SUBSTANCE USE IN SPANISH ADOLESCENTS: THE RELATIONSHIP BETWEEN DEPRESSION AND SOCIAL SUPPORT SEEKING

CONSUMO DE SUSTANCIAS EN ADOLESCENTES ESPAÑOLES: RELACIÓN ENTRE DEPRESIÓN Y APOYO SOCIAL

José P. Espada Sánchez, María T. Gonzálvez Maestre y Mireia Orgilés Amorós

Universidad Miguel Hernández, Spain

Abstract

The lack of family or social support and social circles are risk factors for the onset of substance use and teen depression. In turn, depression is a risk factor for substance consumption itself. Although there is evidence on the relationship between coping strategies and substance abuse, there are few data on adolescents. The present study aimed to analyze the relationship between coping based on social support and depression, with reference to tobacco, alcohol, and cannabis consumption in a sample of Spanish adolescents. Various measures were administered to 1,522 adolescent students in the province of Alicante. The results showed a significant relationship between social support, depression, and consumption of tobacco and alcohol, and a marginally significant relationship with the frequency of tobacco consumption. Although the models were significant, there was not an interaction effect of coping and depression, due to the simple effects of both the variables, which may have accounted for the results. The lack of interaction may be due to previous studies examine the relationship between coping and stress, finding the same effect with depression.

Keywords: Coping, social support, depression, drugs, adolescents

Resumen

La falta de apoyo familiar o social y los círculos sociales son factores de riesgo para el inicio del consumo de sustancias y la depresión adolescente. A su vez, la depresión es un factor de riesgo para el consumo de sustancias en sí. Aunque existe evidencia sobre la relación entre las estrategias de afrontamiento y el abuso de sustancias, hay pocos datos en adolescentes. El presente estudio tiene como objetivo analizar la relación entre el afrontamiento basado en el apoyo social y la depresión, en referencia al consumo de tabaco, alcohol y cannabis en una muestra de adolescentes españoles. Se administraron diferentes medidas a 1,522 estudiantes adolescentes de la provincia de Alicante. Los resultados muestran una relación significativa entre el apoyo social, la depresión y el consumo de tabaco y alcohol, y una relación marginalmente significativa con respecto a la frecuencia del consumo de tabaco. Aunque los modelos resultan significativos, hubo una ausencia de interacción del afrontamiento y la depresión, debido a los efectos simples de ambas variables, que pueden haber explicado los resultados hallados. La ausencia de interacción puede explicarse por estudios previos que examinan la relación entre afrontamiento y estrés, y en los que se encuentra el mismo efecto con respecto a la depresión.

Palabras clave: Afrontamiento, apoyo social, depresión, drogas, adolescente

Correspondencia: María T. Gonzálvez, Departamento de Psicología de la Salud, Universidad Miguel Hernández. Avda. de la Universidad, s/n. 03202, Elche, Alicante. Tel.: 96-665 83 44. E-mail: mgonzalvez@umh.es

Substance use continues to be investigated because of its high incidence, and the social and health consequences. The World Health Organization (WHO) considers substance use, such as alcohol and tobacco, a public health problem, dedicating sections of the WHO for the analysis of this phenomenon. The WHO reported that, worldwide, 22% of adolescents aged above 15 years are regular smokers (WHO, 2014), and reported the average yearly, per capita consumption of pure alcohol in Spain as 11 liters. It is estimated that alcohol causes 3.3% million deaths a year worldwide (WHO, 2014). In addition, the WHO stresses that earlier the age of onset of substance use, more likely is the person to continue consumption in the future, and worse are the consequences on the health of the person (Ministry of Health, 2007; WHO, 2014).

The prevalence of substance use among Spanish adolescents is very high. For example, in the case of tobacco, the age of onset is around 13 years, and stable consumption is found to occur from around 15 years of age (Ariza et al., 2014). Further, the age of onset is similar for alcohol consumption, and a half-year lower for cannabis consumption (Ministry of Health, 2014). The most recent report of the Spanish Drug Observatory noted alcohol as the most addictive substance consumed by Spanish adolescents, with 81.9% of teenagers having consumed it at some point, which is followed by tobacco (35.3%), and cannabis consumption (26.6%).

