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RESEARCH ARTICLE (ORIGINAL)

School climate as a protective factor for substance use in high school adolescents

Clima escolar como factor protector para el consumo de drogas en adolescentes de preparatoria

Clima escolar como fator de proteção para o uso de drogas em adolescentes do ensino médio

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Abstract
Background: The school climate is a protective factor for substance use.
Objective: To identify the association between school climate and substance use in adolescents.
Methodology: Predictive descriptive-correlational study. Single-stage cluster sampling and a sample of 227 students aged 15 to 18 years. A Personal Traits and Drug Consumption Identity Card and the School Climate Survey (MDS3) were applied.
Results: Participants had a positive perception of safety (OR = 0.904; p < 0.01). There was less alcohol consumption in the last week, explaining 8.2% of the variance. Although a positive school climate does not predict tobacco use, a positive perception of the school environment results in a lower probability of tobacco use in the last year (OR = 0.884; p < 0.05).
Conclusion: Although a positive perception of safety in the school climate is associated with no alcohol consumption in the last week, it does not predict tobacco use.

Keywords: schools; underage drinking; tobacco use; protective factors

Resumen
Marco contextual: El clima escolar se considera un factor protector para el consumo de drogas.
Objetivo: Identificar la asociación del clima escolar con el consumo de drogas por los adolescentes.
Metodología: Estudio descriptivo correlacional predictivo. Muestreo por conglomerados unietápico y una muestra de 227 estudiantes de 15 a 18 años. Se aplicó una Cédula de Identificación de Características Personales y Consumo de Drogas y la Escala de Clima Escolar (MDS3).
Resultados: Se identificó que cuando existe percepción positiva de seguridad (OR = 0,904; p < 0,01), existe menor consumo de alcohol en la última semana, lo que explica el 8,2% de la varianza. Por otra parte, el clima escolar positivo no predice el consumo de tabaco, sin embargo, existe menor probabilidad de consumo de tabaco en el último año cuando existe una percepción positiva del ambiente escolar (OR = 0,884; p < 0,05).
Conclusión: La percepción positiva de seguridad en el clima escolar se asocia con el no consumo de alcohol en la última semana, sin embargo, no predice el consumo de tabaco.

Palabras clave: instituciones académicas; consumo de alcohol en menores; consumo de tabaco; factores protectores

Resumo
Enquadramento: O clima escolar é considerado um fator de proteção para o consumo de drogas.
Objetivo: Identificar a associação do clima escolar com o uso de drogas por adolescentes.
Metodologia: Estudo descritivo correlacional preditivo. Amostragem por conglomerados num estágio e amostra de 227 alunos de 15 a 18 anos. Foram aplicados o Cartão de Identificação de Características Pessoais e Consumo de Medicamentos e a Escala de Clima Escolar (MDS3).
Resultados: Identificou-se que quando há perceção positiva de segurança (OR = 0,904; p < 0,01) há menor consumo de álcool na última semana, explicando 8,2% da variância. Por outro lado, um clima escolar positivo não prediz o uso de tabaco, porém, há menor probabilidade de uso de tabaco no último ano quando há uma perceção positiva do ambiente escolar (OR = 0,884; p < 0,05).
Conclusão: A perceção positiva de segurança no clima escolar está associada ao não consumo de álcool na última semana, porém não prediz o uso de tabaco.

Palavras-chave: instituições académicas; consumo de álcool por menores; consumo de tabaco; fatores de proteção

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Introduction

Alcohol and tobacco use among adolescents is a relevant public health issue both nationally and internationally. In 2018, the World Health Organization (WHO) reported that 26.5% of adolescents aged 15-19 years were alcohol drinkers and 43 million adolescents aged 13-15 years used tobacco (Organización Mundial de la Salud [OMS] 2018a; OMS, 2018b). In Mexico, adolescent substance use has been increasing. The Survey on Drug Use among young people aged 12-17 years reported a prevalence of alcohol consumption at some point in their lifetime of 39.8%, in the last year of 28%, and in the last month of 16.1%, as well as an increase in binge drinking in the last month from 4.3% in 2011 to 8.3% in 2016 (Gobierno de México, Comisión Nacional Contra las Adicciones, 2017). Concerning adolescent tobacco use, it reported a prevalence of current tobacco use of 4.9%, with 0.5% of adolescents smoking daily and 4.4% smoking occasionally (Gobierno de México, Comisión Nacional Contra las Adicciones, 2017).

