SMAD, Rev. Eletrônica Saúde Mental Álcool Drog.
2017 Jan.-Mar.;13(1):22-29
DOI: 10.11606/issn.1806-6976.v13i1p22-29
www.eerp.usp.br/resmad

Original Article

Risk factors for alcohol consumption in adolescents students

Graciela Arrioja Morales[1]
Sueli Aparecida Frari Galera[2]
Alejandro Torres Reyes[1]
Sebastiana del Rosario Gargantúa Aguila[1]
María Luz de Avila Arroyo[1]
Francisco Adrian Morales Castillo[1]

This is a qualitative and descriptive work, which has used the clinical and qualitative method. The sample was composed of nine patients living with HIV. We used the interview technique with semi-structured questions to collect data. The data were analyzed using the method of content analysis. Our objective was to describe the symbolic representations that emerged during the group activity, assigned to patients with HIV/AIDS. We conclude that the symbolic is very strong and representative in the life of this population. The myth surrounding HIV can be overcome by knowledge acquired during meetings in groups. Alternatives that offer care aimed at populations that tend to social isolation and exclusion should be encouraged by health professionals and their managers.

Descriptors: HIV; Symbolism; Qualitative Research.

[1] MSc, Professor, Facultad de Enfermería, Benemérita Universidad Autónoma de Puebla, Puebla, Mexico.
[2] PhD, Associate Professor, Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, WHO Collaborating Centre for Nursing Research Development, Ribeirão Preto, SP, Brazil.

Corresponding Author:
Graciela Arrioja Morales
Benemérita Universidad Autónoma de Puebla; Facultad de Enfermería
27 poniente 1304
Bairro: Colonia Volcanes
CEP: 72410, Puebla, Pue, Mexico
E-mail: garrioja@yahoo.com

Fatores de risco para o consumo de álcool em adolescentes estudantes

Introdução: As legislações dos países não aceitam o consumo de álcool em adolescentes, mas se observa seu aumento. Objetivo: Identificar o efeito dos fatores pessoais no consumo de álcool em adolescentes que estudam. Métodos: Estudo correlacional em adolescentes que estudam, com amostragem aleatória realizando a seleção de uma n= 894, a aplicação de três instrumentos. Resultados: O consumo de álcool alguma vez na vida foi de 65%. Encontram-se efeitos dos fatores de risco; sexo e idade sobre o consumo de álcool (c2=31.23; p=.001; R2= 27%). Conclusões: Os fatores de risco aumentam o consumo de álcool em adolescentes.

Descritores: Fatores de Risco; Alcoolismo; Enfermagem.

Factores de riesgo para el consumo de alcohol en adolescentes estudiantes

Introducción: Las legislaciones de los países no aceptan el consumo de alcohol en adolescentes, pero se observa incremento en ellos. Objetivo: Identificar el efecto de los factores personales en el consumo de alcohol en adolescentes que estudian. Metodos: diseño correlacional en adolescentes que estudian, con muestreo aleatorio se selecciona una n= 894, se aplican tres instrumentos. Resultados: El consumo de alcohol alguna vez en la vida fue del 65%. Se encuentran efectos de los factores de riesgo; sexo y edad sobre el consumo de alcohol (c2=31.23; p=.001; R2= 27%). Conclusiones: Los factores de riesgo incrementan el consumo de alcohol en adolescentes.

Descriptores: Factores de Riesgo; Alcoholismo; Enfermería.

Introduction

In 2010, one in 20 people consumed illicit drugs in the world, and the equivalent of 230 million people is alcohol consumers mainly at very young ages. Alcohol is the most consumed drug by adolescents, given the high diversity and forms of distribution of alcoholic beverages to adolescents from all social strata [1-3]. Alcohol consumption phenomenon is complex and multifactorial of sociopolitical, economic and psychosocial impact in all countries[4-6]. Alcohol consumption is among the top five accident risk factors[1,7-9]. Adolescents are 4.4 times more likely to consume alcohol if their father consumes; 4.6 times more if their brother consumes and 10.4 times more if their best friend consumes. If they live with family members there is less risk of using drugs [10].

In Mexico, the state of Póvoa is 11th place above the national average in alcohol consumption, 7% of the population (7,800 cases), 47% men and 15% women [11].