Several models that include several variables have been used to understand the causes and facilitators of drug use in adolescents. One such model that explains the tendency to refrain from drug use is the "stress-coping model" (Wills, Vaccaro, & McNamara, 1992; Wills & Cleary, 1995). This model is based on the idea that the adolescents with higher levels of stress and poor or lack of coping strategies, or those whose family and social circle is composed of consumers, are most likely to consume (Sussman et al., 1993). In addition, it is acknowledged that adolescents under high stress and low social and family support are at an increased risk for depression (Galaif, Sussman, Chou, & Wills, 2003).

In addition to the influence of the coping strategies of adolescents on substance use when a stressor is involved, evidence suggests that coping, by itself, is already an important factor in explaining substance use. In fact, individuals who smoke have been found to have a larger circle of smokers, suggesting that social support

not only entails a lack of support, but is a risk factor in itself (Lueger-Schuster et al., 2015). This influence of social and family support has also been found to be important in alcohol consumption (Villarreal-González, Sánchez-Sosa, Musitu-Ochoa, & Varela, 2010). Having family and social circles of consumers promotes adolescent consumption. Therefore, Allen, Chango, Szwedo, Schad, & Marston (2012) concluded that substance use in the peer group is one of the predictors of increased consumption, while family support is a protective factor. Similar results were revealed by Varela, Salazar, Cáceres, & Tovar, (2007) in the context of consumption of cannabis and synthetic drugs. Specifically, differences were observed in the consumption in adolescents who were related to drug consumers, where, in the case of cannabis, such adolescents were almost twice as likely to be consumers. However, this study did not reveal any significant relationship of substance use with family functioning and coping styles, other than the role of support seeking (Varela et al., 2007). One possible explanation is that family composition and living standards, despite being related to the use of legal or illegal drugs, have been found to have a lesser influence on consumption, as compared to the established relationship of emotional ties between the adolescent and one or both parents (Muñoz-Rivas & Graña, 2001). Another possible explanation is that, as stated above, these factors are just protective factors, and they become risk factors when they occur in conjunction with high levels of stress or depression (Galaif et al., 2003, Sussman et al., 1993).

Although coping based on social support seeking is particularly serious in the case of adolescents with stress or depression, it is noteworthy that a lack of social support can trigger depressive disorders in adolescence. In fact, several studies have observed high correlations between lack of family and social support, and depression. For example, Cowley (2006) found an occurrence rate of .66, and Hampel and Peterman (2005) observed higher ratings of stress in adolescents who did not have family support or a close circle of friends, respectively, than in those who had support from at least one of the two sources, or both. Further, teenagers are considered one of the high-risk groups for depression, and one of the high-risk factors for this disorder is the lack of social support (Orcasita & Uribe-Rodríguez, 2010). However, depending on how the family and social support is assessed, evidence on its association with

depression has been found to be contradictory (Barra, Cerna, Kramm, & Véliz, 2006).

A final aspect to consider in the study of depression and coping based on seeking family and social support is that depression, independently, is related to increased substance consumption. Gonzálvez, Espada, & Orgilés (2015) concluded that adolescent smokers have a worse mood that non-smokers, and that adolescents are more likely to be a smoker when their mood is low.

In short, there is plenty of evidence that depression and coping styles, particularly social support, influence substance use in adolescents. In some studies, the evidence in contradictory and it is unclear if there is an interactive effect between these factors, or whether they themselves are related to substance consumption and its amount or frequency. Therefore, this paper aims to analyze the relationship between coping based on seeking social and family support, and depression levels, on the tendency to use tobacco, alcohol, and/or cannabis in adolescents. We hypothesized that depression and coping will influence the consumption of each of the substances evaluated.