Drug use in adolescence is harmful due to its impact on physical, psychological, family, and social health. Therefore, it is important to address the problem of drug use given that the literature shows that the onset of licit substance use can lead to or increase the likelihood of illicit drug use, which could lead to addiction problems in adulthood (De Higes Martínez, 2020). The factors associated with adolescent drug use are multifactorial and have been approached from different theoretical perspectives, such as ecological models, that represent the complexity of the phenomenon through the interaction between the individual and the environmental factors (Scoppetta & Ortiz Garzón, 2021).

The literature identifies several environmental factors that strengthen skills for the rejection or reduction of risk behaviors, such as drug use. An important factor to consider in schools is the quality of the interpersonal relationships occurring in schools, which are considered the most significant aspect of school climate because they are associated with emotional well-being and its impact on the development of health-promoting behaviors (Ruvalcaba-Romero et al., 2018).

School climate is a multidimensional concept that encompasses the atmosphere, the culture, the values, the resources, and the interpersonal relationships between staff, teachers, students, and parents (Orozco-Solis et al., 2016). According to the National School Climate Council, a positive school climate "fosters youth development and learning necessary for a productive, contributing, and satisfying life in a democratic society" (Gase et al., 2017, p. 320). It is characterized by norms and values with which students feel socially, emotionally, and physically safe. Gaias et al. (2019) mention that a positive school climate has been identified as an ecological factor that is associated with the development of resilience in adolescents.

Students' relationships with parents, teachers, and peers, teachers' attitudes, teaching methodologies, classroom time management, school management style, existence and clarity of school goals, the school's concern for educational themes, and parental involvement in school activities are some of the characteristics of a positive school climate (Shukla et al., 2019). Some studies suggest that a positive school climate is associated with better academic performance, satisfaction with school, health-promoting behaviors, and a lower likelihood of risky behaviors (Lahoz i Ubach, 2021). In 2015, Ryabov found that adolescents who perceive a positive school climate are less likely to consume alcohol and become frequent smokers.

Despite the efforts and prevention programs to reduce drug use, the numbers continue to rise and people start experimenting with drugs at an earlier age. Therefore, it is important to identify the factors in the student's environment that promote healthy behaviors and can be used as a fundamental part of the creation, modification, or restructuring of prevention strategies. The nursing profession is characterized by delivering holistic care. In the area of adolescent drug use prevention, it is important to assess the several environmental factors. For this reason, this study aimed to identify whether the school climate can be associated with adolescents' risky behaviors and whether it is a factor that can be modified through prevention strategies.

Background

The socio-ecological model (SEM) focuses on five levels of interaction - factors - that include individual, social, and environmental components aimed to promote health and that come together for the development of behavior. According to this model, behavior affects and is affected by environmental factors where behavior is the outcome of interest, which is developed by various factors such as the organizational factor (McLeroy et al., 1988). The organizational factor refers to social institutions with organizational characteristics and formal and informal rules and regulations for the operations. In this study, it is represented, through the substructure, by the school climate.

School climate has been defined as the quality of interactions between students, teachers, parents, and school staff that are established under the norms, values, rules, and organizational structures of each school (National School Climate Center, 2007). Several studies have addressed different elements of the school climate. However, the model developed by the US Department of Education has attempted to combine these elements by linking school climate to three domains: safety (emotional safety, physical safety, and substance use), engagement (relationships, respect for diversity, and school participation), and environment, which includes academic environment, wellness and disciplinary environment (Bradshaw et al., 2014).