Adolescence varies by individual or group characteristics and comprises anatomo-physiological changes that modify the psychological and personality profile. There are two steps: a) very young adolescence, 10 to 14 years; b) late adolescence, 15 to 19 years. Teenagers make adjustments or modifications to the extent that they feel socially accepted. Their emotional instability by unfamiliarity and fear of new experiences or decision-making and low self-esteem can lead

them to alcohol and illicit drug use, school problems, unprotected sex, legal problems, emotional changes, traffic accidents, suicides and homicides [12].

The conduct of alcohol consumption in adolescents is a result of the influences of risk factors, which may be personal factors; studying them should receive further scientific research [13].

This study addresses the alcohol consumption phenomenon in adolescents by placing the following research question: What is the factors effect (personal and risks) in alcohol consumption in adolescents studying in high schools of the educational system in the state of Póvia, Mexico?

Method

This is a correlational study

The study was conducted in 2012 with male and female adolescents, 11-16 years-old; studying in the morning period, of three grades of urban public high schools of the educational system of the state of Póvoa, Mexico. Random sampling, confidence level of 95%, .05 significance and .90 power rating for a sample (n = 894). The selection of schools was random, the selection of participants was stratified by proportional allocation to the size of each stratum. Inclusion criteria were students enrolled in high school, with informed consent signed by the parent or guardian and signed by the student.

Three instruments were applied, the personal data cell (PDC), the historical of use and drug addiction (HUDA) and the Tamizaje questionnaire of problems in adolescents (Problem Oriented Screening Instrument for Teenager [POSIT]), translated and validated by Marino et al., (1998) [14]. The data were transformed into rates from 0 to 100, that is why the highest score is the risk factor. To select the sample, the sample mark of students was obtained. Data were obtained in selected educational institutions in 2012.

In accordance with provisions of the General Health Law for research (1987), human dignity, the rights and well-being of participants were protected and respected.

Procedure

For data analysis, the Statistical Package for Social Sciences (SPSS) version 18.0 for Windows was used for descriptive and inferential statistics. POSIT reliability was obtained by the Cronbach's Alpha above .7000.

This research had the approval of the ethics committee and research of the Nursing School of Meritorious Autonomous University of Puebla (FE-BUAP) with register P-2012-0044-CIP and Secretary of Public Education.

Results

The study findings are shown according to the results of the research objective in three items: a) reliability of the instruments; b) descriptive statistics; c) inferential statistics.

Internal consistency of the POSIT instrument or Tamizaje questionnaire of problems in adolescents (Problem Oriented Screening Instrument for Teenager (POSIT), obtained acceptable internal consistency of .8300.

Descriptive statistics: biological personal factors (PF), 55% were women, 11-13 age was 51%. In PF sociocultural, 42% were enrolled in third grade of high school; 59% rarely miss classes, 88% only study, 38% work in trade.

Global prevalence, period and current: global prevalence, global prevalence, period and current alcohol consumption; Alcohol consumption once life or global prevalence was 65% (CI95%, 62-68%). Period of alcohol prevalence 31% (CI95%, 28 - 34%). Current alcohol prevalence 31% (CI95%, 18 - 23%). There were significant differences of alcohol consumption in age; the highest proportion of alcohol consumption once in life, in the last year and in the last month was in adolescents between 14 and 16 years.

Table 1 - Alcohol consumption: comparison by gender among students-Puebla/Mexico

Variable	Once in life				In the last year				In the last month			
	Yes		No		Yes		No		Yes		No	
	f	%	f	%	f	%	f	%	f	%	f	%
Male	263	45	140	45	143	35	260	64	77	42	326	46
Female	319	55	172	55	136	28	355	72	105	58	386	54
	X2=.008, p=.928				X2=6.249, p=.012				X2=.709, p=.400			

n=894
Source: PDC, History of Drug Use

Table 1 shows the difference by gender in alcohol consumption in the last year; in other consumption, proportions of women's consumption were slightly higher than men. In alcohol consumption, compared by school grade, there are statistically significant differences in alcohol consumption once in life (χ^2=49.569, p.001<), in the last year (χ^2=31.180, p.001<) and in the last month (χ^2=41.285, p.001<); it highlights a higher prevalence of alcohol consumption in adolescents of high school. There are statistically significant differences in alcohol consumption by occupation; in consumption once in life (χ^2=17.935, p=.001), in the last year (χ^2=14.771, p=.001) and in the last month (χ^2=18.491, p=.001).