METHOD

Participants

We recruited 1,522 adolescent students from six public schools in the province of Alicante. A minimum of 8% and maximum of 23.3% of the sample was collected from each school. Of the total sample, 703 (46.2%) participants were girls. The participants were aged between 14 and 18 years. Table 1 shows the sample distribution by gender and age. Note that 167 participants (10.97%) reported to be active smokers during the past month, of which 91 (11.11% within group) were male, and 76 (10.81% within group) female. A total of 616 (40.5%) participants had consumed alcohol in the past month, which comprised 312 (38.09%) males and 304 (4.24%) females. Finally, 145 (9.5%) participants reported being recent cannabis users (in the past month), of which 88 (10.74%) were male and 57 (8.11%) female.

Instruments

To achieve the objectives, a battery of tool was administered. First, information related to sociodemographic characteristics of participants, such as gender, age, nationality, and persons with whom the adolescent lived, was collected, followed by their academic data (school, course, and number of failures).

Following this, the short version of the *20-item Center for Epidemiologic Studies Depression Scale* (CED-D; Radloff, 1991) was administered. This instrument consists of five items that assess the extent to which the adolescent has felt sadness and depressive feelings in the past week. The responses are recorded on a 4-point Likert scale, ranging from "Less than a day" to "5–7 days." Both, the original version of the tool and its five-item short version are valid and reliable. The Cronbach's α was .87 for the present study sample; thus, indicating that no items had to be removed to improve this index.

Then, coping strategies were assessed based on the tendency to seek social support (Wills, Sandy, Yaeger, Cleary, & Sinar, (2001). The participants were asked to respond to the statement, "When I have a problem at school or at home..." by rating each of the following options: "I talk to a friend," "I talk to a relative or other guardian," "I step out with other friends," "I meet other friends," and "I talk to the teacher." We used a 5-point rating scale, which ranged from "Never do this" to "Almost always do this." The Cronbach's α for this tool was .64 for the sample included in the present study; therefore, no item had to be deleted to improve this value.

Finally, several items were included to assess alcohol and other substance use. First, we asked if the substance has been consumed at any point in their life. Following this, the number of cigarettes smoked during the past year, month, week, and on the day of the assessment, was recorded. Other important question was about to the stage of quit to smoke. This question was three options of answer that correspond with precontemplation, contemplation, and preparation (Prochaska & Diclemente, 1982). The participants were asked if they had consumed cannabis, cocaine, and other substances at any point in their life and/or over the past month, also.

Procedure

The questionnaires and other tools were translated into Spanish by translators. Two bilingual researchers compared the translation with the original version in order to detect discrepancies and inconsistencies, and the errors were corrected by consensus. Finally, a

discussion group checked the adequacy of the questionnaire according to the Spanish culture, and ensured that the language could be understood by the participants.

After the questionnaires were adapted, the project was presented to the ethics committee of the center, which approved the study. Then 45 secondary schools were randomly selected from the province of Alicante. Upon contact, six of them agreed to participate in the study (recruitment rate = 13%). The reasons for non-recruitment were no response (72%), responded back to us after a first meeting with a statement of no interest (18%) and inability to be able to implement the study during the school day (10%). Finally, an investigator explained the study to the adolescents and administered the questionnaire and other tools. During the presentation, the participants were informed that their identity would be kept confidential and we confirmed that they understood the possibility of to drop out to experiment in some time. The tools were administered to entire groups (usually between 25 and 35 students), during a class at the school itself, always giving the same instructions. During the implementation, the experimenter remained in the classroom to solve any doubts that may arise, and to ensure completion of the questionnaires. All of adolescents selected accept to do the questionnaires and no one ask to drop out to the research.

Data analysis

Several logistic regressions were conducted to achieve the study objectives. When dependent variables were dichotomous (having used a substance or not), binary logistic regressions were applied using multinomial regressions for the categorical variables (frequency of use of the various substances during the past month). In all cases it was ensured that the test assumptions were met, especially normality and homogeneity of variances.