Hypothesis

A positive school climate influences non-use of drugs in high school adolescents.

Methodology

The study had a cross-sectional approach with a predictive

descriptive-correlational design. It was conducted between September and November 2020. The study population consisted of 2,107 students aged 15 to 18 years from a local public secondary school. Single-stage cluster sampling was used, and the sample was calculated based on a multiple regression model of 0.09, an α = 0.05, and a test power of 90%, resulting in 227 students.

A Personal Traits and Drug Consumption Identity Card was used, consisting of eight questions that included socio-demographic data and the overall, period, current and point prevalence of drug use, as well as the age of onset of drug use. School climate was assessed using the School Climate Survey (MDS3) developed by Brandshaw et al. (2014) to implement a sustainable system to assess school climate in the adolescent population, which was validated in Mexico by Orozco-Solis et al. (2016). The scale consists of 56 questions divided into three indicators: safety, engagement, and environment. Questions 1 to 49 have four Likert-type response options, ranging from 1 - *strongly disagree* to 4 - *strongly agree*, questions 50 to 55 have responses ranging from 1 - *large problem* to 4 - *not a problem*, and question 56 on bullying is rated 1 = *yes* or 2 = *no*. A high score indicates a positive school climate. The total scale (α = 0.92) and the subscales (safety α = 0.84, engagement α = 0.92, and environment α = 0.75) showed an acceptable internal consistency.

The study was approved by the Ethics and Research Committees of the Faculty of Nursing of the Autonomous University of Nuevo León (Registration FAEN-D-1577) and by the school's authorities. Data were collected through a digital platform that included the study instruments. Through this platform, data were exported for statistical analysis to IBM SPSS Statistics software, version 22.0 for Windows.

The point-biserial correlation coefficient was calculated to examine correlations between continuous and dichotomous variables and Spearman's correlation coefficient was calculated to examine the relationship between numerical variables. A binary logistic regression model was used to examine the effect of school climate, entering the subscales of safety, engagement, and environment as independent variables and the overall prevalence of alcohol and tobacco use as dependent variables.

Results

The sample consisted of 41.4% boys and 58.6% girls, with a mean age of 16.2 years (*SD* = 0.75; 7.9% were in the first semester, 41.9% in the third semester, 15.9% in the fourth semester, and 34.4% in the fifth semester. Table 1 shows the adolescents' perception of school climate, with a mean of 167.56 (*SD* = 17.77), and the subscales of Safety = 32.42 (*SD* = 6.44), Engagement = 87.28 (*SD* = 10.21), and Environment = 47.85 (*SD* = 5.36).

Table 1

Perception of school climate among adolescents

		Mdn	*SD*	*Min*	*Max*
School Climate	167.56	166	17.77	112	221
SC Safety	32.42	34	6.44	13	42
SC Engagement	87.28	86	10.21	58	112
SC Environment	47.85	47	5.36	30	68

Note. M = Mean, *Mdn* = Median; *SD* = Standard Deviation; *Min* = Minimum; *Max* = Maximum; SC = School Climate.

The mean age of onset for alcohol consumption was 14.35 years (*SD* = 1.76) and 13.84 years (*SD* = 2.14) for tobacco use. Table 2 shows the prevalence of alcohol and tobacco use. In this sample, 48.9% of students reported that they had never drink alcohol in their lifetime, while 90.3% of students reported that they had drink alcohol in the last week. Concerning tobacco use, 80.6% of students reported that they had never smoke in their lifetime and 96.5% reported not having smoked in the last week.