Alcohol consumption Pattern in Adolescents Studying in High School

On a typical day, alcohol consumption pattern is an average of 2 alcoholic beverages. The favorite beverage in a typical day is beer (35%) followed with a significant difference by vodka (7.3%) and cider, 6.2%. The average age of onset in alcohol consumption was 12.2 with DE 1.93.

With the results, the second objective was achieved.

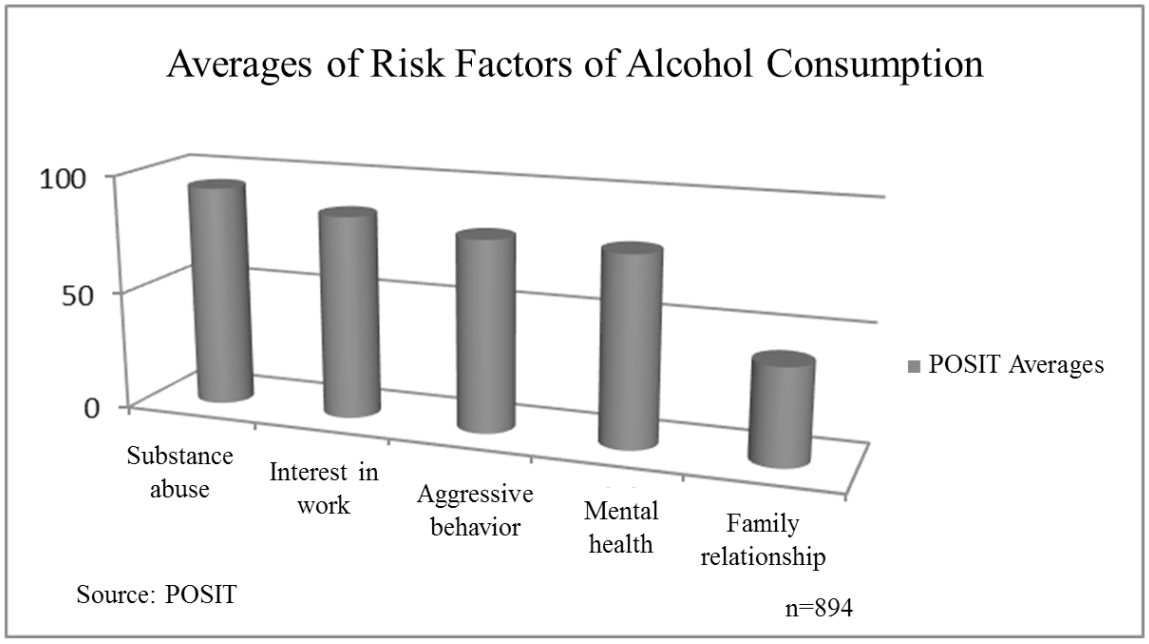

Figure 1 - averages of risk factors (POSIT) in alcohol consumption.

Risk factors before drug use: descriptive and the Kolmogorov-Smirnov test.

Averages of POSIT risk factors were found in alcohol consumption, for substance abuse ($\overline{X}$ =93.65, DE=64.32); interest in work ($\overline{X}$=85.71, DE=18:36); aggressive behavior ($\overline{X}$=80.65, DE=18:36); and mental health ($\overline{X}$=79.50, DE=21:27); family relationships ($\overline{X}$=40.54, DE= 16.99), as shown in Figure 1, in which students have high risk of getting involved in alcohol consumption.

The Kolmogorov-Smirnov test did not indicate normal distribution for POSIT data (K-S = 5.10 to 14.52 p = .001). Thus, using the non-parametric inferential statistics was decided.

POSIT instrument description by subscales: to identify risk factors (RF) compared to alcohol consumption; for each POSIT question frequencies were obtained to identify the highest score.