RESULTS

Differences by gender and age

Before studying the relationship between depression and coping, and substance use, differences by gender and age were analyzed, to determine if these variables needed to be controlled. In the case of gender, differences were observed in terms of the frequency of cannabis use [t (868.9) = 4.15; p < .001], where males had a higher consumption, more than two points as compared to females. Similarly, gender differences were observed in terms of the age of first cigarette consumption [t (386.9) = -2.83; p = .05], where females were found to have initiated consumption at an average of six months after the males. Similar gender differences were found in terms of depression [t (1.455 = -5.55; p < .001] and coping [t (1.502) = -7.32; p < .001]. Specifically, females obtained higher scores on depression, but also reported higher use of coping mechanisms. In case of age, no significant differences were observed in any of the consumption variables, intention, and age of first use (p < .05 in all cases). However, higher consumption of tobacco, alcohol, and cannabis was observed in older participants, as well as a greater intention to quit drinking. In case of coping, no age differences were observed, while age differences were found in the incidence of depression [F(4;1.501) = 44.27; p = .018]. Based on these results, it was decided to control the influence of age in the logistic regressions.

Table 1. Frequency (percentage) of the sample by age and gender

Age	Gender	
	Woman	Man
14	226 (32.2%)	243 (29.7%)
15	224 (32%)	249 (30.4%)
16	184 (26.1%)	217 (26.5%)
17	59 (8.3%)	95 (11.5%)
18	10 (1.4%)	15 (1.8%)

Logistic regression on depression and coping in terms of substance consumption

First, the influence of depression and coping on having smoked, or consumed alcohol and cannabis in the past month were analyzed. The adjusted binary logistic regressions have been summarized in Table 2. Note that in the case of alcohol, the model was significant. When analyzing whether or not the participants smoked in the past month, the model was close to adequate levels of significance (p = .076), and the cannabis model was non-significant.

After analyzing presence or absence of smoking behavior, only the consumers were selected to study the influence of depression and coping on the frequency of use, and the intention to quit. Table 3 shows the adjusted multiple linear regressions for these analyses. It was found that depression and coping did not influence the stage (precontemplation, contemplation, and preparation) quit to smoke. Similarly, no differences were found in terms of alcohol or cannabis consumption in the past month. Regarding the consumption of tobacco, the model was close to significance (p = .069).

Table 2. Adjusted logistic regressions on depression and coping with reference to consumption of various substances

Substance	χ2	d.f.	p
Tobacco	6.87	3	.076
Alcohol	20.84	3	< .001
Cannabis	5.808	3	.121

Note: *d.f.*=degrees of freedom; *p*=significance

Table 3. Adjusted logistic regressions on depression and coping with reference to frequency of substance consumption

Variable	χ2	d.f.	p
Tobacco abandonment stage	3.9	6	.690
Frequency of tobacco consumption in the past month	11.689	4	.069
Frequency of alcohol consumption in the past month	4.124	4	.389
Frequency of cannabis consumption in the past month	1.8	4	.772

Note: *d.f.*=degrees of freedom; *p*=significance

DISCUSIÓN

The present study aimed to analyze the relationship between coping based on seeking social and family support and depression, independently and interactively, on the consumption of tobacco, alcohol, and cannabis in a sample of Spanish adolescents. Findings revealed that these variables influenced the consumption of the substances, which was moderated by depression and social seeking support. The interactive effect was not significant in any case and the effects of depression and coping were independent. Further, coping was found to have a higher relationship with the presence or absence of consumption behavior, as well as with the frequency of such consumption.

We also observed little or no gender differences in substance use, with the exception of cannabis use and age of onset, both of which were lower in females. These figures were consistent with those revealed in previous reports (Ministry of Health, 2014). In addition, these findings were consistent with those of Ariza et al. (2014), where similar results were found regarding the age of onset and frequency of consumption, reporting a higher consumption in males. However, the present study found significant differences in a greater number of substances.