Table 2
Prevalence of alcohol and tobacco use

	Yes		No		95%CI	
Variables	*f*	%	*f*	%	*LL*	*UL*
Alcohol						
Overall prevalence	116	51.1	111	48.9	0.445	0.576
Period prevalence	85	37.4	142	62.6	0.311	0.437
Current prevalence	46	20.3	181	79.7	0.150	0.255
Point prevalence	22	9.7	205	90.3	0.058	0.135
Tobacco						
Overall prevalence	44	19.4	183	80.6	0.142	0.245
Period prevalence	21	9.3	206	90.7	0.054	0.130
Current prevalence	12	5.3	215	94.7	0.023	0.082
Point prevalence	8	3.5	219	96.5	0.011	0.059

Note. f = Frequencies; % = percentages; 95%CI = 95% Confidence Interval; LI = Lower Limit; LL = Upper Limit.

A negative association was found between the period prevalence of alcohol use and the school climate (r_{bp} = -0.140; $p < 0.05$), as well as with the subscale of school climate: safety (r_{bp} = -0.138; $p < 0.05$). The point prevalence of alcohol use was negatively associated with the school climate subscale: safety (r_{bp} = -0.200; $p < 0.01$). As for tobacco use, a negative association was found between prevalence in the last month and the school climate subscale: environment (r_{bp} = -0.162; $p < 0.05$).

To answer the hypothesis, a logistic regression model was performed with the different types of prevalence of alcohol and tobacco use as dependent variables and the subscales of school climate: safety, engagement, and environment as independent variables. Table 3 shows that a positive school climate predicts non-consumption of alcohol in the last week by up to 8.2% of the explained variance, with a lower likelihood of consumption if there is a positive perception of safety (*OR* = 0.904; $p < 0.01$).

Table 3

Effects of school climate on alcohol consumption

	X^2	*df*	*p*	R^2		
Overall prevalence	3.68	3	0.298	2.1%		
Period prevalence	6.70	3	0.082	4.0%		
Current prevalence	4.45	3	0.216	3.1%		
Point prevalence	8.89	3	0.031	8.2%		
Variables	*B*	*SE*	*W*	*df*	*p*	*OR*
Overall prevalence						
SC Safety	-0.029	0.023	1.64	1	0.200	0.971
SC Engagement	0.007	0.018	0.165	1	0.684	1.00
SC Environment	-0.036	0.034	1.11	1	0.292	0.965
Constant	2.039	1.33	2.33	1	0.126	7.68
Period prevalence						
SC Safety	-0.038	0.023	2.72	1	0.099	0.963
SC Engagement	0.008	0.019	0.160	1	0.689	1.00
SC Environment	-0.050	0.036	1.98	1	0.159	0.95
Constant	2.459	1.42	2.98	1	0.084	11.69
Current prevalence						
SC Safety	-0.041	0.027	2.34	1	0.125	0.960
SC Engagement	0.013	0.023	0.323	1	0.570	1.01
SC Environment	-0.050	0.043	1.36	1	0.243	0.95
Constant	1.205	1.70	0.497	1	0.481	3.33

Point prevalence						
SC Safety	-0.100	0.035	8.14	1	0.004	0.904
SC Engagement	0.016	0.032	0.264	1	0.607	1.01
SC Environment	-0.031	0.059	0.268	1	0.605	0.97
Constant	0.898	2.37	0.143	1	0.705	2.45

Note. = Chi-squared; df = degrees of freedom; p = Statistical significance; R^2 = Nagelkerke's R squared; SC = School Climate; *B* = Parameter estimate B; *SE* = Standard Error; *W* = Wald Test; *OR* = Odds Ratio.

On the other hand, Table 4 shows that a positive school climate does not predict tobacco use. However, there is a lower likelihood of tobacco use in the last year if there is a positive perception of the environment (*OR* = 0.884; $p < 0.05$).