Risk factor (RF), use and substance abuse by high school students with 16 questions, 70% achieved a score greater than 90% of non-use and drug abuse.

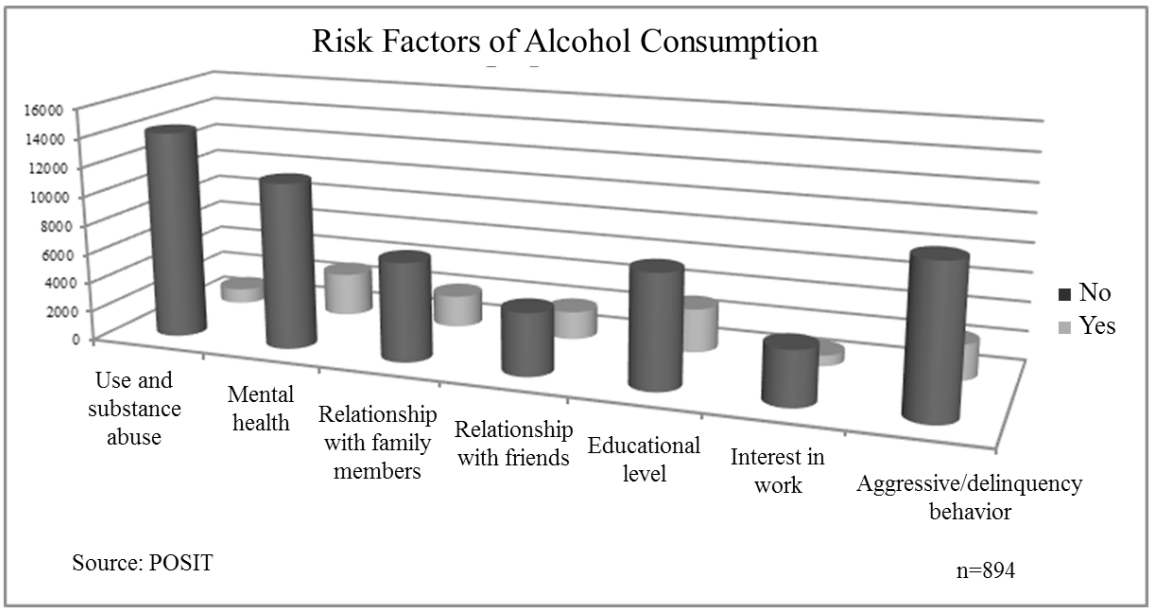

Figure 2 - Risk factors and alcohol consumption in adolescents studying in high school.

RF of mental health of high school students has 16 questions and over 22% indicated some difficulty. RF of family relations with 10 questions pointed out that more than 30% of students do not have good relations. RF of friends' relations with 10 questions pointed out that more than 20% live in this risk. RF of educational level with 12 questions pointed out that more than 20% live in this factor. RF of interest in work of high school students has five questions and pointed out problems with 11%. RF of aggressive/delinquency behavior pointed out that 51% have at least one risk factor.

Difference in risk factors for consumption once in life, in the last year and in the last month.

There is a statistically significant difference of RF regarding the alcohol consumption once in life, in the last year and in the last month (p.001<). Results show higher RF averages in adolescents that consume alcohol compared to those who do not consume (Table 2).

Table 2 - Risk factors and alcohol consumption among students-Puebla/Mexico

	Variable	Category	n	$\overline{X}$	U of Mann-Whitney	p Value
Alcohol	Consumption once in life	Yes	582	503.01	58484.50	.001
		No	312	343.95		
	Consumption in the last year	Yes	279	553.07	56337.50	.001
		No	615	399.61		
	Consumption in the last month	Yes	182	600.21		
		No	712	408.47	36999.50	.001
		No	785	420.03		

n=894
Source: POSIT, History of psychoactive drug use

In the RF and alcohol consumption correlation matrix, there was weak and moderate relations; but positive and significant: Alcohol consumption once in life relates to POSIT (r=.294; p=.001); with RF; use and substance abuse (r=.344; p=.001); with mental health (r=.167; p=.001), with relations with family members (r=.137; p=.001), relations with friends (r=.226; p=.001), with educational level (r .124; p=.001), interest in work (r=.137; p=.001), with aggressive/delinquency behavior (r= .331; p=.001). Alcohol consumption in the last year relates to POSIT (r= .276; p=.001); with use and substance abuse (r=.328; p=.001); with mental health (r=.170; p=.001), with relations with family members (r=.152; p=.001), relations with friends (r=.170; p=.001), with educational level (r=.115; p=.001), interest in work