In terms of gender differences, females were observed to have higher scores on depression, which is consistent with epidemiological data (e.g., Jaureguizar, Bernaras, Soroa, Sarasa, & Garaigordobil, 2015) as well as with scores on other measures of depression (e.g., García-Olcina, Piqueras, & Martínez-González, 2014). Similarly, with reference to coping, females had higher scores, which corresponded with results from previous studies. For instance, Cowley (2006) found significant differences in seeking emotional and social support in women, and Barra et al., (2006) revealed use of approximate and avoidant coping in females.

Finally, note that an interactive effect was not found between depression and coping with reference to drug use. One possible explanation is that although the relationship between coping and stress in relation to drug is well established in the literature, examination of the relationship between depression and consumption is less frequent in the study of the relationship between coping and depression. Despite some evidence in this context (e.g., Galaif et al., 2003), other studies revealed no direct relationship. Thus, several studies concluded that the effect of depression, and stress, on substance use, would be indirect (Villarreal-González, Sánchez-Sosa, & Musitu-Ochoa, 2011). Indeed, there may be an indirect effect of depression on consumption, as a moderator in the stress-coping model. One cannot deny that this disorder is a risk factor for the onset of substance use or frequency of use, especially in adolescents with high stress and low social support skills, which in turn implies a risk for the diagnosis of depression.

This study has certain limitations that should be noted. First is the failure to include stress variables to analyze the differential effect of stress on depression scores. Indeed, independent effects of these variables, and an interactive effect between coping and stress, have been found in the literature. Nevertheless, depression has been observed to be significant in appropriate models. Another limitation is that other coping styles were not measured, as this would have allowed us to examine the interactive relationship between the effects of coping and depression more deeply. Despite these limitations, this study presents important evidence for implementation of drug prevention programs in Spanish adolescents, which should emphasize on communication and social skills, as well as strengthening links with parents and peers. This would help establish this coping style, which was found to be a significant protective factor for the first use of tobacco, alcohol, and cannabis, as well as the frequency of use of the same, or the intention to quit in adolescents who already consumed such substances.

Funding

Conflicts of interest

There are no conflicts of interest.

REFERENCES

Allen, J. P., Chango, J., Szwedo, D., Schad, M., & Marston, E. (2012). Predictors of susceptibility to peer influence regarding substance use in adolescence. *Child Development, 83*, 337–350. doi: 10.1111/j.1467-8624.2011.01682.x

Ariza, C., García-Continente, X., Villalbí, J. R., Sánchez-Martínez, F., Pérez, A., & Nebot, M. (2014). Consumo de tabaco de los adolescentes en Barcelona y tendencia a lo largo de 20 años [Tobacco consumption among adolescents in Barcelona and trends over 20 years]. *Gaceta Sanitaria, 28*, 25–37. doi: 10.1016/j.gaceta.2013.08.005

Barra, E., Cerna, R., Kramm, D., & Véliz, V. (2006). Problemas de salud, estrés, afrontamiento, depresión y apoyo social en adolescentes [Health problems, stress, coping, social support and depression in adolescents]. *Terapia Psicológica 24*, 55–61.

Cowley, E. M. (2006). Personality, coping, motives for substance use, and mood examined in a sample of substance using young adults (Unpublished Doctoral Thesis), Melbourne, School of Behavioral Science: University of Melbourne, Melbourne.

Galaif, E. R., Sussman, S., Chou, C. P., & Wills, T. A. (2003). Longitudinal relations among depression, stress, and coping in high risk youth. *Journal of Youth and Adolescence, 32*, 243–258. doi: 10.1007/s10802-014-9906-5

García-Olcina, M., Piqueras, J. A., & Martínez-González, A. E. (2014). Datos preliminares de la validación del Cuestionario de Detección vía Web para los trastornos emocionales (DETECTA-WEB) en adolescentes españoles [Preliminary data for validation of Detecta Web Questionnaire for emotional disorders (DETECTA-WEB) in Spanish adolescents]. *Revista de Psicología Clínica con Niños y Adolescentes, 1*, 69–77.

Gonzálvez, M. T., Espada, J. P., & Orgilés, M. (2015). Estado de ánimo y consumo de tabaco en una muestra de adolescentes españoles. *Revista Latinoamericana de Psicología, 47*(2), 86-92.