Table 4

Effects of school climate on tobacco use

	X^2	*df*	*p*	R^2
Overall prevalence	1.63	3	0.653	1.1%
Period prevalence	6.63	3	0.084	6.3%
Current prevalence	2.84	3	0.416	3.7%
Point prevalence	3.97	3	0.264	6.6%

Variables	*B*	*SE*	*W*	*df*	*p*	*OR*
Overall prevalence						
SC Safety	-0.014	0.028	0.26	1	0.605	0.986
SC Engagement	-0.015	0.023	0.42	1	0.517	0.985
SC Environment	-0.004	0.043	0.007	1	0.934	0.996
Constant	0.497	1.68	0.08	1	0.768	71.64
Period prevalence						
SC Safety	-0.002	0.040	0.003	1	0.954	0.998
SC Engagement	0.001	0.030	0.001	1	0.981	1.00
SC Environment	-0.123	0.062	3.95	1	0.047	0.884
Constant	3.46	2.48	1.94	1	0.163	31.90
Current prevalence						
SC Safety	0.037	0.055	0.446	1	0.504	1.038
SC Engagement	-0.032	0.040	0.647	1	0.421	0.969
SC Environment	-0.056	0.079	0.507	1	0.476	0.945
Constant	1.26	3.09	0.167	1	0.683	3.54
Point prevalence						
SC Safety	-0.014	0.062	0.055	1	0.815	0.986
SC Engagement	-0.021	0.048	0.193	1	0.660	0.979
SC Environment	-0.113	0.094	1.45	1	0.228	0.893
Constant	4.13	3.80	1.18	1	0.277	62.46

Note. = Chi-squared; df = degrees of freedom; p = Statistical significance; R^2 = Nagelkerke's R squared; SC = School Climate; B = Parameter estimate B; SE = Standard Error; W = Wald Test; OR = Odds Ratio.

Discussion

Participants reported an overall positive perception of the school climate, which indicates a favorable school climate among staff, teachers, students, and parents. Gase et al. (2017) mention that a positive school climate influences academic achievement and attendance, increases students' self-esteem, teaches them to resolve conflicts, and provides skills to develop health-promoting behaviors.

Adolescents perceive their school as safe and as having control over drug use, weapon use, bullying, and physical aggression. On the contrary, Bottiani et al. (2020) mention that students who perceive their school as comfortable and clean also perceive that substance use is a problem at their school. They also reported that there is a good level of communication with the teachers, who listen to them

and value their activities, and a good relationship with their peers. They mentioned that their parents are aware of their academic achievement and are always informed if they do something that is not allowed at school. These aspects are in line with those reported by Gaias et al. (2019), who found that positive perceptions of safety, engagement, and environment are associated with high levels of developmental competence and low levels of risky behavior. Shukla et al. (2019) mentioned that a good connection between the students and the school is associated with violence prevention and healthy behaviors. Finally, they believe that the school is always clean, comfortable, that the rules are clear and that there are consequences for those who do not follow them, and that they will receive the necessary support if they have problems. Bottiani et al. (2020) found that students' perceptions of school climate are associated with meaningful outcomes of academic achievement and mental health and lower delinquency and risky behaviors.
The drugs analyzed here were alcohol and tobacco. This study found that more than 50% of the adolescents had drink alcohol at some point in their lifetime, but only 9.7% continued to drink it in the last week. There were less participants using tobacco than alcohol, with 19.4% of participants having used it at some point in their lifetime and 3.5% having used it in the last week. These percentages are higher than those reported by ENCODAT (Gobierno de México, Comisión Nacional Contra las Adicciones, 2017) at a national level. Alcohol and tobacco use is associated with social gatherings. In Mexico, although alcohol and tobacco sales to minors are forbidden, its consumption by adolescents at family parties or gatherings has been culturally accepted (López-Cisneros et al., 2016).
Drug use at an early age can cause problems of tolerance and addiction because the body is still developing, and alcohol and tobacco have been identified as gateway drugs that increase the risk of illicit drug use (Saltos Solís, 2018). Furthermore, Chacón Cuberos et al. (2016) found that the prevalence of alcohol and tobacco use are low in early adolescence, which is where the onset of use has been identified. However, prevalence increases with age, and acute drug use for social purposes was found at ages 14-16 years, which is similar to the findings of this study.
The proposed hypothesis states that a positive school climate influences the non-consumption of drugs by high school adolescents and identifies that a positive school climate is associated with alcohol non-consumption, only in the last week, with a lower likelihood of consumption if they perceive the school as safe. This aspect is similar to that reported by Cornell and Huang (2016) and Ryabov (2015), who found that a positive school climate, fair discipline, and good teacher-student relationships in schools are associated with lower rates of alcohol consumption. On the other hand, no significant associations were found regarding tobacco use, which may be due to the low rate of tobacco use reported by these students. This aspect differs from that reported by Ryabov (2015), who found that students are less likely to become frequent smokers if they attend schools with a positive school climate.
Students' low prevalence rates of alcohol and tobacco non-use are probably due to several factors related to the COVID-19 epidemiological contingency, such as the economic situation, the access to points of sale, the lack of social gatherings where they usually drink alcohol and smoke, and staying at home, where there is greater parental supervision of adolescents' activities.