(r=.143; p=.001), aggressive/delinquency behavior (r=.292; p=.001). Alcohol consumption in the last month relates to POSIT(r= .299; p=.001); with use and substance abuse(r=.410; p=.001); with mental health (r=.218; p=.001), with relations with family members (r=.178; p=.001), relations with friends (r=.195; p=.001), with educational level (r=.105; p=.001), interest in work (r=.134; p=.001), with aggressive/ delinquency behavior (r= .295; p=.001).

Effects of Risk Factors on Drug Use of Adolescents from High School

To determine the effects of risk factors (RF) on alcohol consumption, 16 models of logistic regression were built. The independent variables were gender, age and RF, and dependents were alcohol consumption once in life, in the last year and in the last month.

Table 3 - Models of logistic regression, risk factors, gender and age in alcohol consumption: once in life, in the last year and in the last month

Consumption	Dependent variable	LRM	X^2	p Value	R^2
Alcohol	Once in life	1	143.61	.001	20%
	In the last year	2	121.80	.001	18%
	In the last month	3	107.44	.001	18%

n=894
Source: PDC, POSIT and HCD

Table 3 shows the model 1 of logistic regression (LRM)1, in which the independent variables gender, age and RF (substance abuse, mental health problems, relationship with family members, relationship with friends, educational level, interest in work and aggressive behavior) affect the alcohol consumption at least once in life. Age (W= 16.02; p= .001) promotes effect. LRM 2 shows that independent variables gender, age and RF (substance abuse, mental health problems, relationship with family members, relationship with friends, educational level, interest in work and aggressive behavior) influence the alcohol consumption in the last year, effect fostered by gender (W = 4.27; p = .038) and age (W= 9:56; p = .003). LRM 3 shows that independent variables gender, age and RF (substance abuse, mental health problems, relationship with family members, relationship with friends, educational level, interest in work and aggressive behavior) influence the alcohol consumption in the last month, effect fostered by gender (W= 12.40; p= .001).

Discussion

The results found in biological, sociocultural and personal factors differ from those appointed by Molinero, Salguero, Castro, Mora and Marquez (2011) and Gómez et al. (2006)[15-16].

Regarding the global prevalence “alcohol consumption once in life”, it was smaller than stated (80%) by Gómez, et al. (2006)[16]; Orgaz, Segovia, López & Tricio (2005)[17] and pointed (71%) by the Consejo Nacional Contra las Adicciones (CONADIC) in 2008[18]. It supports the results of the National Research Commission on Drugs, (2001)[19]; UNODC (2006)[1]. The period prevalence (31%) “alcohol consumption in the last year, less than pointed (52%) by CONADIC (2008)[18]. The current prevalence or in the “last 30 days” is 20% lower than presented (62%) by Gómez et al., (2006)[16] and pointed (41%) by CONADIC (2008)[18].

There were significant differences in alcohol consumption by age and gender; very similar to the results of Molinero, Salguero, Castro, Mora, and Márquez (2011)(15).

The preferred beverage by high school students was similar to those reported by Herrera, Wagner, Velazco, Borges & Lazcano (2004)[8]; Gómez, *et al., (2006)*[16] *and* the nationally shown by CONADIC (2008)[18] and INSP (2008)[20]. The average age in years as early in alcohol consumption was similar to that presented by other researchers (Herrera, Wagner, Velazco, Borges & Lazcano, 2004)[8]; Gómez, et al., 2006[16] and bodies at national level CONADIC (2008) [18] and INSP, (2008)[20]. The frequency they consume alcohol in the last 30 days was similar to what happens at the national level (CONADIC, 2008)[18] and INSP, (2008)[20].

The results related to risk factors (RF) compared to alcohol consumption in adolescents are consistent to those appointed by Anicama (2001), Clayton (1992); Nazar et al. (1994), Hawkins, Catalano & Miller (1992)[21-24], especially in mental health, aggressive behavior, education level and relationships with family members are individual conditions and characteristics, situational or environmental context conditions of the high school students that are exposed to use and abuse of drugs.

