160. https://www.redalyc.org/pdf/714/71439758019.pdf

Secretaría de Salud [SSA] & Comisión Nacional de Salud Mental y Adicciones [CONASAMA]. (2024). *Estudio sobre el uso de Cannabis y sus derivados en población mexicana.* https://bit.

ly/3CfF3x6

Secretaría de Gobernación [SEGOB]. (02 de abril de 2014). *Reglamento de Ley General de Salud en materia de investigación para la salud. México*. https://bit.ly/3WfQLyw

Vega-Cahuich, J. I., Escobedo-Heredia, B. N. L., & Zumárraga-García, F. M. (2018). Marihuana y drogas ilícitas en jóvenes mexicanos: Factores de riesgo y protección asociados a la edad de inicio del consumo. *Revista Iberoamericana de Psicología, 11*(1), 3-10. https://doi.org/10.33881/2027-1786.rip.11103

Velasco-Arellanes, F. J., & Soto-Mendívil, E. A. (2018). Marijuana in Mexico: biological and social implications on legalization and regulation. *Revista Internacional de Investigación en Adicciones, 4*(1), 36-52. https://doi.org/10.28931/riiad.2018.1.05