Conclusion

A high percentage of students did not consume alcohol and tobacco in the last month and the last week. Moreover, students perceived the school climate as positive. This study found that a positive school climate predicts non-alcohol consumption in the last week but does not predict tobacco consumption. It also found that perceiving the school as safe reduced the likelihood of alcohol consumption.
The school climate is a protective factor for adolescent drug use; thus, there is a need for school-based interventions involving staff, teachers, students, and parents to maintain a positive school climate and prevent risky behaviors.
Given that drug use is multifactorial, the design and implementation of interventions must take into account the several protective factors for the development of the behavior, which, through ecological models, can be identified at the various levels of the adolescent's environment. This study found that a high perception of safety at school was a protective factor for alcohol consumption and could be considered in nurse-led interventions. This study should be replicated once students are able to safely return to school because the School Climate Survey assesses the interactions between students, teachers, parents, and staff that occur within the school. Another study should be conducted on the use of illicit drugs to identify the most significant correlations or effects.

Author contributions

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References

Bradshaw, C. P., Waasdorp, T. E., Debnam, K. J., & Lindstrom, S. (2014). Measuring school climate in high schools: A focus on safety, engagement, and the environment. *Journal of School Health*, *84,* 593-604. https://doi.org/10.1111/josh.12186

Bottiani, J. H., Johnson, S. L., McDaniel, H. L., & Bradshaw, C. P. (2020). Triangulating school climate: Areas of convergence

and divergence across multiple levels and perspectives. *American Journal of Community Psychology*, *65*(3-4), 423–436. https://doi.org/10.1002/ajcp.12410

Chacón Cuberos, R., Castro Sanchéz, M., Caracuel **Cáliz**, R., Padial Ruz, R., Collado Fernández, D., & Zurita Ortega, F. (2016). Perfiles de consumo de alcohol y tabaco en adolescentes andaluces de primer ciclo de educación secundaria. *Health & Addictions: Salud y Drogas, 16*(2), 93-104. https://www.redalyc.org/articulo.oa?id=839/83946520003

Cornell, D., & Huang, F. (2016). Authoritative school climate and high school student risk behavior: A cross-sectional multi-level analysis of student self-reports. *Journal of youth and adolescence, 45(*11), 2246–2259. https://doi.org/10.1007/s10964-016-0424-3

Gase, L. N., Gomez, L. M., Kuo, T., Glenn, B. A., Inkelas, M., & Ponce, N. A. (2017). Relationships among student, staff, and administrative measures of School Climate and student health and academic outcomes. *The Journal of School Health, 87*(5), 319–328. https://doi.org/10.1111/josh.12501

Gaias, L. M., Lindstrom Johnson, S., White, R., Pettigrew, J., & Dumka, L. (2019). Positive school climate as a moderator of violence exposure for Colombian adolescents. *American Journal of Community Psychology*, *63*(1-2), 17–31. https://doi.org/10.1002/ajcp.12300