The RF results before alcohol consumption that have been identified are consistent with the stated by

Catalano, Hawkins, et al., (1996); Hawkins, Catalano and Miller (1992)[24-25], who claim the relevance to the RF reduction, as a broad set of them cause the likelihood that the person uses drugs. They also indicate that emotional problems among youth increase the risk that they consume alcohol.

RF results regarding family members relations are vulnerable, consistent with the recommendation of CONADIC (2008) and INSP (2008)[18,21], which states that adolescents are more likely to consume alcohol when they were exposed to opportunities, and progress to dependence when they used alcohol. RF of relations with friends is vulnerable to over 25%; closing the gap in these RF is expected so that they are consistent with the CONADIC (2008) and INSP (2008)[18,21], which states that current generations have increased accessibility to alcohol, higher consumption and more likely to progress from abuse to addiction than previous generations.

RF results with educational level are consistent with CONADIC (2008) and INSP (2008)[18,21], when stating that emotional problems among youth increase the risk that they consume alcohol.

RF results of interest in work are congruent with CONADIC (2008) and INSP (2008)[18,21], and the claimed by Catalano, Hawkins et al. (1996); Hawkins, Catalano and Miller (1992)[24-25]. Great importance should be given to the reduction of these RF as a broad set of them cause the likelihood that adolescents consume alcohol.

The relationship and effect of risk factors on alcohol consumption are different to those found by CONADIC (2008) and the INSP (2008)[18,21]. Effects of personal, gender, age and RF factors were found on alcohol consumption. Age as a predictor is consistent with Peréz et al. (2007)[7], but not with gender as a personal biological factor according to Pender (2006)[13].

Final considerations

Data indicate that the adolescent population in this study shows that, although there is a smaller or equal local consumption than the national consumption, it suggests that this group of students is vulnerable to risk factors of both personal and interpersonal origin. This highlighted the need to implement local preventive action.

The limitations of this study are random sampling and the use of restricted use of data collection instruments.

Acknowledgments

To the National Anti-Drug Secretariat (SENAD) of Brazil, the School of Nursing of Ribeirão Preto, University of São Paulo and Doctor Margarida Antonia Villar Luis fot the support provided in the training and education of Latin American health professionals in research about addictions.

References

1. Naciones Unidas Contra las Drogas y el Delito (UNODC). Informe Mundial sobre las Drogas 2012. Nova Iorque: Organización Mundial de la Salud; 2012.

2. Organización Panaméricana de la Salud [Internet]. Alcohol y atención primaria de la salud: informaciones clínicas básicas para la identificación y el manejo de riesgos y problemas. Washington, D.C.; 2008. [Acceso 13 enero 2010]. Disponible en: http://www.paho.org/Spanish/DD/PUB/Alcohol_Aten_prim_web.pdf

3. Organización Mundial de la Salud [Internet]. Datos y cifras de alcohol. Nota descriptiva 349. Washington, D.C.; 2011. [Acceso 13 enero 2011]. Disponible en: http://www.who.int/mediacentre/factsheets/fs349/es/index.html

4. Ariza C, Nebot M, Villalbí JR, Díez E, Tomás Z, Valmayor S. Tendencias en el consumo de tabaco, alcohol y cannabis de los escolares de Barcelona (1987-1999). Gac Sanit. 2003;17: 190-5.

5. Comisión Nacional contra las Adicciones [Internet]. Palabras del Dr. Carlos Tena Tamayo, Comisionado Nacional contra las Adicciones. Conadic; 2011. [Acceso 15 nov 2011]. Disponible en: http://www.conadic.salud.gob.mx/prensa/boletines2011/palabrasavancesNV_300311.html

6. Ministerio de Sanidad y Consumo (ES) [Internet]. Encuesta Nacional de Salud de 2006. Madrid; 2007.

7. Pérez MA, Leal HFJ, Jiménez PI, Mesa GI, Martínez FML, Pérez M R. Evolución del consumo de sustancias tóxicas en los adolescentes de una zona urbana. Atención Primaria. 2007;39(6):299-304.