Hampel, P., & Petermann, F. (2006). Perceived stress, coping, and adjustment in adolescents. *Journal of Adolescence Health, 38*, 409–415. doi:10.1016/j.jadohealth.2005.02.014

Jaureguizar, J., Bernaras, E., Soroa, M., Sarasa, M., & Garaigordobil, M. (2015). Sintomatología depresiva en adolescentes y variables asociadas al context escolar y clínico. *Psicología Conductual, 23*(2), 245.

Lueger-Schuster, B., Butollo, A., Moy, I., Jagsch, R., Glück, T., Kantor, V., ... & Weindl, D. (2015). Aspects of social support and disclosure in the context of institutional abuse- long-term impact on mental health. *BMC Psychology, 3*(1), 19. doi: 10.1186/s40359-015-0077-0

Ministry of Health (2014). Encuesta estatal sobre uso de drogas en enseñanzas secundarios (ESTUDES) 2012/2013, España [State survey on drug use in secondary teaching (ESTUDES) 2012/2013, Spain]. Author: Madrid.

Ministry of Health (2007). Guía sobre drogas [Drug guide]. Author: Madrid.

Muñoz-Rivas, M. J., & Graña, J. L. (2001). Factores de riesgo y de protección para el consumo de drogas en adolescentes [Risk factors and protective drug use in adolescents]. *Psicothema, 13*, 87–94.

Orcasita, L. T., & Uribe Rodríguez, A. F. (2010). La importancia del apoyo social en el bienestar de los adolescentes [The importance of social support on adolescents well-being]. *Psychologia: Avances de la Disciplina, 4*, 69–82.

Prochaska, J. O., & DiClemente, C. C. (1982). Trastheorctical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research & Practice, 19*(3), 276.

Radloff, L. S. (1991). The use of the Center for Epidemiologic Studies Depression Scale in adolescents and Young adults. *Journal of Youth Adolescents, 20*, 149–166. doi: 10.1007/BF01537606

Sussman, S., Brannon, B. R., Dent, C. W., Hansen, W. B., Johnson, C. A., & Flay, B. R. (1993). Relations of coping effort, coping strategies, perceived stress, and cigarette smoking among adolescents. *International Journal of the Addictions, 28*, 599–612.

Varela, M. T., Salazar, I. C., Cáceres, D. E., & Tovar, J. R. (2007). Consumo de sustancias psicoactivas ilegales en jóvenes: factores psicosociales asociados [Consumption of illegal psychoactive substances in youth: psychosocial factors associated]. *Pensamiento Psicológico, 3*, 31–45.

Villarreal-González, M. E., Sánchez-Sosa, J. C., & Musitu-Ochoa, G. (2011). Consumo abusivo de alcohol en adolescentes escolarizados: propuesta de un modelo psicosociocomunitario [Alcohol abuse among adolescent students: a proposed psychosociocommunity model]. *Ciencia UANL, 14*, 445–458.

Wills, T. A., & Cleary, S. D. (1995). Stress-coping model for alcohol-tobacco interactions in adolescence, J. B. Ferting & J. P. Allen (Eds.), *Alcohol and Tobacco: From Basic Science to Clinical Practice*. National Institute on Alcohol Abuse and Alcoholism, Washington, pp. 107–128.

Wills, T. A., Sandy, J. M., Yaeger, A. M., Cleary, S. D., & Sinar, O. (2001). Coping, life stress, and adolescent substance use: a latent growth analysis. *Journal of Abnormal Psychology, 110*, 309-323.

Wills, T. A., Vaccaro, D., & McNamara, G. (1992). The role of life events, family support, and competence in adolescent substance use: a test of vulnerability and protective factors. *American Journal of Community Psychology, 20*, 349–374. doi: 10.1007/BF00937914

World Health Organization (2014). *Global status reports on noncommunicable diseases: 2014*. Author: Switzerland.

World Health Organization (2014). *Global status report on alcohol and health: 2014*. Author: Switzerland.