Gobierno de México, Comisión Nacional Contra las Adicciones. (2017). *Encuesta nacional de consumo de drogas, alcohol y tabaco 2016-2017*. https://www.gob.mx/salud%7Cconadic/acciones-y-programas/encuesta-nacional-de-consumo-de-drogas-alcohol-y-tabaco-encodat-2016-2017-136758

Lahoz i Ubach, S. (2021). Clima escolar, autoconcepto académico y calidad de vida en alumnos/as de aulas culturalmente diversas. *Estudios pedagógicos*, *47*(1), 7-25. http://dx.doi.org/10.4067/S0718-07052021000100007

López-Cisneros, M. A., Alonso-Castillo, M. M., **Méndez**-Ruíz, M. D., & Armendáriz-García, N. A. (2016). Descripción del consumo de tabaco y alcohol en adolescentes de complementos urbanos del Estado de Nuevo León, México. *Salud y drogas, 16*(2),127-134. https://www.redalyc.org/articulo.oa?id=839/83946520006

De Higes Martínez, E. V. (2020). Mesa tabaquismo. R*evista de Patología Respiratoria*, *23*(Supl. 2), S235-S236. https://www.revistadepatologiarespiratoria.org/descargas/PR_23-S2_S235-S236.pdf

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly, 15,* 351-377. 10.1177 / 109019818801500401

National School Climate Center. (2007). *What is school climate?* https://schoolclimate.org/

Organización Mundial de la Salud. (2018a). *Informe sobre la situación mundial del alcohol y la salud 2018. Resumen.* https://iris.paho.org/bitstream/handle/10665.2/51352/OPSNMH19012_spa.pdf?sequence=1&isAllowed=y

Organización Mundial de la Salud. (2018b). *La OMS presenta un nuevo informe sobre las tendencias mundiales del consumo de tabaco.* Ginebra: Comunicado de prensa. Disponible en: https://www.who.int/es/news/item/19-12-2019-who-launches-new-report-on-global-tobacco-use-trends

Orozco Solis, M., Colunga-Rodríguez, C., Vázquez Colunga, J. C., Vázquez-Juárez, C., Ángel-González, M., Johnson, S., & Bradshaw, C. (2016). Characterization of school climate perception in mexican middle school students. *Psychology, 7(13),* 1562-1574. https://doi.org/10.4236/psych.2016.713151

Ruvalcaba-Romero, N. A., Orozco-Solis, M. G., Gallegos-Guajardo, J., & Nava-Fuerte, J. M. (2018). Relaciones escolares, comunicación con padres y prosocialidad como predictores de emociones positivas. *Liberabit*, *24*(2),183-193. https://dx.doi.org/10.24265/liberabit.2018.v24n2.02

Ryabov, I. (2015). Relation of peer effects and school climate to substance use among Asian American adolescents. *Journal of adolescence*, *42*, 115–127. https://doi.org/10.1016/j.adolescence.2015.04.007

Scoppetta, O., & Ortiz Garzón, E. (2021). Modelos ecológicos del desarrollo aplicados al consumo de drogas ilícitas: Una revisión sistemática. *Psicología desde el Caribe*, *38*(2), 167-188. http://dx.doi.org/10.14482/psdc.38.2.158.1

Shukla, K. D., Waasdorp, T. E., Lindstrom Johnson, S., Orozco Solis, M. G., Nguyen, A. J., Rodríguez, C. C., & Bradshaw, C. P. (2019). Does school climate mean the same thing in the United States as in Mexico? A focus on measurement invariance. *Journal of Psychoeducational Assessment*, *37*(1), 55–68. https://doi.org/10.1177/0734282917731459

Saltos Solís, M. M. (2018). Factores de riesgo del consumo de alcohol y tabaco en adolescentes. *RECIMUNDO: Revista Científica de la Investigación y el Conocimiento, 2*(2), 118-136. https://doi.org/10.26820/recimundo/2.(2).2018.118-136