8. Herrera-Vazquez M, Wagner F, Velazco Mondragón E, Borges G, LazcanoPonce E. Onset of alcohol and tobacco use and transition to other drug use among students from Morelos, Mexico. Salud Pública Mex. 2004;46:132–40.

9. Organización Mundial de la Salud [Internet]. Programación para la Salud y el Desarrollo de los Adolescentes. Ginebra: OMS; 1999. Serie de Informes Técnicos, 886. [Acceso 13 enero 2011]. Disponible en: http://www.paho.org

10. Agencia Mexicana de Noticias (Internet). Resultados preliminares de la encuesta nacional de adicciones. 2008. [Acceso 19 junio 2010]. Disponible en: http://www.agenciamn.com/index.php/Salud/Se-presentan-los-resultados-preliminares-de-la-encuesta-nacional-de-adicciones-2008.html

11. Secretaría de Salud (MX). Programa Nacional de Salud 2007-2012. Por un México sano: construyendo alianzas para una mejor salud. México, D.F.: Secretaría de Salud; 2007.

12. Oliva A, Parra A, Sánchez-Queija I, López F. Estilos educativos materno y paterno: evaluación y relación con el ajuste adolescente. Anales Psicol. 2007; 23:1-10.

13. Pender NJ, Murdaugh CL, Parsons M A. Health promotion in nursing practice. 4.ed. Ed. New Jersey: Prentice Hall; 2006. 397 p.

14. Marino MC, González-Fortaleza C, Andrade PE, Medina- Mora ME. Validación de un cuestionario para detectar adolescentes con problemas por el uso de drogas. Salud Mental. 1998;21:21-36.

15. Molinero O, Salguero A, Castro-Piñero J, Mora J, Márquez S. Substance abuse and health self-perception in Spanish children and adolescents. Nutr Hosp. [Internet]. 2011 [Acceso 19 nov 2012]. Apr;26(2):402-9. Disponible en: http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0212-16112011000200024&lng=en.

16. Gómez A, et. al. Consumo de drogas lícitas e ilícitas por estudantes universitários. Revista de la Facultad de Ciencias de la Salud, 2007; 11(3), 41-45.

17. Orgaz Gallego MP, Segovia Jiménez M, Lopez de Castro F, Tricio Armero MA. Consumo de alcohol en escolares toledanos: motivos y alternativas. Aten Primaria. 2005 Oct; 36(6): 297-302.

18. Consejo Nacional Contra las Adicciones de la Secretaría de Salud Pública. Encuesta Nacional de Adicciones. Cuernavaca Morelos, Instituto Nacional de Salud Pública; 2007.

19. Plan Nacional sobre Drogas (ES). Comisión Nacional de Investigación en Drogas. Madrid: Ministerio del Interior; 2001.

20. Consejo Nacional Contra las Adicciones de la Secretaría de Salud Publica. Encuesta Nacional de Adicciones 2008. Cuernavaca Morelos, Instituto Nacional de Salud Pública (INSP); 2008.

21. Anicama J. Impacto de los factores de riesgo y factores protectores en el desarrollo de la conducta adictiva. En: Zavaleta A, editores. Factores de riesgo y protección en el consumo de drogas en la juventud. Lima: CEDRO; 2002. p. 97–129.

22. Clayton RR. Transitions in drug use: Risk and protective factors. En: Glantz M, Pickens R, editores. Vulnerability to drug abuse. Washington, DC: American Psychological Association; 1992. p. 15-51.

23. Nazar B, Tapia R, Villa A, León G, Medina-Mora M, Salvatierra B. Factores asociados al consumo de drogas em adolescentes de áreas urbanas de México. Salud Publica de México. 1994;36(8):646-54.

24. Hawkins JD, Catalano RF, Miller JL. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood. Implications for substance abuse prevention. Psychol Bull. 1992;112(2):64-105.

25. Catalano FR, Hawkins JD. A social development model: A theory of antisocial behavior. In: Hawkings JD. Delinquency and crime: Current theories. Cambridge: Cambridge Press; 1996. p. 149-197.

Received: July 16th 2013
Accepted: Oct 10th 2015